

**DEVELOPING A NEW MODEL OF CARE FOR
PATIENTS' MEDICATION SUPPLY AT HOSPITAL
DISCHARGE:
A MULTI-PERSPECTIVE APPROACH**

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Abstract

Hospital discharge is a complex process that can result in errors and delays for patients, particularly around the supply of medicines and communication of information. This programme of work (PoW) aimed to develop an innovative model of care for the supply of medication at hospital discharge to provide safe, quality and effective transfer for patients from hospital to community care.

The PoW consisted of four phases which used both quantitative and qualitative approaches. Phase 1 involved semi-structured telephone interviews with 13 Chief Pharmacists. Analysis identified the current discharge process across the range of hospitals as well as key issues and examples of good practice at discharge. Discharge processes were similar across hospitals with issues common to all. Phase 2 used questionnaires to establish patient perceptions of the current discharge process in a large city-centre teaching hospital. The 104 inpatients recruited were 60% (n=62) male, average age was 55 (range 19-93), from both medical and surgical wards. Most patients, 89% (n=87) were satisfied with their hospital discharge but believed it took too long. The perceived main cause of delay was waiting for medicines. Other highlighted issues included limited counselling by pharmacists and a need for more patient involvement at discharge. Phase 3 utilised findings from phases 1 and 2 to inform the development of a new model of care for patient discharge.

Phase 4 consisted of semi-structured interviews and focus groups with stakeholders in patient discharge (n=37), to evaluate the proposed new model of care. Stakeholders successfully evaluated the new model, highlighting areas of the new model of care that would work well and where problems may arise. The model of care was refined based on these findings, with the suggestions for overcoming logistical issues considered. The PoW successfully developed an innovative model of care for patient discharge.

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“There is no such thing as a ‘self-made’ man. We are made up of thousands of others. Everyone who has ever done a kind deed for us, or spoken one word of encouragement to us, has entered into the make-up of our character and of our thoughts, as well as our success.” George Matthew Adams

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List of abbreviations

AF	Atrial fibrillation
AKI	Acute kidney injury
AMU	Acute medical unit
A&E	Accident and emergency
CCG	Clinical commissioning group
CQUIN	Commissioning for quality and innovation – set national goals for NHS
DGH	District general hospital
DH	Department of health
ED	Emergency department
EJHP	European journal of hospital pharmacy
EMIS	EMIS Web (integrated healthcare record system)
EPS	Electronic prescription service
ESAU	Emergency surgical admissions unit
F1	Foundation doctor year 1
F2	Foundation doctor year 2
GP	General Practitioner
ICE	Integrated clinical environment (software produced by Sunquest)
IT	Information technology
IV	Intravenous
KPI	Key performance indicator
LJMU	Liverpool John Moores university
MDS	Monitored dosage system
MDT	Multi-disciplinary team
MUR	Medicines use reviews
NHS	National Health Service
NMP	Non-medical prescriber
NMS	New medicines service
PAS	Patient administration system
PIL	Participant information leaflet
PoW	Programme of work

RAG	Red/amber/green classification, defines whether responsibility for prescribing specific medicines lies with primary care or secondary care
RD&I	Research, development and innovation department
REC	Research ethics committee
RLBUHT	Royal Liverpool and Broadgreen University Hospital NHS Trust
TTO	'To take out', commonly used term referring to the discharge prescription
UK	United Kingdom
U&Es	Urea and electrolytes

Chapter 1 – Setting the scene

This chapter will provide an informative overview of the thesis, to set the scene as to why and how the research was undertaken. This thesis represents a programme of work (PoW) which intended to improve patient discharge from hospital. The aim of the work described in this thesis was to develop an innovative model of care for patients' medication supply at hospital discharge. This model should provide safe, quality and effective transfer for patients from hospital to community care. The innovative model of care relates specifically to medication supply at discharge, rather than other aspects of patient discharge from hospital. For ease, it will hereafter be referred to as a model of care for patient discharge. The thesis covers the stages involved in the development of an innovative model of care for patient discharge from hospital and describes the final model of care.

The researcher graduated from Liverpool John Moores University in 2009 and qualified as a pharmacist in 2010. Since then, she has practised as a hospital pharmacist in a wide variety of clinical specialties. The opportunity to undertake this PhD arose in a field of interest to the researcher, whilst maintaining some clinical pharmacy work. The researcher has enjoyed the experience, particularly working collaboratively with the Centre for Pharmacy Innovation. The researcher has continued to practice as a hospital pharmacist at The Royal Liverpool and Broadgreen University Hospital NHS Trust throughout her three-year PhD studentship. In July 2016 the researcher was married, resulting in a change in surname from Bullock to Wright. Consequently, any documents submitted or published prior to July 2016 were in the name Sally Bullock and those after this date were submitted under Sally Wright.

Providing a clinical pharmacy service to inpatients admitted to an array of hospital wards meant that the researcher was routinely involved in organising the supply of patients' medication for discharge. As noted by Corbin, 'Professional experience frequently leads to the judgement that some features of the profession or its practice is less than effective, efficient, humane or equitable. So it is believed that a good research study

might help to correct that situation'.⁽¹⁾ The researcher's personal experience of witnessing the difficulties for both patients and healthcare staff during hospital discharge, provided the initial incentive to investigate and improve the discharge process.

Patient discharge from hospital is a complex, multi-stage process, involving a variety of healthcare professionals. Despite overwhelming evidence describing the problems that result from patient discharge, successfully discharging patients from hospital remains a challenge.

1.1 Literature search

To fully understand the field of patient discharge from hospital, an extensive systematic literature search of the following databases was undertaken prior to commencing the PoW: AMED, BNI, EMBASE, Pubmed (for Medline), CINAHL and Cochrane Library. These databases were chosen to cover all healthcare related journal articles, conference proceedings and summaries. Key words to identify discharge processes published in the English language were used to detect relevant articles. The following key words were used in all databases: "hospital discharge", "hospital discharge" AND "medication", "trans* of care", "continuity of care" AND "medication", "continuity of care" AND "hospital discharge", "adverse event*" AND "hospital discharge", "pharmacist" AND "hospital discharge", "healthcare quality" AND "hospital discharge", "community pharmac*" AND "hospital discharge", "medic* use review*", "primary medical care" AND "hospital discharge", "handover" AND "hospital discharge", "information technology" AND "hospital discharge", "information technology" AND "medication", "incomplete discharge", "electronic discharge", "computer*" AND "discharge", "medical record" AND "information technology", "discharge prescription", "patient perspectives", "patient involvement"

Full details of the literature search, including the number of hits for each search can be seen in the literature search strategy in Appendix 1.

1.2 Thesis overview

The PoW involved a multi-perspective investigation into the problems associated with the current discharge process. This was followed by the development of an innovative model of care for the supply of patients' medication at discharge from hospital. The PoW consisted of four phases, introduced below and discussed in detail in section 3.2 Overview of programme of work.

Chapter 2 provides a comprehensive review of the background to the thesis, beginning with a broad introduction to the NHS, relevant policies and patient discharge. It then focusses on the problems with discharge and the attempts to resolve the problems discussed in the literature.

Chapter 3 describes the PoW in detail, discussing the approach taken and the methods utilised for each of the four phases of the PoW.

Chapter 4 presents the findings from phase 1 of the PoW, which involved telephone interviews with Chief Pharmacists from acute NHS hospitals across North West England. This phase looked to identify and evaluate the discharge processes used across a range of acute NHS hospitals.

Chapter 5 presents the findings from phase 2 of the PoW. This second phase involved questionnaires to determine the patients' perspective of the current discharge process.

Chapter 6 presents phase 3 of the PoW. This third phase involved triangulation of the data collected and the development of a new model of care for patient discharge. The proposed new model of care for patient discharge is described within this chapter, along with a rationale.

Chapter 7 presents the findings from phase 4 of the PoW. This final phase involved feasibility testing of the proposed model of care described in chapter 6. This was undertaken using qualitative interviews and focus groups to determine a range of

stakeholders' views of the proposed model of care. The model of care was refined and the final, refined innovative model of care for patient discharge is presented within this chapter.

The thesis concludes in chapter 8 with a general discussion of the overall findings and their implications for practice.

1.3 Significance of the research

This research is particularly timely as the NHS is currently under pressure to provide quality patient care with limited resources. Patient discharge from hospital is known to be problematic and resolving these issues would have a significant impact. There are many potential beneficiaries to an efficient hospital discharge process. There are two main aspects to this, benefits for the hospital and benefits for patients. Improvements to the discharge process will be beneficial for hospitals in terms of tackling delayed discharges, encouraging efficiencies and cost savings. Equally as important is the patient. Improving the patient experience is essential; however the potential to improve patient outcomes and reduce hospital readmissions is integral to this PoW.

Chapter 2 – Introduction

This first chapter will provide an introduction to the thesis, beginning with background information on the topic of patient discharge from NHS hospitals. A discussion of the current literature in the field of hospital discharge will follow.

2.1 The National Health Service

The National Health Service (NHS) is the world's largest publicly funded healthcare service⁽²⁾ and is responsible for the diagnosis, treatment and prevention of disease and for public health. Since launching in 1948, the NHS has been constantly changing and expanding to provide the best possible, most cost effective health and social care for patients. The most recent changes took place in April 2013, after the commencement of the Health and Social Care Act 2012.

The government's Department of health (DH) and its agencies are responsible for producing national policies which impact on practice. The aim of these policies is to ensure that healthcare services and staff are able to deliver the highest standard of health and social care to patients at a local level. A major change occurred in 1998, when devolution of NHS operational powers to each of the four countries within the UK took place. This study will focus on health and social care in England. NHS England is the public body of the DH that oversees the budget, planning, delivery and day-to-day operation of the commissioning side of the NHS in England. Public Health England is another body within the DH responsible for the protection of the public's health and to reduce health inequalities throughout England.

Among the responsibilities of NHS England is the provision of funding to both community care services and local Clinical Commissioning Groups (CCGs) across England. CCGs are organisations responsible for commissioning services both in the community and in secondary care within their local area.⁽³⁾ As per the Health and Social Care Act 2012, local authorities have the responsibility of looking after the health care, social care and public health in order to shape local districts.⁽⁴⁾ Local authorities are better placed

to know the needs of their locality and have the ability to shape services to meet local needs and promote health and wellbeing.^(4,5)

The majority of patient care is undertaken in the community, this is known as community or primary care. The first point of contact for a patient seeking medical attention in the community is usually their General Practitioner (GP), but can be from other providers, for example a community pharmacy or dental surgery. The GP practice is usually responsible for coordinating the medical care for each patient. This includes keeping an accurate and up-to-date record of medical history and medication i.e. a treatment plan. The record should also include details of any treatment received from other healthcare providers. If the patient has been admitted to hospital, the record should have a summary of the reason for admission, investigations and procedures that took place, diagnosis, outcomes, changes to treatment plan and details of follow up if required.

Secondary care generally involves hospital care. A patient may be referred to a hospital-based specialist, or admitted through the accident and emergency (A&E) department for acute, severe illness. Non-specialist hospitals are referred to as acute NHS hospitals. They provide acute services such as A&E departments, inpatient and outpatient medicine, surgery and in some cases very specialist medical care. They range in size and location, from relatively small district hospitals, to large city teaching hospitals.⁽⁶⁾ This thesis will focus on the services provided by acute NHS hospitals. Further details about the participating sites in the PoW are given in Chapter 3 – Programme of work.

For a patient with chronic health conditions, for example diabetes, most of their care will be by a team of practitioners based in the community. This could include, but is not limited to their GP, practice nurse or community pharmacist. A range of other community services also exist. The patient may occasionally require secondary care services requiring admission to hospital. The community team will then continue with the patient's usual care once they have returned home. Certain patients require

specialist care without admission to hospital and can be seen by a specialist in a hospital outpatient clinic.

Community Pharmacists are an easily accessible resource for community based patient healthcare. Alongside offering essential services such as dispensing prescriptions, many pharmacies provide a range of public health and medicines management services, including: healthy living advice, weight management, smoking cessation services, NHS health checks, flu vaccinations, sexual health screening, minor ailments schemes, the New Medicine Service (NMS) and Medicines Use Reviews (MURs).⁽⁷⁾ The NMS involves a community pharmacist assessing adherence and identifying problems with newly prescribed medication. This service is targeted at specific conditions, such as asthma. MURs are in-depth reviews of patients' medication to ensure they understand how and when to use their medicines.⁽⁷⁾ An increase in support for the use of community pharmacies for first line patient care has been seen over recent years. After a consultation regarding urgent and emergency care, NHS England agreed that "Community pharmacies are an under-used resource: many are now open 100 hours a week with a qualified pharmacist on hand to advise on minor illnesses, medication queries and other problems. We can capitalise on the untapped potential, and convenience, that greater utilisation of the skills and expertise of the pharmacy workforce can offer."⁽⁸⁾

2.2 The changing care environment

There are many pressures that threaten to overwhelm the NHS. The population is ageing and there is a significant increase in the number of people with long-term conditions requiring health and social care.⁽⁹⁾ Additionally, the NHS is under a huge financial pressure due to a lack of funding. Subsequently, the NHS needs to increase its productivity and improve services using the limited funding available.

The NHS is in the midst of a changing care environment. There will be many changes to the way that care is delivered; which is essential to provide quality care for all patients, within the restraints of the limited resources available. Currently, there is a drive to

move care back into the community. Moving patient's care from hospital into the community is a high priority in the UK and internationally.^(10,11) The consensus is that as much care as possible should be delivered in a local, more convenient setting for patients. This is to improve patient experience and reduce the burden on the NHS by removing the focus from treating patients at expensive hospitals.⁽¹⁰⁾ This means a radical change from current ways of working. NHS England's Five Year Forward View has suggested that new models of care are required (see section 2.9 Developing new models of care) to improve care and deliver care closer to patients through integrated care models.⁽¹²⁾ This will involve a breakdown of the barriers of how care is currently provided.

The Kings Fund suggest that creating patient-centred care that is more coordinated across care settings should be a priority for commissioners, along with supporting medicines management to reduce the likelihood of medication errors and hence patient harm.⁽¹³⁾

2.2.1 Changes in pharmacy services

The changing care environment also impacts pharmacy services. It is thought that hospital pharmacy services should operate more efficiently and safely. Through the optimal use of medicines, technology and workforce, alongside collaboration amongst providers, unnecessary variation in services can be avoided. This will deliver value for money for the taxpayer and good clinical outcomes for all patients seven days a week.⁽¹⁴⁾

The hospital pharmacy transformation programme as set out by the Lord Carter report suggested many mechanisms that hospital pharmacy departments can implement to help deliver improved services. These include: pharmacist prescribers and increased time in patient-facing medicines optimisation roles (for example, medicines reconciliation, which involves obtaining a complete and accurate list of all medication taken by a patient). Hospital pharmacy departments can contribute to increased efficiency in the NHS, by implementing tools such as: effective communication, signposting, breakdown silo working and seven day working.

Recent papers^(15–18) suggest that community pharmacists need to play a more prominent role in new areas, providing easy access to medicines and services which are integrated with other health professionals so that care is seamless. Community pharmacies have successfully become involved in the dispensing of outpatient prescriptions, a role traditionally carried out by hospital pharmacies only. The success of outsourcing hospital pharmacy outpatient tasks to a range of community pharmacy chains,^(19,20) suggests that there is scope to investigate how community pharmacy could have an active role in the discharge process.

Another change for pharmacy as a result of the Five Year Forward View, was the initial £100m of investment to support extra clinical pharmacists to work in general practice by 2020/21.⁽²¹⁾ This emerging role involves GP-based clinical pharmacists working as part of the general practice team to resolve day-to-day medicine issues and consult with and treat patients directly. This includes providing help to manage long-term conditions, including running clinics as well as providing advice for patients on multiple medications.⁽²¹⁾ The role of a clinical pharmacist within a GP practice is thought to be pivotal to improve the quality of care and ensure patient safety.⁽²¹⁾ Having a clinical pharmacist in GP practices also means that GPs can focus their skills where they are most needed, helping GPs to manage the demands on their time.⁽²¹⁾

2.3 Securing high quality care for all patients

NHS England's goal is to secure high quality care for all patients now and for future generations.⁽²²⁾ Several key policy areas have been identified in their recent business plan.⁽²²⁾ These include patient safety, ensuring patients have a positive experience of care, reducing hospital readmission rates and improving quality of life for patients with long-term conditions.⁽²²⁾

2.3.1 Patient safety

Patient safety is a key policy area for the NHS and is important in providing a high quality service. Since 2012 the responsibility of informing and supporting the health sector to ensure that patient safety is at the heart of the NHS has laid with NHS England.⁽³⁾ All NHS treatment should be provided safely. As drug therapy is the most frequent treatment provided by the NHS, ensuring that drug treatment is safe is central to this strategy.⁽²³⁾ Despite most medication being provided safely, mistakes are made. Errors can arise in all stages of the prescribing process; including prescribing, dispensing or administration of medication.⁽²³⁾ In an attempt to reduce the number of medication errors, the DH offered guidance on good practice to improve medication safety during each of these stages of treatment with medication.⁽²³⁾

2.3.2 Positive patient experience

As mentioned above, NHS England's mission is to secure high quality care for all.⁽²²⁾ High quality care is defined by three components: clinical effectiveness, patient safety and patient experience.^(24,25) In order to assess whether NHS services are providing high quality care, performance is measured on these three components being achieved. High quality care historically focussed on ensuring clinical effectiveness and safety of service provision. More recently however, focus has shifted to improving the patient experience.^(5,25,26) Experience of care can be understood by both what the patient experiences when they receive care, and how it makes them feel.⁽²⁷⁾

Measuring patient experience is important for a variety of reasons. Firstly, in determining whether NHS services are providing humane, empathic care.⁽²⁸⁾ Additionally, research has demonstrated positive associations between patient experience, clinical effectiveness and patient safety outcomes, indicating that patient experience is clinically important to improve other aspects of high quality care.⁽²⁸⁾

Service providers within the NHS should strive to ensure patient experience is amongst the best in the world.⁽²⁷⁾ NHS England are involved in many programmes of work aiming to improve the patient experience.⁽²⁴⁾ One example is the medicines optimisation

programme, which involves ensuring that the right patients get the right choice of medicine, at the right time.⁽²⁹⁾ By focusing on patients and their experiences, the programme aims to improve patient outcomes, quality and value from medicine use.⁽²⁹⁾

2.3.3 Reducing hospital readmission rates

The rate of urgent readmissions within 28 days of discharge from hospital is used as a quality of care indicator.⁽³⁰⁾ High readmission rates equate with poor quality of care, poor patient experience and quality of life in general. The cost of readmissions to a nation's health service is high⁽³¹⁾ in terms of both financial burden and impact on patients and their relatives. One qualitative study carried out by the charity Age UK found that older patients felt traumatised and frustrated by their readmissions.⁽³²⁾ Every attempt should be made to reduce the risk of patients being readmitted to hospital after discharge. In practice, there has been a continuous increase in these readmissions since 2001/02 of 2.6% per year.⁽⁹⁾ It appears that many of these readmissions may be avoidable. A review for the DH of sixteen published studies assessing avoidability of readmissions within 28 or 30 days suggest that between 5% and 59% of readmissions may be avoidable.⁽³³⁾ Another systematic review of the literature found that between 5-79% of hospital readmissions were deemed avoidable.⁽³⁴⁾ Although there are many factors involved with readmissions to hospital,⁽³⁵⁾ studies have shown that medication errors and adverse drug reactions have a significant impact on readmission rates.^(35,36) Poor quality discharge has been cited as one of the perceived reasons by older patients for readmission to hospital.⁽³²⁾

2.3.4 Improving quality of life for patients with long-term conditions

In England, more than 15 million people have a long-term condition - a health problem that cannot be cured but can be controlled by medication or other therapies. This figure is set to increase over the next 10 years, particularly those people with three or more conditions at once.⁽³⁷⁾ Living with long-term conditions can affect many parts of a person's life, from their ability to work and have relationships to housing and education opportunities.⁽³⁷⁾ The Five Year Forward View stated that 'long-term conditions are now a central task of the NHS; caring for these needs requires a partnership with patients

over the longer term rather than providing single, unconnected “episodes” of care’.⁽¹²⁾ This fits in with a mandate produced by the previous government, which gave NHS England responsibility for coming up with plans to help improve the quality of life for people with long-term conditions. It aimed to: help patients to get the skills to manage their own health, agree with patients a care plan that is based on their personal needs and make sure that their care is better coordinated.⁽³⁷⁾

Management of long-term conditions is ideally undertaken within the community, rather than in hospital. This requires the patients’ community-based care to adequately support their conditions. Discharge from hospital will also play an important role in this support; particularly in terms of providing joined up, coordinated care. Transfer of information at discharge and communication with patients is essential to ensure that their conditions can be adequately managed and their care is not interrupted by an admission to hospital.

2.4 Patient involvement

Patient involvement in their care is high on the Government’s agenda and thought to be important in improving patient outcomes. The Government’s aim is for all patients to be fully involved in decisions about their own care and that this becomes the norm across the NHS.⁽³⁸⁾ The Francis report, published following an intensive investigation into the failings of an NHS hospital, identified that although the overarching value and principle of the NHS Constitution should be that patients are put first,⁽³⁹⁾ this was not the case in practice. Recommendations included that staff should be open and honest with patients and communication should be maintained.⁽³⁹⁾

Patient involvement in their care is a major component of the medicines optimisation programme.⁽⁴⁰⁾ In particular, good communication between healthcare professionals and patients is needed for involvement of patients in decisions about medicines and for supporting adherence.⁽⁴⁰⁾ This communication with patients is key at discharge to support them with their medicines. One study showed that healthcare professionals did

not sufficiently prioritise discharge consultations with patients and family members due to time restraints and competing care obligations.⁽⁴¹⁾

2.5 Continuity of care

There is no universally agreed definition of continuity of care. It has been defined by one research team as ‘quality health care resulting from the ongoing management of issues which cause disruption to optimal patient care’.⁽⁴²⁾ It has been suggested that continuity of care can be described as a hierarchal structure, which consists of three different hierarchal levels. Firstly, continuity of care should involve an organised collection of medical and social information about each patient, accessible by all healthcare professionals involved in the patient’s care.⁽⁴³⁾ Secondly, an organised team of providers should coordinate and assume responsibility for the quality of care (this is usually the GP surgery’s responsibility).⁽⁴³⁾ Thirdly, there should be an ongoing relationship between the patient and a personal health care professional.⁽⁴³⁾ Systems should aim to encompass all three levels of continuity of care where possible. Monitor, the sector regulator for health services in England, published guidance for commissioners on ensuring the continuity of health services. While this document provides an overall policy approach, continuity is not always evident on a day-to-day basis.⁽⁴⁴⁾

Evidence suggests that patients recognise and value seeing the same GP and maintaining that relationship in the community.⁽⁴⁵⁾ Patient perspectives on continuity of care between hospital and community have not been widely studied. Since good continuity involves seamless processes between professionals and agencies that are generally invisible to the patient, it is difficult for them to assess the work involved in achieving it. Continuity of care often only becomes apparent when co-ordination breaks down and impacts negatively on the patient’s experience of care.^(45,46)

As long-term conditions become more common in an ageing population,⁽⁹⁾ it becomes difficult for a single healthcare provider to manage one patient. There are more people with ‘complex health needs’ – more than one health problem – who require a combination of health and social care services. Consequently, patients are increasingly

seen by an array of providers in a wide variety of organisations and places, raising concerns about fragmentation of care.⁽⁴⁷⁾ By involving more care providers, the risk of a breakdown in continuity of care increases and procedures should ensure that this risk is minimised. It should never be acceptable for patients to be discharged from hospital at any time without knowledge that the patient in need of care will receive it on arrival at their destination.⁽³⁹⁾ This ongoing responsibility for continuing care should also embrace GPs and their practices. GPs should, as a part of their professional obligations, check on their patient after any hospital treatment and assess whether the outcomes were satisfactory.⁽³⁹⁾

When a patient is admitted to hospital, their GP may be unaware of the hospitalisation or the care received during the admission. Inevitably there is a risk of breakdown in continuity of care if this care is not communicated to the GP. One study suggested that many frail older patients reported problems after discharge and were twice as likely to do so when their primary care provider was not aware of the hospitalisation.⁽⁴⁸⁾ Both community-based and hospital-based care providers should strive to ensure that there are no gaps in continuity of care when patients are transferred between care settings. Systems need to be developed to improve communication between the two sectors in order to provide high quality care,^(49,50) as effective communication and information-sharing between primary and secondary care remains an area of concern.

Effective electronic data sharing could improve continuity during transfer between care settings. The creation of a live, interactive patient record that all health professionals can access from whatever setting is seen as the key component to ensure that all patients receive “the right care in the right place, at the right time.”⁽⁵¹⁾ In terms of transfer between different care settings, this would ensure that changes made to the treatment plan are known to the GP as soon as they occur. Health and social care staff from all areas would have direct access to up-to-date information about the medication prescribed to a patient.⁽⁵¹⁾

The NHS 'Spine' is a national IT infrastructure that was initially developed in order to hold patient care records. It also provides the means for which the electronic prescription service (EPS) transmits prescriptions within the community. The Spine is undergoing constant development and improvement, but is currently capable of holding the Summary Care Record (SCR) for patients. Each individual SCR holds information about what medication the patient takes and any allergies or medication problems they have encountered. The SCR provides the information that assists in improving patient safety, quality of healthcare, clinical effectiveness and better administrative efficiency.⁽⁵²⁾ Although the Spine is a starting point, the ideal system for communication does not currently exist. In the absence of an all-encompassing system where information can be instantly shared between all healthcare professionals, innovative methods to improve patient experience, patient safety, continuity of care and reduction of staff workload need to be identified.

2.6 Discharge from hospital

For those patients admitted to hospital – known as inpatients – hospital discharge is the point at which they leave the hospital. Patients can be discharged to their own home, or transferred to another facility if appropriate. Examples of such facilities include care homes or intermediate care facilities. After recovery from the illness causing their admission to hospital, patients are classed as medically fit. Depending on the social aspects of their care, the patient can then be discharged from hospital. The series of events that takes place to execute a successful discharge, allowing patients to be safely discharged from hospital is known as the discharge process.

Discharging patients from acute NHS hospitals can be a complex multistage process. Depending on the individual patient's health and social care needs, the process can involve a range of healthcare professionals from across the multidisciplinary team (MDT)⁽⁵³⁾ as well as the patient.⁽⁵⁴⁾ Consequently, good coordination and communication between the healthcare professionals involved is essential to ensure that patients are discharged safely with robust, ongoing care. Coordination of patient discharge can be carried out by a discharge coordinator, a staff nurse or a junior member of the medical

team,⁽⁵⁵⁾ depending on hospital resources. Recent NICE guidance suggests that a single health or social care practitioner should be responsible for coordinating a person's discharge from hospital.⁽⁵⁶⁾

As mentioned, depending on the individual patient and their needs, a variety of health and social care issues may need to be taken care of prior to discharge. The full range of interventions available at discharge are outside the scope of this thesis, for example providing social care services to patients. The position of this research is to focus on improving the issues that surround medication at discharge. This includes: the supply of medication and communication of the relevant information to patients and their community healthcare providers. This focus is important because ensuring that these processes are carried out correctly is vital to promote medicines adherence and to allow the correct medication to continue to be supplied after discharge.

2.6.1 Discharge planning

Discharge planning is a process that aims to improve the coordination of services after discharge from hospital by considering the patient's needs in the community.⁽⁵⁷⁾ Discharge planning involves the development of an individualised discharge plan for the patient prior to leaving hospital, with the aim of containing costs and improving patient outcomes.⁽⁵⁸⁾ A structured discharge plan was thought to bring about a reduction in hospital length of stay and readmission rates, and an increase in patient satisfaction.⁽⁵⁸⁾ A Cochrane review found that despite positive findings, a conclusion around whether discharge planning led to a significant reduction in readmission rates was uncertain. Discharge planning is recommended and should involve the patient, their family members, and the multidisciplinary team⁽⁵⁴⁾ and should begin as early as possible during the patient's admission.⁽⁵⁵⁾

2.6.2 The discharge process

The supply of medication at discharge begins with the creation of a discharge prescription, which is commonly referred to as the TTO ('To Take Out'). The TTO is a complete and accurate list of all medication the patient should take after discharge from

hospital. The TTO should also highlight any changes to medication that have occurred during the hospital stay. The discharge process involves multiple stages and can vary between hospitals. A typical discharge process begins when a patient is medically fit for discharge and involves a doctor from the medical team providing care during the inpatient admission writing a TTO for a patient. The ward based pharmacy team (which usually includes a pharmacist and a pharmacy technician) are informed that the TTO has been written, so that the pharmacist can carry out a clinical check of the prescribed medication. Once the pharmacist is satisfied the TTO is accurate, safe and complete, they will verify it.

Patient's own medication, if available, is assessed for suitability and quantity to take home. Patients receive at least 7 days' supply of all medication to take home, unless a specified course length of medication is prescribed, in which case the full course would be supplied. This should ensure that the patient has sufficient time to reorder their regular medicines from their own GP. Any medication needed is dispensed by the hospital pharmacy. This is usually only items of which the patient does not already have their own supply. The completed TTO and medication are sent back to the ward, where the nurse looking after the patient will check the TTO and the medication before giving them to the patient along with the discharge summary.

The next important step at discharge is the transfer of patient care back to the community. This involves a discharge summary (a summary of the inpatient episode, also written by the doctor) and the TTO, being sent to the patient's GP within 24 hours of patient discharge.⁽⁵⁶⁾ Providing a complete and accurate discharge summary aids the transfer of care from hospital into the community and allows the GP to coordinate appropriate ongoing care.⁽⁵³⁾ To perform its crucial role in continuity of care, it is essential that the discharge summary contains all relevant information regarding the episode of inpatient care. In an attempt to promote uniformity of content there are published standards detailing the necessary information to include in a discharge summary.^(59,60) Some of the information that should be included is: reason for admission, tests and procedures undertaken during admission, outcomes, medication to be taken

on discharge including reasons for any changes and any follow up required. Transfer of the discharge summary to the GP was traditionally via post, but can now be transferred electronically. Electronic transfer of information in theory makes transfer between the ward, hospital pharmacy and GP practice easier. Prompt transfer of information to the relevant parties is essential for continuity of care.

2.6.3 Community pharmacy involvement at discharge

Another aspect of transfer of care from hospital to the community is the role of the community pharmacist in assisting patients discharged on medication. The extent of follow-up received after hospital discharge differs depending on the patient's ongoing health needs. Community-based follow-up for medication is not routinely provided for patients. Community pharmacists are ideally positioned to provide routine support with medicines after hospital discharge. Research in the late 1990s found that providing community pharmacists with a copy of patient discharge summaries was an effective method of reducing unintentional medication discrepancies.⁽⁶¹⁾ Further research has demonstrated the value of the community pharmacist in separating old and new medications, disposing of any unnecessary medication, counselling patients and answering medicine-related questions,⁽⁶²⁾ ensuring continuity and quality of patient care during the discharge process.⁽¹⁵⁻¹⁸⁾

More recently, community pharmacies offer the NMS and targeted MURs to support patients recently discharged and improve transfer of care between the hospital and community.⁽⁷⁾ Section 2.1 The National Health Service, contains further information about these services. There are four target groups of patients for MURs, which are based on their medicines or clinical condition. One of these target groups is patients recently discharged from hospital with changes to their medicines.⁽⁶³⁾ Both the NMS and MURs can be provided for patients after discharge in order to help the patient's understanding of new medication and improve continuity of care. For patients that are housebound, home visits are also possible. Home visits are a widely underused service due to time and cost restraints. A study in Australia found that after discharge from hospital only 25% of patients saw their GP within 4 days of leaving hospital, whereas the majority of

patients visited their community pharmacist within 2 weeks of admission.⁽⁶⁴⁾ Patients visiting their community pharmacy after discharge could make use of the services offered.

2.7 Current problems at discharge

Discharge from hospital is known to be fraught with issues. Transfer of patient care has been identified as a vulnerable point in the care process as this presents an increased opportunity for errors that may result in patient harm.^(65,66) The common problems that arise at discharge are discussed below.

2.7.1 Delayed discharges

Delayed discharges are common and add to the increasing burden on the NHS. A delayed discharge occurs when a clinical decision has been made that a patient is ready for transfer from a hospital bed, but is still occupying that bed.⁽⁶⁷⁾ When patients are medically fit for discharge, but there another factor is causing delay to their discharge this is commonly referred to as 'bed-blocking'. Bed-blocking is a term used to refer to elderly patients that are medically fit for discharge, but are unable to leave the hospital due to other reasons, examples of which are discussed below. Bed-blocking is a huge problem for the NHS, who are under pressure to reduce this. The Carter report published that on any given day, up to 8500 beds could be blocked by patients with delayed discharge. This is estimated to cost the NHS around £900 million per year⁽⁶⁸⁾ and has gained a lot of interest in the media over recent years who have informed the public about the issues with patient discharge, often sensationalising stories.⁽⁶⁹⁻⁷²⁾

There are various causes of delayed discharges. Examples of potentially long-term causes of delay include patients awaiting social care packages, or care home placement.⁽⁶⁷⁾ The wait for medications at discharge can also delay patient discharge. This is a short-term delay, but the process of discharging patients from hospital can be time consuming, often resulting in patients waiting for their medicines and temporarily blocking beds⁽⁷³⁾ leading to a delayed discharge.

2.7.2 Medication errors at discharge from hospital

The time of discharge is a point at which prescribing errors are likely to occur.⁽⁷⁴⁾ A significant percentage of older patients experience medication discrepancies after transferring from hospital to home⁽⁷⁵⁾ leading to medication errors. Medication errors can cause unnecessary harm to patients and can result in readmission to hospital.⁽⁷⁶⁾ According to a 2014 report, preventable harm from medicines is thought to cost the NHS anywhere between £1 billion-£2.5 billion annually.⁽⁷⁷⁾

There are a number of well documented factors that can contribute to medication discrepancies as a result of hospital discharge.^(51,54) These include: incomplete information in discharge summaries sent to GPs,^(51,54,78,79) lack of prompt transfer of discharge information to GPs,^(48,51,54,79) patient misunderstanding of discharge instructions^(51,54,80) or lack of adequate patient counselling.⁽⁴⁹⁾

Research indicates that if discharge summaries do not contain sufficient information about any changes to the treatment plan that occurred during the inpatient episode, this can result in treatment failures, continuation of inappropriate medication and discontinuation of required medication.⁽⁷⁹⁾ A study conducted across 45 hospitals in England found that two-thirds of discharge prescriptions were inaccurate or incomplete prior to pharmacy screening. Clinical screening by pharmacists was thought to contribute significantly to patient safety.⁽⁸¹⁾ A further study in Switzerland found that drug omissions and unjustified medications on discharge prescriptions were frequent.⁽⁸²⁾ In another study conducted in one hospital in New Zealand, an audit of 100 medication charts and discharge summaries found that there were 1.42 discrepancies in medication per medicine discharge summary.⁽⁸³⁾

Issues can arise when patients' regular medication is not noted on admission to hospital and therefore not included in the discharge summary. Errors and misunderstandings are particularly common in medications unrelated to the primary diagnosis.⁽⁸⁰⁾ Patients' regular medications that are not directly involved with the reason for admission will often be omitted on admission and therefore will not be included on the discharge

prescription. One study found that errors in preadmission medication histories lead to more discharge reconciliation errors.⁽⁸⁴⁾ Other studies have found that more accurate medicines reconciliation on admission and rectifying any problems identified will lead to more accurate medication lists on discharge from hospital. One audit of discharge summaries received by GP surgeries highlighted that regular medication was documented in only 30% of summaries. Regular medication was stopped for 59% of patients during their hospital stay with no reason stated and, at discharge, 39% were prescribed new drugs, again with no reason stated.⁽⁷⁹⁾

Another problem can occur as a result of patient confusion. Patients tend to view their hospital medication and home medication as different and may take both, thus taking double doses of some medicines.⁽⁵⁴⁾ This can be dangerous with many medications and requires adequate patient counselling to reduce this risk. Conversely, some patients inappropriately revert to their pre-admission medication after discharge.⁽⁵⁴⁾ This would be especially problematic for patients who were originally admitted with adverse drug reactions caused by their pre-admission medication.

Lack of adequate communication on discharge from hospital leads to situations where patients will struggle to obtain the correct medication,⁽⁴⁹⁾ or struggle to understand what medication they should be taking, how they should be taking it and why. Inevitably, this will leave the patient confused and at risk of emergency readmission to hospital.

As previously mentioned in section 2.6.2 The discharge process, prompt transfer of information to the relevant parties is essential for continuity of care. It is an expectation that discharge summaries should be sent to patients' GP surgeries within 24 hours of discharge. One audit in 2011 indicated that GP surgeries only received discharge summaries in 58% of cases. Of these, only 6% arrived within 48 hours of discharge from hospital.⁽⁷⁹⁾ The advent of electronic transfer of discharge information may have improved these figures, however if the GP does not receive discharge information promptly, this can disrupt patient care. Problems and adverse reactions can arise for patients because GP computer prescriptions following discharge are not always up-to-

date with the revised hospital medication plan.⁽⁵⁴⁾ This can be due to the discharge letter arriving at the practice after the repeat prescription has been issued by the GP,⁽⁸⁵⁾ or if the discharge letter has been received but the GP system has not been updated with the information. This leads to medication errors, omissions, confusion, and all that follows from poor communication.⁽⁸⁵⁾

2.7.3 Problems with community pharmacist involvement after discharge from hospital

Recommendations have been made previously to improve communication on discharge, including involving the patient's community pharmacist,⁽⁴⁹⁾ however these are not always followed in practice. Despite the evidence suggesting the patient benefits of community pharmacist involvement after discharge from hospital, a lack of communication between the hospital pharmacist and the patient's community pharmacist is common.^(51,54) In the main, community pharmacists are not aware that their patients have been into hospital.⁽⁸⁶⁾

Little work has been done to develop the role of the community pharmacist in managing patients after discharge from hospital. Evidence-based community pharmacist services are available, however studies show that uptake of discharge medication reviews is limited.^(87,88) A questionnaire-based study carried out involving 19 community pharmacists demonstrated that despite community pharmacists' positive responses about providing discharge MURs, patient engagement was difficult.⁽⁸⁹⁾

2.7.4 Patient perspectives of discharge

Effectively managing the patient journey is crucial to improving patient experience of the NHS⁽⁴⁹⁾ and patient discharge from hospital back into the community is an important aspect of the patient journey. Hospital discharge is a complex, multistage process with many potential sources of error and delay, particularly with regards to the supply of discharge medicines.^(90,91) Medication problems caused by discharge from hospital are discussed in section 2.7.2 Medication errors at discharge from hospital. Despite the

evidence suggesting problems affecting patients are common after hospital discharge, few studies explore this from the patients' perspective.

Of the studies that have assessed hospital discharge from the patient's perspective there are some conflicting results. Surprisingly Horwitz found that despite the gaps in their discharge care, patients were uniformly positive in their assessments of discharge care and education.⁽⁹²⁾ Similarly, the National NHS Inpatient Survey which assesses patient experience at hospitals across England showed that 84% of respondents rated their hospital experience as at least 7 out of 10, despite 42% of respondents' discharges being delayed.⁽⁹³⁾ A large proportion (61%) of those delayed discharges were perceived to be caused by waiting for medicines.⁽¹²⁾ These studies suggest that patients may not be aware of some of the internal problems that occur during discharge, or that patient and service providers priorities may not align.

One study found that 42% of older patients reported at least one post-discharge problem.⁽⁴⁸⁾ Current evidence suggests that many problems on discharge occur due to a breakdown in communication. Patients highlighted that they experienced breakdowns in communication between different healthcare providers during transitions of care^(94,95) and between themselves and their healthcare providers.⁽⁹⁵⁾ Inadequate information regarding follow up care after discharge from hospital was a particular concern to patients.⁽⁹⁵⁻⁹⁷⁾ Patients in various studies experienced anxieties about their impending discharge, whether or not these were expressed to hospital staff.⁽⁹⁸⁾ These anxieties could be reduced by improving patient-provider communication. Patients perceived that healthcare professionals did not sufficiently prioritise discharge consultations with patients and family members due to time restraints and competing care obligations.⁽⁴¹⁾

A collaboration between patients, carers and healthcare professionals in Devon led to the development of a list of good outcomes on discharge for patients with complex needs.⁽⁹⁹⁾ Many of the statements were around joined up, coordinated care involving the patient. With regards to their medications, patients stated that they would like to be provided with a supply of medication to last until they could see their GP, along with

sufficient information that they or their carer could manage the medication. Whilst a good basis, these vague statements are open to interpretation as they do not provide much detail around patient needs. Further research is required to identify if these outcomes are routinely experienced by patients.

There are gaps in the evidence around patient experience of hospital discharge. More needs to be known about what patients want with regards to the supply of medication at discharge.

2.7.5 Patient involvement during discharge

Research suggests that patient involvement appears to be limited during hospital discharge. The National Inpatient Survey 2014 found that 54% of patients strongly agreed that they were involved in decisions about their discharge,⁽⁷⁾ this increased to 56% in the 2015 survey⁽¹⁰⁰⁾ but clearly there needs to be an increase in patient involvement at discharge.

Several studies have explored the reasons for low levels of patient participation at discharge. Patients cited the following reasons: many older people can be passive in relation to discharge planning,⁽⁹⁸⁾ some people may be less assertive when they are ill^(96,98) and perceive their contribution to be unnecessary or not valued by their providers.⁽¹⁰¹⁾ Interestingly, one study suggests that healthcare professionals' and patients' views differ on whether patients are involved.⁽⁹⁸⁾

2.7.6 Patient counselling

Counselling patients on their prescribed medication is considered beneficial for patient outcomes. A study carried out in elderly heart failure patients demonstrated that providing patient counselling improves medication adherence and decrease readmission rates.⁽¹⁰²⁾ Another study demonstrated that patient knowledge of medicines newly prescribed in hospital is increased by targeted counselling by hospital pharmacists. This was in comparison to patients receiving counselling by the doctor or nurse looking after them. Not all patients benefitted from this intervention and the

authors considered the impact of hospital discharge being a potentially stressful time when patients are waiting to be allowed to go home and therefore not ideal for information provision.⁽⁸⁸⁾ Despite positive associations between patient counselling and patient outcomes, the extent to which inpatient counselling routinely occurs during admission to hospital was found to be limited.⁽¹⁰³⁾

2.8 Improving hospital discharge

As a result of the issues surrounding patient discharge from hospital, numerous guides have been published to improve the effectiveness and efficiency of patient discharge, particularly with regards to the supply of medication at discharge.^(51,60,104) These guides focus on improving the existing discharge process, along with some ideas of how to do so. There is a gap in the evidence around looking into new models of care for patient discharge, instead of improving the current, failing process.

2.9 Developing new models of care

As discussed, today's NHS faces a range of challenges. Whereas patients require high quality, coordinated services, nearly all experience care that is fragmented and of varying quality.⁽¹⁰⁵⁾ This is particularly true of the hospital discharge process for patients.

This PoW has adopted the stance that for a radical improvement at discharge, an entirely new discharge process is required to overcome the current problems. One mechanism to achieve this and improve patient care is to develop a new model of care. A "model of care" broadly defines the way health services are delivered. It outlines best practice care and services for a person, population group or patient cohort as they progress through the stages of a condition, injury or event.⁽¹⁰⁶⁾ A model of care aims to ensure people get the right care, at the right time, by the right team and in the right place.⁽¹⁰⁷⁾

This is a timely project, as the NHS is currently undergoing much change and trying to encourage the development of new models of care. See section 2.2 The changing care environment for more information.

There are a number of ways in which a new model of care could be developed. This PoW took a multiphase approach, which was adapted from a range of published frameworks, guidelines and tools that utilised stepwise approaches to developing new models of care. This included the: 'changing models of care framework',⁽¹⁰⁸⁾ 'Understanding the process to develop a Model of Care: An Agency for Clinical Innovation (ACI) Framework',⁽¹⁰⁶⁾ 'Model of Care Overview and guidelines'⁽¹⁰⁷⁾ and Quality and Service Improvement Tools from the NHS Institute for Innovation and Improvement.⁽¹⁰⁹⁾

For example, the stepwise approach to develop a new model of care recommended by the ACI involved the following five stages:

- Project initiation – identify the area of need
- Diagnostic – define the problem and understand the root cause
- Solution design – develop and select solutions, create model of care
- Implementation – support the health system to implement the model of care
- Sustainability – optimise use of the model of care, monitor the results and evaluate the impact

The multiphase approach taken involved identifying and evaluating the current discharge process. This helped to map not only the current discharge process, but also the common issues and their causes. Once the process map has been drawn the next step is to identify where the process can be improved by re-designing or removing elements of the existing process.⁽¹⁰⁹⁾ This method followed the existing approaches to developing new models of care. Advice was also sought on lean methodology on how to optimise the flow of services to maximise value with limited resources. New models of care should be tested to ensure their suitability and effectiveness. The most effective method of testing complex interventions is using a randomised controlled trial, as described by Campbell et al.⁽¹¹⁰⁾ The initial stages of their steps involved in designing a randomised controlled trial have been followed in this PoW. This allows for an easy transition to conducting a randomised controlled trial to evaluate the new model of care, although outside the scope of this PoW.

When tackling complex problems in service provision across multiple settings, it is important to acknowledge and work with multiple perspectives systematically. Applying a combination of qualitative and quantitative operational research methods is one approach to achieving this.⁽¹¹¹⁾ This is one reason why mixed methods were chosen to explore a multi-perspective view of patient discharge from hospital and develop a new model of care based on this.

The guiding principles followed whilst developing a new model of care should be that it:⁽¹⁰⁶⁾

- is patient-centric
- has localised flexibility and considers equity of access
- supports integrated care
- supports efficient utilisation of resources
- supports safe, quality care for patients
- has a robust and standardised set of outcome measures and evaluation processes
- is innovative and considers new ways of organising and delivering care
- sets the vision for services in the future

The following factors should be considered during the development of a model of care:⁽¹⁰⁶⁾

- it is based on the best available evidence
- it links to strategic plans and initiatives (local, national, state)
- it is developed in collaboration with clinicians, managers, health care partners, the community, and with patients, their carers, and or organisations that represent them
- costing, funding and revenue opportunities for the model of care are identified, and assessed
- it extends across the patient journey through different care providers
- specialty and priority populations of patients have been considered

To ensure the success of a new model of care, the patient should be kept at the centre of the plans and the potential for a ripple effect through the organisation should be considered. Improving one aspect of a system does not help the patient if another part of their journey is made worse as a result. The new model of care should be tested for improvement, which will help to identify any potential unwanted side effects.⁽¹⁰⁹⁾

2.10 Interventions to improve hospital discharge

Problems at discharge are common and well documented. Much of the evidence found during the literature search highlights these problems and have been discussed throughout the relevant sections within this chapter. A number of interventions have been attempted over the years which have looked at improving different aspects of the discharge process. This section specifically covers a review of the literature around the interventions employed to improve hospital discharge.

The literature search found that despite the well documented issues with the discharge process, there have been few successful methods to solve the problems on discharge within the UK. There have been several large-scale projects worldwide which involve training programmes designed to help hospitals improve their transitions of care. These include; BOOST,⁽¹¹²⁾ Project RED,⁽¹¹³⁾ ARC,⁽¹¹⁴⁾ Care Transitions Intervention,⁽¹¹⁵⁾ European Handover⁽¹¹⁶⁾ and MATCH.⁽¹¹⁷⁾ However many projects carried out within the United Kingdom (UK) tend to be completed on a smaller scale in individual hospitals and have not managed to get the evidence to prove their effectiveness. Some of the published studies are discussed below.

2.10.1 Interventions during hospital admission

The literature search highlighted that a number of hospitals had trialled pharmacists writing discharge prescriptions in place of doctors in an attempt to improve the quality of discharge prescriptions.⁽⁷³⁾ One short study in a single hospital found that pharmacist-written discharge prescriptions contained fewer errors and considerably fewer issues that required clarification in comparison to those written by doctors. The authors felt

that the high quality of pharmacist-written discharge prescriptions should result in a reduction in prescribing or transcribing errors on discharge, and a reduction in interruptions to the discharge process while queries are resolved.⁽¹¹⁸⁾ One significant issue with this system was that the process was considered transcription as the pharmacists were not prescribers. This resulted in a doctor having to validate the discharge prescription before it went to a second pharmacist for a clinical check, adding a further step to the process.

A pilot study carried out on one hospital ward provided an idea of some of the benefits that could be gained from having a 'board round' meeting with the MDT to identify patients for discharge the following day. By pre-empting any issues and organising discharge prescriptions in advance, preliminary data suggests that patients were discharged earlier in the day and pharmacy and ward staff experience was improved as a result of being organised in advance.⁽¹¹⁹⁾ Although the data appears positive, further research with a robust method is required to determine the true extent of the benefits.

Interim results published by one hospital in the process of piloting a dedicated ward pharmacy service looked positive. This involved ensuring a dedicated ward pharmacist attended ward rounds to assist with prescribing tasks. Clear benefits were apparent in terms of drug costs, readmission rates, length of stay, number of patients discharged before lunchtime and the number of pharmacy interventions made.⁽¹²⁰⁾ This was a pilot study and a full evaluation had not been undertaken at the time of writing.

Deeks, 2000⁽¹²¹⁾ investigated the effect of patients self-administering their medicines during their hospital admission on patient satisfaction with the discharge process and the way information was given to them. This UK survey-based study had a response rate of 193/309 questionnaires which could have resulted in response bias. The study was carried out on two acute medical wards within one hospital, the study findings are unlikely to be generalisable. The study concluded that patients who self-administered their medication rated their discharge care and information more highly than those who had not self-administered.

A randomised controlled trial in one hospital in Australia demonstrated that there was a significant reduction in the number of errors on discharge summaries if pharmacists completed a medicines management plan in the discharge summary.⁽¹²²⁾ One well conducted appropriately randomised controlled trial carried out in the USA demonstrated that there was no clinically significant reduction in medication errors as a result of a pharmacist intervention. The intervention involved a pharmacist carrying out medicines reconciliation on admission, discharge counselling, compliance aids where appropriate and a post-discharge follow up phone call. The study was limited to patients with heart failure or acute coronary syndrome and therefore not generalisable.⁽¹²³⁾

Blewett 2010⁽¹²⁴⁾ undertook a retrospective small study in the USA in an attempt to improve geriatric transitional care through inter-professional care teams. These inter-professional teams (IPT) consisted of a geriatrician, a nurse and a pharmacist. The IPT cared for a proportion of patients on a transitional care unit and were solely responsible for their care. The intervention was to determine the impact of the IPT on patient's length of stay and average costs of care per patient. It was not stated if patients were randomly selected. Half of the patients were seen by the IPT, the other half on the transitional care unit were seen by regular staff. Results suggested that patients reviewed by the IPT had shorter lengths of stay, fewer patient days and lower total charges compared to other patients.

Other hospital pharmacy initiatives have been referred to in the literature, however they lack sufficient evidence as to their effectiveness. Examples of such initiatives included: patient information booklets for patients to take with them when they move between care providers, green bags to collect patients' own medication, domiciliary MURs after discharge,⁽¹²⁵⁾ and dispensing for discharge, where original packs were dispensed for use in hospital and at discharge to ensure smooth discharge.⁽⁵¹⁾

2.10.2 Interventions during transfer of care

Royal, 2006⁽¹²⁶⁾ conducted a UK based systematic review looking at interventions undertaken in primary care to reduce medication related adverse events and hospital admissions. The review addressed a clearly focused issue and was an appropriately searched literature review. Relevant interventions included 17 pharmacist led interventions where a medication review was performed in primary care. The review concluded that there was weak evidence to indicate that pharmacist-led medication reviews are effective in reducing hospital admissions. However, there was no evidence to suggest the effectiveness of other interventions which aim at reducing admissions or preventable drug related morbidity.

One study by Harrington et al 2014⁽¹²⁷⁾ evaluated a post-discharge medication reconciliation programme. Patients discharged from one hospital on high risk medication or admitted with a high risk condition, for example diabetes, were referred to the pharmacist. The pharmacist performed post-discharge medicines reconciliation with them. The study was not powered to show effect but anecdotal evidence suggested that it had benefit. 11% of participants were re-hospitalised. There was no comparator group.⁽¹²⁷⁾ In one hospital in the USA, a Care Transitions Service has been introduced. This is a pharmacy-driven programme for medication reconciliation throughout the continuum of care for patients on three or more long-term medicines. The service involves each patient receiving medicines reconciliation on admission to hospital, medicines review on discharge and a full handover to their community pharmacist on discharge. After discharge, patients receive a follow up phone call as a reminder and an outpatient appointment for further medicines reconciliation. A two month review of the service by Conklin et al, 2014 looked at the frequency and type of medicines related problems. They found that the number of medicines related problems decreased throughout the continuum of care.⁽¹²⁸⁾ Further work is required to determine the impact on patient safety and readmission rate. Kind 2012 introduced the C-TraC Program, which was similar to the Care Transitions Intervention. The difference being that the phone contact is by nurses rather than pharmacists. The nurse made a call 48-72 hours post discharge to check on the patient and perform medicines reconciliation. This was a

cohort study, with results compared to pre-intervention group. There was no randomisation and participants included veterans only, mostly over seventy years old and white. Results indicated that emergency readmissions were reduced from 34% in the pre-intervention group, to 23% in the intervention group.⁽¹²⁹⁾

Kripalani et al 2012 led a pharmacist-delivered intervention in two American hospitals whereby patients with cardiovascular disease were provided with medicines reconciliation, inpatient counselling, medicines adherence aids and a follow up telephone call after discharge from hospital. The intervention was assessed by means of an appropriately powered, blinded randomised controlled trial. The results indicated that clinically important medication errors were present among half of patients after hospital discharge and were not significantly reduced by the health-literacy sensitive, pharmacist delivered intervention.⁽¹²³⁾

The evaluation of a nurse led Liaison and Continuity of Care programme in Spain from the patients' perspective found that although patients are satisfied at hospital discharge, they received insufficient preparation to cope with subsequent doubts and difficulties.⁽¹³⁰⁾ The programme involved liaison between different groups of healthcare professionals, to ensure continuity of information (e.g. discharge instructions) and the organisation and management of patients from 24 hours after hospital release. All 83 patients in the programme were interviewed over the telephone. No control group for comparison was used.

One study was conducted in the USA to assess the impact of a pharmacist transition coordinator on evidence-based medication management and health outcomes in older adults undergoing transfer from a hospital to a long-term care facility for the first time. The intervention included medication-management transfer summaries from hospitals, timely coordinated medication reviews by accredited community pharmacists and case conferences with physicians and pharmacists. The primary outcome was the quality of prescribing. There were 110 patients recruited, 88 of which completed the intervention. The results of the randomised single blinded, controlled trial by Crotty, 2004⁽¹³¹⁾ showed

an increase in appropriate medication use. A decrease in hospital readmissions and emergency department visits was also noted in the intervention group, however this was a secondary outcome and the study may not have been powered to show statistical significance.

A systematic review performed by Lamantia, 2010 looked at interventions undertaken to improve transitional care between nursing homes and hospitals. It reviewed five relevant studies, although all were small studies. This highlighted the need for large randomised controlled trials for more robust results. The interventions were found to be successful and included providing the following to the nursing home: the use of a pre-order form for life sustaining medication, medicines reconciliation and a summary sheet with medication on including time of last dose administration.⁽¹³²⁾

A literature review including papers from USA, Canada, Australia and Europe assessed whether continuity of care impacted quality care outcomes for people experiencing chronic conditions. The outcomes were primarily patient-focused with a wide range of functional status, quality of life, and patient satisfaction indicators. The review concluded that papers did not address if continuity of care increased quality of care, despite patient satisfaction increasing.⁽¹³³⁾

2.10.3 Interventions involving community pharmacists

A systematic review has recently studied the potential contribution of community pharmacists to improve transfer of care of patients from hospital back to the community. The review found inconsistencies in the implementation and process evaluation of the interventions in the reviewed studies and therefore was unable to draw a conclusion as to whether patient outcomes were improved. However, the review did conclude that there was sufficient evidence to suggest drug related problems were improved by involving community pharmacists during transfer of care.⁽¹³⁴⁾ Bigger, carefully constructed studies are required to adequately evaluate the impact of community pharmacists at discharge.

Duggan 2012 investigated the involvement of community pharmacy services at the primary-secondary care interface. This was a small study conducted in Dublin and involved a questionnaire to ask the opinions of both hospital and community pharmacists of the current discharge process. A logbook of communication between hospital pharmacists and one community pharmacy was also kept for 365 days. Although limited, when communication was made the issues were resolved in 81% of cases. Both parties would like the introduction of processes to improve seamless care.⁽¹³⁵⁾ A separate questionnaire-based study asking similar questions was undertaken on a much larger scale across Europe by the European Association of Hospital Pharmacists and EuroPharm forum. Communication was found to be non-existent in the majority of cases, however both parties recognised the importance of collaborative working.⁽¹³⁶⁾

Several interventions involving the utilisation of community pharmacy in the discharge process have been reviewed. One study assessed the continuity in patient care upon hospital discharge by evaluating a detailed clinical pharmacy discharge form sent to community pharmacists from the clinical pharmacist.⁽¹³⁷⁾ This was a small study involving eighteen patients from two teaching hospitals. Only twelve community pharmacists received the discharge form. Of these, ten thought that it improved continuity of care and gave positive feedback. Forms took 25 minutes on average for the clinical pharmacist to complete which was thought to be a drain on clinical pharmacists' time. Results seem promising, however due to the very small sample and the absence of feedback from hospital pharmacists, further evaluation is required to determine overall impact.

Discharge MURs are those performed on a patient who has been discharged from hospital within the last 4 weeks after changes have been made to their original medication. One multi-method study looked at the determinants of the uptake of all MURs by community pharmacies in England.⁽¹³⁸⁾ The aim was to explore and identify the key determinants influencing the uptake of MURs. This involved a survey of all primary care organisations in UK (74% response rate) then interviews with stakeholders. This

was a well-planned study with defined objectives and clear conclusions. A split was identified between multiple and independent pharmacies in their approach to the service, multiple pharmacies were more target driven and therefore more likely to complete MURs for patients. This study also indicated a need for greater communication and collaboration with GPs regarding MURs and highlighted that the service may benefit from the establishment of quality measures. Another study took place across Yorkshire, consisting of a survey to determine community pharmacists' experiences of managing patients' medicines after discharge from hospital, focusing on discharge MURs.⁽⁸⁷⁾ Only 23 pharmacists responded, limiting the generalisability of results. Initial findings were that discharge MURs are seldom used. Responses suggested that community pharmacists disagreed that patients are well educated about their discharge medication and would like to be more involved in the discharge process.

Walgreens pharmacy in America offers the WellTransitions service. This involves community pharmacists working onsite in hospitals in collaboration with hospital clinical staff, to align prescription therapy, deliver discharge medications to the bedside, counsel patients about their drug therapy and follow up with patients post discharge. The primary goals of the programme were to reduce preventable hospital admissions and to improve patient satisfaction and health outcomes.⁽¹³⁹⁾ Walgreens released the results of a review undertaken which stated that there was a reduction in emergency readmissions of 46% in patients who received the intervention. However, the report provided insufficient detail of the method used.

In an attempt to improve the communication between hospital and community pharmacists, several recent initiatives have involved implementation of electronic referral systems for hospital pharmacists to refer patients for community pharmacy services after discharge. Several small-scale studies have demonstrated the benefits in terms of readmission rates and length of patient stays,^(140,141) however larger studies are required to determine the full benefits of the referrals.

Summary

That problems occur in numerous areas at discharge is evident. However, many gaps exist in the literature relating to patient discharge from hospital. In particular the specific causes of these problems, how patients perceive these problems and what successful measures have been undertaken to resolve these issues. For this reason, the PoW was undertaken to fill these gaps and subsequently identify a new model of care to improve patient discharge from hospital.

Chapter 3 – Programme of work

This chapter will outline the programme of work (PoW) for the thesis. It will discuss the aim and objectives of the PoW and how they were achieved using a multiphase approach. The methods adopted for each individual phase within the PoW are described next, followed by a methodological rationale for the design of the PoW. The chapter concludes by addressing the ethical issues, robustness, reflexivity and limitations within the PoW.

3.1 Aim and Objectives of PoW

The overall aim of the PoW was to provide the evidence to develop an innovative model of care for patients' medication supply at hospital discharge that will provide safe, quality and effective transfer for patients from hospital to community care.

The objectives of the PoW were to:

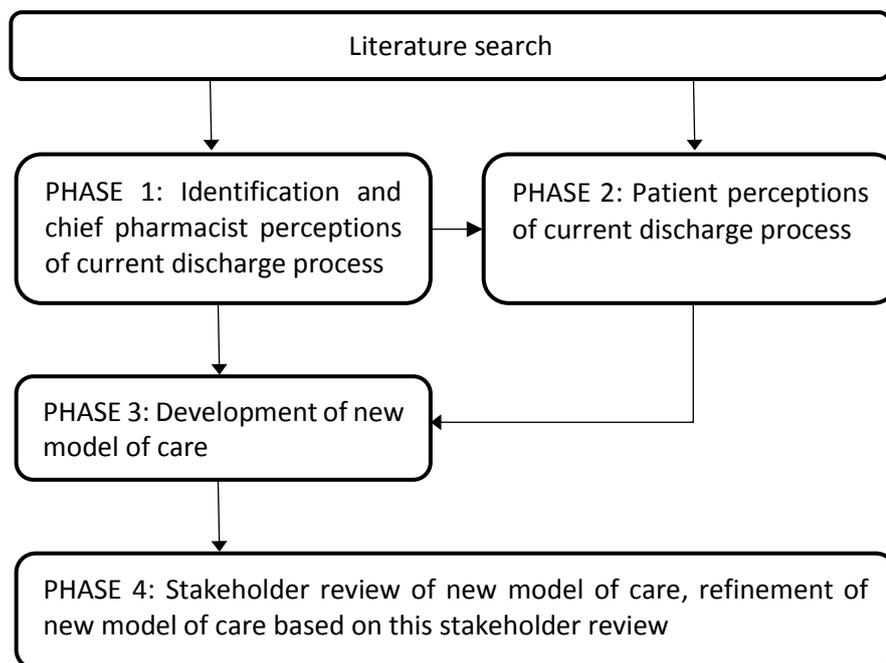
1. Identify the current discharge process used in a range of acute NHS hospitals
2. Explore the perceptions of pharmacists and patients of the current discharge process
3. Develop an innovative model of care to resolve the issues associated with patient discharge from hospital
4. Evaluate the proposed model of care using stakeholder feedback

3.2 Overview of programme of work

To develop the new model of care a multiphase approach was taken, which was adapted from a range of published frameworks, guidelines and tools based around developing new models of care and service improvement as described earlier in Chapter 2 (see section 2.9 Developing new models of care). The multiphase approach taken was broadly to establish the current problems at discharge, plan and develop the new model of care and then to evaluate the new model of care. Subsequent implementation of the

model is beyond the scope of this PoW. A multiphase approach was adopted within the PoW, to develop the new model of care. This was to ensure that multiple perspectives could be taken into account during the development. The PoW comprised four phases and an overview in Figure 3-1 illustrates how all four phases link together. The phases were carried out sequentially and throughout the PoW, findings from earlier phases informed the design of later phases.

Figure 3-1 – Overview of programme of work (PoW)



The four phases of the PoW are as follows:

- Phase 1: telephone interviews with chief pharmacists to identify and evaluate the current discharge process
- Phase 2: questionnaires to determine patient perceptions of the discharge process
- Phase 3: development of a new model of care for patient discharge from hospital
- Phase 4: interviews and focus groups with stakeholders in patient discharge to evaluate the proposed model of care

Phases 1 and 2 identified and evaluated the hospital discharge process from two different stakeholder perspectives, providing a comprehensive understanding of the

research problem. A flowchart providing a visual representation of the current discharge process was produced based on the findings of phase 1. The findings from phases 1 and 2, along with findings in the literature helped to establish a clear picture of the current discharge process and were used to develop a new model of care in phase 3 of the PoW. Phase 4 involved feasibility testing of the new model of care using stakeholder feedback.

A description of the methods adopted within each phase of the PoW is discussed next. Phases 1, 2, 3 and 4 are described in sections 3.3, 3.4, 3.5 and 3.6 respectively and the findings from each phase are presented in chapters 4 – 7.

3.3 Phase 1: telephone interviews to identify and evaluate the discharge process

This initial phase of the research was an exploratory study, investigating current patient discharge care from the perspective of NHS hospital pharmacists. This involved qualitative telephone interviews with chief pharmacists or a nominated senior pharmacy staff member from acute NHS hospitals across North West England.

This phase of the research study was classed as an evaluation of NHS services involving members of staff and did not require NHS ethics approval, as patients were not involved. However, Liverpool John Moores (LJMU) Research Ethics Committee (REC) approved this phase of the research study on 16/1/15, reference number 14/PBS/008. The approval letter can be seen in Appendix 2.

3.3.1 Phase 1 research rationale

Using a qualitative approach enabled a thorough exploration of the current discharge process and an examination of the operation of services in the context of their particular settings or circumstances.⁽¹⁴²⁾ As qualitative data collection and analysis relies on the researcher being heavily involved in the process, the findings are often interpreted according to their biased view. This risk of bias was outweighed by the benefits of

gaining a detailed insight into participants' views to identify and explain the research problem in a way that quantitative methods would not allow.

Interviews were the preferred data collection method to conduct a detailed investigation of the discharge process. Qualitative interviews enabled the researcher to probe for more information where appropriate during the interview to determine reasons for the participant's answers and views. The depth of participant response ensured a detailed discussion around possible reasons, problems and barriers associated with the discharge process. A semi-structured approach was taken for the interviews, to enable the researcher to maintain some consistency over the concepts that are covered in each interview⁽¹⁾ and ensure participants' views on the main issues were discussed. Equally, interviews do have disadvantages. Interviewing is time consuming and obtaining cooperation from potential participants can be difficult,⁽¹⁴³⁾ particularly for longer interviews.⁽¹⁴³⁾ Attempts to overcome these issues have been discussed throughout this section. Telephone interviews were chosen in preference to face-to-face interviews as they enabled interviews to be conducted within a limited time frame by eliminating travel time and costs, within the large geographical area of North West England. The participants in the study are very busy with work commitments and arranging a face-to-face interview at a mutually convenient time would have been difficult. A rapport can be difficult to build over the telephone and the absence of non-verbal cues can also be a disadvantage during telephone interviews.⁽¹⁴³⁾ This could result in bias during data collection. In order to minimise this effect, every opportunity to build a rapport with the participants was made in the initial contact emails and during the interviews.

3.3.2 Phase 1 aim and objectives

The aim of this phase was to identify and evaluate the discharge process(es) used in a range of acute NHS hospitals across the North West of England.

The objectives were to:

- Identify the current discharge process(es) in acute NHS hospitals across North West England
- Determine which members of staff are involved in the current discharge process(es)
- Explore which parts of the current discharge process(es) are considered effective and ineffective
- Investigate any innovative ways of working employed by hospitals in order to improve the discharge process
- Identify staff suggestions for the development of the current discharge process(es)
- Determine the current role of community pharmacists in the hospital discharge process

3.3.3 Phase 1 research method

This section details the research method adopted along with a rationale for each decision. It describes the research sites, participants, inclusion and exclusion criteria as well as the recruitment of participants.

3.3.3.1 Research sites

The study was carried out in acute NHS hospitals across the North West of England. The North West of England was chosen as it contained a diverse range of types of acute hospital, from small rural district general hospitals, to large inner city teaching hospitals. The range of hospitals was similar to those across the rest of the UK and allowed for a degree of generalisation of the findings. Extending the study to include NHS hospitals across the whole of the United Kingdom (UK) was not considered feasible. The anticipated volume of data from the whole of the UK was unwieldy and unmanageable within the time frame and unlikely to be necessary to meet the study objectives.

3.3.3.2 Participants

Participants for the study were chief pharmacists at acute hospitals across North West England or an appropriate senior member of pharmacy staff. Chief pharmacists were

considered the most appropriate member of staff within the hospital to participate because they see the discharge process from an organisational standpoint and how this relates to NHS policies and procedures, as well as the wider aspects of providing quality health care. Their experience provides them with an awareness of how the discharge process runs in practice and they were best placed to provide the information necessary to meet the study aim and objectives. In some hospitals, the Chief Pharmacist may not play a significant role in the development of the discharge process and in these cases, they were then asked to nominate a more appropriate senior staff member to participate in their place. This ensured that an accurate representation of the process in each hospital was gathered.

3.3.3.3 Inclusion and exclusion criteria

The inclusion criteria for the study were chief pharmacists or an appropriately nominated member of pharmacy staff from any of the 22 acute (non-specialist) hospitals in North West England. Each participant required knowledge of the discharge process within their hospital; as stated in the recruitment email which can be seen in Appendix 3.

The exclusion criteria for this phase were participants from specialist hospitals, for example children's, oncology, cardiothoracic, neuroscience and mental health hospitals. This is on the basis that their discharge procedures may be tailored specifically to their speciality and are unlikely to be relevant to an acute general hospital.

3.3.3.4 Recruitment of participants

The names and NHS hospital email addresses of chief pharmacists from acute hospitals in the North West was obtained via the North West Chief Pharmacists Network and the NHS choices website. Participants were initially contacted by email by the researcher via their NHS hospital email account. This initial email included an overview of the study and a summary of the topics with the interview schedule. The specific demographic details that would be asked during the interview were included to allow them to find such data. For example, the number of hospital discharges daily, the pharmacy staffing

levels at each hospital and the number of beds at each hospital. Potential reasons for non-response (for example time, confidentiality, content of interview, reason and importance of study) were addressed in this initial email to ensure that any questions or concerns would be answered early on in an attempt to increase response rates. The email can be seen in Appendix 3. A more detailed outline of the study was provided in a participant information leaflet (PIL) which was attached to the initial email. The PIL can be seen in Appendix 4. This allowed participants to read through the information and contact the researcher if they had any questions prior to agreeing to participate. Participants were asked to sign and return the consent form which was also attached to the initial email (see Appendix 5). The consent form could be returned electronically or via post as the researcher would not be seeing the participant in person. All participants consented on the premise that if any quotes were to be used that may identify their hospital in future publications, approval will be sought from them first.

A reminder email was sent within three working days of the initial email to identify interested participants. This was considered sufficient time for participants to review the study documents, make an informed decision and nominate an appropriate person, if necessary. Dates for interviews were arranged either via email correspondence with the participant or via contact with their personal assistant. The study response rate was further maximised with a second reminder email to any non-responders after two weeks. This was followed up with a telephone call to the personal assistant of non-responders within one month of sending the initial email.

3.3.4 Phase 1 data collection

This section details the method for data collection in used phase 1 and covers the interview schedule, the procedure for data collection and any safety issues thought to affect phase 1.

3.3.4.1 The interview schedule

An interview schedule was developed by the researcher taking into account the aim and objectives of the study, the published literature and prior knowledge of the discharge

process in hospital. Questions and prompts were developed to ensure that they were not leading or biased. The interview schedule was reviewed by the supervisory team to ensure the trustworthiness of data collected. The language used was appropriate for the potential participants and this was checked during the pilot interviews. The interview schedule containing a full list of questions and prompts can be seen in Appendix 6.

The interview schedule was divided into two sections. The first section contained closed questions collecting hospital demographic details. These questions were asked to provide context to the participants' answers to open questions. The second section contained open questions about the discharge process and the participants' opinions of the process. The interview schedule also contained a number of prompts which were used to facilitate the researcher to probe participants for more information about different aspects of the discharge process. With the semi-structured approach to the interviews, there was a risk that any issues participants found important may not have been mentioned. To overcome this risk, all participants were asked if they would like to add anything else at the end of each interview.

3.3.4.2 Procedure

Having pre-arranged the interview at a mutually convenient time, each interview began with a verbatim introductory script, ensuring that each participant was given the same information about the study before the interview. As part of the introduction, the researcher confirmed with all participants that a signed consent form was completed and returned. In some cases, the participants had arranged a time to conduct the interview without returning a signed consent form. If the researcher had not received this from the participant, then the consent form was read out and verbal audio-recorded consent was obtained from the participant before the telephone interview commenced.

Closed questions were asked initially as an ice-breaker, to collect individual hospital demographic data including: hospital type, number of pharmacy staff and number of hospital discharges per day. Where appropriate, any closed questions were followed up with an open question for more detailed information. The participants were then asked

to freely describe the discharge process at their hospital and were probed for more detail using a set list of prompts. Participants were prompted to express their experiences, priorities and concerns throughout the interview. No topics were discussed that any of the participants found distressing during the interviews.

The interview schedule served as a guide during the interviews, but the order and wording of the questions were modified based on the flow of each individual interview. All questions were asked at some point during each interview. Any specific comments worthy of investigation were explored by the researcher. Care and attentiveness was maintained by the researcher during questioning and listening to responses in each interview to ensure that all interviews were conducted to a similar high standard. The researcher strived to conduct the interviews in a neutral manner regardless of participant response in order to reduce bias. However the researcher's experience and background knowledge aided the discussion and helped participants add additional information to gain a more rounded and rich dataset.

Telephone interviews were conducted in the participant's 'natural setting' by telephoning them at their workplace. The interviewee was advised to be in a quiet room in order to minimise distractions and interruptions whilst the interview took place. This also allowed them to answer questions freely without fear of being overheard. The same researcher conducted all interviews in the same quiet research office free from interruptions, to ensure robustness of data collected. The researcher ensured that no others were present in the research office whilst the interviews took place. Trustworthiness of data collected was aided by building rapport, trust and openness with interviewees during the interview to enable them to express their views. The interview allowed sufficient time to ensure all questions were asked and answered thoroughly.

Telephone interviews were recorded using an audio-recording device, which was tested prior to each interview by the researcher. Key messages and reminders were handwritten on a printed version of the interview schedule during the interviews to aid

the researcher during data analysis or to recap on certain points during the interview itself. During data collection and the beginning of analysis, the researcher realised that data saturation had been reached. Data saturation is thought to be achieved when nothing new is generated from data collection.⁽¹⁴⁴⁾ Data saturation is an important measure of the adequacy of the sample size in qualitative research, as it is a way of determining whether sufficient depth and breadth of data has been collected. At this point, the researcher assessed the range of participants and undertook only several more interviews to ensure that participants were from a variety of hospitals with different experiences.

3.3.4.3 Safety issues

Neither the researcher nor any of the participants were put at risk or under any undue pressure during data collection. Telephone interviews allowed both the interviewer and the interviewee to be in a safe environment during the interview. No obvious sensitive topics were discussed. If the interviewee had found any topics distressing, this would have been handled tactfully by the interviewer.

3.3.5 Phase 1 data analysis

The previous section discussed how data collection took place for phase 1 of the PoW. This section will describe the data analysis used for phase 1.

3.3.5.1 Interview transcription

Transcription of interviews, coding and analysis of data were carried out by the researcher and any participant identifiable data were removed at this stage. The recorded interviews were transcribed in Microsoft Word immediately after each interview by the researcher in order to reduce the risk of transcription errors and memory recall. The transcriptions included indications of long pauses and other non-verbal communication, such as laughter, in brackets to ensure that the context of the discussion remained intact. Any field notes relevant to the analysis taken during the interviews were added to the transcriptions as comments so as not to become confused with the interview data. During transcription, the researcher was aware that

transcription error could lead to issues with the content of the data. Subsequently, to increase robustness, the transcripts were thoroughly checked against the audio-recording prior to analysis to ensure content and meaning was maintained. The supervisory team also checked a sample of the transcriptions to ensure trustworthiness of data. Respondent validation of interview transcripts was not a viable option for this study, given the busy nature of the participants' roles.

3.3.5.2 Coding and analysis

Demographic data collected were used only to inform the qualitative data collected. Thematic analysis was undertaken, using the process of constant comparisons (see section 3.7 Methodology for further detail) to analyse the qualitative data collected. NVivo 10 software was used to manage the data.

Analysis started with a detailed, reflective exploration of each transcription. Each transcript was then imported into NVivo and coded line by line to identify the concepts during the process. Similar extracts from the data were coded into the same node. A node is a collection of references about a specific theme, place, person or other area of interest. The references are gathered by 'coding' sources such as interviews, focus groups, articles or survey results.⁽¹⁴⁵⁾ Nodes of interest were developed both from the objectives of the study and from points of interest within the interview transcript data itself. The nodes were then collated into categories related to the research questions. These categories were continually reorganised and combined throughout the analysis process and relationships were investigated until the final eight themes were identified. The supervisory team was involved in discussions around collation of data into themes. Using a coding process that involved attention to detail of the text itself helped to focus attention on the text rather than the researcher's preconceptions. This helped to reduce bias in the analysis. Once the themes were identified, the researcher went back to the original transcript data to check if any themes had been missed.

3.3.5.3 Generic discharge process flowchart

In addition to the generation of themes during the analysis (as discussed above), another major output from phase 1 was the generation of a flowchart to provide a visual representation of the current discharge process. A generic discharge process, in the form of a flow chart, applicable to every hospital that participated in the study was generated. This flowchart helped to capture and describe the discharge process(es) within each hospital as well as identify any variations in the process(es). The areas of the discharge process where problems commonly arose, as per the study findings, were highlighted on the flowchart. This flowchart was utilised in later phases of the PoW to aid development of a new model of care for discharge.

3.3.6 Phase 1 pilot

A pilot study was undertaken with two senior pharmacists who met the inclusion criteria for the study. This was to verify the recruitment procedure, obtaining consent, evaluation of the interview schedule and development of transcribing and data analysis skills prior to commencing data collection. Some of the pilot data were included in the main study, see section 4.4.1 Outcome of the pilot for details.

Section 3.3 has detailed the method used for phase 1 of the PoW. The following section will move on to discuss the method used in the second phase of the PoW, phase 2.

3.4 Phase 2: questionnaire to determine patient perceptions of the discharge process

This phase was a questionnaire-based survey completed by inpatients at the Royal Liverpool and Broadgreen University Hospital NHS Trust (RLBUHT) to explore the current discharge process from the perspective of NHS patients and their suggestions for improving hospital discharge.

This evaluation of hospital-based services involving inpatients also included questions investigating patient suggestions for improving the hospital discharge process, which

could be perceived as research rather than service evaluation. As such ethical approval was required prior to data collection taking place. Indemnity insurance and ethical approval was granted via proportionate review by the following RECs:

- NHS REC on 29/10/15 reference: 15/SC/0669 (see Appendix 7)
- LJMU REC on 3/11/15 reference: 15/PBS/012 (see Appendix 8)
- RLBUHT Research Development and Innovation (RD&I) department on 25/11/15 RD&I number 5123 (see Appendix 9)
- LJMU liability insurance certificate can be seen in Appendix 10

3.4.1 Phase 2 research rationale

A quantitative approach was considered appropriate for this study to determine the opinions from a large number of patients experiencing the discharge process. Qualitative methods would have allowed for collection of only a small number of respondents' views and therefore be less likely to represent the views of the general population. This was important as the findings from this phase were used to inform the development of a new model of care for the population as a whole. Subsequently, collecting the views of a large, varied sample of patients yielded findings that could reasonably be taken as an overall consensus of what patients want from their hospital discharge, which could be used to inform a new model of care.

A questionnaire was considered the most appropriate method to collect data on the opinions and experiences of a large number of patients in a short period of time,⁽¹⁴⁶⁾ as well as to allow continuity of questions for each respondent and ease of data analysis after the data collected had been quantified. Questionnaires with direct questions also help to keep patients' answers focussed on the area of interest as interviews could lead off topic. The questionnaire also enabled the researcher to be objective during the analysis, to reduce the risk of bias in the findings. Questionnaires are known to have disadvantages, such as the potential for poor response rates, or bias if questions are answered incorrectly by participants. These issues were addressed in the design of the phase and have been discussed throughout this section.

3.4.2 Phase 2 aim and objectives

The aim of this phase was to explore patient perceptions and experiences of the current discharge process at the RLBHHT.

The objectives for the phase were to:

- Investigate patients' views of their discharge from hospital
- Explore issues identified in the phase 1 findings from the patients' perspective
- Identify patients' suggestions for improving the current discharge process
- Explore current relationships between patients and community pharmacists

3.4.3 Phase 2 research method

This section details the research method adopted along with a rationale for each decision. It covers the research site, participants, inclusion and exclusion criteria, gatekeepers as well as the recruitment of participants.

3.4.3.1 Research site

The study was carried out across medical and surgical wards at the RLBHHT. The RLBHHT was chosen for several reasons. Firstly, as phase 1 identified that the discharge process and the associated issues were similar across a range of hospitals; this reduced the need to carry out this study across several sites as the results were expected to be similar. Secondly, the RLBHHT is a large city-centre acute NHS teaching hospital with a variety of specialities. This provided diversity amongst the patients who participated in the study. The RLBHHT has approximately 30 inpatient wards from which patients could be discharged. Recruitment of patients took place across a range of general medical and surgical wards to ensure a diverse sample was included. Finally, as an employee at the RLBHHT the researcher had background knowledge of this hospital which allowed for ease of data collection.

3.4.3.2 Participants

Ward-based adult inpatients (hereafter known as patients) ready for discharge were deemed appropriate for inclusion in this study. These patients had experience of the discharge process and were therefore well placed to answer questions concerning the topic. If a patient was unable to participate for any reason a family member or carer could be asked to participate on their behalf, where appropriate. See section 3.4.3.3 Inclusion and exclusion criteria below for full details on both the inclusion and the exclusion criteria for this phase of the PoW.

3.4.3.3 Inclusion and exclusion criteria

Inclusion criteria required respondents to be a patient or a family member/carer completing the questionnaire on the patient's behalf. The potential respondent had to be awaiting discharge from the RLBUHT that day, to their usual place of residence, i.e. to their own home or to a care home.

Patients were excluded from the study if they had cognitive impairment and thus unable to consent and those patients discharged to an intermediate care facility as this was considered an extension of their hospital admission.

3.4.3.4 Gatekeepers

The ward manager or charge nurse for each ward acted as the gatekeeper, and was approached to authorise the study to take place prior to recruiting participants. Gatekeepers were provided with information and shown the study Participant Information Leaflet (PIL) (see Appendix 11) if required, to allow an informed decision to be made regarding their ward's participation. A gatekeeper consent form was signed at the first visit to the ward (see Appendix 12). The gatekeepers were consulted at each ward visit to identify patients due for discharge that day and asked to recommend suitable patients, based on the study inclusion and exclusion criteria.

3.4.3.5 Recruitment of participants

Patients were approached at their bedside to determine if they were well enough and willing to participate, based on referral by individual ward managers or the charge nurse (see section 3.4.3.4 Gatekeepers). Recruitment took place on the day of the patient's discharge so the patient had a clear recollection of their experience and was able to give their immediate impressions. Each potential participant was given a participant information leaflet (PIL) to provide enough detail about the study to allow them to make an informed decision before consenting (see Appendix 11 and section 3.8.1 Informed consent for more detail). Potential respondents were left alone for a minimum of 15 minutes to read the PIL and given the option of going through the information with the researcher on their return. A consent form was provided in the event that the respondent was someone completing the questionnaire on behalf of the patient (see Appendix 13). For patients completing the questionnaire themselves, consent was assumed with completion of the questionnaire and therefore no additional consent form was required. A copy of the questionnaire was handed to the patient at the same time as the PIL for completion.

3.4.4 Phase 2 data collection

This section details the research method adopted for phase 2 and covers the questionnaire and its development, the procedure for data collection and any inherent safety issues.

3.4.4.1 Questionnaire development

Development of the questionnaire took existing evidence into account. Firstly, the findings from phase 1, detailed in chapter 3 were used as a basis for the topic of questions. Then published literature relating to patient experiences of the discharge process, existing validated questionnaires on similar topics and the researcher's background knowledge of the discharge process were all used to help generate the specific questions. Questions were also drawn from the National NHS Inpatient Survey,⁽⁹³⁾ which contains a section dedicated to discharge. Guidance was sought from the supervisory team during the development of the questionnaire.

One of the objectives of this phase of the PoW was to build on knowledge of issues inherent in the discharge process that were identified in phase 1. Issues identified were from a managerial and operational perspective, whilst this second phase aimed to determine patients' perspective of these issues. The NHS strives to be patient-centred, so it was important to explore the patients' perspective of these findings. Only the issues from the phase 1 themes thought to be patient-facing have been investigated in this phase, so that patients would be familiar enough with the topic to be able to comment.

The following themes from phase 1 were explored with patients in phase 2:

- Planning for discharge
- Medication supply for discharge
- Post-discharge community pharmacy involvement
- Patient involvement

The questions were constructed and amended until the questionnaire was felt to contain enough detail to elicit the information required from respondents, without being too long. This was achieved by writing a rationale for each question to ensure they were aligned with the research objectives. The rationale can be seen in Appendix 14. Care was taken to ensure questions were easy to understand and not ambiguous, to improve trustworthiness of the data yielded. Once finalised the questions were formatted and structured to make the questionnaire easy to follow. The questions were structured in a way that allowed patient responses to be easily quantified for analysis purposes. This included ensuring that the questions and answers could be entered into SPSS for quantitative data analysis.

The questionnaire was pre-tested by several members of the public known to the researcher. Each respondent read through the questions and gave constructive comments regarding the wording and understanding of the questions. Any changes were made to the questionnaire after consultation with the supervisory team. No major changes were required and therefore the approving REC did not need to be notified. The questionnaire was then piloted prior to data collection. See section 3.4.6 Phase 2 pilot for details.

The final version of the questionnaire was divided into four sections:

- Part A – About you
- Part B – About your medicines during your stay in hospital
- Part C – About your discharge
- Part D – After your discharge from hospital

The questionnaire contained 20 questions, consisting of mainly closed questions with a tick-box format for ease of use by participants. A range of topics relating to different aspects of the discharge process from the patient's perspective were covered. Individual demographic questions were asked initially, to collect data such as age, gender and whether the patient took any regular medication. Several questions required an open format for patients to elaborate on their responses. A copy of the final questionnaire can be seen in Appendix 15.

3.4.4.2 Procedure

On data collection days, the researcher visited the wards where patients would potentially be discharged from that day. The gatekeeper was asked for suitable patients to potentially participate and each was then approached by the researcher. The researcher continued to collect data for as long as was feasible within the study period, to obtain as large a sample size as possible. Patients were recruited from a range of clinical specialities to ensure a diverse sample of respondents with different medical conditions and backgrounds.

Patients may be reluctant to discuss sensitive issues, which could lead to misrepresentative data being collected. As the topic of discharge was not considered sensitive, this was not thought to be a serious threat to this study. Nevertheless, in order to reduce the risk of bias, the researcher ensured that respondents were aware that any answers they provided were confidential and anonymous. As the questionnaire was carried out at the patient's bedside, there was a possibility of patients or the researcher being overheard. Most respondents completed the questionnaire themselves and no-one wanted to discuss any of the topics privately. Patient identifiable data was not collected during the study.

Respondents completed the questionnaire with the researcher nearby to enable them to ask for support when completing the questionnaire. This helped to increase the diversity of the sample and generalisability of the findings, by allowing patients with reading or writing difficulties to participate. The researcher provided information about the study questionnaire directly to each respondent, to build rapport and encourage participation whilst minimising pressure. Building rapport, trust and openness with respondents enabled them to express their honest views, improving robustness of the study. Answers to questions were recorded on the pre-printed questionnaire handed to patients. The time taken to complete the questionnaire varied between 5–20 minutes depending on the individual.

3.4.4.3 Safety issues

Neither the researcher nor any of the respondents were put at risk or under any duress during data collection. The questionnaire was designed not to cause any discomfort or emotional stress to the respondents. In the event a patient had become upset during the study, the researcher's experience of working as a hospital pharmacist and dealing with patients, allowed her to confidently resolve any issues that may have arisen. The researcher would have either discussed the issue with the patient or sought assistance from an appropriate member of ward staff. In the event that the researcher was unable to manage an issue, she would – where appropriate - remind the patient of the complaints procedure, as detailed in the PIL (Appendix 11). Questionnaires were conducted at the respondent's bedside, minimising risk of physical harm to the patient. The researcher was not involved in any of the respondents' care so questions or concerns highlighted by patients were passed immediately to an appropriate member of staff involved in their care. If evidence of poor practice arose, for example a patient raising concerns to the researcher, the researcher would advise nursing or pharmacy staff responsible for that patient to ensure the patient received appropriate support. Should any serious incidents have arisen, the researcher would have also reported them to the Chief Pharmacist and discussed them with the supervisory team.

3.4.5 Phase 2 data entry and analysis

A database was set up prior to data collection and piloted (see section 3.4.6 Phase 2 pilot) to ensure that it was suitable for data analysis. A code scheme was developed for each question within the questionnaire to facilitate data entry into SPSS, this can be seen alongside the questionnaire rationale in Appendix 14. Data were entered into the SPSS database by the researcher. An internal consistency check was undertaken by the researcher and 10% of the sample was checked by a member of the supervisory team. The data was 'cleaned' using the crosstab function in SPSS.

Descriptive statistics (using the frequency and descriptive analysis tools in SPSS version 22) were used to analyse the data. Open questions generating free text data were entered into the SPSS database and subsequently coded to allow responses to be analysed using quantitative descriptive statistics. Free text responses are also cited where appropriate throughout the phase 2 findings section to provide context to the quantitative findings from the questionnaire.

3.4.5.1 Generic discharge process flowchart

A generic discharge process flowchart was generated in phase 1 of the PoW (see section 3.3.5.3 Generic discharge process flowchart for details of how this was generated). In addition to the quantitative analysis within this phase, the areas of the discharge process where patients felt that problems commonly arose, as per the study findings, were highlighted on this flowchart. This flowchart containing the issues from the patients' perspective was utilised – along with the flowchart from phase 1 – in later phases of the PoW to aid development of a new model of care for discharge.

3.4.6 Phase 2 pilot

A pilot study was undertaken with patients at the RLBH to verify the recruitment procedure, obtaining consent, evaluation of the survey and development of data entry and data analysis skills prior to commencing data collection. The pilot involved the researcher handing out the questionnaires for completion and asking for informal patient feedback after completion to determine if the questions were comprehensible,

unambiguous and the questionnaire was well structured. The pilot data were used to test the data entry process and subsequent analysis using SPSS.

This chapter has so far detailed the methods for phases 1 and 2 of the PoW. The next section discusses the method used in phase 3. Whilst the first two phases were standalone, the third phase of the PoW utilises the findings from the earlier phases.

3.5 Phase 3: development of a new model of care for patient discharge from hospital

This third phase of the PoW involved developing a new model of care for patient discharge and was informed by the findings from phases 1 and 2 of the PoW along with data from the literature (see chapter 2 – Introduction).

3.5.1 Phase 3 rationale

The findings from phases 1 and 2 provided the evidence to support the overall PoW by highlighting the need to develop a new model of care for patient discharge to improve patient care. Triangulation of the phase 1 and 2 findings was undertaken to obtain a rich, robust and comprehensive account of the current discharge process.⁽¹⁴⁷⁾ This process of combining the findings was undertaken to facilitate a deeper understanding of the issues associated with current hospital discharge from different stakeholder perspectives. This process emphasised the problems requiring solutions and examples of good practice to incorporate in a new model of care.

3.5.2 Phase 3 aim and objectives

The aim of this phase was to develop an innovative model of care for patient discharge from hospital that provides safe, quality care in a timely manner and improves patient experience.

The objectives were to:

- Explore and triangulate the findings from phases 1 and 2, to determine the issues that require solutions and the examples of good practice at discharge
- Use the findings and data from the literature to generate a new model of care for discharge
- Define and map out the new model of care
- Explain how the new model of care overcomes the issues identified in phases 1 and 2
- Explain how the new model of care encompasses the good practice identified in phases 1 and 2

3.5.3 Phase 3 method

Overall, this phase involved utilising the findings from phases 1 and 2, alongside findings from the literature to inform the development of a new model of care for patient discharge. Several steps were necessary to achieve the aim of developing a new model of care.

Initially, the findings from phases 1 and 2 were explored. This began with the generic discharge process flowchart, which was created in phase 1 of the PoW (see Figure 4-1). The main issues associated with the discharge process from the pharmacists' perspective had been highlighted on this flowchart. In the same way in phase 2 of the PoW, the issues from the patients' perspective had been mapped onto the generic discharge process flowchart (see Figure 5-1). Triangulation of the results began here, as the two flowcharts containing the findings from phases 1 and 2 were integrated, creating a third flowchart illustrating the combined problems at discharge (see Figure 6-1). The combined flowchart was used to determine if the issues surrounding discharge were similar from a pharmacist and a patient perspective. The combined flowchart covered the issues at discharge, but not the examples of good practice. The examples of good practice were recapped from the main findings of phases 1 and 2 to be taken into consideration for the new model.

Two main aspects were taken into consideration when developing the new model of care: the highlighted issues and the examples of good practice. As already discussed, the issues within the discharge process highlighted by the pharmacists in phase 1, and patients in phase 2 were considered together to provide a deeper understanding of the issues from each perspective. The discharge process flowchart detailing the combined issues helped the researcher to easily identify stages of the current discharge process that were considered redundant, or needed improvement. When creating the new model of care for discharge, it was important to consider the impact of redesigning specific aspects of the discharge process on the wider discharge process. For example, that removing a rate-limiting step in one area of the current discharge process did not create another elsewhere. The second area that was taken into account was examples of good practice at discharge found in phases 1 and 2, and in the literature. The proposed model of care was described using a flowchart to provide a visual aid (see Figure 6-2). A detailed rationale was also written to describe the reasons for the choice of new model.

This section has discussed how the new model of care for patient discharge was developed in phase 3 of the PoW. The following section will discuss the method used in phase 4 of the PoW, which was a test for feasibility of the new model of care.

3.6 Phase 4: interviews and focus groups to evaluate the proposed model of care

Phase 4 of the PoW involved feasibility testing of the proposed new model of care using qualitative interviews and focus groups with relevant stakeholders in the discharge process (see section 3.6.3.2 Participants for further details). The findings were then used to refine the new model of care.

This formative evaluation of a proposed service involved members of staff and expert patients from patient and public involvement groups. This phase did not require NHS ethics approval, as participants were not current patients within the NHS. However, LJMUC REC approval was granted on 25/6/16. Reference: 16/PBS/002 (see Appendix 16).

3.6.1 Phase 4 research rationale

This phase of the research was a feasibility test, to determine if the proposed new model of care emerging from Phase 3 was considered feasible and acceptable by the target population. Feasibility testing allowed the new model of care to be modified before implementation if necessary. By pre-empting any major issues with the new model of care, as well as gauging stakeholder engagement, this increases the likelihood that the proposed new model would be a success once implemented.

Qualitative methods were considered appropriate for this phase to allow a thorough exploration of each step within the new model of care. It also enabled depth of response around participants' views, potential problems and barriers that could affect the new model of care.

Qualitative data relies on the researcher being heavily involved in the process and the researcher's involvement in the development of the new model of care could lead to bias during data collection. However, the researcher's background was important when explaining the new model of care in detail with participants to ensure that an accurate picture was formed and therefore appropriate feedback was obtained. This risk of bias was therefore outweighed by the benefits of gaining a detailed insight into participants' views of the new model of care.

Semi-structured interviews and focus groups were used to carry out the qualitative data collection for this study. These data collection methods were preferred to enable the researcher to probe for more detailed information where appropriate. Focus groups were chosen to allow opinions of the new model of care to be freely discussed within the group. An advantage of a focus group is that it allows several different perspectives to be explored and promotes discussion.⁽¹⁴⁶⁾ The role of the researcher is key to ensure that the focus group is successful, without leading the group and influencing the data collected.⁽¹⁴⁶⁾ Qualitative interviews elicit people's thoughts and therefore they can be attributed to an individual person. Despite qualitative interviews not having the advantage of multiple perspectives to promote discussion within a group as in focus

groups, they are still an appropriate method of data collection as they enable a detailed discussion of the discharge process between the researcher and the participant as the final phase explored any potential issues with the proposed new model of care and therefore it was important to highlight as many perspectives as possible. Qualitative interviews were preferred to focus groups as not all participants could attend a focus group due to the busy nature of their roles. Offering both methods of data collection ensured that a diverse range of stakeholders participated to generate feedback from different perspectives, which was key to the successful development of the new model.

3.6.2 Phase 4 aim and objectives

The aim of this final phase of the PoW was to explore stakeholder views of the proposed new model of care for patient discharge from hospital.

The objectives were to:

- Explore perceptions of the proposed model of care with relevant stakeholders in the new model including patients and healthcare professionals from hospital and community settings
- Identify any potential issues with the new model of care
- Identify the knowledge and skills required to deliver the new model of care to establish future training needs
- Identify the resources required to deliver the new model of care
- Refine the new model of care based on stakeholder feedback

3.6.3 Phase 4 research method

The following section details the research method adopted along with a rationale for each decision. It covers the research sites, participants, inclusion and exclusion criteria as well as the recruitment of participants.

3.6.3.1 Research sites

Potential participants were drawn from hospital staff at RLBUHT and other North West England hospitals. Community healthcare staff were also identified from GP practices,

community pharmacies and patients through local patient and public involvement groups in the Liverpool area. Liverpool was identified as an appropriate area due to the diversity of patient groups in the area and types of services available.

3.6.3.2 Participants

Potential participants included either service users or anyone involved in the delivery of the proposed model of care. This included hospital and community-based staff involved in the discharge process: hospital pharmacists, pharmacy technicians, nursing staff, hospital doctors, community pharmacists and GPs. This varied range of service providers were considered best placed to identify issues and suggest improvements to the model as they will be familiar with different aspects of patient discharge and their own capabilities. Expert patients from patient and public involvement groups were also invited to participate, to consolidate findings from phase 2 and determine if they think patients would be happy to use this type of service.

3.6.3.3 Inclusion and exclusion criteria

The inclusion criteria for this phase required participants to be either involved in delivering the current discharge process, involved in delivering the proposed model of care or an expert patient with knowledge of the current discharge service. Those unfamiliar with any aspect of patient discharge were excluded as their contribution was considered to be limited.

3.6.3.4 Recruitment of participants

Potential participants were identified via a snowballing sampling method⁽¹⁴⁶⁾ via informal professional networks and invited to participate due to their involvement in the discharge process. Participants were approached either in person or via email (see Appendix 17) as appropriate. A participant information leaflet (PIL) (see Appendix 18) was provided to enable participants to make an informed decision as to whether they would like to take part. The PIL highlighted that the focus group/interview would be audio-recorded to ensure that they were comfortable with this. The PIL was sent to each participant before the focus group or interview via email allowing sufficient time for it

to be read. Each participant was asked to sign a consent form prior to participation (see Appendix 19). All participants consented on the premise that if any quotes were to be used that may identify their hospital in future publications, approval will be sought from them first. Participants were asked if they would be happy to participate, having been given at least 24 hours to consider the study information. A mutually convenient time for the session was arranged as appropriate.

3.6.4 Phase 4 data collection

Section 3.6.3 detailed the research method adopted for phase 4. Section 3.6.4 will introduce the method for data collection used in phase 4. It covers the topic guide, the procedure for data collection and any safety issues thought to affect phase 4.

3.6.4.1 Topic guide development

A topic guide was developed to meet the study aim which was suitable for use in either interviews or focus groups to ensure trustworthiness of data. General themes for discussion were determined based on the findings from phases 1, 2 and 3 of the PoW, the available literature and discussions with the research supervisory team. These key topics for discussion can be seen in section 7.2 Method. Questions and prompts were developed to ensure that they were not leading or biased and included in the topic guide (see Appendix 20). The terminology used was checked during the pilot interviews to ensure it was appropriate for the potential participants (see section 3.6.6 Phase 4 pilot).

3.6.4.2 Procedure

The interviews and focus groups were arranged for a mutually agreed time. To build a rapport with participants prior to the sessions any arrangements were conducted in a polite, friendly and efficient manner. Both the interviews and focus groups began with a verbatim introductory script, to ensure every participant was given the same information. This information included a reminder that the session would be recorded for analysis purposes prior to switching on the recorder (see Appendix 20). Consent forms were completed prior to the session beginning and collected by the researcher.

The sessions were broadly divided into two sections, following a workshop-style approach rather than the format of a traditional focus group. In the first section the researcher gave a verbal overview of the proposed model of care, supported by a printed copy of the flowchart describing the new model of care, which was developed in phase 3 (see Figure 6-2). The second section involved the researcher asking open questions exploring participants' opinions about the new model of care (see Appendix 20). Each step of the proposed new model of care was discussed with participants. Prompts were used by the researcher to probe participants for more information about different aspects of the new model.

The topic guide served as a guide throughout, but the order and wording of the questions were modified based on the flow of each individual session. All questions were asked at some point during each interview and focus group. Any specific comments of interest or those unfamiliar to the researcher were explored further. Care and attentiveness was maintained by the researcher during questioning and listening to participant responses to ensure that all interviews and focus groups were conducted to a similar high standard. The researcher strived to conduct the interviews in an impartial manner regardless of participant response in order to reduce bias. The researcher's experience and background knowledge could hinder this, however the researcher aimed to utilise her background knowledge to facilitate the discussions and encourage participants to expand on their responses to gain a well-rounded and rich dataset.

The focus groups and interviews took place in private rooms in order to minimise distractions or interruptions during the process. The researcher's role was essential to ensure that the interviews or focus groups were successful, without leading the participants and causing bias. The questions and prompts were properly explained to participants if required. Trustworthiness of data collected was aided by building rapport, trust and openness with participants and encouraging participants to give their honest opinions. It was made clear to participants that honest feedback was important, so that they did not feel obliged to give positive responses if they felt that the new model could be improved. Sufficient time was allowed to ensure all questions could be answered

completely. As the researcher progressed through the data collection and analysis process it was noted that no new topics or perspectives were emerging. It was clear that data saturation had been achieved. At this point, several more interviews with participants from diverse backgrounds were conducted to ensure that stakeholders with different experiences had been included and a range of responses were gathered.

3.6.4.3 Safety issues

Neither the researcher nor any of the participants were put at risk or under any duress during data collection. All interviews and focus groups were conducted in a safe work environment, in quiet, easily accessible rooms. Neither the researcher nor any of the participants were put at risk physically or emotionally during data collection.

3.6.5 Phase 4 data analysis

The previous section discussed how data collection took place for phase 4 of the PoW. This section will describe the data analysis used for phase 4.

3.6.5.1 Transcription

The digital audio recordings were transcribed in Microsoft Word immediately after each interview or focus group by the same researcher in order to reduce the risk of transcription errors and aid memory recall. All participant identifiable data was removed at this stage. Similarly to the method used for transcription in Phase 1 (see section 3.3.5.1 Interview transcription), transcriptions were checked against the audio-recording to ensure the content and meaning had been maintained. The supervisory team also checked a sample of the transcriptions to improve robustness of data.

3.6.5.2 Coding and analysis

For the purpose of analysis, interview data and focus group data were pooled and analysed together. Coding of the transcript data took place using the same process as in phase 1 of the PoW. See section 3.3.5.2 Coding and analysis for details of the process used. Using a coding process that involved attention to detail of the text itself helped to focus attention on the text rather than the researcher's preconceptions. The supervisory

team were also involved in discussions around collation of data into themes. This was important when analysing the new model of care which was developed by the researcher to help reduce bias in the analysis. Once the themes were identified, the researcher went back to the original transcript data to check if any themes had been missed. This is known as thematic analysis by constant comparisons (see section 3.7 Methodology for more detail).

Two separate methods of qualitative analysis were performed on the data within this phase of the PoW. The qualitative analysis, as discussed above, to identify themes and review the proposed model of care holistically. A stepwise review of the new model of care was also performed. This qualitative analysis took on a more predictive approach, whereby nodes were arranged according to the individual stages of the proposed new model of care, to systematically analyse each step of the new model of care in detail. Using these two methods of analysis added to the robustness of the phase.

3.6.6 Phase 4 pilot

The first interview conducted was a pilot to determine if methods of recruitment were suitable and the topic guide yielded suitable data for analysis. The pilot also checked the recording equipment to ensure everything was in working order. The first focus group conducted was also carried out as a pilot.

3.7 Methodology

Research paradigms are frameworks based on philosophical beliefs that are shared by groups of researchers.⁽¹⁴⁶⁾ Paradigms provide a basis for understanding the nature of reality, they guide how researchers approach research and will impact research design.⁽¹⁴⁸⁾ A variety of paradigms are discussed in the literature, each with differing viewpoints. It is important to state which paradigm individual research studies belong in, to acknowledge that the approach taken for the study is one of many and that there are other ways to carry out the research.

The pragmatic paradigm was the approach taken for the PoW as it is orientated toward solving practical problems in the 'real world'^(149,150) and endorses theory that informs practice.^(143,150) Pragmatism lends itself well to this PoW and the personal views of the researcher. The research area was identified from known problems with the current discharge process, both anecdotal and from existing evidence. The pragmatic paradigm was appropriate to explore issues with the current discharge process and use this information to develop a new model of care to improve practice. It is important to note that the pragmatic approach views current knowledge as tentative and changing over time.⁽¹⁴³⁾ As systems and technologies develop with time, knowledge previously collected regarding the discharge process can become invalid and this was taken into account during the study.

Another methodology important to this PoW is grounded theory. This qualitative methodology's purpose is to construct theory grounded in data.⁽¹⁾ There are several unique features of grounded theory, namely that the concepts out of which the theory is constructed are derived from the data collected during the research process and not chosen prior to beginning the research. Secondly, in grounded theory, research analysis and data collection are interrelated. After initial data are collected, the researcher analyses that data and the concepts derived from the analysis form the basis of subsequent data collection.⁽¹⁾ Regardless of the type of data used, they are analysed by means of a process called constant comparisons. In doing constant comparisons, data are broken down into manageable pieces with each piece compared for similarities and differences. Similar data are grouped together under the same conceptual heading. Through further analysis, concepts are grouped together by the researcher to form themes. These themes are integrated around a core theme which provides the structure of the theory.

Within the qualitative phases of this PoW the principles of grounded theory were utilised to carry out data analysis and develop themes based on the data. However for the purpose of this PoW a theory was not constructed as is usual for grounded theory. Within the qualitative phases of the PoW, topics discussed during data collection

developed based on the findings from the analysis of the initial data collected from participants. Analysis was also grounded in the data, using the principles of constant comparisons to establish emerging themes.

Different methodologies exist for carrying out research. These broadly fall under either quantitative or qualitative approaches. Quantitative research is used to measure the research problem by generating accurate numerical data. Qualitative research is usually exploratory, involving in-depth discussions with participants leading to rich data sets. As such, qualitative data can be seen as more subjective than quantitative research. The qualitative approach is used to understand opinions and reasons and tends to address the questions what, why and how. The type of method chosen will depend on the research problem and what type of data would be most appropriate to address the problem.

In some circumstances, a combination of both qualitative and quantitative would be the most appropriate approach. Mixed methods research is the use of quantitative and qualitative methods in a single study or series of studies.⁽¹⁵¹⁾ This methodology is increasingly used by health researchers, especially within health services research.⁽¹⁵¹⁾ The underlying assumption of mixed methods research is that it can address some research questions more comprehensively than by using either quantitative or qualitative methods alone.⁽¹⁵⁰⁾ Research questions that profit most from a mixed methods design tend to be broad and complex, with multiple facets that may each be best explored by quantitative or qualitative methods.⁽¹⁵¹⁾ The research problem of discharge from hospital is a broad and complex issue and requires a combination of quantitative and qualitative methods to resolve.

Pragmatism, the paradigm adopted by the PoW, lends itself to mixed methods as it frees the researcher to use a range of approaches to best understand the research problem.⁽¹⁵⁰⁾ Mixed methods were appropriate to address the overall aim of the PoW, as each phase required different research strategies to enable a thorough understanding of the research problem from different perspectives, either confirming or providing an

alternative explanation, enhancing trustworthiness of the data. A range of methods were therefore employed to use the appropriate method for each individual phase, to meet the aim of each phase. The methods complemented each other and benefited from the strengths of each method whilst allowing the biases from individual methods to be overcome by the strengths of the other methods. The subjective bias of the researcher was a disadvantage, which cannot be removed. Reflexivity was adopted by the researcher to identify if her views influenced the research.

The individual methods used throughout this PoW have been discussed within their respective sections in this chapter. Triangulation is a well-documented advantage to mixed methods research, whereby the same research problem is explored using different methods. The PoW followed a concurrent triangulation design whereby both exploratory qualitative and explanatory quantitative methods were used separately, independently and concurrently in different phases.⁽¹⁴³⁾ The findings were then compared to assess their convergence⁽¹⁴³⁾ to form a clearer picture of the research findings.

3.8 Ethical Issues

A researcher has a responsibility to work within a code of ethics. Different professionals will have their own code of ethics, but all should have common principles. For example, researchers must strive to protect subjects from undue harm arising as a consequence of their participation in research.⁽¹⁵²⁾ The researcher had a responsibility to complete the PoW with integrity and contribute to the knowledge base. The PoW was therefore designed to ensure the research was carried out ethically and appropriate ethical approval was sought for each phase of the PoW.

Various potential ethical issues were considered during each phase of the PoW. One area that required ethical consideration was the participants. The researcher strived to develop an atmosphere of mutual trust with each of the participants. As part of this, the researcher was not judgemental and respected the beliefs and values of the individual participants, which may have differed from her own. The methods adopted to ensure

the research within each phase of this PoW was conducted ethically have been discussed throughout this chapter and two important aspects, informed consent, and confidentiality and anonymity are discussed in more detail below.

3.8.1 Informed consent

Informed consent is essential for research involving human participants. It is when permission is granted by the participant who has been fully informed of the research study and the possible consequences. Informed consent was obtained for all phases in the PoW involving data collection. Participant information leaflets (PIL) were provided in each phase of the PoW to assist participants to make an informed choice about participation. Each PIL provided detailed information about the background to the specific study, information about the researcher, what participation involved, benefits and possible risks of participating, an invitation to take part, why they have been chosen to participate, confidentiality and the participant's rights. The PILs were phrased in such a way that they were easy to read and if the participant had any questions they could contact the researcher for more information. In order to confirm that informed consent had taken place, consent forms were provided for all participants throughout the phases to complete, sign and return to the researcher before the research took place.

The individual methods used to provide information and obtain informed consent for each phase of the PoW are detailed in the relevant individual sections for each phase. See sections 3.3 – 3.6 for further information.

3.8.2 Confidentiality and anonymity

Participant confidentiality and anonymity was maintained throughout all phases of the PoW. Personal information was not collected unless necessary and very few participant identifiable data were required for the purpose of the PoW.

For qualitative phases 1 and 4 which involved audio-recorded interviews, the researcher anonymised all data at the transcription stage by removing any participant identifiable information and coding the transcripts to enable participant identification. For the

quantitative phase 2, no patient identifiable data was collected. To ensure confidentiality, only the researcher and supervisory team had access to the data including: interview audio-recordings, transcripts, questionnaires and consent forms.

All forms of electronic data were stored on the researcher's personal computer which was attached to the LJMU server and password protected in a locked office at LJMU. All paper copies of research data, for example questionnaires and consent forms, were kept in the same locked office in a locked cabinet which was only accessible to the researcher.

3.9 Robustness of research across PoW

The PoW was designed to ensure that the research carried out was robust. This was achieved in a variety of ways, including ensuring trustworthiness throughout the PoW. The specific means of ensuring trustworthiness in the design of each individual phase are discussed throughout this chapter.

Triangulation of the data was an important aspect of ensuring robustness. The benefits of triangulation in a mixed methods study have previously been discussed in this chapter (3.5.1 Phase 3 rationale). This PoW used a variety of data collection methods: qualitative interviews, focus groups and questionnaires. All of these methods have both strengths and weaknesses which have been discussed within the appropriate individual section of this chapter. The benefit of using all of these methods within one study is that the strengths of each individual method will offset the weaknesses of the others. This is one way of ensuring methodological robustness. Another example of robustness incorporated into the PoW is the participant sample. Chief Pharmacists were interviewed to obtain their perspectives of the discharge process in phase 1 and patients were included in phase 2. Including different participant perspectives on the same research problem supports the robustness of the study. Finally, to ensure that the researcher did not limit the review of the new model of care to her own views, a range of stakeholders in the discharge process were approached to evaluate the new model.

3.10 Reflexivity

In qualitative research, the researcher collects and interprets data, making the researcher as much a part of the research process as the participants and the data they provide.⁽¹⁾ Subsequently, as discussed throughout this chapter, there is a risk within qualitative research that the researcher's beliefs, experience or values will influence the research (see also section 3.7 Methodology). This was a consideration during this PoW due to the researcher's experience as a hospital pharmacist. The individual methods sections throughout this chapter discussed ways in which the researcher attempted to limit the bias in each phase. To remove this bias is impossible. One way to recognise that the researcher was not a neutral observer was by including reflexivity. Qualitative reflexivity is the process by which the researcher reflects upon and critically appraises the data collection and interpretation process.^(142,153) It looks at the effect of the researcher on the research process. This self-reflection was important to identify all of the influences that may have inadvertently affected the research process. The researcher kept a research journal documenting her thoughts throughout the process and identified several preconceptions that could have influenced the qualitative analysis. By being aware of these, the researcher was less likely to inadvertently allow this to occur. By keeping this journal, the researcher was able to take a critical look at the research and take a step back from the intense process of qualitative research, which can occasionally be overwhelming. The findings chapters for each phase of the PoW contains a section on reflexivity within the individual phases.

3.11 Methodological limitations of PoW

The methodological limitations thought to affect each phase of the PoW are discussed. Each of the methods used within the individual phases have their own limitations. However as discussed in section 3.9 Robustness of research across PoW, the strengths of each phase offset the limitations of others, which is one of the benefits of using a mixed methods approach to research. Despite the strengths of the mixed methods approach, there are also challenges. Using a mixed methods approach meant that the researcher required training to learn a new set of skills for different methods both

qualitative and quantitative. This was time consuming, but necessary to ensure that each phase of the PoW was carried out correctly.

There is an inherent risk of bias during qualitative interviews or focus groups. This was particularly relevant in phases 1 and 4 where qualitative interviewing techniques were used. The researcher has worked as a hospital pharmacist and having experience in the field under investigation, leads to the researcher having preconceptions. This was also a consideration in phase 4, due to the researcher's involvement in the development of the new model of care. Although this bias can not be removed, numerous strategies were employed throughout the PoW to reduce the risk of bias. These have been discussed throughout this thesis. One particular strategy to reduce bias was the inclusion of the supervisory team throughout planning and data analysis. The team included three pharmacists from varied backgrounds, one with a background in psychology. This variety helped to provide differing viewpoints throughout the process.

The interviews were conducted in a way to minimise bias from the interviewer which could adversely affect the study. The researcher kept an open manner throughout each interview, setting aside any preconceptions as much as possible. Questions were asked in an impartial manner and properly explained to all participants to avoid being misleading. The researcher's background as a hospital pharmacist was beneficial to assist with understanding of any terminology used by the expert participants during the interviews.

Reflexivity of the researcher was a key component of carrying out the qualitative phases of the research. This is introduced earlier in this chapter (see section 3.10 Reflexivity). A reflexive paragraph within the findings chapters for phases 1 and 4 will overview the specific impact of the researcher on the findings and vice versa within the individual phases.

A common problem with research is that participants may be reluctant to discuss certain issues because they are concerned about confidentiality, causing problems or distress

for themselves or others. Equally, participants may want to give socially desirable responses to be viewed favourably by others. These types of responses from participants could lead to misrepresentative data being collected. This could apply to the interviews or focus groups, but also when respondents are completing questionnaires. This was not a serious threat to this study, as the topic was not considered sensitive. Nevertheless, during all correspondence and at the beginning of each interview, focus group or prior to respondents completing the questionnaire, the researcher ensured that participants knew information was confidential. During all phases, participants were informed how their responses may impact future models of discharge care to encourage honest responses.

Response bias can also be an issue if questions are not carefully constructed. Care was taken when developing the questionnaire to avoid leading questions and minimise bias. Care was also taken by the researcher during the interviews and focus groups to follow the wording of questions on the interview schedule or topic guide to ensure all questions were asked clearly and consistently.

Not all participants answered every question, which could lead to some response bias for individual questions. It is not possible to know whether all possible patients were approached to participate. This is due to the fact that individual ward gatekeepers directed the researcher to the appropriate patients. This may have affected the study response rate and contributed some response bias. However, a representative sample of patients awaiting discharge was thought to have been achieved.

Achieving true integration of the different types of data, both qualitative and quantitative, can be difficult. It requires innovative thinking to move between different types of data and make meaningful links between them.⁽¹⁵¹⁾ The findings from phases 1 and 2 were from different sources and used different methods and therefore made comparisons challenging during triangulation. Reflecting on the PoW findings, the results complement each other enough to have informed the development of the new model of care and integration of data has therefore been achieved.

Finally, the PoW has addressed the overall aim of the study, which was to provide the evidence to develop an innovative model of care for patient discharge from hospital. This PoW was not the only way that the aim could have been achieved. The most appropriate and feasible methods were chosen by the researcher to carry out the study at the time. Other options were available, for example, further information could have been sought about the current discharge process from other stakeholders in the early phases of the PoW. This however would not have been manageable within the time constraints of this PhD. The researcher chose the participants from phases 1 and 2 as they were thought to provide the most important and useful information.

Chapter summary

This chapter gave an overview of the PoW, before describing how the individual phases within the PoW were undertaken and the rationale for each. This included ethical issues and limitations of the study. The following four chapters will discuss the four individual phases of the PoW, along with their findings in detail. This begins with phase 1 findings, which is described in chapter 4.

Chapter 4 – Phase 1: Evaluating the current discharge process from the Pharmacists' perspective

An overview of the methods and rationale for the design of the PoW was provided in chapter 3 (see section 3.3.3 Phase 1 research method). This chapter describes and discusses the findings for phase 1 of the PoW. This is the first of the four phases in the PoW, involving telephone interviews with Chief Pharmacists to identify and evaluate the discharge process.

4.1 Introduction

As previously discussed in chapter 2 – Introduction, hospital discharge can lead to a variety of problems including: medication errors, hospital readmissions and bed-blocking. This has a negative impact both on patients, who are at risk of harm and poor experience, and on the hospital itself in terms of patient flow.

As mentioned in the outline for the PoW (in section 3.2 Overview of programme of work) it is important to identify where and how problems at discharge arise to develop solutions. Despite common problems associated with discharge from hospital being well-documented in the literature (see 2.7 Current problems at discharge), the solutions developed by hospitals to address these problems are not widely published. Furthermore, it is unclear if the discharge process is similar across all acute NHS hospitals. This first phase of the PoW attempted to broaden the scope of 'grey literature' available on this topic, by investigating how the discharge process is carried out at a range of acute NHS hospitals. This involved an evaluation of the current discharge process and any innovative ideas in place to improve the discharge process at each hospital.

The findings from this phase are important to the overall PoW to inform the design of a new model of care for patient discharge, which incorporates successful aspects of the current process(es) and removes common problems at discharge.

4.2 Method

As previously discussed in section 3.3.1 Phase 1 research rationale, this first phase of the research was an exploratory study, investigating discharge care from the perspective of NHS hospital pharmacy staff. This involved qualitative telephone interviews with chief pharmacists or a nominated senior pharmacy staff member from acute NHS hospitals across North West England. The resulting interview recordings were transcribed and analysed by constant comparisons. This next section of the chapter will discuss the findings in detail.

4.3 Aim and Objectives

As discussed in section 3.3.2 Phase 1 aim and objectives, the aim of this phase of the PoW was to identify and evaluate the discharge process(es) used in a range of acute NHS hospitals across the North West of England.

The objectives were to:

- Identify the current discharge process(es) in acute NHS hospitals across North West England
- Determine which members of staff are involved in the current discharge process(es)
- Explore which parts of the current discharge process(es) are considered effective and ineffective
- Investigate any innovative ways of working employed by hospitals in order to improve the discharge process
- Identify staff suggestions for the development of the current discharge process(es)
- Determine the current role of community pharmacists in the hospital discharge process

4.4 Findings

The findings are presented within this section, including details of the pilot, participant demographics and the themes which emerged from the data collected during data analysis.

4.4.1 Outcome of the pilot

A pilot study was carried out using two participants from the same hospital site. The pilot demonstrated that the interview questions were unambiguous and yielded suitable, relevant data to meet the study objectives. Minor rephrasing of some questions on the interview schedule took place after the pilot, to improve clarity of questions. The pilot confirmed that the recruitment procedure and methods for obtaining consent from participants were appropriate. The pilot allowed the researcher to develop transcribing and data analysis skills, including the use of NVivo software, prior to data collection commencing. The pilot also confirmed that the telephone interviews were feasible in the setting and time period.

The researcher's interview technique had improved by the second interview and as both participants were from the same hospital, only one of the two pilot interviews could be used as part of the main analysis. Subsequently, the second of the two pilot interviews conducted was used as part of the main analysis.

4.4.2 Demographics

Data collection took place between 21st January 2015 and 25th April 2015. All twenty-two potential participants that met the inclusion/exclusion criteria (see section 3.3.3.3 Inclusion and exclusion criteria) for the study were contacted and invited to participate. All of those that responded were interviewed. A total of 13 participants took part in the study, giving a response rate of 59%. A further two potential participants responded late, however data saturation had already been achieved at this point and no further interviews were arranged. The average duration of interviews was 30 minutes (range 15 to 50 minutes).

A range of staff members participated, including: Chief Pharmacists, Clinical Services Managers and the Lead Pharmacy Technician responsible for running the ward-based discharge service. Few of the participants played an active role in discharging patients, but all were involved in overseeing and organising the process and were aware of the problems occurring within their hospitals. The participants were from a range of types of acute NHS hospitals to assess the discharge process from a variety of types of acute hospital. This included teaching hospitals, three of which were city-centre teaching hospitals, district general hospitals and one integrated care organisation, formally known as a district general hospital. A full list of participants and their hospital demographics can be seen in Table 4-1.

Table 4-1 – Phase 1 participant and study setting demographics

Participant Number	Job role	Type of acute hospital	Hospital beds	Patient discharges per day
1	Clinical Services Manager	City centre teaching hospital	600 +	100 +
2	Chief Pharmacist	City centre teaching hospital	600 +	100 +
3	Chief Pharmacist	District general hospital	600 +	< 50
4	Chief Pharmacist	District general hospital – split sites	600 +	100 +
5	Clinical Services Manager	District general hospital – split sites	600 +	100 +
6	Chief Pharmacist	District general hospital	300 – 600	< 50
7	Chief Pharmacist	Teaching hospital	600 +	50 – 100
8	Chief Pharmacist	District general hospital	300 – 600	< 50
9	Technical Ward-Based Services Manager	City centre teaching hospital	600 +	100 +
10	Chief Pharmacist	Integrated care organisation	300 – 600	50 – 100
11	Chief Pharmacist	District general hospital	300 – 600	unknown
12	Clinical Services Manager	Teaching hospital	600 +	50 – 100
13	Chief Pharmacist	Teaching hospital	600 +	50 - 100

After 13 interviews, no new topics or perspectives were found to emerge. It was therefore assumed that the goal of identifying all issues and perspectives on the topic was reached and sufficient detail obtained for qualitative analysis, i.e. data saturation was achieved. The participants all offered valid opinions about their hospital discharge processes and it was assumed that the data collected was representative of the discharge process in each hospital at that point in time.

All participants' hospital pharmacy departments were open seven days per week, although the working hours each day differed between hospitals, particularly at weekends. Some were open later during the week and one hospital had a pharmacist on site 24 hours per day. At the time of interviews taking place, it was coming to the end of the winter period and most of the departments had extended their working hours to cope with the increased demand on acute hospitals during the winter months. However, these extended hours were temporary – supported by 'winter pressures' funding – and not reflective of usual working schedules. Standard seven-day clinical pharmacy services were not in place as has been suggested in the Carter report.^(14,68) For most hospitals, the clinical pharmacy service provided at weekends was limited in comparison to that provided throughout the week.

4.4.3 Themes

Coding the interview transcript data led to a total of 38 nodes being created, which were then combined and organised into themes and subthemes during the analysis process. Coding began using some *a priori* codes initially, which were based on the study aim and objectives and the questions asked of the participants. However mainly a structured, detailed approach to coding the data was taken, looking at each line and questioning the meaning of each, focussing the researcher on the data itself. Transcriptions were reviewed, looking for repetition, similarities and differences in the data. The nodes were compared and combined to establish subthemes and then broader themes.

Eight themes emerged during analysis. The steps taken to ensure robustness of the analysis have been described in section 3.3.5 Phase 1 data analysis. The themes were

based around aspects of discharge highlighted by participants. This included: planning for discharge, discharge documentation, supply of medication for discharge, post-discharge community pharmacy involvement, communication within the discharge process, factors affecting the discharge process, patient involvement and innovative discharge processes. These themes are listed along with their subthemes in Table 4-2.

Table 4-2 – Phase 1 list of themes and subthemes

Theme	Subthemes
Planning for discharge	Coordination of the discharge process Discharge planning Decision to discharge Out of hours discharge
Discharge documentation	Content of the discharge documentation Writing the discharge documentation Verification of the discharge prescription
Supply of medication for discharge	Medication supplied at discharge Dispensing of medication for discharge Delivery of medication to the patient for discharge
Post-discharge community pharmacy involvement	Hospital referral of patients to community pharmacy Medicines support after discharge
Communication within the discharge process	Communication within the multi-disciplinary team Using technology for communication
Factors affecting the discharge process	Hospital pressures Discharge training for staff
Patient involvement	Patient counselling Patient involvement
Innovative discharge processes	Current innovative solutions Suggestions for changes to the discharge process

As already discussed, (see section 2.6 Discharge from hospital) discharge from hospital is a complex multi-stage process, involving a number of different people. Subsequently, analysis of the discharge process did not result in a linear set of themes. Whilst each of

the themes identified impact on the discharge process, thorough analysis revealed that each individual theme is interlinked and influences others.

Each theme is presented including an overview and a description of the subthemes. To help present the themes and subthemes, quotes taken directly from the data have been used. These quotes have been anonymised and for context have been described according to job role and type of hospital for each participant.

4.4.3.1 Planning for discharge

The theme planning for discharge encompasses the aspects of preparing and planning for patient discharge from hospital to ensure that discharge is organised, timely and appropriate. This theme comprises the following four subthemes: coordination of the discharge process, discharge planning, the decision to discharge and out-of-hours discharge.

4.4.3.1.1 Coordination of the discharge process

Poor co-ordination of the process on the day of discharge was noted by the majority of participants. There did not appear to be a set person taking responsibility for ensuring that it ran smoothly.

“So no-one coordinates it most of the time, although there’s lots of attempts to coordinate it.” Clinical Services Manager, District general hospital

Discharge coordinators were discussed by the participants; however the job role was not consistent between hospitals. The role of the discharge coordinator ranged from overseeing discharge for all patients on a ward, to being involved in discharge planning for complex patient cases only. Junior doctors were not thought to play a role in the coordination of the discharge process.

“[Discharge coordinators] tend to be more involved in the complex discharges, but I think in general it’s the nursing staff who coordinate the discharges.” Chief Pharmacist, City centre teaching hospital

Even within the same hospital, quality of coordination can differ significantly as different members of staff take on that responsibility.

“It is usually, it varies enormously on different wards to be quite honest. On some wards they have got a discharge coordinator. On some wards it’s the lead nurse, on some wards it’s pharmacy-based.” Clinical Services Manager, Teaching hospital

The findings of this study showed that nursing staff were most commonly cited as being responsible for coordinating the discharge process on the day of discharge.

“[The nurses] manage the patient’s discharge, they will call on the doctors to generate a TTO if they’ve not done it, they’ll call upon us to do our bit if we haven’t done it.” Chief Pharmacist, City centre teaching hospital

Several participants mentioned their hospitals trialling pharmacist-led discharge and had a small evidence base to say that the service was effective, based on pilot data. This involves pharmacists taking control of the discharge process once the decision to discharge the patient has been made.

“We started in the medical wards a pharmacist-led discharge. So changing the process so the pharmacist actually writes the discharge instead of the medics. So we are informed that the patient is fit for discharge, the pharmacist takes over and we process.” Clinical Services Manager, Teaching hospital

4.4.3.1.2 Discharge planning

Discharge planning was highlighted by the participants as taking place early in the inpatient stay.

“The same as many other trusts out there, the discharge planning starts quite early in patient stay” Chief Pharmacist, City centre teaching hospital

In practice, a predicted (or estimated) date of discharge can be given for each individual patient, based on their needs. This helps to plan for discharge. Predicting the date of discharge can pre-empt some of the tasks involved at discharge and reduce the lag time of patients waiting after they are told that they are due to be discharged. Despite planning for discharge occurring, participants admitted that predicting the date of hospital discharge did not always occur for their patients.

“But getting [the medical staff] to predict the date of discharge accurately and then for the ward staff, whether it be doctors, nurses or us, to then meaningfully use that intelligence to plan for the discharge is very difficult.” Clinical Services Manager, District general hospital

The findings from this phase suggest that participants would like to work towards using the estimated discharge date for all patients.

“I think we need to work towards estimated date of discharge and better, I think that’s a problem for the organisation.” Chief Pharmacist, District General hospital

4.4.3.1.3 Decision to discharge

The decision to discharge a patient was usually made during the consultant ward round.

“The decision to discharge is normally a consultant-led decision as are many decisions in terms of the next step in people’s care during the hospital [stay]. So I suppose that decision to discharge traditionally would

happen on a ward round or some other meeting between the consultant and the patient or appropriate review.” Clinical Services Manager, City centre teaching hospital

In addition to consultant ward rounds, several of the hospitals ran morning ward-based meetings with medical staff to highlight patients that could be discharged that day. This was to make the MDT aware early on about any potential discharges to help prepare patients for discharge earlier in the day.

“There is a daily what we call whiteboard round, where the consultants are supposed to just come to the ward at about 9 o’clock and identify if any patients can go that day depending on results and things. And that’s ... in between formal ward rounds.” Chief Pharmacist, District General hospital

4.4.3.1.4 Out of hours discharge

This sub-theme focused on the discharge process out of pharmacy working hours. As previously mentioned (see section 4.4.2 Demographics), the pharmacy departments were open 9-5pm Monday to Friday, with some working extended hours throughout the week and at weekends, usually with skeleton staff. The larger hospitals were open later on weeknights and longer hours at the weekends. All hospitals had an on-call pharmacist (usually off-site) to deal with any emergencies out of hours. One of the large inner city teaching hospitals had a pharmacist on site 24 hours per day.

In theory, good planning for discharge should ensure that most patients are discharged within pharmacy working hours. However, the findings from this phase revealed circumstances whereby patients needed to be discharged out of pharmacy working hours. Participants agreed that their off-site pharmacist on-call would not come in to dispense a discharge prescription for a patient out of hours, as it is not seen as an emergency. The only exceptions to this mentioned by participants were patients at the end-of-life stage who required controlled drugs dispensing to get them home and keep

them comfortable, or in an emergency situation where patients needed to be discharged to free up more hospital beds.

“Every discharge will be taken into account on its own merit so if it's a standard one we would normally say wait until the next day, but of course there are exceptions. For example if it was a palliative discharge or if there was a significant bed crisis in the hospital, we may need to sort of review that on a case-by-case basis and make a decision. But strictly speaking our on-call service is for urgent advice and supply and not for discharges.” Clinical Services Manager, City centre teaching hospital

If a discharge prescription was written and a pharmacist was not available to complete it, hospitals have made individual arrangements for obtaining any required medication through other routes. Examples of this include: pre-labelled stock on wards for nursing staff to give routine medication to patients as appropriate or an FP10 prescription – which can be dispensed by any community pharmacy – could be written to allow the patient to collect their medication from a community pharmacy.

“There are policies to allow for patients to be discharged out of hours. If a patient has all the medication they need, two professionals can check the discharge. So a nurse and doctor could check the patient has everything they need, which would allow the patient to go home out of hours. We have the ability to write FP10 for any outstanding medication so they can actually collect that from a community pharmacy out of hours.” Clinical Services Manager, City centre teaching hospital

Patients discharged from hospital out of hours, when a full pharmacy service is not available, would not receive the same thorough prescription check as when a pharmacist was available. Through analysis of the discussions with participants, it was inferred that for a quality, safe discharge for a patient, input from the pharmacy team is required.

Enabling the timely discharge or transfer of patient care improves both quality of care and the efficiency of services. It requires resources to be balanced and aligned so that they are available to meet patients' needs at the earliest possible point, seven days a week.⁽¹⁵⁴⁾ Few hospitals were running a full pharmacy service seven days a week. Participants voiced the difficulties in providing a seven day service and cited funding as the main issue with this.

4.4.3.2 Discharge documentation

Discharge documentation is the handover document sent to the patient's GP, which encompasses all of the information regarding the inpatient episode and medication. This theme covers the preparation of the discharge documentation, which comprises the discharge prescription (TTO) and the discharge summary containing details on the inpatient episode. The three subthemes under this umbrella theme include: the content of the discharge documentation, writing, and verifying the discharge prescription.

The findings suggest that the process of creating the discharge prescription is similar at each hospital, with some hospitals providing an innovative approach to the preparation of the discharge prescription. These innovative approaches are discussed in more detail within the theme 'innovative discharge processes'.

4.4.3.2.1 Content of the discharge documentation

The hospitals used a broad range of electronic systems for discharge. The software for discharge included: Sunquest ICE[®], JAC[®], Quadramed[®], Advantis[®], Ascribe[®], Medisec[®] and Lorenzo[®]. Ascribe[®] was the most frequently used system out of the small number of participants interviewed.

From the findings, the discharge prescription may be separate from the discharge summary of events during the inpatient episode depending on the electronic discharge systems used. However, the discharge summary and discharge prescription were combined prior to sending the information out to the GP.

“The discharge system is different to our electronic prescribing inpatient system. But you can pull the discharge medication from one system onto the other so there is an interface.” Chief Pharmacist, District general hospital

All of the participants confirmed that their hospitals had progressed from the traditional, paper-based, handwritten discharge documentation and were using the preferred electronic discharge systems to write their discharge documentation.

*“It’s a lot better. The paper system was hopeless for us and for the GPs.”
Chief Pharmacist, Teaching hospital*

Several of the participants felt that electronic discharge systems had been forced onto their hospitals in order to meet the targets for sending discharge summaries to GPs within the 24 hour target.

“E-discharge has been sort of forced on us by the CQUIN requirement that the GPs need a discharge summary within 24 hours of the patient going home and the only way you can do that is electronically.” Chief Pharmacist, Integrated care organisation

Despite problems occurring with individual prescribers, participants agreed that switching from the traditional paper-based system to the electronic discharge system had improved the information sent to the patients’ GPs.

“I think it’s improved the quality of the discharge summary greatly when it is done correctly. Obviously it’s garbage in garbage out and you will find some of the individual doctors not doing a very good job on the discharge summary, but tends to be the minority and when it is done properly we had a lot of positive feedback from the GPs saying this is great” Chief Pharmacist, Integrated care organisation

The study found that the participants' hospitals were compliant with current national standards by including all relevant discharge information in the discharge summary templates.^(59,60)

"It contains the narrative of the presenting complaint, investigations, diagnosis there is a section for medicines started, stopped and changed, as well as the medicines that the patient has to go home on." Chief Pharmacist, City centre teaching hospital

4.4.3.2.2 Writing the discharge documentation

The findings suggested that discharge prescriptions were commonly written by a junior doctor from the team looking after the patient.

"The discharge prescription needs to be written and that traditionally will be done by the most junior member of the medical team. So either an F1 or an F2 depending on the structure of the team." Clinical Services Manager, City centre teaching hospital

All participants highlighted that the time spent waiting for the doctor to write the discharge prescription was inefficient.

"It sort of jumps out that bit waiting for the medics to prescribe is totally ineffective." Chief Pharmacist, City centre teaching hospital

The junior doctor's role includes completing a list of jobs generated during the consultant ward round. This included writing the discharge prescription for any patients going home, however discharge prescriptions were not always seen as a priority and were often written after their more urgent jobs are completed.

"I think to be fair to the junior medical staff there is tremendous pressure to do other tasks first. That's a problem as well ... The problem is, or one of the problems is, that the doctors will do the ward round but the

discharges are not completed until after the ward round and then after the main tasks from the ward round are done.” Chief Pharmacist, District General hospital

Having junior medical staff writing the discharge summary can be time consuming and inefficient and requires action in order to reduce the wait time for patients. Some hospitals have started to utilise their non-medical prescribing pharmacists to write discharge prescriptions as a way of reducing the wait time for patients. This will be discussed in more detail in theme eight (see section 4.4.3.8 Innovative discharge processes).

Despite discharge summary templates including prompts for all mandatory information on discharge summaries, issues regarding incomplete writing of discharge summaries were highlighted by several of the participants during the interviews. Electronic discharge systems had mandatory boxes for completion, which theoretically should ensure the information is inputted into the discharge summary. However, one participant noted that doctors completing the electronic discharge summaries had managed to find ways of overriding the system so they did not have to complete all sections of the discharge summary.

“Our doctors have worked out that if they just put a full-stop in there it will just let them go on.” Chief Pharmacist, Teaching hospital

4.4.3.2.3 Verification of the discharge prescription

The verification of the discharge prescription to ensure that the medication prescribed at discharge is accurate, safe and complete, was seen by all participants as an important stage in the discharge process. The pharmacist clinical check was thought to lead to a significant reduction in medication errors after any issues have been rectified.

“Unfortunately we know roughly one in two discharges we have that additional step of needing to go back to the prescriber for some form of amendment.” Clinical Services Manager, City centre teaching hospital

Participants stated that a pharmacist’s verification of discharge prescriptions was standard for their hospitals. A potential patient safety issue was highlighted for discharge prescriptions that are sent out to GPs without verification.

“I think I can name one trust where they only authorise a quarter of the discharge letters that leave the building. Now we know like 90% of things we need to change them in some way, some are minor, some are major. So if you’re only doing a quarter, then three quarters are going out with duff information on and that’s going to have impact on people’s lives.” Clinical Services Manager, District general hospital

4.4.3.3 Supply of medication for discharge

This theme relates directly to the supply of medication for discharge. The three subthemes within this theme included: medication supplied at discharge, dispensing of medication for discharge and delivery of medication to the patient for discharge. The findings identified that the supply of medication on discharge from hospital was carried out by the hospital pharmacy team.

4.4.3.3.1 Medication supplied at discharge

The supply of medication on discharge from hospital was highlighted as an area of waste in the process. Supplying all medication often leads to patients receiving medication on discharge from hospital that they could obtain from their GP.

“Sadly we do [dispense all medication on discharge], and that means that we often dispense a lot of items for surgical patients that are nothing to do with the reason that they came into the hospital.” Chief Pharmacist, Teaching hospital

On discharge from hospital, enough medication was supplied to ensure that patients have time to obtain further supplies from their GP. Participants from different hospitals stated that they would supply a minimum of seven, ten or fourteen days' supply of patient's medication on discharge, depending on their agreements with local CCGs. This included both newly started medication and long-term medication that patients were taking prior to admission. Due to calendar pack sizes of most medication, patients often received one month's supply at discharge.

"We do a minimum of 7 days, but we would supply an original, like a 28 day supply. But we make sure that the patients go home with a minimum of 7 days." Technical Ward-Based Services Manager, City centre teaching hospital

4.4.3.3.2 Dispensing of Medication

Dispensing the required medication for discharge traditionally takes place in the pharmacy dispensary. The findings support that this was still normal practice. The majority of hospitals also had facilities on the wards for the ward-based pharmacy team to dispense and label medication for discharge on the ward.

"We have ward-based access to the pharmacy dispensing system and labellers on the ward. So the pharmacist and technician can, if the drugs are available... they can do it on the ward." Chief Pharmacist, District general hospital

Participants had data to demonstrate that ward-based dispensing had reduced the wait time for the patient in comparison to dispensing the discharge prescription in the pharmacy dispensary.

"We have KPIs for ward-based turnaround times and dispensary turnaround times, and it's pretty clear that if the discharges are done on the wards they are done a lot quicker." Chief Pharmacist, District general hospital

Participants were in agreement that one of the most time consuming processes in the dispensing of discharge prescriptions was the preparation of monitored dosage system (MDS) compliance aids. Whilst useful for some patients to manage their medication if prescribed multiple medicines, they require more resources to dispense in the pharmacy.

“Least effective are when we get venalinks down in pharmacy ... It’s just time, it’s just it takes two people to do it. One person to do it, one person to check and then you have to get the pharmacist to check the final thing. We have to do two weeks’ worth of venalinks because we give 14 days on discharge and that includes venalinks. So it’s just the usual time consuming process that it is.” Chief Pharmacist, District general hospital

Participants highlighted that pharmacy was the perceived cause of delay for patients when they are going home. One participant had witnessed a doctor insinuating to a patient that pharmacy would take a long time to get their discharge medication.

“[A doctor] said [to patient] you can go home, the only thing we’re waiting for is your pain relief from pharmacy and they take ages to do that, do you want to be bothered waiting?... So I think we still have got the same perception, as we are an easy target unfortunately. ‘Oh it’s down in pharmacy they’ve had it for ages’.” Chief Pharmacist, Integrated Care Organisation

4.4.3.3 Delivery of medication to patient for discharge

One of the highlighted problems contributing to the patients’ wait at discharge was the wait for the arrival of discharge medication on the ward after being dispensed in the pharmacy dispensary. Participants overcame this issue by employing a designated pharmacy porter, which significantly reduced this wait time.

“One of the things that we identified as a real problem was that the prescriptions could be done but our portering was ineffective. So we’ve

now got a band 2 pharmacy runner, who will take the discharges to the wards. So that's resolved that problem." Chief Pharmacist, District General hospital

4.4.3.4 Post-discharge community pharmacy involvement

After discharge, the patient crosses the interface between hospital and community. Maintaining continuity of care throughout this transfer relies on good communication of information. All hospitals complied with current guidelines by routinely transferring discharge information to the patient's GP. However, communication with other community healthcare providers was not mandatory. This theme covers the two subthemes: hospital referral of patients to community pharmacy, and medicines support after discharge.

4.4.3.4.1 Hospital referral of patients to community pharmacy

One participant found that not all patients use one regular community pharmacy. Instead it tended to be older patients who required delivery of their medication who were more likely to visit just one regular pharmacy.

"In our meds rec document, one of the questions we're going to ask is do you have a regular community pharmacist. So that we can begin to know who the community pharmacist is. But actually, when we started speaking to patients we find a lot of them don't have one set community pharmacy they always go to. The older patients tend to, but a lot of them are getting their medicines delivered." Chief Pharmacist, Teaching hospital

From the findings, it is uncommon for any discharge information to be sent to the community pharmacy by the hospital after discharge. This usually only occurs if a patient has their medication in an MDS compliance aid from a regular community pharmacy.

“The common ones that pharmacy get involved in would be when a patient has a compliance aid so we need to convey information and arrange ongoing supply and that the turnaround is often reduced, we will fax community pharmacies with the discharge information to make sure that they can liaise with primary care colleagues and arrange for further supplies for compliance aids.” Clinical Services Manager, City centre teaching hospital

One area’s local CCGs were investigating the possibility of implementing a CQUIN (Commissioning for Quality and Innovation) target around sending information to the community pharmacy, as current performance was poor and this would provide staff with an incentive to send this information.

“I know there’s quite a few schemes going on around the region to try and have that information sent to the local, their pharmacy to make sure that that information is carried through. So we’re certainly interested in looking in that and I think our local commissioners are thinking about a CQUIN around the communication to community pharmacies.” Chief Pharmacist, District general hospital

The most commonly used method of transfer of discharge information was by fax, however participants had varying views on the confidentiality of faxes and as a result, some hospitals have stopped using this method.

“We used to fax copies of the prescription if we felt community pharmacists needed to see the copies. But I think sending faxes is quite hazardous from a confidentiality point of view. So we didn’t feel comfortable with that.” Chief Pharmacist, District general hospital

An application had been developed to attempt to improve this referral process called ‘Refer to Pharmacy’, see subtheme below, medicines support after discharge, for further details.

4.4.3.4.2 Medicines support after discharge

A major role for community pharmacists after patient discharge from hospital is to carry out MURs or the NMS with patients when they are back home from hospital, to ensure that there are no problems or confusion with any of the new medication. It is recommended that hospital pharmacists refer patients to their community pharmacy for this purpose.⁽⁷⁾ It is clear from the findings that very few of the hospitals were referring patients regularly for this additional support.

“We’re not very good at that. I think the infrastructure locally isn’t great for doing it. We do some certainly. I wouldn’t like to give you a proportion it will probably be quite low.” Chief Pharmacist, Integrated Care Organisation

Some hospitals had their own community interface teams that carry out similar services to the MUR and NMS services offered by community pharmacies. Subsequently there may not be the same need to refer to a community pharmacy.

“We’ve got our own community service team linked in with the hospital. They tend to pick up, in community any issues that they might want to follow up with the patient.” Technical Ward-Based Services Manager, City centre teaching hospital

One hospital that had undertaken research around community pharmacy involvement after discharge stated that even if the patient had been made aware of the services offered by community pharmacists, unless prompted, they would be unlikely to utilise them.

“The evidence is that very few people actually follow through in that and I think it’s because they just don’t get it. And, when we’re talking to them about it, they go home, relax, they’re home from hospital and then they forget about it.” Clinical Services Manager, District general hospital

This led to the development of an application that allows easy identification of the patient's local community pharmacy and sends a referral, including the patient's discharge information, to that pharmacy. The onus will then be on the pharmacy to contact the patient to carry out the services and hopefully increase the uptake.

“Refer to pharmacy application, it's got a link with the PAS system so all the patient demographics are instantly sucked in just by putting the patient's hospital number into the search engine... We can either if you know the name of the pharmacy just type it in or type the telephone number or the postcode, some kind of recognisable thing from the label or what they've told you and that rapidly finds the... pharmacy. But if they're kind of descriptively telling you where it is, there's an interactive map, google maps, which has flags to show you where the patient lives and where the community pharmacies are. And you can use that to help them navigate.” Clinical Services Manager, District general hospital

4.4.3.5 Communication within the discharge process

A recurrent finding was that all stages of the discharge process are heavily reliant on communication. Two main subthemes emerged: communication within the multi-disciplinary team, and using technology for communication.

4.4.3.5.1 Communication within the multi-disciplinary team

Communication within the MDT was important in delivering good patient care. Each step in the discharge process relied on communication between different members of the MDT. Any miscommunication in the process could lead to errors or delays.

“There is no direct mechanism of informing the pharmacist that it is ready so it needs to be some sort of physical communication... so the pharmacy team, either the technician or the pharmacist will either rely on the prescribing doctor or the ward team to alert them that the discharge for a specific patient needs to be processed.” Clinical Services Manager, City centre teaching hospital

One participant thought that at their hospital, the pharmacist needed to play a more integrated role in the team, in order to improve communication, add to the skill mix of professionals and improve patient care.

“So the way I see the pharmacy profession at the moment we work in isolation a bit too much, and I suppose some of the senior members of the team, although they have fantastic relationships and links with consultants, they may not be embedded into the medical teams....there is a role for non-medical prescribers to be part of the team so you'd have that continuity and responsibility for the patient... you may be able to get the best bit of the pharmacists in terms of their attention to detail and accuracy and really understand the discharge process from the pharmacy perspective.” Clinical Services Manager, City centre teaching hospital

Communication between members of the MDT is not only important in direct patient care, but also in the planning and development of care systems used. One example highlighted problems a pharmacy team were experiencing with their electronic discharge system. This system had been implemented without seeking pharmacy input and had led to unforeseen difficulties for the pharmacy team when using the system.

*“It was implemented by a consultant and pharmacy weren't really involved in it. And this is the problem with it really the medicines and all the patient information that needs to be relayed back to the GP.”
Technical Ward-Based Services Manager, City centre teaching hospital*

4.4.3.5.2 Using technology for communication on discharge

Overall, despite some inherent difficulties, many positives were highlighted by the participants regarding the use of technology in the discharge process. There was variation between the hospitals in the extent of technology used for communication. One participant highlighted that because of the technology available, communication between hospital and community should be good quality in order to ensure transfer of care for every patient is safe.

“I think there’s a greater need for clarity of information. I think primary care are now very specific of what the expectation is in terms of the whole discharge letter or clinical summary and we need to make sure that we aspire to give that on every patient basis. With all the communication tools that we've got, not to have the accurate communication I think we recognise that is detrimental.” Clinical Services Manager, City centre teaching hospital

A large proportion of hospitals used both electronic prescribing systems, for inpatient prescribing and electronic discharge systems for writing and sending discharge prescriptions to the GP. As already discussed, a range of different electronic discharge systems were used in hospitals. The same issue applied for electronic prescribing systems. In several hospitals, one programme was used for both inpatient prescribing and electronic discharge, which was thought to make writing the discharge prescription a straight forward process.

“We have electronic prescribing across the whole hospital and so basically when somebody is ready to go home, to prepare the discharge the doctor can then just choose which of the prescriptions that are currently active, and then it goes into the electronic document. And then there's a flowsheet to fill in, of different sections about the patient about why they have been in and all those things.” Chief Pharmacist, Teaching hospital

Three of the hospitals used separate electronic systems for inpatient prescribing and discharge. For the hospitals that had different electronic prescribing and electronic discharge systems, an electronic link between the two had been developed, so that no transcription was required.

“The discharge system is different to our electronic prescribing inpatient system. But you can pull the discharge medication from one system onto

the other so there is an interface.” Chief Pharmacist, District general hospital

Conversely, several hospitals did not use an electronic prescribing system, but did have an electronic discharge system. A highlighted issue with this method of writing discharge prescriptions is that the prescriber had to manually transcribe the medication from a paper medication chart, onto the electronic prescribing system, increasing the risk of transcription error.

*“I think what doesn’t help for us is that we haven’t got electronic prescribing. So the junior doctors or whoever when they write the take home prescription they have to manually go in and type them all in as opposed to just choosing what’s on the screen and what they’ve had as an inpatient. So I think that’s laborious and that’s where errors happen.”
Chief Pharmacist, District general hospital*

There were a variety of mechanisms for sending the completed discharge summary to the GP, including: direct electronic transfer, by email (via NHS.net email address) or by post. Not all GP practices were able to use the electronic discharge systems and the mechanism of choice was dependent on the capabilities of the GP practice.

“There’s some GPs that are not on that system and if they’re in our health economy what we do is print a copy off for the GP and that goes on the path lab mail run the following morning. And for those GPs outside of the area, we post them to them...If they’ve got the necessary software or they’ve agreed to whatever they need to agree with they’ll be on it. Most GPs are but for some reason some of them aren’t.” Clinical Services Manager, District general hospital

The consensus from participants was that an electronic system for transfer of patient information, accessible to all relevant healthcare professionals would be a solution to

ensuring seamless communication between hospital and community. This system does not currently exist in practice.

“Having a technical solution that aids the two-way communication between primary and secondary, you know truly interfacing, not automatically having it populate, but truly having the capability to review and accept changes made by hospital into the primary care record and vice versa... Removes transcription errors and enhances seamless communication” Clinical Services Manager, City centre teaching hospital

The closest system to this ‘ideal’ electronic system that was mentioned was an ‘Integrated Care Record’, which is discussed within theme eight (4.4.3.8 Innovative discharge processes). The electronic systems available have helped to improve the discharge process.

“But the pharmacy bit is getting more and more efficient because the technology is being used to help us instead of prevent us working.” Chief Pharmacist, Teaching hospital

4.4.3.6 Factors affecting the discharge process

This theme provides an insight into the factors affecting the discharge process. Two main factors were identified and are discussed under the following subthemes: hospital pressures and discharge training for staff

4.4.3.6.1 Hospital Pressures

Throughout discussions with each of the participants, the topic of hospital pressures impacting on the discharge process came up repeatedly. This was often cited as a reason for failings within the discharge process.

Hospitals and hospital staff are under pressure from a variety of sources. For example, some of the sources of pressure are from the hospital to meet targets and from patients

to meet their expectations of service and ensure quality patient care in a short space of time.

“In the organisation for the last 6-9 months we’ve had tremendous pressures from Monitor... regarding our performance in our ED targets (95% target) and we’ve had people who’ve come in to review our processes and things.” Chief Pharmacist, District General hospital

All of the pressures appear heightened if the hospital is understaffed. Participants highlighted that there was a deficit of staff, particularly junior doctors.

“Because of the reconfiguration of some of the doctor training, we are going to be looking at a deficit of junior doctors.” Clinical Services Manager, City centre teaching hospital

Due to pressures on healthcare staff, tasks often need to be prioritised in order to cope with the workload. As a result, patient discharge is not always a high priority.

“I also think there is something about the culture... if you’ve got nurses who are very busy, and new patients create more work, pushing patients quickly through the discharge process means that they’ve got to see patients more quickly. And therefore it’s when they’re already busy, and I do think sometimes the process could be faster from that perspective.” Chief Pharmacist, District General hospital

4.4.3.6.2 Discharge training for staff

Another factor highlighted as having an impact on the discharge process was staff training. This included educating prescribers to prescribe earlier and complete discharge summaries appropriately.

“So we have been looking at having training sessions with junior doctors.” Chief Pharmacist, Teaching hospital

The importance of training staff to use newly implemented systems effectively was identified as a finding. One example of where this would have improved practice was given by a participant whose hospital had piloted a pharmacist-led discharge service. Despite the pilot ensuring medication was supplied faster, time until the patient was discharged was not reduced. This was due to other healthcare professionals being unprepared for their role in the new service.

“What we did see in the sort of post intervention data is that time from when the medicines are all on the ward to the patient actually leaving got longer. And we think that’s just due to the nurses not being used to having the drugs ready so early. So we’ve caught them by surprise and they’re not getting the patients ready quick enough. So I think there’s some inefficiencies there that we will have to work through as well.” Chief Pharmacist, City centre teaching hospital

4.4.3.7 Patient Involvement

The theme of patient involvement included the two subthemes: patient counselling, and involving the patient at discharge. The findings suggest that patient involvement in their own discharge from hospital was limited. This was noted throughout all interviews.

4.4.3.7.1 Patient Counselling

Policies at most hospitals recommended that counselling should take place at the point of discharge when the nurse is giving the patient their medication.

“The process is that the nurse will sit down with the patient and go through all of the medicines almost as their last job prior to the patient being discharged. The idea is they go through each and every medicine with them and offer them counselling around the medicines at that time.” Chief Pharmacist, City centre teaching hospital

Participants agreed that ideally, patient counselling should take place throughout the patient's admission, whenever any new medication is prescribed.

“What we try to encourage is counselling throughout the process rather than at discharge. So we are trying to encourage the pharmacists [for any] new items being prescribed, have a conversation with the patient at that point rather than leave it all to the end of the process.” Clinical Services Manager, Teaching hospital

Participants agreed that patients are not always counselled before discharge. One participant in particular mentioned several serious incidents that had occurred in their hospital as a result of this.

“We've not been great at getting involved in counselling on discharge. Although that might change because there have been quite a few incidents where it hasn't been done properly or it hasn't been done at all and patients have ended up with drugs missing. Or in one or two cases patients getting somebody else's medications, so quite serious incidents.” Chief Pharmacist, Integrated care organisation

In addition to participants admitting that counselling was not routinely taking place, a lack of ownership of patient counselling was highlighted. No specific healthcare professional appeared to be responsible for ensuring that counselling was taking place before discharge.

“Who counsels? That's a very good question there. The answer is probably we don't, nobody does it well enough I would say. It is an area I think which is in relative terms poorly managed. So I think doctors think nurses do it, nurses think pharmacists do it and pharmacists think everybody else does it apart from them. I think that pharmacists do it to a certain extent, but they don't do it universally and comprehensively. I think we've got a big gap and that comes up regularly in inpatient surveys

and things where patients say that they don't get enough information about their medicine. I would say it is an area for development still.” Chief Pharmacist, District general hospital

In some cases, pharmacy had no contact with the patient prior to discharge, these patients were given labelled pre-packed medication stocked on the wards for routine surgery. The nurses were responsible for counselling the patient at discharge.

“Surgery is an interesting model because quite a lot of surgical discharges are done by pre-packs and nurse-led discharge.... the nurses would have to do the counselling.” Chief Pharmacist, District General hospital

Several participants reflected that during discharge may not be the most appropriate time to discuss the patient’s medication with them as they receive a lot of information at discharge.

“You know we're trying to give them all the pharmacy information and the number of changes that could be upwards of five or six pieces of information and that could be the same time as their next clinic appointment, person coming out to see them, everything else ... I'm not sure that we are targeting the best time to actually get salient points of information across” Clinical Services Manager, City centre teaching hospital

4.4.3.7.2 Involving the patient at discharge

The findings suggest that when a patient was considered medically fit for discharge, doctors would tell the patient that they could go home, without a realistic timescale of how long the discharge process would take. This leads to the unrealistic expectation that patients can leave straight away and impacts on their experience.

“I think the least effective thing is a consultant telling a patient at 9 o'clock in the morning that they can go home without explaining to them

there is a process that has to be followed.” Chief Pharmacist, Teaching hospital

Participants mentioned patient involvement during a review of their medication and discussions about any supplies they may have had at home. Other patient involvement was limited to the few instances when a visit to their community pharmacist was recommended to discuss their medication after discharge from hospital.

4.4.3.8 Innovative discharge processes

The discharge process has evolved dramatically over the years. One participant discussed how the introduction of a clinical pharmacy service within hospitals changed the system from a supply only service, to clinical involvement in patient care to ensure that treatment is optimal.

“So clinical pharmacy now is well established within the hospital environment and we're not just talking about an accuracy based system where a drug is prescribed and we dispense based off that prescription. We're taking a much more holistic view of the patient and the clinical pharmacists are experts in their area or the rotational pharmacist is an aspiring expert in the area and they're aware of relevant guidelines and recommendations and what is gold standard or best care for any given patient” Clinical Services Manager, City centre teaching hospital

Patients have high expectations of the services provided to them by the NHS. One issue noted was that it is important to manage patient expectations to avoid disappointment and frustration.

“So patient's ready to go home, fundamentally there you have got a customer service issue where a patient has been told they are fit and well to go and you are then in the business of managing their expectations when the discharge prescription may or may not have even been written” Clinical Services Manager, City centre teaching hospital

To address the issues of high pressures and meeting patient expectations, several hospitals had trialled some innovative solutions to the issues with the discharge process with the limited resources at their disposal. Several of the innovative ideas have been mentioned throughout other themes.

4.4.3.8.1 Current innovative solutions

In a bid to reduce the delay whilst waiting for doctors to write the discharge summary, several participants discussed pilot studies where their non-medical prescribing pharmacists wrote the discharge prescriptions instead of junior doctors on some of the hospital wards. This both reduced the time involved obtaining a written discharge prescription and also improved the accuracy of the written prescriptions.

“The whole process took ... 8 hours 37 minutes from the point the patient was told they could go home ‘til them actually leaving the ward. And when we looked at a breakdown of that time, close to 3 hours was for doctors to generate the prescription ... we got a prescribing pharmacist to generate all the TTOs on the medicines admissions unit and what we found straight away was ... for the whole process, it went from just over 8 and a half hours to just over 5 hours.” Chief Pharmacist, City centre teaching hospital

“What we found is the error rates have gone down to just about 0. The baseline was when we did an intervention audit, 1 in 5 prescribed had errors.” Chief Pharmacist, District General hospital

Conversely, one participant argued that pharmacists writing discharge prescriptions was not an appropriate use of non-medical prescribing pharmacists.

“We have pharmacists who can prescribe but we don’t have them writing TTOs... We used to, but then when the law became a bit clearer we took a very strong view about what non-medical prescribing is and isn’t and we

don't think it's writing TTOs for a patient we've never seen before." Chief Pharmacist, Teaching hospital

A number of the hospitals had links with community interface teams, either their own hospital staff who work with patients out in the community, or links with a community-based service who visit patients. Patients could be referred to the teams after discharge for follow-up if they required help with their medication, or were thought to be high risk for readmission.

"Follow up once they have been discharged back home just to make sure they are settled ok with their new medicines... So it's really if we suspect that there's going to be some concordance issues, either through the lack of understanding of complex medicines or just through sheer numbers of medicines that they are getting discharged home on." Chief Pharmacist, City centre teaching hospital

There was anecdotal evidence that this service was beneficial for patients.

"So we've got pharmacy involvement in that so we would refer for medicines usage reviews, review medication for pills and spills if they're falling over or if they are a falls risk. So that's fairly recently set up but working really well. And it also enables us to keep patients at home who might otherwise have been admitted to hospital." Chief Pharmacist, District general hospital

Several of the hospitals had a medicines hotline, which patients could ring after they had been discharged to ask any questions. One hospital was in the process of setting up email access to their medicines hotline to provide easier access for a wider patient audience.

"We are looking at maybe doing beyond just a patient helpline. Because a lot of patients are working and unable to ring so we are thinking about

trying to have a patient portal so you could email in a question as well as ring.” Chief Pharmacist, Teaching hospital

One technology solution was in use in one hospital, called an ‘Integrated Care Record’, which allowed healthcare professionals to input and obtain patient information from both sides of the interface, hospital and community.

“See the GP’s record so we can see the patient’s allergies, all the prescriptions they’ve had recently and any visits they’ve had... In the same way... the GPs in [the area] can see our hospital blood results and they can see all the outpatient letters and all the discharge letters there.” Chief Pharmacist, Teaching hospital

4.4.3.8.2 Suggestions for changes to the discharge process

When asked about any changes that they would like to make to their discharge process, participants were varied in what they thought would improve the system. Some of the suggestions included:

- Having a van to deliver medication to patients after discharge instead of having the patient wait
- Providing pre-recorded counselling tools to patients which are accessible electronically so that they could be watched at a time appropriate for the patient
- Having an all-encompassing technology solution, which would allow read/write access to patient discharge information for all relevant healthcare professionals
- Having pharmacist-led discharge as standard around the hospital
- Discharge prescriptions to be written during consultant ward rounds
- More investment in pharmacy to enable the pharmacy teams to manage all medication related tasks on the wards
- Having community pharmacists dispense the discharge prescriptions and patient collect from them/ have it delivered

- Employing a ward-based pharmacy technician, based in the discharge lounge. So that they would manage the discharge prescriptions, ensure the correct people were contacted and counsel the patients prior to discharge

4.5 Generalised discharge process mapping

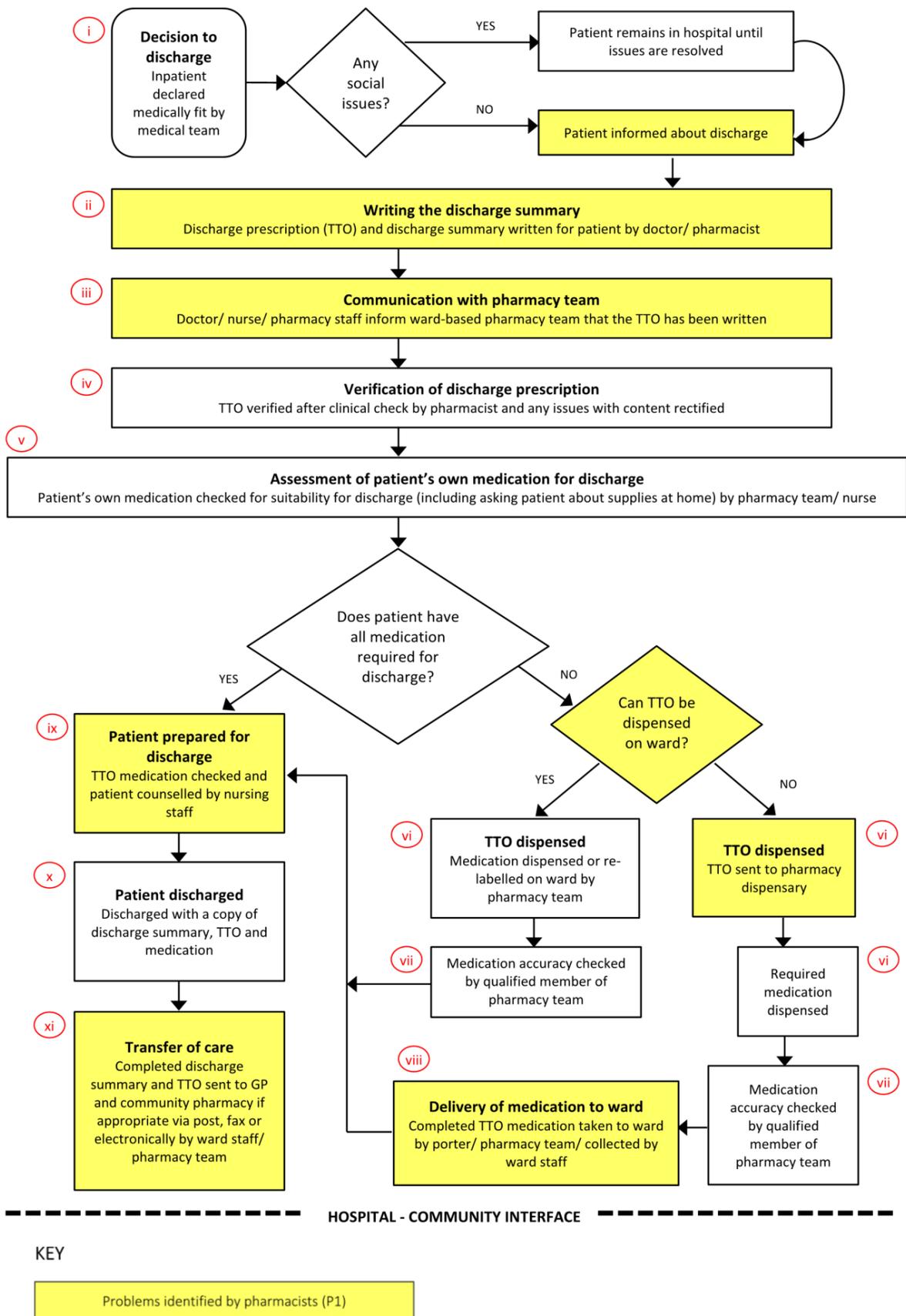
During the interviews, participants were asked to describe the discharge process at their hospital. This alongside prompts from the researcher elicited a discussion of a step-by-step discharge process at each hospital. From gathering and analysing the data, it was found that the general discharge process was similar in all hospitals. Minor differences were found in the members of staff who undertook each step in the process, or in those hospitals who had implemented innovative discharge processes to improve discharge as discussed within the individual themes.

This phase of the PoW aimed to identify the current discharge process and evaluate it. It was important to get to the root of the problems at discharge and one way of helping to do this was to map the process out. Not only does mapping out the process help to clarify a complicated multistage process, it also helps to identify areas where improvements can be made. The steps involved in the discharge process are mapped in the form of a flowchart (see Figure 4-1), based on the standard discharge processes for all hospitals that participated in the study. This is a generic process that could be applied to each hospital that participated in the interviews, and therefore does not take into account any innovative schemes, any steps in the process from hospitals that did not take part, or any emergency situations. Subsequently, this model is applicable to the hospitals that participated in this phase, however individual hospitals across the UK may show minor variance from this generalised model.

The stages where issues were identified within the discharge process have been highlighted on this generalised model, using the findings discussed throughout this chapter. The shaded areas on the flowchart represent the stages in the discharge process where problems were identified in the findings.

This map of the discharge process in combination with the findings around where issues arise in the process will provide the foundation for the development of the new model of care.

Figure 4-1 – Generalised discharge process in acute hospitals across North West England showing issues identified by pharmacists



A stepwise discussion of the generalised discharge process is detailed below. The labelled roman numerals refer to the individual steps of the discharge process, as seen in Figure 4-1.

- (i) After a medical review, when a patient is deemed medically fit, a consultant or other senior medic will make the decision to discharge the patient. The patient is told at this point that they can be discharged.
- (ii) After the decision to discharge has been made, a discharge prescription (TTO) and summary of the inpatient episode are written. This is traditionally carried out by a doctor involved in the patient's care during the admission. This may also be carried out by a non-medical prescribing pharmacist.
- (iii) The ward based pharmacy team are made aware that the discharge prescription is written. If there is no ward based pharmacy team, this communication will be with the pharmacist in the pharmacy dispensary.
- (iv) The next stage is the verification of the discharge prescription by a pharmacist, to ensure that the medication prescribed at discharge is complete, safe and all required information is included. The pharmacist identifies if there are any issues with the discharge prescription and contacts the prescriber to rectify them if applicable.
- (v) A full list of the patient's medication is documented on the discharge prescription, but only those required will be supplied. The patient's medication on the ward is compared with the medication listed on the discharge prescription. The patient will usually then be asked what medication they have at home and the discharge prescription will be annotated to say which, if any of the medications need supplying on discharge. This role is usually by the ward pharmacy team, i.e. the technician, or pharmacist if a technician is not available. In some cases, nursing staff will be involved in asking the patients about their medication supplies at home, or they may send any medication to the

pharmacy dispensary for checking there. This would only be if the ward based pharmacy team was not available.

- (vi) Dispensing the required medication for discharge is traditionally done in the pharmacy dispensary, although if the facilities are available, it can be done on the ward. Regardless of where the prescription is dispensed, a member of the pharmacy team, usually pharmacy assistant or technician, will label and dispense the required medication on the discharge prescription.
- (vii) A suitably qualified member of the pharmacy team will then perform an accuracy check to ensure that the correct medication, quantities and directions for use have been supplied for the patient.
- (viii) For discharge prescriptions dispensed in the pharmacy dispensary, the completed discharge prescription is delivered to the ward by the pharmacy team, a porter or collected by nursing staff from the ward. For those dispensed on the wards, no delivery is required as the medication will be ready on the ward.
- (ix) Once the medication and completed discharge summary is ready on the ward, and any other arrangements have been put in place, the patient can then be prepared for discharge. The discharge medications are checked against the prescription and the patient is counselled, usually by the nurse.
- (x) The patient is then discharged with a copy of the discharge summary and medication.
- (xi) The completed summary including the prescription is sent to the patient's GP and the community pharmacy if appropriate. Other healthcare professionals may also be sent a copy on an individual patient need basis, for example a district nurse or the care home.

4.6 Discussion

Through analysis of the interview data, the current discharge process at each hospital was identified, and a generic discharge process mapped. This generic discharge process includes a stepwise description, for reference as can be seen in Figure 4-1. An evaluation of each stage of the current discharge process was achieved, which allowed conclusions to be drawn as to the effective and ineffective parts of the current discharge process.

The findings determined that the discharge process was similar at each hospital and the issues highlighted by participants appeared to be common across the range of acute hospitals that participated.

The separate themes are discussed, followed by a discussion of the findings overall, considering the themes collectively

4.6.1 Planning for discharge

Discharge is known to be a complex intervention, with multiple obstacles within and outside of the hospital setting.⁽¹⁵⁵⁾ It involves a range of different services and requires planning and coordination to ensure that quality patient care is not compromised. The consequences of not doing this can have a negative effect on patients, their family and carers, the hospital itself and people needing hospital treatment.⁽⁵³⁾

Currently, the discharge process is poorly coordinated in most of the participating hospitals. There are too many different members of staff involved with no-one overseeing the process. As mentioned in the findings, several hospitals are looking to integrate a pharmacist prescriber into the medical team. This could ensure the pharmacist is aware of any upcoming patient discharges and transfer the responsibility of coordinating patient discharge to the pharmacist.

Making a single health or social care practitioner responsible for coordinating the person's discharge from hospital is clearly beneficial and fits in with current NICE guidance.⁽⁵⁶⁾ As pharmacy is heavily involved on the day of discharge, it would appear a

logical step to for them to oversee the process. The idea of pharmacist-led discharge was trialled in one hospital as discussed in the findings. An adaptation of this should be considered in the new model of care.

From the findings, it would appear that discharge planning was occurring early in the inpatient stay, demonstrating that hospitals in this phase were working towards current national guidance.^(51,55,156) However discharge planning was not used to its full advantage. Current literature suggests that focusing on a predicted date of discharge increases the likelihood of discharge by this date and may reduce the length of stay in hospital.⁽¹⁵⁷⁾ Using a predicted date of discharge in combination with one person coordinating discharge could improve preparation for patient discharge.

Linking the findings that patients discharged out of hours are unlikely to be seen by a pharmacist and the risks associated with not having a pharmacist verify a discharge prescription, clearly not having a 24/7 clinical pharmacy service is a problem. When developing new models of care, out of hours discharge needs to be considered so patients can be discharged safely at any time of day. With the push towards seven day working within the NHS,^(14,154) working patterns may change and this may no longer be an issue. Until those changes are made however, mechanisms of ensuring safety for patients discharged out of hours need to be put in place. Developing a new model of care that improves efficiency at discharge may limit the need for patients to be discharged out of working hours.

4.6.2 Discharge documentation

The handover of patients when discharged from hospital to community is a complicated and multifactorial process. According to a 2014 patient safety alert, poor communication during transfer of care is identified as a particular area of risk and accounted for approximately 33% of the 10,000 patient safety incidents reported to the National Reporting and Learning System between October 2012 and September 2013.⁽¹⁵⁸⁾ This highlights just how important it is to send a complete and accurate

summary of events and medication over to the patient's GP, to allow them to provide appropriate ongoing care.

From October 2015, transfer of discharge information had to be by either secure email, or direct electronic transfer.⁽¹⁵⁹⁾ In addition to preparing hospitals for this change from the paper-based system, electronic discharge systems facilitate the transfer of information to the GP within the 24-hour target. The vast number of electronic discharge systems available was highlighted as an issue. One common platform would reduce the risk of confusion for all electronic system users.

Problems associated with incomplete information regarding medication on discharge are well-documented.⁽⁵¹⁾ The study findings support the current literature that these problems are still common. The pharmacist could be a safety net to add any relevant medication information and prevent incomplete discharge documentation getting sent to the GP.

Preparation of the discharge prescription and discharge summary for an inpatient episode is traditionally carried out by a junior doctor involved in the patient's care during the admission.⁽¹⁶⁰⁾ The findings suggest that this is occurring in most hospitals. Within the findings, there was a general consensus that waiting for junior doctors to write discharge prescriptions is an inefficient use of time and a major cause of delay in the discharge process. This is an important step in the discharge process that will require amendment in the new model of care.

As highlighted, the verification of the discharge summary by a pharmacist was deemed important to prevent medication incidents from occurring on discharge. While it is not always possible to provide a clinical check of every prescription, it is important to ensure that procedures enforce this for discharge summaries and this will be incorporated as standard in the new model of care.

4.6.3 Supply of medication for discharge

The findings from this theme suggest that participants felt that they are providing unnecessary medication to the patient and this is an area that needs to be addressed when developing a new model of care. This stage of the discharge process is time consuming, especially for those discharge prescriptions that require dispensing in the pharmacy dispensary. This impacts on the patient who has to wait for the medication to be supplied, but equally is a waste of resources in terms of staff labour and cost of supplying unnecessary medication.

The findings suggested that patients are often told by ward staff that waiting for their medicines in pharmacy is the cause of their hospital delay. Phase 2 of the PoW will address the issue from the patient perspective to determine their opinion. Regardless of the cause, the wait for medicines needs to be reduced to improve the process. Several mechanisms were in place to try to reduce the time taken for pharmacy to dispense medication. Ward based dispensing is becoming common, which has proved to be quicker. For prescriptions dispensed in pharmacy, porters have been employed to speed up delivery of medication to the wards.

4.6.4 Post-discharge community pharmacy involvement

One important finding was the lack of community pharmacy involvement after discharge. Currently literature suggests that community pharmacists are not well utilised after discharge and this phase demonstrated that few hospitals refer their patients for services provided by community pharmacies. Patients may have a long-standing relationship with their community pharmacist and encouraging them to visit post-discharge can raise patient awareness of the support that is available to them at their community pharmacy.

The findings from this study support previous studies suggesting there is a lack of communication between the hospital and the patients' community pharmacist⁽⁵⁴⁾ and that there are very few discharge medication reviews undertaken.⁽⁸⁷⁾ Community

pharmacy services after discharge are an underused resource that should be incorporated when developing new models of care for patient discharge.

4.6.5 Communication within the discharge process

MDTs can bring benefits to patient care when communication is timely and relevant, but problems can arise when communication is poor or responsibilities are unclear.⁽¹⁶¹⁾ A lack of communication within the MDT causes issues not only from a clinical perspective, but also in planning future services. Using the example discussed in the findings (see section 4.4.3.5.1 Communication within the multi-disciplinary team), if valuable input from different healthcare professionals had been sought, the electronic discharge system would have been user friendly for all healthcare professionals needing to use the system. This example demonstrates that a range of stakeholders should be involved in the development of a new model of care to take into account different roles and requirements of the new model.

As discussed in section 4.4.3.5.2 Using technology for communication on discharge, not all hospitals use the same system for electronic prescribing and electronic discharge. The electronic link between electronic prescribing and electronic discharge systems appears to be a solution for the issue of using two separate systems, however since the interviews took place, an audit in one of the hospitals found that over half of electronically generated discharge letters (n=25, 53.2%) did not contain a complete list of medicines.⁽¹⁶²⁾ This would require further information to determine whether this was due to human error or the electronic interface itself, but this could potentially lead to problems with transfer of information and therefore continuity of care.

A vast number of different electronic discharge systems were in use. Within the thirteen hospitals, seven different systems were used. This can cause confusion for healthcare professionals, who may need to be familiar with a number of systems within their job role. GP practices may not have the technology available to integrate a variety of systems. This also applies to the different electronic prescribing systems. Although each individual hospital has chosen the systems suitable for their specific needs, this limits

the possibility of connecting systems used in different care settings. This strengthens the argument that a solution for many of the issues on discharge would be a single electronic system, where each care setting has read/write access to the same patient information, for a smooth transfer of care for patients. Despite the progress in technology, good communication between healthcare providers is essential to ensure that the discharge process runs smoothly.

The different systems will also be confusing for patients. They may have to follow different processes depending on the systems and it may also not be easy for them to understand the information or layout of different summaries. Although outside the scope of this study, further work needs to be done to determine if the electronic discharge summary has had an effect on patient understanding of discharge instructions.

4.6.6 Factors affecting the discharge process

As long-term and complex conditions become increasingly common in an ageing population,⁽¹⁶³⁾ pressures on the NHS are more evident than ever. The demand for hospital resources is increasing, without the financial support to provide them. It is difficult to meet demands with limited resources. The limited funding available is a well-publicised problem for the NHS. Subsequently, there is a greater need to ensure work is streamlined and efficient. Having an inefficient discharge process not only prevents patients being discharged in a safe and timely manner, but also impacts on patient flow through the hospital and therefore patients waiting in the emergency department. Quality of patient care will also be affected by an inefficient and time consuming discharge system. Lack of funding for the NHS is not a short term issue and new more efficient models of care need to be developed to work around the lack of resources available to NHS hospitals. For the reasons discussed, it is important that any new models of care that are developed take into account the hospital pressures. A process is required that will ease the burden on the hospital staff instead of add to it.

Many of the issues within the discharge process highlighted by participants could be improved by providing training. Certain areas are lacking when it comes to staff training.

It is important to note that any lack of staff training highlighted, is likely as a result of the pressures on NHS hospitals.

Junior doctors do not receive formal training for writing discharge prescriptions. One study highlighted that over a third of junior doctors felt inadequately prepared for writing discharge summaries.⁽¹⁶⁰⁾ Training packages led by pharmacists or another suitably experienced member of staff should be developed for junior doctors or medical students to improve the quality of the discharge summaries produced.

4.6.7 Patient Involvement

The involvement of patients, carers, and families is crucial to successful and timely discharge planning⁽⁵⁴⁾ From analysis of the data, the extent of patient involvement in the process appeared minimal, although this may be due to the pharmacists discussing the discharge process from an operational point of view. Consequently, in the latter interviews, questions were asked around the perspective of the patient. In light of the recent patient and public involvement agenda within health and social care research, there is an emphasis on involving the patient in decision making. This too should be true for service development and this will be included in the development of a new model of care for discharge from hospital.

Patient counselling improves medication compliance and reduces hospital readmissions.⁽¹⁶⁴⁾ Standards published by the Royal Pharmaceutical Society recommend that the pharmacy team provides information about medicines to patients and their carers before discharge.⁽¹⁶⁵⁾ From the literature, patients commonly state that they do not receive enough information about their medicines before discharge from hospital.⁽⁹³⁾ The findings from this phase support this as patient counselling was highlighted as an area for improvement by participants.

The point of discharge may not be the most appropriate time to discuss medication with the patient, and the new model of care should include counselling so that patients are discharged safely from hospital whilst getting the most from their medication. One

suggestion would be that for patients who are unable to take in the information, follow up by a community pharmacist may be an opportunity to provide additional counselling to a when the patient is settled at home.

Mechanisms to involve patients in their own care need developing, as self-care is important. One small study demonstrated that educating patients about self-care after discharge and through facilitation of patient self-care throughout their stay, led to a reduction in readmission or emergency department visits at 30 days post discharge.⁽¹⁶⁶⁾ It would appear from the findings that this is not being encouraged currently by hospitals across the North West. One important aspect of self-care is being able to get reliable information about the medication that they are taking. Enabling patient access to care through easy and accessible methods could improve the use of services and lead to an increase in adherence with medication through thorough understanding. Community pharmacies are an under-used resource, as they could provide help after discharge for patients as previously discussed. In addition, having access to a medicines helpline, a pharmacist at the hospital or an interface team could help patients become more informed and therefore involved in their own care.

4.6.8 Innovative discharge processes

Due to the shortfalls in the current discharge process, patients' expectations and hospital demands are not always met. Hospitals have therefore attempted to improve discharge by piloting innovative solutions. Utilising the clinical pharmacy service is important to improve the process, and the phase found several innovative examples of this happening across the North West. Many of the solutions to improve the discharge process could be adapted and used nationally.

One interesting finding was the common use of pharmacists writing the discharge prescription. All of the hospitals had at least considered doing so and most had piloted this new model of care. Participants cited preliminary data demonstrating the benefits of having a pharmacist write the discharge prescriptions instead of the medics. One

reservation with this is the risk of deskilling junior doctors, as these prescribing opportunities are when the junior doctors will learn to prescribe appropriately.

One development issue for pharmacists writing discharge prescriptions is that there will be occasions when pharmacists have to write discharge prescriptions for patients when they have not been involved with their care, or perhaps in an area of medicine with which they are not familiar. Although this may be unavoidable in certain circumstances, the new model of care should be developed to reduce this risk. Ensuring that the pharmacist prescriber is an integrated member of the medical team, involved in ward rounds and therefore more likely to have met the patient is one way to reduce the risk.

Many of the innovative solutions aim to encourage patients to participate in self-care, which is beneficial for patients and can help with the medicines optimisation agenda. Unfortunately, many of these innovative ideas have not become standard practice. The highlighted lack of current solutions to issues with the discharge process demonstrates a need for the development of new solutions to overcome issues that occur at discharge.

4.7 Conclusion

To summarise this phase, a variety of themes emerged from subjects that were important to the participants, who were professionals familiar with the problems faced when discharging patients from hospital. The themes discussed individually provide detailed evidence of the areas that impact – both positively and negatively – on the discharge process. All of the themes are useful in describing individual areas that are important in ensuring the discharge process is safe, effective and efficient. Many of the themes discussed contain overlapping information as for the discharge process to function effectively, each individual component has to occur. Breaking down the information gathered during the study is important to elicit the details of where problems and examples of good practice arise during discharge, which was undertaken during the discussion of each of the eight themes. This highlighted a number of important findings, such as lack of staff training on patient discharge, lack of patient involvement in the discharge process and poor communication between hospital and

community pharmacists. Many of the problems highlighted by the study are longstanding and attempts have been made to overcome them. Most of the innovative solutions to these problems suggested by the participants were based on small-scale pilots and have not become part of routine practice.

It is equally important however, to step back and look at the bigger picture, especially whilst developing ideas for a new model of care. By combining the eight themes into broader organisational categories, it becomes easier to view the overall study findings. These broader themes can be seen in Table 4-3.

Table 4-3 – List of phase 1 organisational categories

Organisational category	Theme
Stages of the discharge process	Planning for discharge Discharge documentation Supply of medication for discharge
Collaboration at discharge	Post-discharge community pharmacy involvement Communication within the discharge process Patient involvement
Factors affecting the discharge process	Factors affecting the discharge process
Innovative discharge processes	Innovative discharge processes

The themes relating to the ‘stages’ within the discharge process – planning for discharge, discharge documentation and supply of medication for discharge – were combined. By doing this, it became clear that the problems at discharge are not caused by one particular stage that could easily be addressed, but are occurring as a result of different stages of discharge and are caused by many factors. The discharge process does not just need improvement in one particular area or stage, but in all areas. The new model of care for discharge will be developed based on the positive and negative findings and will focus on improving patient discharge as a whole addressing all of the highlighted issues.

The themes: patient involvement, communication within the discharge process and post-discharge community pharmacy involvement all highlight the need for improved communication and collaboration at discharge, with different healthcare professionals and the patient themselves. Collectively, these themes can be captured by an organisational category relating to collaboration within the discharge process. Improving collaboration is another overarching issue that needs to be addressed when developing the new model of care. Designing an improved model of care will not provide a better discharge service without communication and involvement of all relevant parties.

Importantly, some of the factors affecting the discharge process will still be a problem even in the new model of care. Resources and staff are limited within the NHS and the new model of care should be designed in a manner that does not disadvantage the already overburdened system. Working to produce a streamlined system that runs within the limited resources is key. The innovative discharge ideas implemented by different hospitals as pilots are a useful tool to start developing ideas and determine what works well.

The research method has successfully met the study aim by identifying and evaluating the current discharge process used at acute NHS hospitals across North West England. This phase of the PoW was the first study to identify and evaluate the discharge process in acute NHS hospitals across North West England. This research identified that participating hospitals operated similar discharge processes. Furthermore, each of the objectives for this phase were met. The current discharge process was identified and mapped, this included which member of staff was responsible for each stage of the discharge process. The findings established which stages of the process work well and where problems exist along with reasons for the issues. The issues highlighted were similar across the acute NHS hospitals. The study also identified a range of innovative solutions and ideas or suggestions that participants had to improve patient discharge from hospital. Finally, the community pharmacists' role at discharge was investigated from the perspective of hospital pharmacists. The findings from this phase support

existing evidence around issues with the discharge process and demonstrate that the current discharge process has many issues and is substandard.

A number of recommendations resulted from these findings were taken forward in the development of the new model of care. The examples of good practice will be incorporated and areas causing common problems at discharge will be removed where possible. A range of healthcare professionals need to be involved in the design of the new model of care, both hospital and community based. Equally, patients – as service users – should be involved in the development of care provision services where possible, in order to improve patient experience when the service has been implemented. Although outside the scope of this study, further work could involve development of a formal discharge training programme for junior medical staff.

This chapter has discussed in detail the findings from phase 1 (Evaluating the current discharge process from the pharmacists' perspective) of the PoW and highlighted areas that will be taken forward to develop a new model of care in phase 3. The results of this phase were published in the *European Journal of Hospital Pharmacy*.⁽¹⁶⁷⁾ See Appendix 21 – Published journal article 'Hospital patient discharge process: an evaluation'. Having achieved all that was set out in phase 1, the next chapter will present the findings from phase 2 of the PoW (Evaluating the current discharge process from the patients' perspective) Phase 1 has given an indication of what is happening in practice from an operational and managerial perspective. Due to the highlighted lack of patient involvement in the findings, phase 2 addresses the patients' perspective of the current discharge process.

Chapter 5 – Phase 2: Evaluating the current discharge process from the patients’ perspective

Having described and discussed the findings from phase 1 (Evaluating the current discharge process from the pharmacists’ perspective) of the PoW in the previous chapter (Chapter 4), this chapter will review and discuss the findings from phase 2. This second of four phases within the PoW, involved a questionnaire survey to determine patient perceptions of the current discharge process.

5.1 Introduction

As mentioned in the outline for the PoW (section 3.2 Overview of programme of work), to address the problems at discharge, it is important to determine where and how the problems arise. Whereas phase 1 of the PoW identified problems and examples of good practice within the discharge process from an operational and managerial perspective, phase 2 assessed the same process from the patient’s perspective. This was to provide a clearer picture of where good and poor practice exists at discharge. As discussed in chapter 2 (see section 2.7.4 Patient perspectives of discharge), evidence in the literature regarding patient perspectives of hospital discharge is limited and conflicting. This phase adds rigour to the PoW by exploring the patient-facing themes identified in phase 1 from the patient perspective. This allows the opinions and experiences of patients to be compared and contrasted with those of the pharmacists in phase 1 during triangulation of data in phase 3 (see Chapter 6 – Phase 3: Developing a new model of care for patient discharge from hospital).

The findings of this phase are important to the overall PoW to inform the design of a new model of care for patient discharge which incorporates successful aspects of current systems and removes any steps that commonly lead to problems. Chapter 2 (see section 2.9 Developing new models of care) discusses the importance of taking into account patient experience during development of a new model of care. Developing a

new model of care that is based around patient priorities and needs should lead to a positive patient experience when it is implemented.

5.2 Method

As detailed earlier (see section 3.4.3 Phase 2 research method) this phase of the research was a questionnaire-based survey completed by inpatients at the RLBUHT to explore the current discharge process from the perspective of NHS patients. As previously discussed (section 3.4.4.1 Questionnaire development), questions were developed based on the issues identified in the patient-facing themes from phase 1 of the PoW (see section 4.4.3 Themes). These four themes include: planning for discharge, medication supply for discharge, post-discharge community pharmacy involvement and patient involvement. In addition to exploring the phase 1 themes, patients were asked about their overall opinion of the discharge process and if they had any suggestions for improvement.

The data collected were entered into an SPSS database and descriptive statistics were used to analyse the data (see section 3.4.5 Phase 2 data entry and analysis for further detail).

5.3 Aim and Objectives

As mentioned in section 3.4.2 Phase 2 aim and objectives, the aim of this phase was to explore patient perceptions and experiences of the current discharge process at RLBUHT.

The objectives were to:

- Investigate patients' views of their discharge from hospital
- Explore issues identified in the phase 1 findings from the patients' perspective
- Identify patients' suggestions for improving the current discharge process
- Explore current relationships between patients and community pharmacists

5.4 Findings

The findings are presented in this chapter under the following subheadings:

- Demographics
- Patient experience of discharge and suggestions for improvement
- Patient involvement
- Post-discharge community pharmacy involvement

Response rates to individual questions are indicated throughout the tables in the findings section within the response column. Responses to each question are reported by the percentage (%), followed by the number of respondents selecting each answer (n) and the response rate for the question (N). The response rates differ between individual questions due to not all respondents answering every question.

5.4.1 Outcome of the pilot

A pilot study was carried out with four patients from the RLBUHT. The pilot highlighted an important issue with the procedure. Many of the questions in the questionnaire only applied to patients who had been told that they could go home. This was highlighted by one case where the nurse knew that a patient was due for discharge that day, but the medical team had not yet informed the patient. This was taken on board during data collection and gatekeepers were asked to recommend patients that had been informed about their discharge. The pilot demonstrated that other aspects of the research process, the recruitment process and obtaining consent were successful. It also found that the questionnaire yielded suitable relevant data and no amendments to the questionnaire were necessary.

5.4.2 Demographics

Data collection took place on different days of the week during the period 30th November 2015 and 7th February 2016. A total of 104 patients were approached at their bedside on wards to participate. The full range of wards are shown in Table 5-1. All of those approached agreed to participate (100% return rate), although response rates to individual questions varied as not every respondent answered all questions.

Respondents were all patients, no family members or carers completed the questionnaire on behalf of a patient. In some circumstances (for example poor eyesight with no glasses, patient unable to write) the patient requested that the researcher complete the questionnaire on their behalf. In these cases, the researcher read the questions out verbatim and did not elaborate so as not to lead the respondent's answers. The demographic characteristics of the study respondent in phase 2 are shown in Table 5-1.

Table 5-1– Demographic characteristics of phase 2 respondents

	Response
Age in years mean (SD)	55 (18)
Age group	% (n/N)
18-35	17% (18/104)
36-55	34% (35/104)
56-75	37% (38/104)
76+	12% (13/104)
Gender	
Male	60% (62/104)
Female	40% (42/104)
Inpatient ward	
Medical ward	38% (37/96)
Surgical ward	22% (21/96)
ESAU	21% (20/96)
AMU	19% (18/96)

The average age of respondents was 55 years with an age range of 19 to 93 years. The majority, (37%, 38/104), of respondents fell into the age group 56–75. More males (60%, 62/104) than females (40%, 42/104) completed the questionnaire.

Patients were recruited from a range of admissions, medical and surgical wards, the acute medical unit (AMU) and the emergency surgical admissions unit (ESAU). The majority of respondents were from medical wards (38%, 37/96), with a relatively even distribution of respondents from the other three ward areas.

One question asked if patients took regular medication prior to admission to hospital and if so, the number of daily medicines that they took. A breakdown of the findings is shown in Table 5-2.

Table 5-2 – Patients taking regular medicines before hospital admission

Question	Response % (n/N)
Did patient take regular medicines	
Yes	71% (74/104)
No	29% (30/104)
Number of regular medicines taken daily	
1-4	32% (24/74)
5-9	43% (32/74)
10 +	22% (16/74)
Don't know	3% (2/74)

The study findings indicate that the majority of respondents (71%, 74/104) were taking regular medication prior to admission to hospital. Of these patients taking regular medication, the majority were taking five or more medications daily as can be seen in Table 5-2.

5.4.3 Overall patient experience and suggestions for improvement

Patients were asked about their opinions and experiences of hospital discharge, along with any suggestions for improvement of the process. The findings will be discussed within the section and have been broken down into the following subheadings: patient experience of their discharge from hospital, perceived reasons for delay to patient discharge, suggestions for improvement of hospital discharge.

5.4.3.1 Patient experience of their discharge from hospital

Patients were asked to rate their experience of discharge from hospital. Overall, the majority of patients found that their discharge experience was either good (57%, 56/98) or satisfactory (32%, 31/98). 11% (11/98) of patients rated their discharge as poor. The results are displayed in Table 5-3.

Table 5-3 – Patient experience of discharge

	Response % (n/N)
Patient rating of discharge experience	
Good	57% (56/98)
Satisfactory	32% (31/98)
Poor	11% (11/98)

Respondents were asked if there were any positive or negative aspects about their discharge. Common themes within the positive comments related to being able to go home and the good, caring staff. For negative aspects, patients commonly referred to the long wait for their medicines. The specific positive and negative comments are discussed within the relevant findings sections throughout this chapter.

5.4.3.2 Perceived reasons for delay to patient discharge

Determining a true representation of how long the patient waited for their discharge in total would not be possible, as the patient had not left the hospital at the time they completed the questionnaire. Patients were therefore not asked how long their wait had been. However, several patients commented that a negative aspect of their discharge was the long wait to be discharged.

Patients were asked which tasks they were waiting for to be carried out before they could go home. The perceived reasons for delay to patient discharge are shown in Table 5-4. As patients could select more than one option, the results are therefore not mutually exclusive.

Waiting to receive discharge medicines was the most commonly cited reason for patients' perceived delay to their discharge (70%, 64/92). For those that selected 'other', the reason given was waiting on a review by another healthcare professional before they could be discharged, this included specialist nurses or another medical team within the hospital.

Table 5-4 – Patients’ perceived reasons for delay to discharge

	Response % (n/N)*
Factors causing delay to patient discharge	
Waiting for discharge medicines	70% (64/92)
Waiting for test results	14% (13/92)
Waiting for further tests	10% (9/92)
Waiting for transport home	10% (9/92)
Unsure	7% (6/92)
Other	7% (6/92)
Waiting for social care arrangements	2% (2/92)
*categories not mutually exclusive	

5.4.3.3 Suggestions for improvement of hospital discharge

Respondents were asked if the process of supplying discharge medicines could be improved. Responses are given in Table 5-5.

Table 5-5 – Patient suggestions for improvement of discharge

	Response % (n/N)
Could the supply of discharge medicines be improved?	
No	45% (41/91)
Don’t know	32% (29/91)
Yes	23% (21/91)

Almost one quarter (23%, 21/91) of respondents felt that the service of supplying their discharge medicines could be improved. These respondents made suggestions for improvement of the service in a free text answer box in the questionnaire. Their responses included improving speed and communication, and having the option of collecting discharge medicines from an outside pharmacy to save time. One respondent who was clearly familiar with the technology available in the community suggested that a community-based electronic system to collaborate and organise the prescription could be helpful. EMIS Web was the example given, which is an integrated healthcare record system that allows patients to order repeat prescriptions from their GP. Two

respondents thought that prescriptions should be organised and completed the day before discharge.

Patients were then asked if the hospital could help them with their medicines after discharge. Table 5-6 presents respondents' views on whether hospital staff could help patients with their medicines after discharge.

Table 5-6 – Hospital assistance with medicines after discharge

	Response % (n/N)
Could the hospital help patients with their medicines after discharge?	
No	72% (69/96)
Don't know	21% (20/96)
Yes	7% (7/96)

Most respondents (72%, 69/96) did not think that hospital staff could support them with their medicines after discharge, with one respondent commenting 'people in the community should help me, it should be my GP in charge'.

Only 7% (7/96) of respondents felt that hospital staff could support them with their medicines once they had been discharged home. Patient suggestions for this support included: delivery of medicines to the patient, ability to contact or see patient again if they need help after discharge. One patient commented that a nurse would be visiting them at home daily to administer injections that they were not able to do themselves. To add to this, patients were also asked where they would prefer to collect the discharge medicines from, if they had a choice. These results are presented in Table 5-7.

More patients would prefer to collect their medicines from a community pharmacy of their choice (52%, 47/91) than wait to collect their medicines in hospital (39%, 36/91). A small proportion (9%, 8/91) would like to go through their GP surgery to collect. Additionally, two of the respondents that chose community pharmacy as an option added that they would like a delivery service alongside this.

Table 5-7 – Patients preferred place to collect discharge medicines

	Response % (n/N)
Where would patients prefer to collect discharge medicines from?	
Community pharmacy of patient’s choice	52% (47/91)
Hospital	39% (36/91)
GP surgery	9% (8/91)

5.4.4 Patient involvement

Phase 1 found that patient involvement in the discharge process was limited (see section 4.4.3.7 Patient Involvement). The findings within this section explore whether patients feel that they are involved in the discharge process. This section encompasses patient involvement during different stages of the discharge process, as well as communication and patient counselling.

5.4.4.1 Planning for discharge

Patients were asked if they felt that they had been involved in their own discharge planning. Their responses can be seen in Table 5-8.

Table 5-8 – Patient involvement in discharge planning

	Response % (n/N)
Patient involvement in discharge process	
Strongly agree	22% (20/92)
Agree	41% (38/92)
Neutral	13% (12/92)
Disagree	11% (10/92)
Strongly disagree	13% (12/92)

A combined total of 63% of respondents either agreed (41%, 38/92) or strongly agreed (22%, 20/92) that they were involved in planning their discharge. Whereas a combined total of 24% disagreed (11%, 10/92) or strongly disagreed (13%, 12/92) that they had been involved and 13% (12/92) were neutral.

When asked if there were any positive or negative aspects about their discharge experience, several of the responses were related to planning for discharge. When asked if there were any positive aspects about their discharge, patients commented that getting to go home and free a bed was a positive. Several patients also mentioned that the process appeared well organised. Conversely, one patient felt that they were getting sent home too early and another was made anxious by mixed messages from different doctors about whether they were ready to be discharged or not. Another patient commented that they would have liked more notice before going home to make arrangements with family members.

One particularly surprising example of poor discharge planning was documented by one patient. Whilst waiting for test results and then discharge, their bed was given to another patient whilst they were still on the ward. This was extremely embarrassing for the staff and patients involved. This is an unfortunate example of what can happen when multiple people are involved in coordinating patient discharge and patient flow throughout the hospital.

5.4.4.2 Communication with patients throughout the discharge process

Patients were asked about the communication they had received during the discharge process. The findings are shown in Table 5-9.

The study found that a combined total of 74% of patients strongly agreed (25%, 24/95) or agreed (49%, 46/95) that the discharge process was explained to them. Similarly, 79% of respondents strongly agreed (34%, 32/94) or agreed (45%, 42/94) that they understood the discharge process. One patient commented that having prior experience of discharge meant that they were more aware of what was likely to happen this time round at discharge.

Only 57% of patients either strongly agreed (21%, 20/94) or agreed (36%, 34/94) that they were kept updated with the progress of their discharge.

Table 5-9 – Communication with patient throughout their discharge

	Response % (n/N)
Was the discharge process explained to patients?	
Strongly agree	25% (24/95)
Agree	49% (46/95)
Neutral	18% (17/95)
Disagree	6% (6/95)
Strongly disagree	2% (2/95)
Did patients understand the discharge process?	
Strongly agree	34% (32/94)
Agree	45% (42/94)
Neutral	15% (14/94)
Disagree	2% (2/94)
Strongly disagree	4% (4/94)
Was patient updated on progress of discharge?	
Strongly agree	21% (20/94)
Agree	36% (34/94)
Neutral	32% (30/94)
Disagree	9% (8/94)
Strongly disagree	2% (2/94)

Messages were mixed regarding communication of information. When asked if there were any positive aspects of their discharge, some respondents commented on the helpful, caring staff and good communication between staff and themselves. Conversely, one patient commented that they were given misinformation. A further example of poor communication was a patient who had been sent to another ward from the admissions unit after being told that they could go home, with no explanation as to why. At the time of completing the questionnaire, they were still waiting for their medicines and to go home.

5.4.4.3 Patient counselling

Patients were asked if any changes made to their regular medicines during their hospital admission were verbally discussed with them. If changes had been discussed, respondents were then asked if they understood what medicines they should be taking after discharge. The responses given are shown in Table 5-10.

Table 5-10 – Counselling on any changes to patients’ regular medicines

	Response % (n/N)
Changes to medicines during admission	
No changes to medicines	56% (56/100)
Changes to medicines	32% (32/100)
Patient didn’t know	12% (12/100)
Was patient clear about what medicines to take after discharge?	
Fully	63% (20/32)
Partly	31% (10/32)
Not at all	6% (2/32)

The majority (88%) of respondents knew if any changes had been made to their medicines during their hospital admission. Of those 88%, (56%, 56/100) had no changes to their medicines. Those patients with changes to their regular medicines (32%, 32/100) were asked if they had received any counselling about their medicines and which member of staff had discussed their medicines with them. Not all 32 responded to every question, responses can be seen in Table 5-11 along with the number of respondents.

Table 5-11 – Verbal patient counselling provided for new medicines

	Response % (n/N)
Patient received counselling on the following points:	
How to use the medicine(s)	93% (25/27)
What new medicine(s) are for	89% (24/27)
Benefits of new medicine(s)	88% (23/26)
When to use the medicine(s)	85% (22/26)
Whether further supplies are needed	73% (19/26)
How to obtain further supplies	58% (15/26)
Side effects of medicine(s)	58% (15/26)
Healthcare professional patient was counselled by	
Consultant	47% (15/32)*
Nurse	34% (11/32)*
Other doctor	28% (9/32)*
Pharmacist	13% (4/32)*
No-one	6% (2/32)*
Don’t know	3% (1/32)*
*categories not mutually exclusive	

Of the patients with changes to their medicines, the majority were told what their new medicine was for (89%, 24/27) and how to use their medicines (93%, 25/27). An

important finding is that not all of the counselling points listed in were routinely covered with patients. Interestingly, according to respondents only 13% (4/32) of patient counselling was by a pharmacist.

5.4.5 Post-discharge community pharmacy involvement

This section builds on the phase 1 findings that despite evidence suggesting community pharmacy involvement after discharge is beneficial for patients, communication between hospital and community pharmacy is limited. This section aimed to establish any pre-existing relationships between patients and their community pharmacies. Patients were asked if they usually collected their medicines from the same community pharmacy and reasons for choosing that particular pharmacy. Table 5-12 shows patient responses to these questions.

Table 5-12 – Patient use of regular community pharmacies

	Response % (n/N)
Does patient use regular community pharmacy?	
Yes	84% (82/98)
No	13% (13/98)
Don't know	3% (3/98)
Reason for use of particular pharmacy	
Close to patient's home	73% (60/82)*
Close to patient's GP surgery	54% (44/82)*
Pharmacist knows patient and their needs	32% (26/82)*
Delivery service provided	26% (21/82)*
Pharmacy orders patient's repeat medication	23% (19/82)*
Other reason	7% (6/82)*
*Categories not mutually exclusive	

The majority (84%, 82/98) said that they did use one regular pharmacy, whilst 13% (13/98) did not use the same pharmacy each time. Proximity to the patients' home was the main reason for choosing their particular pharmacy (73%, 60/82), followed by proximity to their GP surgery (54%, 44/82). Those who selected 'other' as a reason for choosing a regular community pharmacy (7%, 6/82) cited the following: pharmacy

provides multi-compartment compliance aids (MCA), helpful staff, good service and ability to order prescriptions electronically.

Patients were asked if they would be visiting a community pharmacist after discharge and if so, their reasons for doing so. Table 5-13 breaks down the responses to these questions.

Table 5-13 – Intended community pharmacy visits after patient has been discharged

	Response % (n/N)
Will patient be visiting a community pharmacy after discharge	
No	46% (45/99)
Yes	28% (28/99)
Don't know	26% (26/99)
Reason for community pharmacy visit	
Obtain further supplies of new medicines	71% (20/28)*
Order next repeat prescription	64% (18/28)*
Discuss any problems with medicines	29% (8/28)*
Discuss newly started medicines	14% (4/28)*
*categories not mutually exclusive	

A greater proportion of respondents (46%, 45/99) did not plan to visit a community pharmacy after discharge, or were unsure if they would need to (26%, 26/99). For those that did plan to visit a pharmacy (28%, 28/99), this was mainly to collect (71%, 20/28) or order (64%, 18/28) their medicines. Very few of the patients intended to see the community pharmacist for advice about their medicines.

5.5 Discussion

As discussed in chapter 1, current evidence suggests that many problems can occur with patients' regular medicines after hospital discharge.^(75,76,168) The survey found that a high number of patients took regular medicines. This suggests that the risk of medication problems applies to the majority of inpatients and is therefore an important issue to resolve. This highlights the importance of having a robust service in place at discharge to reduce the risk of problems occurring with medication after discharge.

The patients who participated in this study were from a variety of wards, were a relatively even split of male and females and had a wide age range. Including a diverse range of patients in the study, captured views from different patient groups. This improved the likelihood of the study findings being generalisable to other acute NHS hospitals with similar populations.

5.5.1 Overall patient experience and suggestions for improvement

The findings from section 5.4.3 Overall patient experience and suggestions for improvement are discussed below.

Patient experience of their discharge from hospital

The findings indicate that a large number of patients were satisfied with their experience, whilst still encountering issues during discharge. This study supports previous research whereby patients have reported a high level of satisfaction with discharge (see section 2.7.4 Patient perspectives of discharge). There could be many reasons for this. It could be argued that patients' low expectations of hospital discharge are responsible for them reporting a high level of satisfaction with the discharge process despite known problems. Equally, that the patient is being discharged could have resulted in a more positive response. Despite the majority of patients finding their discharge experience at least satisfactory, there is much room for improvement at discharge.

Perceived reasons for delay to patient discharge

Respondents commonly felt that discharge from hospital took too long. The majority of patients (70%) perceived that waiting for their discharge medicines was the main cause of delay to their discharge. This result is higher than in the National Inpatient Survey 2014 results, where 61% of delayed discharges were perceived to be caused by patients waiting for their medication.⁽⁹³⁾ It was not possible to determine if this was the true cause of delays to discharge as this was outside the scope of the study. Unfortunately, waiting for pharmacy to supply discharge medicines is known to be commonly perceived by hospital staff as the main delay to discharge,⁽¹⁶⁹⁾ and the findings from this study suggest that patients also hold this view. This belief may stem from either real or

perceived pharmacy-related delays. An example of a real issue is when pharmacists are unavailable to authorise discharge prescriptions, or discharge medicines take a long time to arrive from pharmacy. An example of a perceived pharmacy-related delay could be through misinformation supplied by ward staff, or because the discharge process and its expected duration is not explained to patients. Previous research has shown that discharge delays are a much wider issue and pharmacy is not the only cause.^(167,169) Regardless of where the responsibility lies, delays at discharge need to be addressed to improve patient experience.

Suggestions for improvement of hospital discharge

Only 23% of patients felt that their discharge could be improved. This builds on the findings that the majority of patients were satisfied with their discharge. Providing a faster service was a common theme highlighted by patients throughout the study as well as some reasonable suggestions for future developments to the discharge service.

The findings suggest that community healthcare professionals should support patients with their medicines after discharge, rather than hospital staff. It is interesting that patients see their GP as the main source of help with medicines after discharge. This could be due to a lack of awareness of the support available from community pharmacies who offer the NMS and MURs to support patients recently discharged from hospital. Hospital pharmacists have an important role in signposting or referring patients to community pharmacies for support with their medicines. Encouraging communication between patients and their community pharmacist could prevent any issues that may arise in the future. Of the small proportion of patients who would like support after discharge from hospital, they requested delivery of their medicines and the option to be contacted or seen again if help was required after discharge. It may be possible that both of these services could be carried out by community pharmacists.

A larger proportion of patients preferred to leave the hospital and collect their medicines from a community pharmacy than remain in hospital to wait for them. This is a similar idea to the model of care used by an increasing number of hospitals who have

now outsourced their hospital outpatient prescriptions to community pharmacy chains.⁽¹⁹⁾

5.5.2 Patient involvement

The findings from section 5.4.4 Patient involvement are discussed below.

Planning for discharge

Phase 1 found that although discharge planning was seen to be happening, it was not very well coordinated. Planning a patient's discharge from hospital should include the patient as well as their family members or carer as appropriate.^(54,55,170) There was no mention of patient involvement in this planning process by the participants from phase 1. The questionnaire therefore asked patients if they felt that they were involved in the discharge process.

Whilst the findings suggest that the majority of patients felt that they had been involved in their discharge planning to some extent, these were lower than national figures. The National Inpatient Survey 2014 found that 54% of patients strongly agreed that they were involved in decisions about their discharge⁽⁹³⁾ compared to only 22% in this study, demonstrating room for improvement. Although respondents were similar in age and gender, the variation could be due to the slight difference in how the questions were asked in both questionnaires and the much larger sample size in the national survey.

Communication with patients throughout the discharge process

In phase 1, patient involvement and patient counselling during the discharge process was found to be limited.

Discharge from hospital can be complex, depending on individual patient needs and without explanation, patients will not be aware of the reasons for any hold-ups at discharge. Findings from phase 1 identified that hospitals experienced issues because doctors often told patients that they could go home without sufficient explanation about the process, leading to unrealistic expectations from patients about when they

could leave hospital (see section 4.4.3.7.2 Involving the patient at discharge). From the findings of this phase, it appears that the majority of patients felt that the process had been sufficiently explained to them. This study did not ask which member of the multidisciplinary team explained the discharge process to patients and it would therefore be difficult to determine if it was in fact the doctors that were providing this information at the appropriate time.

As previously discussed in Chapter 2, providing patients with the information required to enable involvement in their care is a Government priority.⁽³⁸⁾ The findings indicate that information about discharge was given to most patients. Nonetheless, all patients should be involved in their care and should therefore receive information about discharge. Explaining the complexities of the discharge process so that patients understand the numerous steps that need to take place before they are discharged would empower the patient and improve their experience. This includes regular and accurate information about the duration of any delays during episodes of care.⁽¹⁷¹⁾ Owing to the discharge process being a time consuming and complex one, inevitably delays can occur. Providing updates if discharge is delayed or if any changes occur will help the patient to understand what is happening and improve their overall experience.

Patient counselling

As discussed in Chapter 2, a component of the medicines optimisation programme is to support medicines adherence⁽⁴⁰⁾ by providing patients with information about their medicines. As it is estimated that between 30-50% of patients do not take their medicines as intended,⁽⁴⁰⁾ improving medicines adherence is vital. Counselling patients on their medicines prior to hospital discharge is therefore encouraged. The majority of patients in the study stated that they were aware of whether or not changes were made to their medicines during their admission. However, over a third of patients were unclear about what medicines they should be taking after discharge. This could be due to a lack of patient counselling, poor understanding of information or the patient not remembering information. It does highlight that improved communication of

information is required and calls into question the quality of information given to patients and whether it is provided at an appropriate time.

Interestingly, findings from this phase indicate that pharmacists are the least likely healthcare professional to provide patient counselling, despite being the most appropriately trained in medicines use. This supports the findings from phase 1 that hospital pharmacists are unlikely to be providing adequate patient counselling (see section 4.4.3.7.1 Patient Counselling). During the development of a new model of care, medicines counselling involving trained pharmacy staff should be incorporated as standard.

5.5.3 Post discharge community pharmacy involvement

According to the literature, community pharmacists can play an important role in patient care after discharge (see section 2.6.3 Community pharmacy involvement at discharge). Phase 1 identified that although considered beneficial, communication between hospital pharmacists and community pharmacists was limited and for most hospitals, not a straightforward process due to the methods of communication available. This phase therefore tried to ascertain whether patients have an established relationship with a particular community pharmacist and whether they intended to visit a community pharmacist to assist them after discharge.

The majority of patients in this study appeared to use a regular community pharmacy, which can help build relationships and improve continuity of care. However, although the majority of patients may use a regular community pharmacy, not many would think to visit after discharge. For those patients that would visit, this would tend to be to order and collect their medicines rather than seek any advice or counselling. When developing a new model of care, this pre-existing relationship between patients and their community pharmacy needs to be built upon. In particular, patients should be encouraged to seek support and advice after discharge from hospital.

5.5.4 Limitations

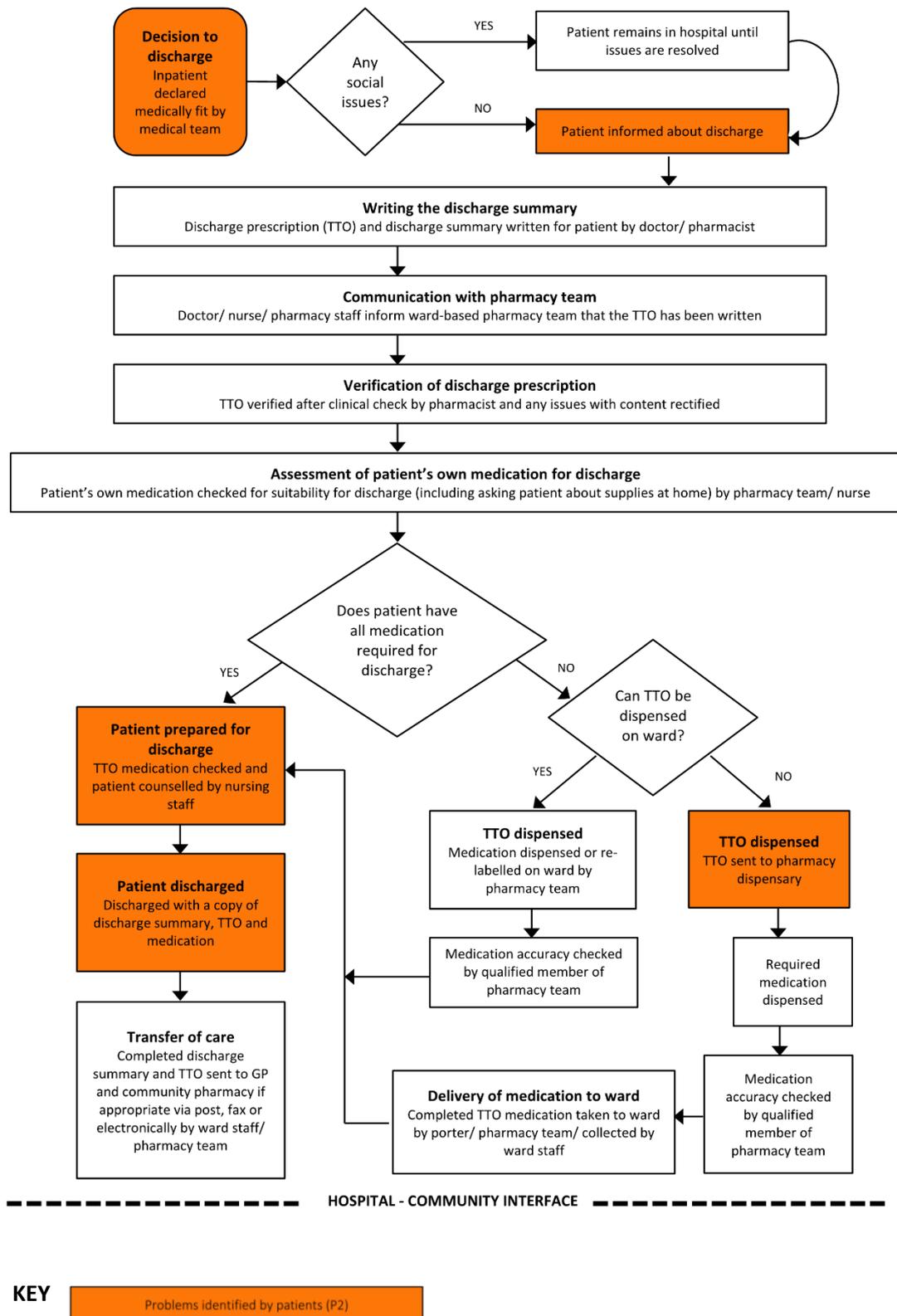
Recruitment for this study proved more difficult than anticipated, mainly because junior doctors were threatening to strike during the data collection period. The hospital altered its standard processes in response to this threat to ensure patient safety was not compromised. As a result of the temporary change to normal procedure, this was not a true representation of the current discharge process and therefore data collection was interrupted. Additionally, although preliminary discussions with the research site established that on average approximately 100-120 patients were discharged daily, the actual number of patients that met the phase 2 inclusion criteria was much lower, which meant that data collection took longer than anticipated.

As this study was specific to one hospital, the findings are only relevant to the RLBUHT and are not necessarily generalisable across other hospitals. The reasons for conducting the study at this one particular site are discussed within section 3.4.3.1 Research site. However if the research were to be conducted again, extending the study to recruit patients from other hospitals would improve generalisability of the findings.

5.7 Generalised discharge process with problem areas highlighted

A generalised hospital discharge process was mapped by the researcher in phase 1. This can be seen in Figure 4-1. In phase 1, the stages of the discharge process where pharmacists identified problems were highlighted in yellow on the flowchart. The image in Figure 5-1 shows the same discharge process developed in phase 1 – containing the pharmacists' perspective – with the issues identified from the patient's perspective overlaid. The areas highlighted orange on the flowchart represent those stages in the discharge process where problems were identified by patients.

Figure 5-1 – Generalised discharge process in acute hospitals across North West England showing issues identified by patients



5.9 Conclusion

To summarise this second phase, questionnaires elicited a range of responses from patients which enabled their perspectives of the discharge process to be captured. This phase highlighted a range of interesting findings detailing what is important to patients, which have been discussed throughout section 5.4 Findings.

The findings highlighted several areas for improvement at discharge. Most importantly that despite most patients feeling satisfied at discharge they found that the discharge process takes too long, with the wait for medicines perceived by patients to be the main cause. It is important that the new model of care reduces the delays to patient discharge. Additionally, the misconception that waiting for pharmacy to supply discharge medication is the cause of delays to discharge needs to be addressed in the new model of care.

The findings from this phase and from the National Inpatient Survey⁽⁹³⁾ demonstrate that patients should be more involved in their discharge from hospital, this would support the Government's agenda (see section 2.4 Patient involvement). Ensuring the patient is involved in decisions around their medicines for discharge including the supply is an important consideration and extends beyond the scope of pharmacy. However, the new model of care should provide adequate opportunity for patients to be involved during planning for discharge.

Communication with patients at discharge appears to be extremely varied. There are examples of good communication, with many patients appearing satisfied, whereas some patients found communication poor. Improved communication with patients is required as standard, so all are receiving the same high standard service. Existing evidence demonstrates the failings that result from poor communication with patients (see section 2.7.2 Medication errors at discharge from hospital). Opportunities need to be created within the discharge process to allow and encourage good communication to happen. This applies to both communicating general discharge information to patients and counselling patients on their medication. A trained member of the

pharmacy team would be an ideal person to provide counselling to patients, equally however, one person should be given overall responsibility for providing all information about the progress and expected duration of the patients discharge. Providing this information is likely to improve the patient experience.

Throughout the findings, utilising community pharmacy services after discharge was mentioned. The findings suggest that in the new model of care, there is scope for community pharmacy involvement to increase after discharge. This could improve patient care at discharge and help to forge relationships between the patient and their community pharmacist to encourage future support with medicines. Raising patient awareness of the services provided by community pharmacists is important to increase likelihood that patients will make use of the available services.

This second phase of the PoW has successfully met the study aim by exploring patient perceptions and experiences of the current discharge process at RLBUHT. Furthermore, this phase met the study objectives by investigating patients' views of their discharge from hospital, exploring the issues identified in the phase 1 findings from the patients' perspective and identifying patients' suggestions for improving the current discharge process. The current relationships between patients and their community pharmacists were also investigated.

Phase 2 builds on phase 1 findings and addresses those issues highlighted by pharmacists, but from the patients' perspective. This phase has identified that despite the majority of patients feeling satisfied with their hospital discharge, issues commonly arise. The study has highlighted several areas that require improvement to provide safe, quality care for patients and improve patient experience at discharge. In particular, the findings support phase 1 findings which suggested that both patient counselling by pharmacists and patient involvement in discharge are limited. Findings also show that patients perceive their discharge to take too long and is largely due to the wait for discharge medicines.

This phase builds on the existing knowledge of problems at discharge by adding the patients' perspective to issues commonly highlighted by healthcare staff. Patient experience is important to determine if services are providing high quality care. From the results of this phase there is much room for improvement. This supports findings from phase 1 which suggest that an improved discharge process is required. The findings from phase 2 will be combined with those from phase 1, and used to inform the development of the new model of care for patient discharge.

This second phase produced important findings that will be used to inform the development of the new model of care in the next phase of the PoW. Several major issues emerged from this phase that will be taken into account. The new model will include medication counselling provided by trained pharmacy staff as standard, support with medicines after discharge by community pharmacists and communication of information during discharge to all patients. Patients, as service users, should not only be involved during their discharge from hospital, but should also be involved in the development of the new model of care, to improve patient experience whilst using the services. Finally, it is essential that the new model of care will speed up patient discharge.

The study was designed to establish the patient perspective of discharge prior to leaving hospital. This was to ensure an accurate recollection of the process and to help with recruitment of patients. However, although outside the scope of the PoW, further research could involve patient follow up after discharge to determine if their opinions differ after leaving the hospital.

This chapter has discussed in detail the findings from phase 2 of the PoW (Evaluating the current discharge process from the patients' perspective) and highlighted areas that will be taken forward to develop a new model of care. The results of this phase were published in the *European Journal of Hospital Pharmacy*.⁽¹⁷²⁾ See Appendix 22. Having achieved the aim and objectives set out for phase 2, the following chapter will present phase 3 of the PoW in which the new model of care for patient discharge from hospital was developed based on phase 1 and 2 findings.

Chapter 6 – Phase 3: Developing a new model of care for patient discharge from hospital

Having overviewed the findings for phases 1 and 2 of the PoW in the previous two chapters, this chapter discusses the third phase of the PoW in which a new model of care for discharge was developed. This chapter includes an overview of the current discharge process, the proposed new model of care along with a rationale, concluding with a discussion.

6.1 Introduction

As previously discussed, the current hospital discharge process tends to be fragmented and of varying quality between individual patients. This can lead to a variety of problems including: medication errors, hospital readmissions and bed-blocking. This has a negative impact on both patients and the hospital itself. This PoW looked to resolve the issues occurring at patient discharge. In order to do so, the overall PoW aimed to develop a new model of care for patient discharge that will provide safe, quality and effective transfer for patients from hospital to community care (see section 3.1 Aim and Objectives of PoW).

A model of care outlines best practice services. It aims to ensure people get the right care, at the right time, by the right team in the right place.⁽¹⁰⁷⁾ (see section 2.9 Developing new models of care) A model of care should be based on the best available evidence, which is why the PoW was developed to identify and evaluate the current discharge process and use the evidence collected to inform the development of the new model of care for discharge. Chapters 4 and 5 discussed the current discharge process from a pharmacist and a patient perspective, respectively. This third phase involved triangulation of the data from both of these earlier two phases, to gain a multi-perspective evaluation of the current discharge process (see 3.5.3 Phase 3 method for more detail). An explanation is given (in section 6.3 Problem areas within the current discharge process) of how the findings from the evaluation of the current discharge

process, discussed in detail throughout chapters 4 and 5, were combined to generate a useful basis to begin the development of a new model of care for patient discharge. The findings from the triangulation were used in addition to evidence in the literature to develop the new model of care. As mentioned in the overview of the PoW (see section 3.5.3 Phase 3 method), development of the new model of care incorporated the successful aspects of the current process and removed any stages that commonly cause problems at discharge.

This chapter then moves on to introduce the new model of care, along with a discussion of the rationale for the new model. As the new model was informed by the earlier findings, these will be referred to throughout the rationale.

6.2 Aim and Objectives

The aim of this third phase was to develop an innovative model of care for patient discharge from hospital that provides safe, quality care in a timely manner and improves patient experience.

The objectives were to:

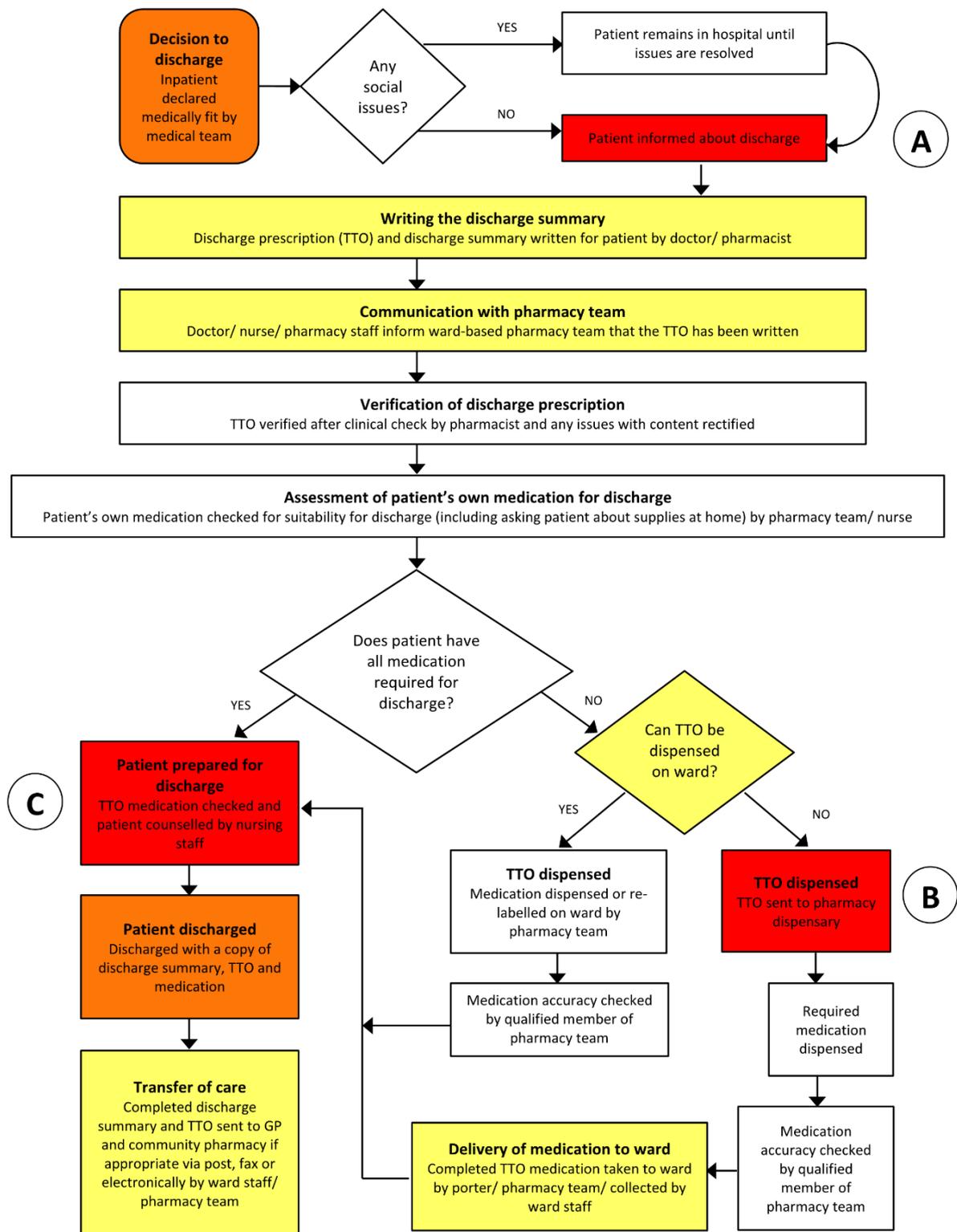
- Explore and triangulate the findings from phases 1 and 2, to determine the issues that require solutions and the examples of good practice at discharge
- Use the triangulated findings and current literature to generate a new model of care for discharge
- Define and map out the new model of care for patient discharge
- Explain how the new model of care for patient discharge overcomes the issues identified in phases 1 and 2
- Explain how the new model of care for patient discharge encompasses the good practice identified in phases 1 and 2

6.3 Problem areas within the current discharge process

The common issues with the current discharge process identified by both pharmacists and patients were discussed within chapters 4 and 5. These issues were highlighted on two generic discharge process flowcharts, to help visualise where issues commonly arose in the current discharge process. The two flowcharts showing the stages where issues were identified by pharmacists and patients can be seen in Figure 4-1 and Figure 5-1 respectively. To ascertain whether the problems were similar for patients and pharmacists, i.e. from an operational or managerial perspective and a service user perspective, the two flowcharts were merged. Figure 6-1 contains the combined flowchart, illustrating the stages of the discharge process where issues commonly arose from a pharmacist and patient perspective. As indicated by the key, stages in the process where issues arise from the pharmacists' perspective are highlighted in yellow, those from the patients' perspective are highlighted in orange and the areas where both found issues arise are highlighted in red.

Three stages within the current discharge process were identified as problem areas by both pharmacists and patients, these can be seen highlighted in red on Figure 6-1 and for the purpose of discussion, are labelled A, B and C. The first stage highlighted as an issue from both perspectives was when the patient is informed about their discharge (see A in Figure 6-1). The problem was related to the delay from when the time patient is told by the medical team that they can go home and the actual time that the patient is discharged from hospital. That patients are informed they can go home without a clear explanation of how long the process will take, leads to unmanageable patient expectations as it is not possible to discharge patients instantly. This not only impacts on the patient experience, but puts more pressure on staff trying to arrange the discharge.

Figure 6-1 – Generalised discharge process in acute hospitals across North West England highlighting pharmacist and patient identified issues



----- HOSPITAL - COMMUNITY INTERFACE -----

KEY

Pharmacist identified issues (P1)	Patient identified issues (P2)	Issues identified by pharmacists and patients (P1&2)
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The next stage of the discharge process that both pharmacists and patients deemed a problem area was during dispensing of discharge medication (see B in Figure 6-1). Patients thought that discharge from hospital took too long and that the wait for medicines was a main cause of this delay. Pharmacists also felt that the process of waiting for medicines at discharge took too long and despite a variety of reasons for this, accepted that dispensing discharge medication is one of the causes of delay. Whilst some hospitals attempted to dispense medication on the wards to speed up the process, this facility was not widely available (see section 4.4.3.3.2 Dispensing of Medication).

The final stage of the process highlighted by both pharmacists and patients as an issue was at the point of preparing the patient for discharge (see C in Figure 6-1). Patient counselling was an important aspect of this, but unfortunately the content of counselling was mixed and was rarely carried out by a pharmacist.

Other problem areas highlighted from phases 1 and 2 that are important to take into consideration during the development of the new model of care include:

- Poor coordination of the discharge process
- The length of time it takes for doctors to write discharge prescriptions
- Pharmacy relying on ward staff to inform them when a discharge prescription has been written
- Many medications supplied to the patient that could otherwise be obtained from their GP, leading to waste
- Completed discharge information is not always sent to patients' GP
- Limited communication between hospital and community pharmacy
- Patient involvement in their discharge is limited

It is essential that the new model of care for discharge addresses these issues and identifies ways of overcoming them.

6.4 Positive aspects of the current discharge process

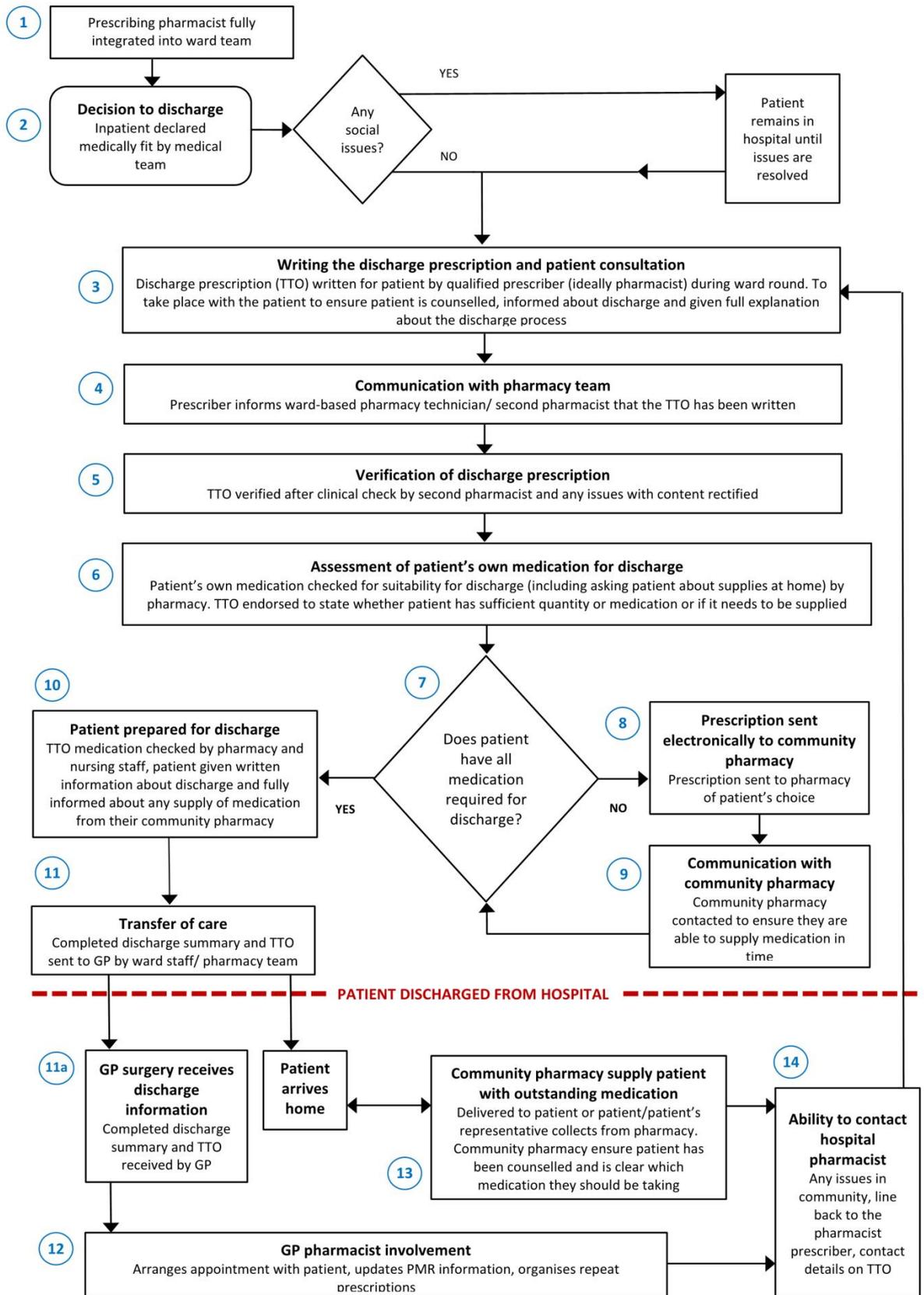
Whilst for this PoW it was important to identify the stages of the discharge process which often lead to problems and delays at discharge, it was equally important to ascertain the stages that work well. Participants from both phases 1 and 2 highlighted a variety of examples of good practice in the current discharge process. Having pharmacists write discharge prescriptions instead of junior doctors was shown to speed up the discharge process and improve accuracy of discharge prescriptions (see section 4.4.3.8.1 Current innovative solutions). The verification and clinical check of discharge prescriptions by a pharmacist was also seen as an important step for patient safety in the discharge process (see section 4.4.3.2.3 Verification of the discharge prescription). The introduction of electronic discharge systems have improved the quality of discharge information and enabled fast transmission of information to GPs (see section 4.4.3.2.1 Content of the discharge documentation).

From a patient perspective, the positives mentioned related to having good, caring staff looking after them, and being able to go home. It is important that the new model of care allows staff to prioritise patient care to provide a positive patient experience. All of this information gathered was taken into account during the development of the new model of care for discharge, along with the suggestions for improvement of the discharge process discussed in chapters 4 and 5.

6.5 Proposed new model of care for patient discharge from hospital

As previously discussed, the new model of care was developed based on the earlier findings and information from the literature. This new model of care was based on the suggestions and requirements of the participants within phases 1 and 2 of the PoW and is therefore appropriate for these patients and pharmacists. The new model of care was discussed with the supervisory team and the agreed model of care is depicted in a flowchart, outlining the stages of the proposed new model of care. The proposed new model of care for patient discharge flowchart can be seen in Figure 6-2.

Figure 6-2 – Proposed new model of care for patient discharge flowchart



6.5.1 Rationale for new model of care for patient discharge from hospital

It is important to improve the discharge process and there are many potential beneficiaries to having a safe, efficient patient discharge system (see section 1.3 Significance of the research). As has already been discussed, there are many potential sources of error and delay within the discharge process. Subsequently, there are many areas of the discharge process that need to be improved. For this reason, the proposed new model of care for discharge differs from the current discharge process in a number of ways.

A recurring theme within the findings from both pharmacist and patient perspectives was to speed up patient discharge. The wait for discharge medicines was perceived as the main cause of delay to current discharge (see section 5.4.3.2 Perceived reasons for delay to patient discharge). If a patient is left waiting for their discharge medication, they are effectively 'blocking' a hospital bed by preventing a new patient from being admitted into it. By increasing the speed at which discharge medications are provided to patients, this will improve the efficiency of the discharge process overall. This should impact positively on both patient flow through the hospital and patient experience. This model of care has therefore been designed with a view to speed up the supply of medication at discharge.

Each stage of the new model of care for patient discharge has been numbered in Figure 6-2 – Proposed new model of care for patient discharge flowchart. The individual stages within the new model of care for patient discharge are described in detail, along with a discussion of the rationale for each, in the following sections.

Stage 1: Prescribing pharmacist fully integrated into ward team

For a prescribing pharmacist to be able to successfully write discharge prescriptions it is important for them to be fully integrated into the ward-based team. This will improve communication and team working between the MDT (see section 4.4.3.5.1 Communication within the multi-disciplinary team). For the new model to function, it relies on the pharmacy team including pharmacists and pharmacy technicians to be

ward-based. This may involve redistribution of pharmacy staff, which will be feasible due to the shifting of roles as discharge dispensing is outsourced.

Stage 2: Decision to discharge

The pharmacist as an integral member of the ward-based MDT, will ideally be on the ward round with the senior medical team and therefore present when the decision to discharge is made for each patient. The decision to discharge should remain the responsibility of the senior doctor looking after the patient, no evidence to the contrary was collected around this.

This new model of care encourages pharmacy ownership of the medication supply aspect of discharge. Once the decision to discharge a patient has been made, the pharmacy team should take responsibility for the process, from the initial writing of the discharge prescription, to the patient receiving their medication for discharge. This will encourage improved coordination of patient discharge which was found to be lacking according to the pharmacists interviewed (see section 4.4.3.1.1 Coordination of the discharge process).

In the current discharge process, when patients are declared medically fit for discharge they are told at this point that they can go home and this is usually when the process of medication supply at discharge begins. The process is known to be a lengthy, complex one with the potential for delays and error as previously discussed. Patients are often misinformed at this point as they mistakenly think that they can go home straight away, when in fact they often have to wait (see section 4.4.3.7.2 Involving the patient at discharge). Having a pharmacist present who is aware of the likely duration of the discharge process can ensure that patients are given the correct information and that patient expectations are appropriately managed.

Stage 3: Writing the discharge prescription and patient consultation

Whilst there are numerous reasons for the long wait in the current discharge process, the initial delay is the time lag between the decision to discharge and the doctor writing

the discharge prescription (see section 4.4.3.2.2 Writing the discharge documentation). Attempts have been made by hospitals to overcome this delay, for example: transcription of medication onto TTOs, pharmacists writing TTOs and writing TTOs earlier in the patient's stay. Those solutions that are working well, particularly pharmacists writing discharge prescriptions, appear to still be in the pilot phase or have not been rolled out across all hospital wards. Most hospitals were positive about pharmacists writing discharge prescriptions. It is for this reason that the new model of care will utilise a prescribing pharmacist on the ward to write the discharge prescriptions.

Provided there are no social issues that need resolving prior to discharge, a pharmacist prescriber can begin writing the discharge prescription. The discharge prescription should be written during the ward round, to start the process at the point the patient is told they can go home. This should speed up patient discharge as delays currently arise when waiting for a doctor to write the discharge prescription once their competing interests have been addressed. Having the pharmacist present when the decision to discharge is made provides the opportunity to clarify any medication queries or issues with the medical team immediately, which should speed up the writing process. Delays in the current process occur if pharmacists need to contact the medical team to address any queries or errors on discharge prescriptions written by doctors.

The pharmacist should ensure that any additional information required is included on the discharge prescription. For example, reasons for any changes to medication, any monitoring requirements or future changes to medication. This is to improve communication across the interface.

An important aspect of the new model of care is that as much of the discharge prescription as possible should be written at the patient's bedside. This provides an opportunity to discuss any changes to medication with the patient and give any counselling required. This stems from the findings in phases 1 and 2 that patient counselling is limited and unlikely to be carried out by a pharmacist. This is also an ideal opportunity for pharmacists to inform the patient about the discharge process, how long

they are likely to wait and what they need to do to get their medicines. Improving communication around the process of patient discharge is essential at this early stage, so the patient is fully informed.

Stage 4: Communication with pharmacy team

As in the current discharge process, the new model of care is heavily reliant on good communication to work efficiently. Within this new model, pharmacy will not be waiting for the medical team or nursing staff to let them know a discharge prescription has been written, which again, is often not a priority for them. This is an important step in the discharge process and could potentially lead to delays if not carried out.

In stage 4 of the new model of care, the ward-based pharmacy team need to communicate this information between themselves. This is likely to be easier to do, as the pharmacy team's priorities will be aligned and making contact within the team should be easier than attempting to contact a junior doctor. This is another area where the pharmacy team ownership of the supply of medication at discharge can help to smooth patient discharge. Once the discharge prescription is written by the pharmacist prescriber it is important that the pharmacy team is made aware of this so that they can carry out the rest of the process. Any delays informing the team will inevitably delay the rest of the discharge process.

Stage 5: Verification of discharge prescription

The discharge prescription, which has been written by a prescribing pharmacist, should receive a clinical check and be verified by a second pharmacist. From the phase 1 findings, the verification by a pharmacist for patient safety in the current discharge process was seen as an example of good practice (see section 4.4.3.2.3 Verification of the discharge prescription). There have been a number of studies which demonstrate that discharge prescriptions written by hospital doctors commonly contain errors and omissions. Despite findings suggesting that prescriptions written by pharmacists are less likely to have errors than those written by doctors (see section 4.4.3.8.1 Current innovative solutions), in the interest of patient safety verification by a pharmacist is still

necessary within the new model of care due to the risk of human error. The second pharmacist checking the discharge prescription does not necessarily have to have been involved in the patient's care. The second pharmacist should be able to clinically check the prescription and identify if there are any issues with its content. Communication between pharmacists to rectify any issues should be easier within a small team. Contacting the doctor to rectify issues was shown in phase 1 to be an additional rate-limiting step at discharge.

Stage 6: Assessment of patients' own medication for discharge

The next stage of the proposed model of care is to assess the patient's own medication for discharge. This should be carried out by the pharmacy team as it is in the current discharge process. Patient's own medication should be checked for suitability for discharge, including asking the patient when they have any supplies of their medicines at home. It should then be documented on the discharge prescription which – if any – medication the patient requires a supply of for discharge. This stage is important to reduce medication waste.

Stage 7: Does patient have all medication required for discharge

This stage of the new model of care is based on the question 'does patient have all the medication that they require for discharge?' Two options now exist depending on the answer to that question, which can be seen on the flowchart in stage 7 of Figure 6-2. If patients have all of their medication for discharge, or have sufficient supplies at home, they will skip the supply stage of the new model and be prepared for discharge (stage 10). This is similar to what currently happens in practice. Alternatively, for patients who require a supply of medication at discharge, they will move on to stage 8 'discharge prescription sent electronically to community pharmacy'.

Stage 8: Discharge prescription sent electronically to community pharmacy

If the patient does not have all of their regular medication in the current discharge process they are supplied with a minimum of seven days' worth of medication. This wait for medication to be dispensed adds to the delay for the patient waiting to go home and

can lead to 'bed blocking'. Hospitals are under a lot of pressure to improve patient flow. One idea that some hospitals have had to increase patient turnaround time is to move medically fit patients from their bed on the ward, to a discharge lounge where they can wait for their medication and free up their hospital bed (see section 4.4.3.8.2 Suggestions for changes to the discharge process). Whilst this does in theory free up a hospital bed, problems can still arise here and it does not necessarily improve the patient experience as they are still left waiting for their discharge medicines in hospital.

In the new model of care, patients who require a supply of medication will have their discharge prescriptions sent electronically to a community pharmacy of their choice to be dispensed. There are several reasons for this stage. There is a drive for moving care back into the community (see section 2.2 The changing care environment) and community pharmacies are ideally placed to dispense medicines close to the patient's home. Patients often have a regular community pharmacy and communicating the patient's discharge information to their community pharmacy will not only improve continuity of care, but will enable community pharmacists to support patients with their medicines after discharge. Having the community pharmacy aware of any changes to the patient's medication that took place during the hospital admission is likely to be beneficial to patient care. When asked for suggestions for improvement to discharge, a larger proportion of patients preferred to collect their medicines from a community pharmacy than wait for them in the hospital (see section 5.4.3.3 Suggestions for improvement of hospital discharge) and one Chief Pharmacist suggested that community pharmacies could supply discharge medication (see section 4.4.3.8.2 Suggestions for changes to the discharge process).

Clearly, visiting a community pharmacy after discharge is not feasible for every patient. However, the majority of community pharmacies offer a delivery service, which could be arranged for the patient when they are back at home. This should help improve the patient experience as their wait in hospital is reduced and support with their medicines after discharge is encouraged. This stage also benefits the hospital by speeding up discharge turnaround times and therefore improving patient flow through the hospital.

Many hospitals have chosen to outsource their outpatient prescription dispensing. This involves community pharmacy companies running outpatient pharmacies within a hospital where all outpatient prescriptions are dispensed. This has been shown to improve efficiency, reduce patient wait for their outpatient medication, and has had a cost saving impact for many hospitals.⁽¹⁹⁾ With the success of outsourced outpatient pharmacies, it would be remiss to not utilise similar resources for the dispensing of discharge medication. Although utilising these outpatient pharmacies to dispense discharge prescriptions was considered, sending the discharge prescription to the patient's regular community pharmacy was chosen. Firstly, because not all hospitals have an outsourced outpatient dispensing facility and secondly, the link with the patient's community pharmacy at discharge was thought to be beneficial for continuity of care.

Stage 9: Communication with community pharmacy

In order to ensure the new model of care is robust, there needs to be some mechanism of communication with the community pharmacy that the prescription as has been electronically sent to. This would ideally be an electronic form of communication to improve efficiency. This communication would be a two-way system where the community pharmacy could confirm that they have received the prescription, that they are able to supply that medication within a particular time frame, and to confirm a time for delivery or a time the patient can expect to collect the medication. This information should then be relayed to the patient to confirm the arrangements. With the appropriate technology, a message could also be sent to the patient confirming the arrangements. Once arrangements are organised with the community pharmacy, the patient can then move to the next stage of the new model where they are prepared for discharge.

Stage 10: Patient prepared for discharge

In the current discharge process, discharge medications are checked and handed to the patient, along with the discharge prescription, by the nurse looking after them. Patients should at this point be counselled on their medication before they go home. The extent to which this was thought to take place was limited (see section 4.4.3.7.1 Patient Counselling). This is an essential stage in the process, however in the new model of care, a member of the pharmacy team should oversee that final check of the patient's own medication given to the patient at discharge. The pharmacy team will have just checked the patient's own medication for discharge (see Stage 6: Assessment of patients' own medication for discharge) so going through the medication with the patient and providing any last minute counselling can be seen as an extension of this task. The addition of the pharmacy team at the last stage should ensure that the patient receives only the correct medicine at discharge. This concludes the pharmacy ownership of the discharge process and ensures everything is carried out as intended. The patient will have the process of either collecting or receiving their discharge medication from the community pharmacy explained to them at this point.

Stage 11: Transfer of care

All discharge information is automatically sent electronically to the patient's GP, as this is essential for continuity of care to allow the GP to continue to provide the necessary follow-up care. Stage 11 should already be occurring in practice, to transfer patient care from the hospital back to their community provider. Appropriate technology should be utilised to ensure that the electronic information arrives with the GP completed, and in a timely manner.

As indicated in stage 11 of Figure 6-2, the patient then crosses the interface as they are discharged from hospital. Stage 11a involves the GP practice receiving this electronic discharge information from hospital, across the interface. This is an automatic stage once stage 11 is carried out by hospital staff.

Stage 12: GP-based clinical pharmacist involvement

Alongside the patient arriving home and receiving their medication, the discharge information is sent and now received by the GP surgery. Currently, any changes to patients' medication are usually actioned by their GP. One important change in the new model of care is the involvement of a clinical GP pharmacist at discharge, which is not currently standard practice (see section 2.2.1 Changes in pharmacy services). By including a clinical pharmacist in the GP setting, this closes the loop and improves continuity of care. The GP-based clinical pharmacist can review the discharge medication, perform medicines reconciliation and update the patient's medical record to ensure that all medication is accurate and up-to-date. Having the ability to quickly contact the hospital pharmacist prescriber will allow GP staff to rectify any queries (see Stage 14: Ability to contact the hospital prescribing pharmacist).

Stage 13: Community pharmacy supply patient with medication

After discharge from hospital, the patient arrives home. The final stage involves the patient receiving their medication from the community pharmacy. This may be by delivery from the community pharmacy, or it may be that an arrangement has been made for the patient or their representatives to collect from the community pharmacy as appropriate. This is another opportunity for the community pharmacy to ensure the patient has been counselled on any new medication and is clear what exactly they should be taking. By having access to the discharge prescription, they should have the necessary information to enable them to do this.

Stage 14: Ability to contact the hospital prescribing pharmacist

The discharge prescription will contain the contact details of the prescribing pharmacist. This means that if there are any issues with medication in the community there is a contact for them to get in touch with the pharmacist prescriber to rectify this.

6.6 Discussion

Overall, the pharmacy team ownership of the medicines aspect of the discharge process is important to ensure that the process is completed as safely and efficiently as possible. Phase 1 findings demonstrated poor coordination of the discharge process and that no one was taking ownership of the discharge process overall (see section 4.4.3.1.1 Coordination of the discharge process). Having the pharmacy team responsible for all aspects relating to patients' medication is important, from prescribing, counselling, organising the supply and handing out medicines to the patient ready for them to go home. This is likely to increase efficiencies in the process and avoid omitting important stages. Whilst pharmacy ownership of the medicines aspect of discharge is important, it is essential to note that there are other aspects of discharge that will be occurring simultaneously (as discussed in section 2.6 Discharge from hospital). Links between the pharmacy team and those carrying out other aspects of patient discharge need to be maintained. The impact of this will be investigated through feasibility testing of the proposed new model of care in phase 4.

The model of care follows the guiding principles in developing new models of care discussed in the introduction (see section 2.9 Developing new models of care). The new model of care is patient-centred and aims to improve patient experience as well as patient care. It was developed based around the participants from phases 1 and 2 of the PoW and takes into account their views and needs. The new model of care for patient discharge has localised flexibility to consider equity of access for all patients. Flexibility of the new model of care is key to its success. As with all 'real world' scenarios, there may be instances whereby the model of care is not suitable. A degree of flexibility will be necessary to allow for safe, appropriate patient care. As individual cases arise, these would have to be addressed. Good communication between patients and healthcare professionals throughout the process will facilitate this and avoid any issues. Suitable arrangements could be made for individual patients based on their needs, for example delivery or collection of medication as appropriate. This new model supports integrated care by encouraging communication between hospital and community pharmacy, improving continuity of care across the interface. It supports efficient use of resources, both in hospital and community whilst ensuring safe quality care for patients. The new

model of care is innovative, involving new ways of organising and delivering patient care, setting the vision for pharmacy services in the future.

The new model of care draws on the earlier findings from this PoW and proposes solutions to overcome the issues highlighted, whilst keeping successful aspects of the current discharge process. Whilst the new model is an improvement on the current discharge process, in order to identify any issues with the new model of care feasibility testing is needed to refine the model and ensure its suitability for implementation. By undertaking feasibility testing, any issues that may arise on implementation of the new model of care for discharge can be identified, considered and resolved as appropriate.

6.6.1 Limitations

The main limitation for this phase is that the new model of care was developed based on the findings of phases 1 and 2, along with evidence from the literature. Although this has many positives, which is why the PoW followed this route, there is a risk of bias. Relying on the findings from these phases may have led to important aspects or viewpoints being missed. This is particularly the case with subjective qualitative data, other potential participants who did not participate in the earlier phases may have had differing opinions from those that did participate.

6.7 Conclusion

This phase of the PoW has successfully met the phase aim, which was to develop an innovative model of care for patient discharge from hospital that provides safe, quality care in a timely manner and improves patient experience.

The phase 3 objectives were also met. The findings from phases 1 and 2 were triangulated, highlighting the issues that require solutions and the examples of good practice at discharge, from the perspective of pharmacists and patients (see section 6.3 Problem areas within the current discharge process). The triangulated findings and

evidence from the literature were then used to generate a new model of care for discharge, which was mapped out and defined (see section 6.5 Proposed new model of care for patient discharge from hospital). Section 6.5.1 Rationale for new model of care for patient discharge from hospital, explains how the new model of care for patient discharge overcomes the issues and encompasses the good practice identified in phases 1 and 2.

The proposed new model of care has been designed as a result of existing evidence in the literature and discussions with patients and pharmacists about their expectations and requirements during hospital discharge. Evaluation of the model is required to determine its potential impact.

So far, this thesis has described phases 1 and 2 which identified and evaluated the current discharge process from the pharmacists' and the patients' perspective. This chapter has presented phase 3 which triangulated these findings and used the results to develop a new model of care. This chapter introduced the proposed new model of care and detailed the rationale behind it. The following chapter will discuss the findings from phase 4 of the PoW, feasibility testing of the proposed model of care.

Chapter 7 – Phase 4: Evaluating the new model of care

Having introduced the proposed new model of care in Chapter 6, this chapter describes and discusses the findings for phase 4 of the PoW, which involved feasibility testing of the proposed model of care. This final phase of the PoW involved interviews and focus groups with a variety of people involved in patient discharge from hospital (hereafter referred to as stakeholders) to evaluate the proposed model of care.

7.1 Introduction

To overcome the issues associated with hospital discharge previously discussed, the PoW was designed to facilitate the development of a new model of care. This new model was described in chapter 6. It is important to set this new model of care up to succeed. To facilitate this, the final phase of the PoW involved feasibility testing of the new model of care. This looked to identify any potential issues and establish the views of relevant stakeholders involved in the new model of care. This phase is important to the overall PoW as the findings are used to refine the proposed model to improve and increase the likelihood of a successful implementation.

7.2 Method

The method utilised in this phase of the PoW has been fully described in section 3.6.3 Phase 4 research method. This qualitative phase involved both semi-structured interviews and focus groups with relevant stakeholders in patient discharge from hospital. The recordings resulting from the interviews and focus groups were transcribed and thematic analysis by constant comparisons was used.

As discussed in section 3.6.4.1 Topic guide development, the general topics for discussion were based on the findings from earlier phases of the PoW. These key topics for discussion during the interviews and focus groups were as follows:

- General feedback on new model

- Where any improvements could be made
- Any practical issues with new model
- What resources would be required to provide new model – is this feasible?
- What knowledge/skills would be required for those providing the new model of care

7.3 Aim and Objectives

The aim of this final phase of the PoW was to explore stakeholder views of the proposed new model of care for patient discharge from hospital.

The objectives were to:

- Explore perceptions of the proposed model of care with relevant stakeholders in the new model including patients and healthcare professionals from hospital and community settings
- Identify any potential issues with the new model of care
- Identify the knowledge and skills required to deliver the new model of care to establish future training needs
- Identify the resources required to deliver the new model of care
- Refine the new model of care based on stakeholder feedback

7.4 Findings

This section will present and discuss the findings from this phase of the PoW, including the pilot, participant demographics, a stepwise review of the new model of care and the themes generated.

The transcripts were coded into nodes as described in section 3.6.5.2 Coding and analysis. Coding the interview transcript data led to a total of 81 nodes created. Coding began using some *a priori* nodes to code data into initially, which were based on the study objectives, the stages of the new model of care and the questions asked of the participants. In addition to the *a priori* nodes, a grounded approach to coding the data

was taken, looking at each line and questioning the meaning of each, focussing the researcher on the data itself. This led to the creation of many nodes based on the content of the data itself.

Once the data had been coded, the nodes specifically relating to the logistics of each individual stage of the new model of care were taken and used to perform a detailed stepwise analysis of the new model of care to establish what participants thought of each stage of the new model of care. This can be seen in section 7.4.3 Stepwise review of new model of care. The remaining 28 nodes were thoroughly checked, looking for repetition, similarities and differences in the data to develop relevant subthemes then organised into broader themes during the analysis process. Both routes of analysis were thought to be important – to analyse in detail the steps and refine individual stages of the process to improve the new model of care as much as possible. A holistic view of the process is equally important and allowed other aspects to be discussed and reviewed that would not be possible in the detail.

7.4.1 Pilot outcome

The first interview conducted was undertaken as a pilot to determine if recruitment methods were suitable and the questions in the topic guide yielded suitable data for analysis. Similarly, the first focus group conducted was carried out as a pilot. This was to determine if the topic guide was as suitable for promoting discussion during the focus groups, as it was for the interviews. The pilot demonstrated that the questions elicited appropriate discussion around the topic in both the interviews and focus groups. The questions were unambiguous and yielded suitable, relevant data to meet the study objectives. Minor rephrasing of some questions took place after the pilot to improve their clarity. No significant changes were made to the topic guide or procedure following the pilot and the findings from both the first interview and the first focus group were included in data analysis. Data collected during both the pilot interview and focus group were included in the main analysis.

7.4.2 Demographics

Data collection for this phase took place between 16th September 2016 and 6th December 2016. Potential participants (see section 3.6.3.2 Participants for details of how participants were selected) were approached in succession either in person or via email. All of those approached agreed to participate in either an interview or a focus group, depending on their availability.

A total of 37 people participated in this phase, 23 of which participated in interviews. The average duration of the interviews was 32 minutes (range 19 to 60 minutes). The remaining 14 participants were involved in two focus groups. Both focus groups contained 7 participants each from a similar background, but with differing levels of experience. The two focus groups lasted 29 and 28 minutes respectively.

All participants met the inclusion criteria and none of the exclusion criteria and therefore allowed the most representative data to be captured. A range of stakeholders participated, including: hospital pharmacists with differing levels of experience and from different hospitals, community and primary care pharmacists, nurses, hospital doctors and GPs, pharmacy technicians as well as patient and carer representatives. Participants were recruited from a range of hospitals, GP practices, community pharmacies and CCGs across North West England. A full list of participants and their backgrounds can be seen in Table 7-1.

Data collected from all interviews and the two focus groups conducted were analysed together. To differentiate between the interview participants and the focus group participants, interview participants have been numbered 1 – 23 and focus group participants have been allocated a letter, A – N. Participants A – G were in one focus group and participants H – N were in the second focus group. This coding can be seen in Table 7-1. Each stage and theme throughout this findings section is presented including an overview of the topic and a description relevant information. Similarly to phase 1 findings (see section 4.4.3 Themes) to help present the data, quotes taken directly from

the data have been used. These quotes have been anonymised and for context have been described according to job role or status of each participant.

Table 7-1 – Phase 4 participant demographics

Participant	Job role	Place of work
Interviews		
1	Clinical Pharmacy Services Manager	City centre teaching hospital
2	General Practitioner	GP practice
3	Consultant Pharmacist	City centre teaching hospital
4	Independent prescriber Hospital Pharmacist	City centre teaching hospital
5	Medicines Management Pharmacist	City centre teaching hospital
6	Pharmacist Teacher Practitioner	University/ City centre teaching hospital
7	Community Pharmacist	City centre community pharmacy
8	Community Pharmacist	Suburban community pharmacy
9	Medicines Safety and Care of the Elderly Pharmacist	City centre teaching hospital
10	Rotational Hospital Pharmacist	City centre teaching hospital
11	Band 7 Haematology Pharmacist	City centre teaching hospital
12	Nurse Ward Manager	City centre teaching hospital
13	Senior Hospital Pharmacist	Large district general hospital
14	Lead Pharmacist for Medicine	City centre teaching hospital
15	Primary Care Prescribing Pharmacist	Clinical commissioning group
16	Outpatient dispensing pharmacist	Large teaching hospital
17	Specialist Paediatric Pharmacist	Children's hospital
18	Medical Education Pharmacist	University/ City centre teaching hospital
19	Junior doctor, medical specialities	City centre teaching hospital
20	Junior doctor, surgical trainee	Teaching hospital
21	Consultant, Acute Medicine	City centre teaching hospital
22	General Practitioner	GP practice
23	Clinical Pharmacy Operations for community pharmacy chain	Large UK community pharmacy chain
Focus group 1		
A	Medicines management technician	City centre teaching hospital
B	AMU medicines management technician	City centre teaching hospital
C	Lead medicines management technician	City centre teaching hospital
D	Medicines management technician	City centre teaching hospital
E	Renal medicines management technician	City centre teaching hospital
F	Medicines management technician	City centre teaching hospital
G	Medicines management technician	City centre teaching hospital
Focus group 2		
H	Patient representative	Patient and public involvement group North West
I	Dementia nurse lead	Patient and public involvement group North West
J	Learning disabilities nurse/carer representative	Patient and public involvement group North West
K	Patient representative	Patient and public involvement group North West
L	Patient representative	Patient and public involvement group North West
M	Carer representative	Patient and public involvement group North West
N	Patient representative	Patient and public involvement group North West

7.4.3 Stepwise review of new model of care

A detailed description of the stages of the new model of care was given in chapter 6 and can be seen in Figure 6-2. This section details the findings of a review of the stages within the new model of care, from the perspective of the stakeholders. The stages have been grouped together as discussed by the participants. In addition to any comments, positive or negative, suggestions for improvement have been included. Any refinements made to the new model of care based on participant suggestions have also been included within the relevant stages.

Stages 1 and 2: Prescribing pharmacist fully integrated into the ward team and decision to discharge

The participants' thoughts on stages 1 and 2 of the new model of care have been discussed together below.

Integrated ward team

Having the pharmacist fully integrated to the ward team was seen as beneficial to write discharge prescriptions.

“Pharmacists being the member of the team who’d write the discharge medications, factoring in anything that’s happened in that ward round or pre-planned in the notes. To me it makes a lot of sense.” Clinical Pharmacy Services Manager

In addition to a pharmacist, it was suggested that it may also be beneficial to have a pharmacy technician integrated into the team and involved in the ward round, to support the logistics of the supply of medication.

“Maybe they could have a technician attached the ward round as well. Because they are really knowledgeable. If a TTO goes missing they can find it, they know exactly where it is. I don't know how they do it but they just do.” Nurse Ward Manager

Before the decision to discharge

Steps could be taken during admission to help the new model of care run smoothly. Participants highlighted the importance of ensuring the patient is prescribed the correct medication during their admission, by performing medicines reconciliation on admission. This should assist the reconciliation of discharge medications.

“Obviously the big part now is the medicines reconciliation to make sure that information is flowing through. So it's important that we move to making sure that we document what everyone has come in on and we can then reconcile at the point of discharge all changes and make sure that does get communicated which is the big problem.” Lead Pharmacist for Medicine

Another suggestion was that for certain patients, the pharmacist could begin writing the discharge prescription before the ward round and make any final adjustments after the decision to discharge has been made. This will help to speed up the process during the ward round and manage the pharmacists' workload.

“Often the decision can be taken before, the ward round could be a confirmatory thing so you could start the planning beforehand ... So that if they know say three of the patients that they are going to see are 99% certain to go home they could have those TTOs written before the ward round, and then when the consultant says yes this patient can go home it is a case of just ‘is anything changing from what I have done?’ No, fine hit the button, move on.” Medicines Management Pharmacist

Decision to discharge

The actual decision to discharge should remain with the consultant responsible for the patient. The new model of care should not affect this.

“The decision to discharge, that's kind of outside of our scope isn't it? So there's social issues etc.” Clinical Pharmacy Services Manager

Stage 3: Writing the discharge prescription and patient consultation

As described in chapter 6 (see Stage 3: Writing the discharge prescription and patient consultation) in the new model of care, writing the discharge prescription and the consultation with the patient should occur simultaneously during the ward round. Both tasks are carried out by the pharmacist, resulting in an increase in pharmacist visibility to patients on the ward in comparison with the current discharge process. Patients should benefit from this increased interaction with the pharmacy team.

“What I like about it is this idea that the pharmacist is more involved in the process, so there you are able to communicate any changes. It’s the stuff that we should be doing, but in a busy hospital we might not get the time to do.” Medical Education Pharmacist

Pharmacists writing the discharge prescription

Hospital pharmacists were considered an appropriate healthcare professional to write discharge prescriptions. Pharmacists were thought to produce quality discharge prescriptions and speed up the process. Pharmacists were seen by participants as able to understand a variety of perspectives and therefore generate an accurate and complete discharge prescription.

“I think having pharmacists write the discharge again can make a lot of sense because we almost have that foot in both camps, you know. We’re clinically minded enough and part of that ward based team to know what’s going on with the care, but we’re functionally minded to know what it takes to create an accurate discharge prescription that a pharmacist can process.” Clinical Pharmacy Services Manager

Junior doctors thought pharmacists writing discharge prescriptions would improve quality of discharge prescriptions, was an appropriate change in role and they were happy for them to do so.

“I have no problem with [pharmacists writing TTOs] it’s one less thing for doctors to do. We had a teaching session with a pharmacist and I was amazed at how many TTO scripts have errors on them that have to have a phone call. So you would hope that pharmacists writing the TTO would reduce that risk. So it probably will reduce time overall.” Junior doctor, medical specialities

Logistics of writing discharge prescriptions during the ward round

Writing discharge prescriptions on the ward round alongside the medical team on the ward round was thought to complement shared decision making policies.

“The new prescribing competencies emphasise the point of shared decision-making. You do need to have close involvement with the team because you are available to them and they are available to you.” Senior Hospital Pharmacist

This stage of the new model of care was thought by many participants to be feasible and work well. However, participants did note that there may be certain issues that could slow down the process. The following issues were highlighted. If the inpatient prescribed medication was not correct at the time of writing the discharge prescription. The pharmacist would have to take the time to rectify any issues before starting the discharge prescription.

“So I think that it is a good model. I can see that that there are potentials for slowing down if you have to do the meds rec at the same time. And often you can do it easier if you've got the patient in front of you. If you're doing a TTO at the bedside you can go through the medications there and then. You can quite quickly know what is right and what is wrong, it is just sorting it that takes a bit of time, are mistakes intentional or not?” Senior Hospital Pharmacist

The timing of the ward round itself could also impede the process. If ward rounds or decisions about patient care are occurring later in the day, this will impact the time in which the discharge prescriptions can be written. Participants suggested that to overcome this, straight-forward discharge prescriptions should be completed as early as possible, to reduce the number remaining later in the day.

“If it’s done in the morning then they can all be done early on in the day. If my ward round was at 3 o’clock in the afternoon I’d be in a difficult position. There will be some situations where you can’t make the decisions, for example you’re waiting for the INR to come back before you dose the warfarin. I think the key to this is getting the quick ones done and then the ones with problems you accept that there may be a decision late in the day but that’s alright we can manage that because we’ve got less of them. And it’s meeting the patient expectation, let them know what else needs doing.” Lead Pharmacist for Medicine

A further obstacle highlighted was around logistics. If the ward round team move on to the next patient whilst the pharmacist is still writing the discharge prescription, or talking to the patient, they could miss information about the next patient.

“But I think there is a downside though, to what you have described. Because if you have someone on a ward round, say the first patient you start the TTO for discharge and you then leave the ward round. We don’t stop, we carry on and the second person may also be going home and then you’re playing catch up then and you become independent from that team.” Junior doctor, medical specialities

There is then a risk that pharmacists will rush discharge prescriptions, reducing their quality, to keep up with the pace of the ward round. One suggestion included waiting until after the ward round to write the discharge prescriptions if this became a problem. This would ensure that the pharmacist would be fully informed. However it could delay

all of the discharge prescriptions, depending on the length of time the ward round takes. This could result in a similar situation to what happens currently.

“I do worry that you as a pharmacist will miss a lot of the ward round and you might end up rushing the TTO to get the next patient, so you wouldn't miss if someone with a massive medication list is going to go home. So might be better to do the ward rounds, take notes and then go to a room away from bleeps and work your way through them. You could ask which are the priority as well, annotate which ones are palliative ones or blister packs or ambulances and then after you've written them all liaise with the nurses” Band 7 Haematology Pharmacist

Having to miss part of the ward round appears to be commonplace and from a consultant's perspective, it is better to follow this model and hear the majority of relevant information than to not attend the ward round and potentially miss all relevant information.

“If the next person is discharged, you're going to miss it. But then still, you have picked up on the first one. Unless you're going to have 100 pharmacists which I doubt, that's always going to be a problem. And I think it's still better to do some, even if you can't catch all of them. Because really for a pharmacist it's crucial that they are there, because they're picking up why these medicines are [prescribed].” Consultant, Acute Medicine

By having the appropriate information technology (IT) infrastructure in place, this should allow the pharmacist to write discharge prescriptions without having to move away from the ward round.

“Now that we are using more IT based things, if you're the pharmacist on the round and it's a simple TTO, there's nothing to stop you having a notebook or a tablet and doing it on that. But you don't have to physically

leave the ward round. There may be lots of patients where you are not physically needed for every single patient, but you are in the room. But that's about the available technology rather than anything else." Junior doctor, medical specialities

Another logistical issue highlighted was the difficulty attending the ward rounds. Potentially trying to organise attending more than one ward round could be difficult. Particularly if they are running at the same time.

"If you are just covering a ward and so if you are covering and you have got another ward and the ward rounds are at the same time, how would the pharmacist know what needs to go on the TTO?" Independent prescriber Hospital Pharmacist

Patient consultation

The patient consultation involves two aspects: medication counselling and an explanation of the discharge process and what the patient will need to do to obtain their discharge medication.

The benefits of patient counselling by a pharmacist are discussed throughout this thesis. Despite the majority of participants agreeing that the new model of care provides an ideal opportunity to counsel patients, one participant raised the issue that some patients may be preoccupied and not take in the information.

"If you've just been told you can go home, is that the right time to counsel a patient? Or is there another time they are going to be more receptive to information? I think it's a tricky one because you have got the opportunity to counsel them and once they are out of the system you may find that they are not engaging with the system. Equally I think at the point that you are being discharged, there is a reasonable subset of patients whose focus is then going to be on the process of going home

and their attention is going to be reduced.” Clinical Pharmacy Services Manager

This same participant suggested that technology could be used to provide patient counselling. Patients could be given electronic access to counselling points about medication that could be read at a time convenient for a patient.

“I don’t really understand why you don’t have a QR code, or a website on a discharge summary then you’ve got a video repository that you could add. So you can always get your counselling and people could see, and pick and choose their drugs.” Clinical Pharmacy Services Manager

As discussed in phases 1 and 2, patient counselling is not occurring routinely. It is unclear exactly when the most appropriate time to counsel patients is. Every patient is different and many factors will affect attention span, for example: the stage of discharge they are at, other personal issues and the amount of information they are given. From the responses of participants, there does not appear to be a clear time to counsel patients. Counselling throughout admission if any changes are made would be beneficial, however from the generally positive responses from stakeholders, where possible counselling should take place with the pharmacist at the point that the discharge prescription is written. If further counselling can take place as a reminder, this will reinforce the information and should be encouraged.

As previously mentioned, in the current discharge process patients are often misinformed when they are told that they can be discharged. Patients think that they can go home straight away and are often left frustrated when the process takes much longer than expected.

“From personal experience I know that many patients and their relatives get really irate and upset when they are told that they can go and are then left waiting. I always think, why are they told they can go if they

don't have the medicines? Because actually you can't go. It's being told to patients wrong." Patient representative

Participants saw the benefits of having a pharmacist present at this point to ensure that the patient is fully informed of the process and the likely duration.

"If the pharmacists are there prescribing, you can eradicate any of that misinformation. You would be able to clarify it on that earlier intervention." Dementia nurse lead

Stages 4 and 5: Communication between pharmacy team and verification of the discharge process

The next two stages of the new model of care involve the prescribing pharmacist communicating to the pharmacy technician and the second pharmacist that a discharge prescription is ready and needs to be clinically checked and verified.

Communication between the pharmacy team was thought to be easier than communication with the doctors who may not be on the ward when required.

"It is easier for a pharmacist to contact a pharmacist rather than the doctors who may have a million other places that they need to be." Independent prescriber Hospital Pharmacist

Verification of the discharge prescription by a second pharmacist was thought to be an important stage in the process, as pharmacists are still at risk of making prescribing errors.

"And then there's a bit in there that I really strongly agree with and that's that you are going to get someone verifying the pharmacists' work. Because we always feel much safer when a pharmacist has reviewed our work. A lot of it is because you are going to make mistakes as human

error. We have a natural safety check when a doctor prescribes and a pharmacist checks it and I think you need to keep that safety check there. Show me someone who has done 100 prescriptions and not made a mistake on any of them. Especially when it's busy.” Consultant, Acute Medicine

Although it is not mandatory to clinically check a pharmacist's prescribing, those pharmacists who are likely to carry out the role agreed that they would prefer to have their prescribing checked by another pharmacist.

“Yes definitely. As someone who is just going through my non-medical prescribing training now and potentially working as a prescriber rather than a pharmacist I wouldn't want to be doing both sets myself. I don't think the RPS or the GPhC are explicit about that at the moment, beyond controlled drugs. But I do think that it is good practice to have someone doing the clinical check. Separate the tasks out.” Medicines Management Pharmacist

One participant suggested that the community pharmacist could verify the discharge prescription, to reduce duplication of stages in the new model of care.

“I think [the verification of TTO by a second pharmacist] is an additional step that may not be necessary. Could this not be done by the community pharmacist rather than the hospital pharmacist? The term 'clinical pharmacist' is often talked about in relation to hospital pharmacists, but all pharmacists are clinical pharmacists. The community pharmacist will be doing their own clinical check when they receive the TTO, as they would with any other type of prescription that they receive. So having the hospital pharmacist do a clinical check and then a community pharmacist do a check ... Basically you are duplicating work here and adding a rate-limiting step.” Head of Clinical Pharmacy Operations for community pharmacy

Stages 6 and 7: Assessment of patients' own medication for discharge and does patient have all medication required for discharge

Patients' own medication will be assessed by the pharmacy team to establish what medication needs supplying on the discharge prescription. This happens in the current discharge process. Participants suggested that few items would need to be dispensed for the discharge prescription if the patient's medication had been appropriately managed during their inpatient stay.

"Hopefully they would have [all their medication] anyway. We manage our ward really well. Our TTOs hardly ever need dispensing. The technician manages it completely and pre-emptively. She looks at the notes and she listens on the ward rounds as well, she's in the background to see what might be happening. What drugs might be coming up." Band 7 Haematology Pharmacist

Stages 8 and 9: Prescription sent electronically to community pharmacy and communication with community pharmacy

As discussed in section 6.5.1 Rationale for new model of care for patient discharge from hospital, the discharge prescription will be sent to the patients' community pharmacy to be dispensed in stage 8 of the new model of care. Stage 9 involves communication between the pharmacy team in the hospital and the community pharmacist to ensure that the community pharmacy can provide the medicines required on the discharge prescription for the patient.

Following a detailed discussion with participants around stages 8 and 9, more steps are involved within these two stages than simply sending the prescription to the community pharmacy and communicating with the community pharmacy. As a result, the proposed model of care has been refined to expand on stages 8 and 9 to capture each element discussed by participants.

“You’ve got information that needs to go to the community pharmacy, community pharmacy needs to acknowledge that information, decide whether they can act on it, physically supply a patient, then there’s got to be some sort of feedback if they can’t.” Clinical Pharmacy Services Manager

Sending the prescription electronically to the community pharmacy

Participants were in agreement that a single electronic system should be used, rather than having different methods of sending over the discharge prescription.

“If you're using a system which involves every single community pharmacy it is better to use a system which is consistent. Rather than saying one trust will fax them down, we'll email them down, we'll scan a copy on and then email that. At least then it is electronically signed the doctor has to go dink it's signed and then it goes to the spine.” Community pharmacist

Participants thought that to improve continuity of care, regardless of whether patients need their discharge prescription sending to their community pharmacy to be dispensed, they should still be given the option of sending it to the community pharmacy for information purposes.

“Potentially you should be asking the patient if they want us to send their information to the community pharmacy whether they are waiting for a supply or not of their medicines. This is for continuity of care and to help prevent problems.” Independent prescriber Hospital Pharmacist

Patients should be given the choice as to whether they would like their discharge information to be sent over to their community pharmacy even if a supply of medicines is not required. For this reason, in the refined model of care, during stage 10 when the patient is prepared for discharge, they will also be asked if they would like their

discharge prescription to be sent to the community pharmacy if this has not already been done. Then as part of the transfer of care across the interface in stage 11, the discharge information can be sent to the community pharmacy as well as the GP if appropriate. This alteration can be seen in the refined model of care in Figure 7-1.

Communication between hospital and community pharmacy

Participants agreed that communication between hospital pharmacists and community pharmacists is important.

“Opening up that communication with community pharmacy, it’s definitely the way we need to be moving forward. In the last MDT I was at, they really appreciate how important it is for communication between different levels of care and not just hospital doing everything and then in community they haven’t got a clue what’s been going on.” Medical Education Pharmacist

Respondents highlighted several projects beginning across the UK, looking at sending patients’ discharge information to their community pharmacy for information. This has not expanded to involving community pharmacies in dispensing medication for discharge. The response had been positive to the idea of hospitals sending over discharge information to the community pharmacy, with talks around how it can link into providing MURs and the NMS for patients after discharge.

“Yeah everybody was really keen. It was like yeah, that makes so much sense. We were talking around linking it in with the MURs and the New Medicines Service as well.” Primary Care Prescribing Pharmacist

Participants raised concerns around an increase in the volume of telephone calls from community pharmacies as a result of outsourcing dispensing of discharge prescriptions to community pharmacies. Without adequate communication, community pharmacists may need to repeatedly contact the prescriber if there is anything that they are unsure

of. This could hinder the process and increase the workload for both community and hospital pharmacists.

“We don’t really communicate that well with community pharmacists. I think that has to change fundamentally. We do have to be more proactive at communicating any changes, almost pre-empting if it is something unusual maybe to let them know in advance. Just in case they query it. Otherwise you might be having calls all of the time.” Pharmacist Teacher Practitioner

An issue raised by one participant was that to ensure that the community pharmacist is able to supply the correct medication for each patient, it is important for them to understand the format of the discharge prescription and the endorsements made by hospital pharmacy staff indicating which medications need to be supplied.

“We need to be very clear with the community pharmacist what they actually need to dispense, because some of the items will have been dispensed as an inpatient. Sometimes you may not want anything supplying, so we need some way in the system of letting them know what the endorsements are.” Lead Pharmacist for Medicine

For the purpose of the new model of care, the discharge prescription form to be sent to community pharmacies could be designed to provide clear, easy to follow information. This would assist the community pharmacy to dispense the correct medication.

“If you are developing your own [form], you could have a column on there that was pre-populated. So all items could go on the discharge prescription to let them know what the hospital was treating the patient with, but you could have a box saying community pharmacy not to supply.” Medicines Management Pharmacist

It is important to note that there would be issues around legality for the community pharmacist dispensing medication off a discharge prescription form. These would have to be clarified before a pilot of the new model of care.

Continued communication between the hospital and the community pharmacy was considered important, to update them on any changes that would affect the supply of discharge medication. The community pharmacy should be kept fully informed throughout the discharge process, despite this adding to the hospital pharmacy team's workload.

“But then what happens if they don't send [the patient] home and the pharmacy is waiting with all these meds and they can't send them? We would obviously have to communicate that they are actually not going home, but that might be an extra step.” Band 7 Haematology Pharmacist

For example, whereas pre-empting patient discharge and early organisation can help smooth the discharge process, if there were last minute changes to the discharge prescription or the number of days required for short courses had altered since the community pharmacy had received the discharge prescription, this could cause problems.

Mechanism of communication across the interface

Several participants commented that a telephone call would be inefficient for the communication across the interface.

“I don't instinctively like the idea of phoning the community pharmacy. So would we have to ring the community pharmacy? And if we did that, could it end up taking a similar amount of time to dispensing it in the hospital?” Consultant Pharmacist

In addition to being a time intensive form of communication, one participant highlighted the risk of errors due to miscommunication.

“A phone call to me is quite nice and very friendly, but is actually going to open up a can of worms and cause more problems. First of all it relies on you getting through on the phone and that is quite tricky. Secondly, you get misinterpretation. You have to spell out names of drugs and you might be given quite a lot of information.” Community Pharmacist

Utilising technology to send the discharge prescription and any necessary additional information was considered a more efficient mechanism of communication between the hospital pharmacy team and the community pharmacist than a telephone call.

GPs and community pharmacists routinely use the widely available EPS system to transfer prescriptions electronically. One problem highlighted by a GP familiar with the system was that the current EPS system is only a one-way communication system, which may not be appropriate for the new model of care.

“If you were going to use the electronic note attached to the prescription for your system, you would have to have another way of confirming that the community pharmacist had read your note and were able to action it. You could attach a note saying ‘please deliver today’, but how will they then respond to this? How do they communicate any issues that they have? This is only a one-way communication system.” General Practitioner

A two-way electronic communication system would be preferred. It could be used to send the discharge prescription to the community pharmacist, they could then acknowledge and respond to the request to dispense the discharge prescription using the same system.

“Some kind of system that would be incumbent on rechecking to see that they’ve physically acknowledged it. I don’t know, maybe I’ve sent it off, therefore a red traffic light appears against the patient. They acknowledge it, therefore an amber light appears. I know it’s been seen but not actioned, then a green light when it’s been actioned. Something like that.” Clinical Pharmacy Services Manager

Participants highlighted that an alert to make the community pharmacist aware that a discharge prescription has been received would be useful. Without an alert, there is a risk that the discharge prescriptions will be missed and patients could go without their medication which could cause patient harm.

“How are they going to be alerted, especially as there could be a locum pharmacist in unfamiliar with the system? It could be that they don’t look at their alerts for a few days and the patient is left without their antibiotics and ends up with septicaemia.” Consultant Pharmacist

An essential part of the new model of care is ensuring that there is an alert for the community pharmacist to let them know that a discharge prescription has been received and when it is required. This will be incorporated into the electronic system used for the new model of care.

It was highlighted that the new model of care did not take into account what would happen if the discharge prescription was sent to the community pharmacy and they are unable to supply the medication for the patient.

“Decide whether they can act on [the discharge prescription], physically supply a patient, then there’s got to be some sort of feedback if they can’t.” Clinical Pharmacy Services Manager

Subsequently, in the refined new model of care (see Figure 7-1) an additional stage has been added after stage 9 to indicate the process under such circumstances. There are

various reasons why community pharmacies may be unable to supply the discharge medication, these are discussed in Stage 13: Community pharmacy supply patient with medication. The recommendations for suitable alternative mechanisms of medication supply if the community pharmacist is unable to supply the discharge medication are based on the discussions had with stakeholders, detailed under Stage 13.

Stage 10: Patient prepared for discharge

During stage 10 of the discharge process the patient is prepared for discharge, during which a member of the pharmacy team gives the patient any medication already on the ward, explains the process and the arrangements for obtaining any medication outstanding from their community pharmacy and provides any last minute counselling. Participants considered this an appropriate role for the pharmacy team to take on.

"I really like the idea about the pharmacy staff giving the medicines to the patient. I know certainly there is difficulty with that because the nurses obviously have got a lot to do. I think we may be able to put a richer focus on that. Not just in terms of making sure that they do get their medicines. But also about ensuring that they are happy with what they have been given. I'm not saying that that should be left until that point but in terms of counselling and information it's a continual process through the patient's stay. It is time to reinforce that and address any concerns they have before they leave the hospital. Reinforce you know all the supplies going to be continued after discharge. That you are going to be talking to their community pharmacist as well as the GP about the medicines. So it is a good idea." Medicines safety and Care of the Elderly Pharmacist

Preparing the patient for discharge is currently a nursing role, however nurses thought that it would be appropriate for pharmacists to take on this role and that patients were likely to receive an improved service as a result.

“That's great I don't see it as taking the job from the nurses. I see it as freeing us up to do other things. We will still be involved in it. It will still be our job to say ‘have you spoken to the pharmacist? You've got your medicines, do you understand?’ I don't see it as taking anything away and if I'm honest I think you would also find with the pressures with a lot of the newly qualified, just with the demands generally, there are a lot more errors. We also don't have that knowledge that the pharmacists have so don't leave it to juniors who have only been qualified six months and who don't know medicines inside-out.” Nurse Ward Manager

Participants thought that some of the errors in providing medication at discharge would be reduced by having a member of the pharmacy team check the medication given out to patients.

“Yes I mean we see so many errors, stuff just gets scooped out of the lockers and handed over to the patient. We had some medication that was about £1500 per box for use in ITU only and somehow this box managed to go home with the patient and I don't know how that happened. It was unbelievable. I know that is an extreme version but we see lots of errors like this. So I think this will be reduced with pharmacy involvement so that will be a good thing.” Senior Hospital Pharmacist

This stage does not have to be an additional step in the process, it could occur at the same time that the patients' own medication is assessed by the pharmacy team. As the pharmacy team is ward based, there should be no disruption by leaving the ward to carry out any tasks.

“I don't think you want to encumber the process by adding steps per-se. I wouldn't want to be waiting for a member of the pharmacy team to come back up and check that before the patient can go. You're potentially adding another step to delay the patient's exit. But if it is a ward based

system, the whole process would take place at the same time on the ward.” Clinical Pharmacy Services Manager

Stages 11 and 11a: Transfer of care and GP receives discharge information

Transfer of care to the GP involves the electronic sending of information to the GP which should already be happening in practice. The quality of information sent to the GP can be poor, as discussed in section 2.7.2 Medication errors at discharge from hospital, although one GP thought that this had improved with the use of electronic systems.

“GPs don’t always get accurate and complete information sent to them about patient discharge. To be fair, it’s been a lot better in recent months with things coming through electronically. But I think the quality of what we get is sometimes a bit disturbing and needs to be looked at.” General Practitioner

Another GP highlighted that communication with district nurses could be improved. There may be scope to include other relevant healthcare professionals in the community in the transfer of discharge information.

“The communication with district nurses isn’t always done well, so we may also get involved here. Making sure communication is good so that it is easier for different agencies and that everything is set up would be good.” General Practitioner

Stage 12: GP Pharmacist Involvement

More GP practices are employing pharmacists and there is scope for them to play an important role in the new model of care, ensuring patient care remains stable across the interface. Participants agreed that GP pharmacists could play an important role in the new model of care.

“I believe highly that GP pharmacists are the future and I think we will be started to be asked more questions by this team of people. So this I think

is really important and it will become bigger. And questions will be asked about performance and making sure that things are right for patients. So the GP pharmacist involvement I think is a definite in my case.” Lead Pharmacist for Medicine

Undertaking medicines reconciliation when the patient returns back to the community would fit in with guidance which suggests that medicines reconciliation should be carried out at any transfer of care setting. This should highlight issues and could potentially reduce patient harm and readmission to hospital.

“This fits in with the NICE meds optimisation guideline that said that there should be medicines reconciliation when you change setting and also we know from some of our venalink audits and things like that, that it is not always actioned as quickly as it should be on to the system. So actually getting those pharmacists involved if the discharge prescriptions are going to them and then they can make sure that the meds rec is done on the GP system is actually probably a brilliant idea. It will probably solve quite a lot of our re-attendance [rates] because of the prescribing error issues ... GP pharmacists getting involved at discharge is definitely a good idea.” Medicines Management Pharmacist

Stage 13: Community pharmacy supply patient with medication

Although overall the community pharmacy dispensing discharge prescriptions was seen as a positive step, participants had some reservations. One participant suggested that to manage patient expectations, a time slot would be useful from the community pharmacy so the patient knows when to expect their medication. Updates could be provided by the community pharmacy via email or text message so that the patient is fully informed.

“So community pharmacy supply patient with medication outstanding. So you’re probably going to want a time slot aren’t you ... If you order

something online, you get an email that's got a number of steps in the process. You've placed the order, they've dispatched it and it's with their courier for delivery ... Why don't we. We could have that and patients could see their TTO going through the process and you'd be able to manage expectations. Something to instil confidence in the process. An unknown feels longer than a defined period of time" Clinical Pharmacy Services Manager

One of the issues highlighted was that patients may be reliant on support from family members, friends or carers to use this model of care. Potentially by arranging to have medication delivered this would reduce this risk, however this may not be practical if patients are unsure what time they will arrive home.

"That is another stop for a patient on the way home. This could be a problem if patient just wants to get home or if their hospital transport home means that they don't know what time they will get home. You're then relying on friends or family to collect them for you and not everyone will have someone nearby who can do that for them." Consultant Pharmacist

Logistics of community pharmacy supplying discharge medication

The main issues highlighted by stakeholders in having community pharmacists dispense discharge prescriptions were around the logistics of making that supply and getting it to the patient in a timely manner. A range of logistical issues were discussed. Blister packs were seen as a barrier, because they take a long time to dispense and community pharmacists may not be able to provide them under short notice.

"Blister pack patients could be problematic. I suppose the issue of blister packs with major changes, that is a real issue because community pharmacists don't turn round blister packs in a couple of hours. Whereas [hospitals] do, so although we say we are slow we actually do expect to

be able to turn around blister packs in a couple of hours.” Senior Hospital Pharmacist

Conversely, another participant felt that because the community pharmacy usually arranges the supply of patients’ blister packs, they were best placed to make any changes to the blister packs.

“I think it sounds brilliant, because when I used to do hospital discharges, there was the odd occasion where you needed to liaise with the community pharmacist, so you would phone them. You know, if someone had a tray that was due to be delivered that was going to be completely wrong. The problem being, on discharge if you phoned the community pharmacist, they’d already done a month’s worth of trays. So that was a waste. I don’t know how they got around that. We only did a week, so that was confusing because it was a different system. And quite often I would receive phone calls from community pharmacists a few weeks down the line to say ‘I believe such and such a patient was in hospital, what were the changes?’ So we could fax or scan a copy of their discharge to the pharmacist, but it was only if they contacted us. So I think it’s a really good thing.” Outpatient dispensing pharmacist

Community pharmacies have limited opening hours, although some are now open for longer hours. This will affect the timescale in which a discharge prescription can be sent to a community pharmacy, which could be problematic for patients requiring later discharge.

“I’ve had situations where my mum has been discharged at 7 o’clock at night. Her pharmacy isn’t open at that time of night, so what would the situation be then if she is expected to get home and pick up her medication from the pharmacy. Because again, you’re time restricted.” Carer representative

The community pharmacy's workload could affect when the discharge prescriptions are dispensed and how they are prioritised. This would affect the timeliness of the patient receiving their discharge medication.

"Hospitals prioritise TTOs because we know patients are going home, but how will the community pharmacy be able to prioritise these over their other workload. If they have a lot of patients waiting in the shop, they're obviously going to prioritise them." Consultant Pharmacist

There may also be stock issues for community pharmacies. The types of medication prescribed on discharge prescriptions may differ to the stock that they currently hold. They may have to order certain medication in, which could delay the patient receiving their medication.

"Community pharmacies don't carry necessarily the same things as hospital pharmacies. Whereas we would make a decision and find the patient an appropriate alternative and we have more options to find something suitable if we run out, in community pharmacies if it isn't on the shelf they are unlikely to be able to get it. So there's a risk of some people not being able to get what they need." Consultant Pharmacist

Community pharmacies can obtain the majority of medication quickly. However certain items can take a long time to source, such as specials.

"The other problem is how quickly would a community pharmacy be able to get hold of a special? Sometimes it takes them two weeks." Specialist Paediatric Pharmacist

Additionally, patients who are prescribed hospital-only medication could have problems obtaining a supply at discharge, because these medications cannot be supplied by a community pharmacist.

Many patients would be reliant on the community pharmacy delivering the medication to them. Depending on the individual community pharmacy and how they run their delivery service this may not be possible.

“Every place has a delivery service now. It's just a matter of how they run them. So little small places will have their drivers and you can just say ‘you need to come back, you need to come and pick this up.’ Somewhere like Boots has, they strategically operate, you load up all of your deliveries onto the central system. They have a set of drivers and they plan their route out and then they go and pick them up and then they are told on which route to go and plan ahead and do that. But I'm not sure that gives you much scope for last-minute emergency deliveries. I'm assuming there's got to be some way round it because that situation can't be unique.” Community Pharmacist

These logistical issues could all be worked through before the new model of care was implemented. By having the fail-safe mechanisms discussed in section 7.5.3 Ensuring quality and safety of new model of care, patients would not be discharged from hospital without a guarantee that they will receive a supply of their discharge medication.

Prescription charges

Hospitals do not currently charge patients for discharge medication supplied. Community pharmacies do enforce a prescription charge. The risk that if patients have to start paying for their discharge medication from the community that they will not collect the medication was highlighted. This could put patients at risk of harm and readmission to hospital.

“Do you think for people that pay for prescriptions, would they pick it up? Because they wouldn't have to pay for it if they got it here but they would at a community pharmacy. Then if they didn't take the medication would they end up back in [hospital]?” Medicines Management Technician

If patients did have to pay for their discharge medication, one participant thought that it could lead to a cost saving for the NHS.

“It could save the NHS a fortune really, if people are going to start paying for prescriptions that they normally get for free.” AMU medicines management technician

Stage 14: Ability to contact hospital pharmacist

By including the prescriber’s contact details on the discharge prescription, this allows healthcare professionals in the community and patients to contact the prescriber if there are any issues. Participants considered this beneficial for community pharmacists trying to contact the prescriber.

“That is the other thing that I really liked about this that you have got the pharmacist that has done the prescription is more available to the community pharmacy, I think that is a really positive thing. That ticked a big box I think.” Senior Hospital Pharmacist

It was also thought to be beneficial for GPs to have easy access to the prescriber.

“If we have any queries with the discharge summary, having a contact number for someone involved in the patient’s care would be useful. For non-urgent questions it is easy to write to the patient’s consultant as their name is usually on the discharge summary. However for questions that we need a quick answer for, it would be useful to have someone that we could call up. For example the patient may have had problems with that drug before, but they didn’t tell anyone about it in hospital and now they are prescribed it.” General Practitioner

From a feasibility perspective, participants were concerned that direct phone numbers to the prescriber may lead to telephone calls at inappropriate times and perhaps

providing the pharmacy telephone number so that calls can be screened may be an option.

“I like the idea of being able to contact the hospital pharmacist. I just don't know whether you might want to... The consultant has got the screen of their secretary. You haven't got any screen so if you are giving out direct contact numbers. Where is the ‘right I will deal with this, but right now I need to be doing something else’ Do we give the details of the pharmacy secretaries who can then triage it out to people appropriately? In the same way that the consultant’s secretary would. Just because otherwise I can see pharmacists being pestered and also once you have got a ‘oh I know the cardiology pharmacists contact details I will just give her a call because this is a cardiology kind of problem’. So just something in there to give us a screen. I am not saying we shouldn't be contactable but you are not always free at the moment the call comes in.” Medicines Management Pharmacist

Stage 15: Patient support and advice in community

An additional stage for the new model of care was suggested. This was to include follow up of patients with the community pharmacist. Linking the patient with their community pharmacist provides an opportunity for the patient to make use of services such as MURs and NMS provided by their community pharmacy. This option could ensure that the patient has no issues with their medication after discharge and provides a point of contact if there are issues.

“I also think that you could almost extend this model somewhat to have an ‘after discharge’ section. This would be mainly community pharmacy involvement, but there could be a lot of it. You’d probably want to consider how and where counselling by the community pharmacist would take place. As I think it is important that this happens. It’s also trying to see what follow up services the community pharmacy could provide. Could you link in the discharge MUR service, or the new medicines service,

depending on what medicines the patient was started on during admission.” Head of Clinical Pharmacy Operations for community pharmacy

Stage 15 has therefore been added in the refined model of care, which can be seen in Figure 7-1.

7.4.4 Themes

In addition to the stepwise review of the new model of care, a separate qualitative analysis was undertaken to review the new model of care holistically. Three main themes emerged during this qualitative analysis. The themes are based around the aspects of the new model of care considered important to participants. An overview of the themes followed by a description of the subthemes are presented throughout sections 7.4.4.1 – 7.4.4.3. A list of the themes and subthemes can be seen in Table 7-2.

Table 7-2 – Phase 4 List of themes and subthemes

Theme	Subthemes
Impact of new model of care	Positive impact of the new model of care Addressing delays at discharge Impact on other aspects of patient care Education
Resources required for new model of care	Infrastructure Training Payment or funding of new model of care Implementing the new model of care
Ensuring quality and safety of new model of care	Quality and safety issues Managing patient expectations Ensuring the success of the new model of care Healthcare professional competence Barriers to patients receiving medication Prescribing responsibility

7.4.4.1 Impact of new model of care

This theme comprises the following four subthemes: positive impact of the new model of care, addressing delays at discharge, impact of other aspects of patient care and education.

Overall, there were many positive comments about the new model of care along with some constructive feedback on the likely problem areas of the model. Stakeholder opinions on the new model of care are discussed throughout the findings section within the appropriate themes relating to the specific areas.

7.4.4.1.1 Positive impact of the new model of care

Participants anticipated many benefits from the new model of care. Participants liked the idea of the integrated ward team writing discharge prescriptions during ward rounds and counselling patients at this point would be an improvement in comparison to the current discharge process.

“I think it is not just a good thing I think it's fabulous. It is the natural progression. In the old days when consultants did a ward round and they had all the people around them the consultant will be teaching them, asking questions and all the rest of it. They could take their time and then walk away and everything could be done in the afternoon. And that's entrenched in them that format. What they need to know is that everything that they can do TTOs and [discharge summaries] and everything else in real time then it is an enhanced service. But most especially the patient safety and the opportunity for someone to counsel patients about medication changes.” Nurse Ward Manager

Participants agreed that there would likely be an improvement in speed and patient experience as well as patient flow.

“So you're thinking the specialist pharmacist will be the person writing the discharges... There will be a massive help in terms of time saving, bed

occupancy, patient journey. The journey will be better as they'll be much happier and can leave the hospital sooner and so on." Specialist Paediatric Pharmacist

By having the pharmacist write discharge prescriptions, this effectively frees up the doctors time to complete other tasks. Their skills can be utilised elsewhere.

"It is a very time intensive system, but then it does free up doctors so maybe in that model that is something we need to think about. What the doctors would do instead ... So it improves the quality, but it also allows the doctors to use their skills elsewhere." Senior Hospital Pharmacist

From a GP perspective, the new model of care provides an additional mechanism of reducing the risk of patient harm, by informing the community pharmacy of the patients' discharge medication.

"Yes, I think that it could potentially have benefits, thinking about continuity especially, because we have had situations where the community pharmacists have not been made aware that the patient has had any changes to their medicines in hospital and continue to supply their previous medicines. The patient then gets a little confused about which medicines they should be taking and ends up defaulting back to their old medicines. So I think that communication with the community pharmacist is really important." General Practitioner

Additionally, by outsourcing the dispensing of discharge prescriptions, the hospital pharmacy team would have more time to focus on providing an improved clinical pharmacy service for patients.

"It would allow us more time to spend on clinical activities" Consultant Pharmacist

7.4.4.1.1.1 Pharmacy ownership

A further potential benefit mentioned by several participants was the pharmacy ownership within this model of care. This means that the pharmacy team would take responsibility for the process of supply of medication at discharge. This ownership will make pharmacy responsible for the success of the model. The new model of care would promote the use of pharmacy both in the hospital and the community by identifying the pharmacists involved in patients' care.

"I like that you're actually putting a face to pharmacy. It's pro-pharmacy and as a profession we're not very good at doing that." Medical Education Pharmacist

Encouraging team-working and ensuring pharmacy services are ward-based will increase pharmacy ownership of patient care. Pharmacy team members will be more engaged in patient care as a result and therefore motivated to work efficiently.

"Being more ward-based will give the pharmacy team more ownership over the patients especially those used to being in the dispensary. I think that if we move ownership to people, they will work more efficiently because they will want to work with the team and they'll be able to prioritise. It will also improve communication between different healthcare professionals because everyone is on the ward and easier to contact." Lead Pharmacist for Medicine

One downside to the increased pharmacy ownership within the new model of care is that pharmacy working hours are limited. For patients discharged out of pharmacy hours, this could be an issue as they may not receive the same level of service.

"I think it keeps all of the ownership with pharmacy and I do think that is important, but it is just out of hours isn't it." Independent prescriber Hospital Pharmacist

7.4.4.1.1.2 Continuity of care

The new model of care was thought to assist community pharmacists in providing ongoing patient care after discharge. Providing detailed discharge information to the patients' regular community pharmacist was seen to be helpful for correctly supplying future medication and providing continued care for patients as they will be aware of any issues or changes to medication.

“Once they are done then they are back on the monthly prescriptions... it gives you, particularly if it is one of your regular patients you are then very much aware and you have dispensed the new prescriptions. So instead of waiting to see a copy of the discharge letter which sometimes doesn't always come to you and then you are dispensing off an old prescription. You're then seeing straightaway the changes in the medication and so you know for when you are ordering next time, if they're on your repeat ordering service, that actually there's been these changes when they came home on the TTO.” Community pharmacist

In other countries, hospitals do not dispense discharge prescriptions for patients. These patients leave hospital and continue to get their medication from the GP. There is limited communication within this process and therefore a lack of continuity of care. The new model of care builds on the aspect of dispensing medication outside the hospital, but provides the continuity of care aspect that is missing in these existing systems by transferring discharge information to community healthcare providers.

“I first came across this actually when a pharmacist from Denmark came years ago to the hospital and they don't do discharges at all. And a lot of continental places don't do that. So there is no continuation of care which obviously is part of NICE and general common sense, but it is in the NICE medicines reconciliation thing. So I think certainly it increases our communication with community pharmacy and it may help them in the management of ongoing conditions.” Senior Hospital Pharmacist

One GP raised an interesting point about the nature of the continuity of care provided by the new model. Although it will improve the records kept at a patient's community pharmacy, which will be beneficial for future care, a patient will not necessarily see the same community pharmacist each time they visit the community pharmacy.

“What continuity of care exists at the moment with community pharmacies? Now, I can tell you that some of the small independents probably do have a reasonable degree of continuity of care. But some of the large chains, the pharmacist I would say changes quite frequently. So I don't think there is that sort of continuity. So there may be continuity in terms of records that the pharmacists are keeping, but I'm not sure there's necessarily that continuity of the individual personal touch.”

General Practitioner

7.4.4.1.1.3 Unintended benefits

In addition to the intended benefits, participants noted potential unintended benefits of the new model of care. A prescribing pharmacist present on the ward round was thought by a range of participants to have other benefits, not just writing discharge prescriptions. The pharmacist would be able to resolve any medication issues at the point of the ward round, regardless of whether the patient was due for discharge.

“So there will be other involvement for pharmacists on the ward round, they won't just be doing the discharges they will be getting involved in the patients who've got pharmaceutical care needs as well.”

Medicines Management Pharmacist

There are also potential benefits around reducing medicines waste. For patients with existing repeat prescriptions, community pharmacists would be familiar with any changes to the patient's medication and be able to supply the most recent, correct medication rather than medication that may no longer be suitable.

“I think it would be really good. There’s a lot of work going on around repeat prescribing systems and stuff like that and it supports that agenda completely because you’re taking away the risks of repeat prescribing because the medicines are there. What quite often happens now is when the patient is in hospital, community pharmacists order on their behalf. The prescriptions are there, try and get delivered and the patient’s in hospital and they come out with new meds that are different and they’ve just had a new prescription. So just within that one cycle there’s loads of waste. So by cutting it out and sending it straight to the pharmacy, it’s going to reduce the waste in the system.” Primary Care Prescribing Pharmacist

7.4.4.1.2 Addressing delays at discharge

As previously mentioned, one of the positive aspects of the new model of care is that it should speed up patient discharge from hospital. A variety of stakeholders were in agreement that having a prescribing pharmacist write discharge prescriptions at the time of decision to discharge would start the process earlier than occurs currently and speed up the process.

“I think it will obviously be quicker. In terms of there is no delay between the ward round and the writing of the TTO. It also stops that whole “I look at the TTO and there are a million things wrong because that shouldn't be”. So in terms of the whole shortening of the time I think that's really good.” Independent prescriber Hospital Pharmacist

One participant familiar with a hospital that has started to utilise their prescribing pharmacists to write discharge prescriptions noted that it has sped up the discharge process in comparison to having junior doctors write them.

“They do this at [a specialist hospital]. On the surgical wards there is now a pharmacist on the ward round solely there to write the TTOs. And that’s sped up the discharge process so much. So this happens, because the

pharmacist is on the ward round, the TTO gets called down to the pharmacy and is double checked by the pharmacist.” Rotational Hospital Pharmacist

Participants did not think that the new model of care was infallible. Areas were identified where delays could potentially occur, which have been discussed throughout the relevant stages in section 7.4.3 Stepwise review of new model of care.

Having community pharmacists dispensing discharge prescriptions was thought to reduce the delay to patient discharge, if patients could leave at the point their discharge prescription was written and sent to a community pharmacy.

“I can see that from our point of view that this could be great. I mean the time patients stay in the hospital without needing to. They get told at 8 in the morning that they can go home on the ward round, and they’re still lurking around at 4pm because of issues. If they could just pack their things and go.” Specialist Paediatric Pharmacist

GPs agreed that this would speed up patient discharge, whilst preventing patients visiting their GP after discharge to organise a supply of their discharge medication.

“I accept the fact that patients hanging around for six hours in an exit lounge waiting for a bag to arrive doesn’t make sense. Equally, I get annoyed when patients turn up here to say they left the hospital, they couldn’t be bothered to wait for their medicines and they want me to issue it. Or they were told that they’ve got to go back to the [hospital] to collect their medication and they don’t see why they should. I know there are those sorts of issues that clearly your proposals would do away with, which I think most GPs would think was a good idea.” General Practitioner

7.4.4.1.3 Impact on other aspects of patient care

As previously discussed, hospital discharge is a complex, multistage process (see section 2.6 Discharge from hospital). The new model of care focuses on the supply of medication for discharge. Participants were asked if they thought that the new model of care would impact on other aspects of patient care.

Theoretically, by making the supply of medication at discharge more efficient, patients should be able to get home from hospital much quicker than in the current discharge process. However in reality, the wait for discharge medication is not the only cause of delay to patient discharge. There is a risk that if patients receive their medicines faster, other causes of delay to discharge will become apparent.

“I think the waits for other things are still going to be there. It is often medicines are the ones used as the excuse. And sometimes it's justified. But I am sure there are other factors. Maybe they will be less masked by the discharge, I don't think it's going to have a knock-on effect directly. What it might mean is that other delays could become more apparent because if they've got their medicines there then you know they are waiting for something else. I'm sure there are other delays, but I don't think I can come to see any problems as a result.” Medicines Safety and Care of the Elderly Pharmacist

By implementing the new model of care, other important processes should not be overlooked as a result. An example highlighted by a consultant was that writing the discharge prescription is often a prompt for the junior doctors to write the discharge summary for a patient. If they are no longer required to complete this task, there is a risk that discharge summaries may not be written.

“An important point to recognise is, the reason a lot of patients get their discharge letters done, is because it's on the same thing as the TTO. Now if you get pharmacists doing the TTO, then you might reduce the number

of patients that get a detailed letter from the team about what actually has gone on.” Consultant, Acute Medicine

7.4.4.1.4 Education

The benefits of improved education for healthcare professionals within the new model of care due to improved team-working and collaboration were highlighted by a number of participants. Junior pharmacists could receive more support on the wards.

“We’re quite isolated as a profession and by having this integration into the team you really are putting people together and you can get more day to day education. Whereas at the moment you probably get a lot at the start of a rotation, or with someone that’s new and then it becomes almost none existent. You can almost kind of partner up and there can be some other benefits from this.” Clinical Pharmacy Services Manager

Having a pharmacist present whilst discussions around patient care take place on ward rounds provides a different perspective than the doctors. This will help to highlight other issues and teach the doctors to look out for those issues in the future. This will have a big impact on education for doctors of all levels of experience on prescribing issues.

“But also how much learning is going to be involved. ‘Have you noticed that the patient is on amlodipine and simvastatin 40mg?’ We learn so much from our ward pharmacist coming over to us. Having a prescribing pharmacist on the ward round is a massive opportunity for everyone, not just juniors. In fact, the consultants probably would benefit the most. Because we are not still being trained in that way. So having someone say, ‘do you want that?’ and it would be much better for patients for that reason as well.” Consultant, Acute Medicine

Equally, the education for community pharmacists to enable them to provide the clinical service fits into the agenda of upskilling community pharmacists to perform more clinically-orientated roles.

“So community pharmacists would have to undergo some form of training to carry out the level of clinical check that a hospital pharmacist would. This all fits in to the agenda of upskilling our community pharmacists, which would be huge for them.” Head of Clinical Pharmacy Operations for community pharmacy chain

Learning to prescribe is a significant part of a doctor’s education. Participants raised the issue of the risk of de-skilling doctors if they are not routinely writing discharge prescriptions.

“There is an issue there about de-skilling doctors as with any [non-medical prescribing] really.” Senior Hospital Pharmacist

All participants could see that the risk was there, but the majority felt that by ensuring that the pharmacist writing the discharge prescriptions did so based on prescribing decisions made on the ward round with the integrated team, that this could actually be beneficial to the doctors.

“I think it might enable them to prescribe better. Because ideally the pharmacist will be there as an advisor and point out the issues... You are working collaboratively and you are facilitating learning and improving their education. I think the education point is a big thing.” Nurse Ward Manager

7.4.4.2 Resources required for new model of care

This theme consists of the following four subthemes: infrastructure, training, payment or funding of the new model of care and implementing the new model of care. Participants highlighted a range of resources that would be required for the new model of care to be successful.

7.4.4.2.1 Infrastructure

For the new model of care to be successful, it needs to have the infrastructure in place first. Two main areas were highlighted by participants, broadly the human infrastructure, in terms of staffing levels and integrated ward teams, and secondly having the technology to allow the new model to function.

“So firstly the infrastructure. Such as having an embedded ward team but also having the technology to be able to do it. So in terms of the infrastructure of IT to be able to do TTOs in a timely manner but also to be able to send the TTOs to the community chemist as well.” Pharmacist Teacher Practitioner

7.4.4.2.1.1 Staffing

Staffing was seen an important part of the infrastructure to enable pharmacists to safely carry out their new role within the new model of care. One concern was that if pharmacists had competing priorities, there was a risk that the cause of the delay to discharge would shift from the doctors to the pharmacists, without any improvement for the patient.

“One of the flaws that might occur with the process is currently the clinician has the conflicting priorities and therefore doesn't progress the prescription as quickly as possible. What does the pharmacist do at the moment that they are going to have to drop in order to take this role on? Otherwise a possibility is that what you are shifting is the delay from the consultant. The delay could then come from the pharmacist not being able to do it there and then.” Community pharmacist

Participants highlighted that an ideal staffing level may not be achievable in every hospital due to their sizes and budgets. This could impact on workload for the pharmacy team.

“In some smaller hospitals that could pose complications in terms of their numbers. They may not have enough rotational pharmacists to have one

per ward. If the prescribing pharmacist is out doing additional duties and is taken away from their traditional pharmacist role, they may not have enough non-prescribing pharmacists to pick up the rest of the work.”
Medicines Management Pharmacist

One way in which the appropriate staffing infrastructure could be achieved is with a redistribution of current roles within the pharmacy team.

“If we’re losing activity should we lose posts? Or can we redistribute those posts? As times are tight, you’ve got to argue that pharmacy should potentially ask if they can lose posts out of this. Are you just moving people elsewhere, to do a different job? It’s about how we are reconfiguring the workforce to get the most benefit and utilisation.”
Clinical Pharmacy Services Manager

7.4.4.2.1.2 Technology

Another important aspect of infrastructure is having the technology in place and functioning to allow easy use of the new model of care. There are several areas of the new model of care which will rely on IT systems to function efficiently. Writing the discharge prescription, verification of the discharge prescription, sending the discharge prescription electronically to the community pharmacy and an electronic communication system between the hospital pharmacy and the community pharmacy. Suggestions for technology for each stage of the new model of care are discussed within section 7.4.3 Stepwise review of new model of care.

“Having the technology to be able to do it. For example, things that slow us down here at the moment are probably the Wi-Fi connectivity. The number of tablets, if you are saying we want all TTOs to be done at the patient's bedside. Each trust will have to have an IT system that will be able to cope with that.” Pharmacist teacher practitioner

As highlighted earlier, the electronic discharge systems used within each hospital are different. One participant mentioned that to implement the new model of care, using the same systems nationally would give a joined up approach.

“It would be better to look at this as a national project where everyone has the same system rather than doing in-house and everybody using different systems. We need to have something simple that everybody can have access to. The problem with the whole NHS is that each hospital has got a different way of doing things and they don't all talk and that's the barrier isn't it. We need to join the way of working.” Lead Pharmacist for Medicine

Several participants were keen to utilise the NHS Spine for electronic transmission of discharge prescriptions, because community pharmacies are already using this system to receive prescriptions from GPs.

“So if there is a way of accessing hospital trusts accessing the Spine that will be a way of getting it to a hospital pharmacy. Because every pharmacy is up and running for EPS. It's standard now.” Community Pharmacist

It is equally important that there is sufficient access to electronic systems for pharmacy staff. Having a portable device accessible to each pharmacist who will be writing the discharge prescriptions was suggested to overcome issues with access. Otherwise the new model of care will be inefficient and not improve delays to patients leaving the hospital.

“Most hospitals just haven't got enough IT equipment to be able to get to each patient and that is inefficient. Actually having a discharge computer or a device which the pharmacist could have which was theirs and they could access the machine would definitely make this process a

lot more efficient. So that is something that certainly needs to be on there.” Senior Hospital Pharmacist

Any technology solutions used for the new model of care must be user friendly and quick, so as not to add steps and encumber the process or deter people from using the system.

“I think that anything being sent out of the hospital needs to be a one-touch system and that goes for anything in this process electronically. If anything is too long, for example sending it to the community pharmacy by fax, that's never going to work is it.” Lead Pharmacist for Medicine

7.4.4.2.2 Training

Some participants felt that limited additional training would be required, because the new model of care builds on current skills, particularly for community pharmacists.

“Well I don't think you need any, anything that you've talked about here is to me basic pharmacist common sense skill. It is essentially it's just giving a prescription in a different form.” Community pharmacist

The intensity of training to use any IT systems would depend on the IT system chosen. If a new electronic system was to be introduced, training would have to be provided to ensure that staff could access and use the system to ensure that the discharge prescriptions were actioned.

“You'd have to train the community pharmacies in the electronic system that it's coming in. Because certainly when they've tried [sending discharge information to community pharmacists], community pharmacies and GPs said they haven't got the information but when it came to it they actually did have the information, they just didn't know how to access it on the computers. So there's big issues around training and how to access electronic prescriptions. I can just see them not opening the system to access the prescriptions.” Consultant Pharmacist

Community pharmacists may require further clinical training to provide an understanding of the discharge prescription and the medicines they are likely to be dispensing.

“I would possibly say that community pharmacists might need to shadow a prescribing pharmacist to see what happens from the very beginning. So maybe shadow them for a week and see what their role involves ... You would understand it better if you see where it begins at the ward round level. And see how it makes its way to them. I think it’s a good idea for them to do a diploma isn’t it anyhow, but that’s a political one with cost and everything, but yeah an improvement in clinical knowledge.”
Outpatient dispensing pharmacist

Participants felt that pharmacists writing discharge prescriptions should be sufficiently trained and competent in the area that they are prescribing in. See section 7.4.4.3.4 Healthcare professional competence for a detailed discussion around this topic.

7.4.4.2.3 Reimbursement for new model of care

Participants were unsure of the best way for reimbursement of the new model of care to take place. Several participants thought that if the prescription was sent from the hospital to the community pharmacy, the hospital should be paying for the medication.

“If you are sending the prescription, I think that you would be charged.”
General Practitioner

Currently, Clinical Commissioning Groups (CCGs) control the overall medication budget, which is split into the prescribing budget for community and for hospital. There is a difference in how much medication supplied by hospitals and community pharmacies costs. Several participants felt that it should not matter who is charged for the medication, provided it was the most cost effective option overall.

“Again, unfortunately whilst the overall budget for drugs comes from the CCGs, whether it’s one or the other it doesn’t make a difference. Of course there is a differential charge between hospital supplied medication and community supplied medication. So in the hospital, it pays VAT. Community pharmacy doesn’t pay VAT so you’ve got an issue there. We know that hospital services sometimes manage to get very good contract prices on certain medications, so that differential may also adversely affect people’s budgets. To my mind, I don’t mind which budget it comes from because overall it’s one budget. I’d want to look at what was going to be the most cost effective way of doing things. I think you’ve got to balance that cost effectiveness against improving the system and streamlining it.” General Practitioner

The possibility of re-aligning the medication budget to cover any expenses incurred as a result of the new model of care was suggested.

“You should see the reduction in the GPs prescribing budget because instead of it coming from the GPs it’s coming from the hospital instead. I don’t think there’s any extra funding required it’s just realigning it really as to where it needs to be.” Primary Care Prescribing Pharmacist

It was thought that to encourage success of the new model of care, a paid structured service should be commissioned for community pharmacy, similar to the idea of MURs or the NMS. This would require evidence that the new model of care leads to an improvement in service and cost savings.

“Well pharmacies will want payment for it, but the government won't want to pay for it so I am not sure. In order for it to be recompensed as far as pharmacy is concerned it would need to demonstrate improvement in service. I think if it was paid it will be easier to monitor. But then you have got the job persuading policymakers that it is the right thing to do which you need to have strong evidence for. Anything that is a paid

structured service is more likely to happen in a community pharmacy.”

Community pharmacist

Conversely, one community pharmacist suggested that to receive and dispense an electronic prescription from the hospital is similar to receiving and dispensing a prescription from a GP. Subsequently, the service may not require additional funding or commissioning by CCGs. Having a payment structure similar to the current community pharmacy contract should be sufficient.

“But essentially you are asking them to do what they already paid for within their pharmacy contract. As in to dispense prescriptions. It is just that normally we don't dispense against hospital prescriptions. But you're not asking them to do anything that is over and above their role as such. Now granted it is not, we do not dispense hospital prescriptions, but essentially all it is, is a different form type and as long as it legally meets the requirements of what is needed on a prescription.” Community Pharmacist

7.4.4.2.4 Implementation of the new model of care

Participants suggested that the initial implementation of the new model of care could cause some issues. When the new model of care is implemented, the number of options for the supply of discharge medication should be limited. Otherwise this could be confusing for staff.

“The ideal situation would be, regardless of what time the patient is discharged that the TTO is distributed in the same way. At the moment, when community pharmacies aren't 24/7 I think you'll struggle to find one system that suits all. We know at the moment, there's drug cupboards on the wards where TTOs can come out of, normal pharmacy, Lloyds. That's three systems already, if you add in a fourth system, it could get confusing.” Junior doctor, medical specialities

In terms of outsourcing dispensing discharge prescriptions to be dispensed by community pharmacies, this is a completely new idea for the NHS. The legality of community pharmacists dispensing discharge prescriptions requires review prior to implementation. To ensure that the discharge prescriptions received by community pharmacies are seen as urgent and important, community pharmacists should be made aware of the new model of care. One idea from a participant was to have the new model commissioned as a service by the CCGs. By having it as a commissioned service, community pharmacists are more likely to be familiar with the process and understand the urgency when they receive a discharge prescription.

“I think if it's going to be done it needs to go through the CCGs to be commissioned as a service so it is known that this is an actual thing. So people recognise that the discharge prescription is different from the GPs prescription in terms of timeliness and understanding those kind of aspects to it whereas in the community frequently you have got to order your prescription to 3 days beforehand has got to be sent to the relevant pharmacy and they will then make it available the next day. It is understanding that those things which are okay for a GP system aren't okay for a discharge from hospital system.” Senior Hospital Pharmacist

7.4.4.3 Ensuring quality and safety of new model of care

This theme comprises the following five subthemes: quality and safety issues, managing patient expectations, ensuring the success of the new model of care, healthcare professional competence and prescribing responsibility.

7.4.4.3.1 Quality and safety issues

Quality was important to participants for developments within pharmacy practice.

“My guiding philosophy for pharmacy and progress is that we should look at quality above everything else. Then there's definitely elements of

speed. We need to be flexible. But first and foremost is quality.” Clinical Pharmacy Services Manager

Several of the stages within the new model of care involve the pharmacy team taking on roles during patient discharge that are traditionally the roles of doctors or nurses. This includes writing the discharge prescription and giving any medication to the patient at the point of discharge. These are both roles that revolve around medication, something in which the pharmacy team specialise. One participant felt that to drive quality and efficiency, the pharmacy team were appropriate care providers to undertake these roles.

“I do have some concerns around when medicines isn’t the focus of your attention, which it isn’t for doctors and nurses, it is part of what they do. It doesn’t receive the same level of focus that the pharmacy department give. I think there’s only so far you can take certain processes because they have so many other things to do and it’s not their priority, it’s further down the list...It’s a question of can you drive that quality up as high as the hospital wants it as part of nursing or doctor’s role. I think if you can, that’s fine. However, whoever can meet the exacting standards should be doing the role, be it they are adding value to the hospital, to the patients. But if it is pharmacy because we have that medication focus. If we can do that to a better quality at a reasonable speed and cost, then I think we should be looking at doing it.” Clinical Pharmacy Services Manager

Participants thought that pharmacists writing the discharge prescription would improve the quality of the information on the discharge prescription as discussed in section 7.4.3 Stepwise review of new model of care — Pharmacists writing the discharge prescription.

In addition to driving quality, having pharmacists write the discharge prescriptions was also thought to improve safety.

“From a safety point of view, your training as a pharmacist makes you an appropriate person to do that role. I suppose you’re also focussed on doing one task, whereas the doctor... As an F1, you’re writing a TTO, you’ve got 6 things to do at the same time and I’ve made so many mistakes because of that. So actually I think it might be safer.” Junior doctor, surgical trainee

7.4.4.3.1.1 Receiving medication from different sources

One safety issue highlighted by participants was the risk with patients potentially receiving medication from a variety of sources. This could lead to confusion for patients and potentially cause patient harm. Communication with the patient is essential to explain fully what is happening and to reduce risk to patients.

“In terms of the medication supply at discharge, there are several issues here. You are essentially creating a risk by supplying medicines from two sources. Sending some from the hospital, the patient’s own and supplying the rest from the community. This could be a problem for the patient and it would be important to identify a way of reducing the risk for patients. Communication is essential here. Both to reduce patient risk and also to explain fully what the new process is to the patients.” Head of Clinical Pharmacy Operations for community pharmacy

7.4.4.3.1.2 Barriers to patients receiving medication

Several participants noted their concerns about the potential for patients not receiving their medication as a result of this new model of care.

“The difficulty with this is you are sending [patients] out on the premise that they get those medicines that day. And there are lots of unknown factors that can prevent that from happening. There are lots of things

that can prevent the patient from getting the medicine that you would have definitely given them.” Community pharmacist

Participants discussed a variety of logistical issues that could occur with community pharmacists dispensing discharge prescriptions. These have been discussed in detail in section – Stage 13: Community pharmacy supply patient with medication. Any of these logistical issues could be a potential barrier to patients not receiving their discharge medication.

7.4.4.3.2 Managing patient expectations

Managing patient expectations is a large part of improving their experience. It is important that the patient is fully informed about what they should expect during their discharge from hospital.

“And it's meeting the patient expectation let them know what else needs doing.” Lead Pharmacist for Medicine

Patients familiar with the current discharge process may assume that discharge medication would be supplied by the hospital. Participant views were mixed over whether patients would be happy to receive their medication from their community pharmacy.

“Would patients feel comfortable with the whole culture change? We are already trying to get the patient out of the culture where they think they come to hospital and you get a goody bag with all your medicines to go home. But I still think that they would anticipate that if they were started on something new that the hospital would supply it.” Consultant Pharmacist

Other participants thought that patients were likely to be happy that they could go home.

“In terms of the patients I think they will appreciate that they can just go home.” Independent prescriber Hospital Pharmacist

Patients are expected to remain in hospital until their discharge medication is ready. In some circumstances, nursing staff agree with patients that they can go home and return for their medication rather than wait.

“But a lot of patients do go home and come back the next day. Well they're supposed to come back when it's ready ... But I think a lot of them will be more than happy to go to their local pharmacy or arrange a delivery rather than a two or three hour wait or even a return to us. So I do think that is really good.” Nurse Ward Manager

A patient representative with experience of having to return to the hospital for discharge medication would prefer to collect discharge medication from the community pharmacy for convenience.

“Oh it would be much better, because I had to come back at 8 o'clock in the evening to get my medicines. In the dark at night. They didn't light the car park and there was all kinds of people hovering outside the hospital etc. So for me a community pharmacy would be so much better.” Patient representative

Several participants wondered if there could be an element of patient choice in the new model of care. This may not be an efficient use of hospital time, but could help to manage patient expectations and therefore improve patient experience.

“Would there be elements of patient choice in this? So could they choose to wait for it here? You would be running two systems, it's not necessarily efficient, but it might be patient focussed. It's about choice and empowering them. Maybe the choice would satisfy the wait. It may change their opinion of it that they've chosen that way.” Clinical Pharmacy Services Manager

7.4.4.3 Ensuring the success of the new model of care

This subtheme looked at the issues raised by stakeholders around ensuring that the new model of care functions correctly and efficiently.

Participants thought that it was important to integrate a fail-safe mechanism to guarantee that the new model of care will ensure that patients receive their discharge medication.

“What I’d be worried about, is say if the patient went home. There’s got to be a lot of reassurance for the patient that someone has spoken to the community pharmacy and that they will be delivering their medicines at a set time. You need to ensure that it is fool proof.” General Practitioner

Without a fail-safe, as one carer commented during a focus group, there is a risk that patients could be left to try and organise a supply of medication after they have been discharged from hospital.

“I just worry that it would be me running round frantically looking for a community pharmacy that was open so that they could dispense mum’s medication.” Carer representative

This will significantly impact on the patient experience in hospital and may also affect their opinion of the community pharmacy.

“Making sure that you’re not in a situation where the patient is out without a TTO being sent and the patient turns up at [the community pharmacy] and they don’t know what they are supposed to be dispensing. Because then it’s just going to have a negative impact on the patient’s opinion of the service and the community pharmacy.” Medical Education Pharmacist

One participant noted that monitoring the new model of care would be easier if it was arranged with just one community pharmacy, rather than all community pharmacies. If

there were any problems with patients failing to collect their medication, one community pharmacy would be more likely to notice this trend and let the hospital pharmacy know. If all community pharmacies were involved, they may only receive a small number of discharge prescriptions and problems could be less noticeable.

“What about if you had a single community pharmacy nearby, could you not send it to them and the patient could collect it on the way out? Because then, if there’s a problem they know us and they can ring us. And the other thing is, if there are problems in general with the system, for example people not picking their prescriptions up. At the end of the week it would be easy to check on this. Whereas if you are sending the prescriptions to pharmacies around the city, no-one’s going to do anything if the odd patient doesn’t collect. Especially if they’ve only got one patient. So we could arrange it with one community pharmacy company.” Consultant Pharmacist

7.4.4.3.4 Healthcare professional competence

This subtheme emerged as many participants highlighted that the different stakeholders involved in providing the new model of care should have the confidence and competence to provide their role.

Community pharmacists may see a change in the types of medication that they will be used to dealing with in hospital prescriptions. Subsequently, some community pharmacists may not be comfortable dispensing some of the medication.

“I suppose it depends on the individual community pharmacist and I suppose they’ll see a lot of weird and wonderful things. Would they be happy with dispensing some of the stuff?” Rotational Hospital Pharmacist

Regarding hospital pharmacists, one participant highlighted that just because a pharmacist has qualified as a non-medical prescriber, this does not automatically mean

that they will be confident to carry out that role. Prescribing pharmacists need to build up confidence in order to feel comfortable prescribing discharge prescriptions and that will come with experience.

*“Well it’s the NMP role really. It’s about not just qualifying as an NMP it’s having the confidence and experience to provide that role isn’t it.”
Medicines safety and Care of the Elderly Pharmacist*

A variety of factors are involved in ensuring competence of prescribing pharmacists. Participants agreed that the pharmacist should have experience in the area that they are prescribing in.

“You would want somebody with experience in that area so you would want someone with respiratory experience to go on the respiratory ward round.” Senior Hospital Pharmacist

Ideally pharmacists would be prescribing for patients that they are familiar with and had previously been involved in providing their care.

“So then you’ve got the prescribing pharmacist, who would ideally have been involved in patient care. Otherwise it could potentially be dangerous, although medical staff have been doing it for years. There may be occasions where we have got to do it obviously.” Consultant Pharmacist

One participant highlighted that junior pharmacists may not feel comfortable checking senior pharmacists’ work. This was discussed with other participants, who felt that this should be addressed from the outset of the new model of care to ensure that pharmacists of all levels are comfortable checking their colleagues prescribing.

“I can see that it would be a concern and it is probably something that would need to be addressed from the outset of the system to enable those people to have the confidence to do it. But they should have the

confidence as a healthcare professional to challenge anyone.” Medicines Management Pharmacist

Another participant raised the concern that junior pharmacists may not provide the same rigorous clinical check for prescribing pharmacists that they would for a doctor. This was because they may assume that discharge prescriptions have been written correctly when in fact there is a mistake, because their more experienced colleague has written it.

“We are very good at junior pharmacists checking doctor’s prescriptions. If they know it’s a senior pharmacist doing the prescription will it be a bit slack? If you have a very junior pharmacist just started and they are working alongside a senior pharmacist who has been in the role for a long, long time. Whether they would question as much as they should be doing. I think that might be a danger there as well.” Pharmacist Teacher Practitioner

7.4.4.3.5 Prescribing responsibility

Writing discharge prescriptions could be classed as transcribing rather than prescribing, as the discharge prescription is based on the medications prescribed on the inpatient chart. The medication on the discharge prescription should be based on a discussion with the doctors on the ward round.

“It’s transcribing but then you’re making a decision, okay it’s led by the discussion with the doctors” Band 7 Haematology Pharmacist

Traditionally, the responsibility of the discharge prescription lay with the doctor. However, if the pharmacist is writing the discharge prescription, it is debatable whether they should be responsible for this. It was suggested that the responsibility should be with the consultant and the team responsible for the patient.

“Who does the responsibility then lie with? It’s usually the prescriber that has the responsibility for not only the initiation but the monitoring and follow up of the drugs, and that’s what I teach the students. So therefore if the drug that was started in the hospital, making sure that it’s followed up in the community. So one concern is arguably, if the pharmacist has written that prescription, does the responsibility lie with them, or with the prescribing doctor? That would be a discussion to be had. My opinion would be that it would be a team thing, so it would still lie under the consultant and whoever had been involved in that team.” Medical Education Pharmacist

Who the responsibility lies with becomes a particular issue if the pharmacist writing the discharge prescription disagrees with the doctors’ prescribing choices.

“Or if you are unhappy with the doctor’s decision what do you do then? The consultants on my ward would often start things in bigger doses than I would ever start ... It doesn't mean that they are wrong it's just not what I would do as a prescriber.” Independent prescriber Hospital Pharmacist

A further issue highlighted by one participant is who the responsibility would lie with if problems with obtaining a supply of medication resulted in patient harm.

“So what happens if the patient can’t get their Fragmin at discharge and they end up with a DVT? Whose fault is that? Ours because we didn’t give it when they went, the community pharmacy’s because they didn’t prioritise it or the patient’s because they didn’t go back and collect it?” Consultant Pharmacist

7.5 Discussion

Through analysis of the data collected, the new model of care was evaluated. The stepwise review highlighted specific issues with the new model of care, which have been

used to refine the model. The themes will be discussed which will be followed by a discussion of the relevance of the findings overall, considering all of the themes collectively.

7.5.1 Impact of new model of care

Overall general feedback for the new model was positive. During the sessions, participants either stated specifically that they thought the new model of care had potential, or this was implied from their responses. Although participants highlighted potential problems that may occur, comments were constructive and they identified potential problems to rectify and improve the model.

Participants mainly thought the new model of care would speed up patient discharge and therefore patient flow through the hospital as well as improve patient experience, safety and medicines use. Provided the infrastructure was in place for the new model of care and the multidisciplinary team were able to hold earlier ward rounds, the new model of care could potentially dramatically reduce delays for patients at discharge. As discussed in the findings from phases 1 and 2, pharmacy is often perceived as the cause of delay to discharge. Using the new model of care, patients would not have to wait in hospital for their medication and the misconception that pharmacy is causing the delay could be corrected.

Stakeholders thought there would be benefits to outsourcing dispensing of discharge prescriptions to community pharmacies. This would give the pharmacy team more time to spend improving the patient care provided in hospital, leading to benefits for patients throughout their admission, not just at discharge. Additionally, this will encourage a relationship between the patient and their community pharmacist and provide a route for patient follow up in the community. Developing this relationship is an important step towards improving continuity of patient care in terms of information. This does not necessarily give continuity of care in terms of the community pharmacist that the patient will see, as that will depend on the staffing of the individual community pharmacy.

Pharmacy ownership of the supply of medication at discharge within this new model of care was highlighted by participants and seen as beneficial to the profession as well as for patient care. This is both within hospital pharmacy and in community pharmacy. Currently, pharmacy is an underused resource and it is only in recent years that the services offered by community pharmacies are advertised. Whilst the new model of care encourages pharmacy ownership of medication supply at discharge, the main premise of this is disadvantaged by the lack of a consistent clinical pharmacy service provided seven days per week. As discussed in section 4.6.1 Planning for discharge, despite recommendations for hospital pharmacy departments to provide a full service seven days per week, this has not yet been implemented in practice universally. The new model of care may therefore require an adaptation for out of hours working.

As stated, pharmacy is often perceived as the cause of delay to discharge (see section 6.3 Problem areas within the current discharge process). By reducing the wait for discharge medication, there is a risk that other delays at discharge will become apparent and prevent patients from being able to leave hospital. Although the blame will no longer rest with pharmacy, this does not improve patient experience. Care must be taken to ensure that other issues do not arise as a result of this new model of care. Those potential issues suggested by participants could be monitored.

Stakeholders discussed how the new model of care could have an impact on education for healthcare professionals in a number of ways. The main concern around education was the potential risk of de-skilling doctors if pharmacists were to take over the role of writing discharge prescriptions. After discussions with a variety of different stakeholders around this topic, the conclusion was that writing discharge prescriptions was not the only route for junior doctors to learn how to prescribe. Discharge prescriptions are currently poorly written by doctors and provided they are still prescribing for inpatients, they will still receive appropriate training. Additionally, the pharmacist will be writing the discharge prescriptions on the ward round and any prescribing decisions can be made through discussions with the doctors. Junior doctors are more likely to be involved in these decisions and consider the prescribing issues that arise and learn from them.

Pharmacists on the ward round can highlight any prescribing issues for patients and stakeholders thought that this would be beneficial for the learning of doctors of all levels of experience. Having a more team-based approach can also be beneficial to junior pharmacists, who will work closely with the experienced pharmacist on the wards and have an increased level of support from them for longer than they may receive currently.

Finally, this new model of care could change the role of a community pharmacist. Depending on the individual community pharmacist, they may only dispense the discharge prescription with no further input. However, other more clinically focussed community pharmacists could use this as an opportunity to provide follow up for patients and to start to push their role into a more clinical one. Community pharmacists could seek the additional training needed to provide a more clinical role. This fits in with the current drive to change the community pharmacy workforce.

Clearly, the new model of care will have a big impact on various areas. Most of the impact was positive, however having the potential pitfalls highlighted ensures that they can be monitored to ensure that these problems are not occurring.

7.5.2 Resources required for new model of care

Stakeholders discussed the resources that would be required for the new model of care to be successful, both for implementation and for the sustainability of the new model of care.

The infrastructure to allow the new model of care to be successful needs to be in place before the new model of care is initiated. This refers mainly to appropriate staffing and technology, however there are other aspects. Without the appropriate staffing levels and the stability of that role, pharmacists are not going to be able to safely and efficiently write discharge prescriptions for patients as they will have many other competing priorities. The risk with this is that patient discharge takes just as long as it does currently and the blame moves from the doctor not writing the discharge prescription fast enough, to the pharmacist not doing it. To allow the staffing levels to be able to meet the

demands of the new model of care, there needs to be a change in current roles. As discharge prescription dispensing would be outsourced, time is freed up from those pharmacy staff who would usually undertake this role. They can take on some of the tasks carried out by other members of the pharmacy team to free up their time. The shift in the workforce overall would allow prescribing pharmacists to take the time to write discharge prescriptions. This is a feasible change in the workforce, as many pharmacy technicians are able to undertake medicines reconciliation and other tasks traditionally carried out by a pharmacist. More time should be available if discharge prescriptions were outsourced to community pharmacy as less time would be spent on dispensing activities. Many larger hospitals may already be at or close to a staffing level appropriate to carry out the new model of care. This may not be the case for smaller district general hospitals and their ability to carry out the role would need to be reviewed on an individual basis.

Technology will have a major impact on the new model of care. To be an efficient service, it really needs to be a fast, user friendly electronic system to transmit the discharge prescription and provide a platform for two-way communication with the community pharmacy. This relies on the community pharmacies and the hospital having access to the system. It also relies on enough access for users. For example, there should be sufficient numbers of portable devices to access the system on. Internet access also needs to be reliable and fast for transmission of information.

One suggestion by stakeholders was to utilise the existing EPS system, as all community pharmacies have access to this and are familiar with its use. This is a reasonable suggestion, however there are a range of logistical issues with this that would have to be reviewed. One example would be how you would send a discharge prescription rather than an FP10 via this route and the legal aspects of doing so.

Limited training was thought to be necessary, unless new electronic systems are involved, in which case it is essential that staff are able to use and access the systems.

There is a risk that discharge prescriptions will be missed and patients could go without their medication.

With any change in process, training should be required to ensure that healthcare professionals are familiar with the systems and are competent to carry out the process. Without training, there is a risk that the new model of care would not be used, or would be used incorrectly and lead to issues. Clinical training around the types of medication that the community pharmacists will encounter could help them to become familiar and comfortable dispensing the discharge prescriptions.

There was a debate around how the new model of care would be funded. As a result of the limited amount of money available in the NHS, additional funding would be difficult to obtain. The new model of care would have to prove that it would lead to cost savings for any investment. However as the discharge prescription would be sent from the hospital, stakeholders thought that the hospital should pay for the service. As the prescribing budgets for community and hospital care are not currently combined, there is a potential to move a proportion of the budget to align with any costs incurred from the new model of care. It could be inferred that due to potential savings as a result of bed days saved, reduced readmission rates and medication errors, that the new model of care would fund itself. A full economic evaluation would be required to determine this.

Another debate was around how the community pharmacist would be reimbursed for dispensing discharge prescriptions. One community pharmacist felt that reimbursement could be similar to the current community pharmacy contract for dispensing FP10s, as the process would be similar. Another suggestion was having the new model of care commissioned as a community pharmacy service. By doing this, community pharmacists would be aware of the process and the importance of dispensing discharge prescriptions in a timely manner. It would also serve as an encouragement for community pharmacists to participate, as it would add to their income. This encouragement would be necessary

if the new model of care resulted in a large increase in workload for community pharmacists.

In summary, this theme demonstrates that a large amount of investment in terms of staffing levels, technology, time and training will have to be made to implement the new model of care. Ensuring the appropriate resources are available will provide an efficient and user friendly discharge service that should benefit patients and healthcare staff alike.

7.5.3 Ensuring quality and safety of new model of care

The aim of phase 3 of the PoW was to develop an innovative model of care for patient discharge from hospital that provides safe, quality care in a timely manner and improves patient experience. This theme looks at the issues raised by the relevant stakeholders to determine if they thought that the new model of care would provide safe and quality care that improves patient experience.

As previously discussed, the new model of care involves a variety of role changes in comparison to the current discharge process. This involves the pharmacy team taking on a variety of roles traditionally undertaken by other healthcare professionals. The two main examples of this were pharmacists writing discharge prescriptions and the pharmacy team giving out patients' medication at discharge in place of the nurse. This was thought by stakeholders to drive the quality and safety of patient discharge. Although this is adding workload to the pharmacy team, the long-term benefits of improving these aspects of patient discharge are clear and they are currently poorly carried out, affecting patient care. In both of these instances, the pharmacy team are the appropriate healthcare professional to be carrying out that role safely and accurately and this will likely improve patient care and the patient's experience. Equally, as well as improving the patient experience, having the pharmacy team involved in the discharge process can improve the quality of information sent to the GP. This will have a positive impact on continuity of care.

The question remains, what will happen out of hospital pharmacy hours. In theory, with the new model of care, patient discharge should take place earlier in the day when the pharmacy team is around. However there may be situations that are unavoidable and patient discharge has to take place later. If patients are discharged when the pharmacy team is not around to deal with patient discharge, the decision needs to be made about what the process will be under such circumstances.

The risk of patients becoming confused by receiving medication from different sources was also highlighted. Potentially, patients could have some medication at home, some on the ward and some from their community pharmacy. If the new model of care were to stop providing medication in hospital or dispose of patients' own medication, this could lead to unnecessary waste. This will require excellent communication with the patient and counselling to reduce patient risk. Alternative ways around this will need to be discussed. One way could be that for patients receiving medication from their community pharmacy, they could be advised to have their other medication with them so that the community pharmacist can go through all their medication in one go and provide complete counselling.

Another issue with medication provided by the community pharmacist was the risk that patients would not receive their medication. Most of the issues highlighted by stakeholders around this issue were logistical problems that may arise, which all could be worked through before the patient left hospital, in which case it should not be a serious threat to patients. Equally, many patients leave without their medication in the current system. The best way to resolve this issue is with adequate patient counselling, to ensure they understand the importance of taking their medication.

To improve patient experience during hospital discharge, patient expectations must be managed. In the current discharge process communication over likely time they can be discharged is poor and can impact on the patient experience. By ensuring there is good communication with the patient, they will be fully informed about the duration of their discharge process and hopefully this will help them to make any suitable arrangements

and manage their expectations. The new model of care is a complete change in culture for patients at discharge as patients with previous experience of being admitted to hospital will assume that they will receive their discharge medication from the hospital. Stakeholders had differing views over whether patients will be happy to receive their discharge medication from the community pharmacy instead of the hospital. From the findings of phase 2 of the PoW (see section 5.4.3.3 Suggestions for improvement of hospital discharge) more patients would prefer the community pharmacy to supply their discharge medication than the hospital.

For those patient who are unhappy with receiving their medication from the community pharmacy, or unable to do so, stakeholders discussed the possibility of an element of patient choice in the new model of care. This would mean that if patients were happy to obtain a supply from the community pharmacy they could do so, but if not the hospital would still supply the medication. This would come down to the cost and logistics of having two systems running alongside each other at discharge for the hospital. However having the element of patient choice may help to manage patient expectations and improve the patient experience. Part of the new model of care includes the option to either collect from the community pharmacy or have a delivery. This constitutes patient choice and may help to improve the patient experience.

Part of ensuring the quality of the new model of care is having a mechanism of ensuring that it is working correctly and efficiently. As the model differs from the current discharge process, there are a number of areas that are new and therefore will require monitoring.

Checking that the new model of care is successful, and continues to work effectively is essential. There are a variety of ways in this needs to be achieved. Audit is an obvious tool for determining how the new model of care is working. With the new model of care being dependent on technology to run smoothly, this provides an easy audit trail to follow and ensure the steps are occurring in the process and the time taken for each. Another mechanism is through direct communication with the patients and people

involved in providing the service, so that any issues can be highlighted and discussed as they arise.

In the current discharge process, if there was a problem obtaining any of the discharge medication for a patient, they would remain in hospital until the issue was rectified. With the new model of care, the patient receives the supply of medication from a community pharmacy and it is effectively out of the hospital's control. If the patient does not receive their medication as a result of failings in the system, this puts the patient at risk of harm. Incorporating a fail-safe mechanism at the appropriate stages of the new model of care is essential to ensure that the patient will always receive a supply of their discharge medication.

The new model of care will be a significant change in the way patients receive their medication and they will need to be reassured that it will occur. Communication with the patient to ensure that they are aware of the process is an important part of the new model of care. By having a fully informed patient, this will serve as another fail-safe in the new model of care as the patient can become involved if they notice anything amiss during their discharge.

Flexibility of the new model of care is essential. There may be a variety of individual cases where through logistics, obtaining a supply of discharge medication via the new model of care route. Whilst attempting to make the model as broad as possible for all patients, it must be accepted that a degree of flexibility must be allowed in these instances.

An important aspect of quality and safety is ensuring that the healthcare professionals providing the new model of care are competent and comfortable carrying out their roles. This applies to healthcare professionals in the community and in hospital. A range of issues around competence, confidence and feeling comfortable providing the service arose through discussions with the stakeholders.

For community pharmacists, stakeholders did not feel that the change would have much of an impact as it is a relatively similar process to dispensing the prescriptions that they are familiar with. Community pharmacists' competence should therefore not be a big issue when dispensing discharge prescriptions. The change may be in the types of medication that they will be dealing with as a result of receiving hospital prescriptions. Providing any training regarding the types of medication that the community pharmacist is likely to deal with may be helpful here.

From a hospital pharmacists' perspective, there is a significant change in their role. Particularly for prescribing pharmacists. Many of the participants, both current prescribers and those pharmacists who are not prescribers highlighted the potential risk of some pharmacists not feeling comfortable enough or being competent to carry out the role. The pharmacists writing discharge prescriptions should ideally be qualified as a non-medical prescriber with sufficient experience and feel confident within that role. Ideally, they should write discharge prescriptions for patients who fall within their area of clinical expertise and that they have been involved in their care during the patients' admission. This may not always be possible, but is the most appropriate way of providing competent staff to write the discharge prescriptions.

Pharmacists at all levels of experience within the hospital are trained to check and question doctors' prescribing. As the prescribing pharmacists start to write discharge prescriptions, they will still require a clinical check from another pharmacist. Stakeholders highlighted the concern that junior pharmacists may assume that their senior, more experienced colleagues are unlikely to make any errors and therefore not provide the same clinical check of the discharge prescription that they would with one written by a doctor. Equally, there was a concern that they may feel uncomfortable approaching another pharmacist with a potential error. This needs to be addressed from the offset of implementation of the new model of care.

A decision will have to be made before implementation of the new model of care as to where responsibility lies for prescribing within the new model of care. Traditionally this

is with the doctor responsible for the patient, however if the pharmacist is prescribing for the patient does this responsibility become the pharmacist's? One issue with this is that the consultant will still have the overall say over the medication prescribed for the patient and the prescribing pharmacist may not necessarily agree with the decisions. If the prescribing decisions are made as a multidisciplinary team, the responsibility should lie with that multidisciplinary team.

7.5.4 Limitations

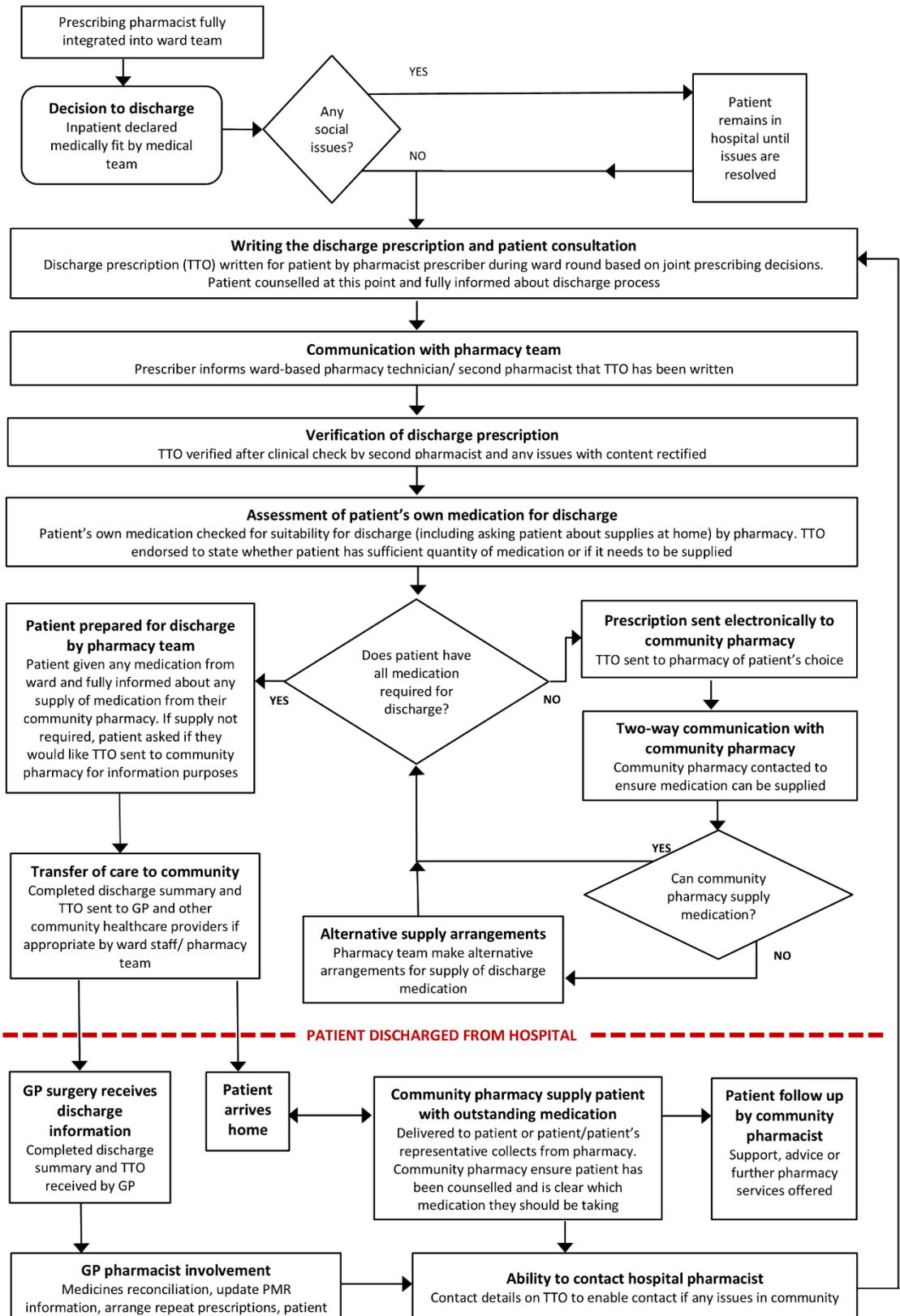
This phase involved only a small number of participants, which could be seen as a limitation, because views are subjective and different experiences of participants will lead them to answer in their own way. The researcher tried to take this into account by ensuring that a range of different stakeholders were interviewed to ensure diversity of results. A large proportion of the participants have a pharmacy background. This was as a result of the researcher initially anticipating that a much larger sample size would be required before data saturation was reached. Pharmacy colleagues from a variety of backgrounds were approached first in larger numbers than other professional backgrounds, fewer participants from other backgrounds were required due to the study reaching data saturation. The study did not aim to quantify the number of participants that liked or disliked the new model of care, but to identify any issues and ways to improve the proposed model. It was therefore not essential to have a large sample of participants and data collection continued until no new information was elicited from participants.

A further limitation to this study was the different methods of data collection used. The participants were busy and it would have been difficult to recruit all participants if focus groups were the only option. As a result, only a few focus groups were carried out which meant that they could not be repeated. If the phase were to be repeated, one method of data collection would be appropriate.

7.6 Refined innovative model of care for patient discharge

As a result of feasibility testing the new model of care, several adjustments have been made to the new model to take into account the stakeholders' opinions and improve the model. The individual reasons for these changes were discussed within the relevant stages throughout section 6.4.4. The refined innovative model of care can be seen in Figure 7-1.

Figure 7-1 – Refined innovative model of care for patient discharge from hospital flowchart



7.9 Conclusion

To summarise this phase, the qualitative approach successfully evaluated the proposed new model of care for patient discharge. A detailed discussion of each stage of the new model was presented in section 7.4.3 Stepwise review of new model of care. The three themes then cover a holistic view of the new model of care from the stakeholders' perspective.

Overall, the responses were positive towards the new model of care. All of the participants thought that the new model of care had potential for success. The new model of care involves part of the discharge process taking place in hospital and part taking place in the community. For the new model of care to be successful, both aspects need to run efficiently, with excellent communication between care settings. For the process that takes place within the hospital, a ward-based service is essential. There was an inherent reliance on the ward-based team to make it an efficient service. Stakeholders anticipated issues and delays if the pharmacy team had other commitments on other wards, or if they had left the ward whilst required to help with patient discharge.

Speed of patient discharge is often not the main concern of healthcare professionals. Quite rightly, there are considerations such as patient safety, ensuring medication is supplied appropriately and information is transferred to the community for continuity of care. Whilst this is vital in the new model of care, to ensure quality and safety, it is often missed by patients, who just want to be discharged quickly from hospital. Each of the aspects are important and patients should be made aware of what is happening at discharge and why it is important, to manage their expectations.

The findings highlight that a large amount of investment in terms of staffing levels, technology, time and training is required before the new model of care can be implemented. Once that is in place, the new model of care should be able to function efficiently. In theory, this initial investment will be returned once the new model of care is running.

The research method for this phase has successfully met the study aim by exploring stakeholder views of the proposed new model of care for patient discharge. Furthermore, the objectives for this phase were met. A variety of stakeholder perspectives were explored. The findings have identified which stages of the new model of care stakeholders thought would work well and where problems may arise. Stakeholders were enthusiastic about the proposed model of care and had many positive comments. Many thought that it would be successful. A variety of logistical issues were highlighted, mainly in two areas – pharmacists having the time to write discharge prescriptions during the ward round and logistical issues of community pharmacists supplying discharge medication. Many of the participants suggested a variety of solutions to such problems. The knowledge, skills and resources required to deliver the new model of care were established. This phase has been essential to provide feedback on the proposed new model of care, which has been used to refine and improve the model. The innovative model of care resulting from this phase of the PoW is now at a suitable stage to test its feasibility.

A number of recommendations resulted from this phase that will be essential to implement and maintain a successful model of care for the discharge of patients from hospital into the community. Although outside the scope of this study, further work will involve a pilot of the innovative model of care to determine the impact of the innovative model of care on patient discharge from hospital. The findings from the themes will be useful to facilitate implementation of the innovative model of care.

This chapter has discussed in detail the findings from phase 4 of the PoW and how they have been used to improve the new model of care. Having successfully achieved the aim and objectives set out for the final phase of the PoW, the following chapter consists of a discussion and summary of the overall PoW.

Chapter 8 – Discussion

This final chapter of the thesis considers the PoW as a whole. It draws together the conclusions from each of the phases and discusses the implications of these conclusions. A discussion around the proposal for further work concludes this chapter.

8.1 PoW overview

This thesis describes an integration of mixed research methods to consider the current discharge process from multiple perspectives and inform the development of a new model of care for patient discharge from hospital.

Interviews and questionnaires explored the current discharge process with pharmacists and patients respectively. Triangulation of the findings informed the development of a new model of care. Interviews and focus groups then led feasibility testing of this proposed model of care. The new model of care was refined based on this feasibility test, resulting in the development of an innovative model of care for hospital discharge that will provide safe, quality and effective transfer for patients from hospital to community care.

8.2 Methodological Appropriateness

As previously discussed, the research was conducted using mixed methods. This included qualitative telephone interviews, quantitative questionnaires, triangulation of data, and qualitative face-to-face interviews and focus groups. The strengths and limitations of each method have been discussed throughout this thesis. The methodological limitations were discussed in detail within section 3.11 Methodological limitations of PoW. Despite the study limitations, the conclusions of the study are justified. The conclusions drawn from each phase are reasonable within the study setting. As the PoW was carried out within a limited study setting, it would not be reasonable to suggest that the findings were generalisable across the whole of the United Kingdom. If the research were to be carried out again, the researcher would likely

use a similar methodology but with larger sample of participants, more variety of stakeholders earlier in the research within a wider geographical area to improve generalisability of results.

8.3 Reflexivity

The concept of reflexivity was introduced in section 3.10 Reflexivity. Reflexivity was employed throughout the research process and assisted the researcher's development as a qualitative researcher as well as helping to improve the robustness of the work. Reflexivity within the individual phases is discussed below.

The researcher had several preconceptions before beginning phase 1, due to her experience as a hospital pharmacist. The main one was that a major cause of the delay to discharge was the time it took for the doctors to write the discharge prescriptions. This issue was highlighted by participants and the researcher strived to remain neutral during the interviews to not lead the discussion towards that conclusion. Another of the researcher's initial preconceptions were that the larger, teaching hospitals would have the most innovative ideas. However after analysis, the findings show that a variety of hospital types are identifying novel methods to improve the discharge process. The researcher noticed that her preconceptions were not always correct and that her opinions changed as a result of the discussions with participants.

Although not a qualitative phase, reflexivity was still employed to a certain extent during phase 2. When commencing this phase of the PoW, the researcher not only had experience as a hospital pharmacist, but had also developed preconceptions based on the findings in phase 1. Despite the limited literature available suggesting patients were satisfied at discharge, the researcher's experience with patient dissatisfaction at discharge in a busy acute city-centre hospital led to preconceptions that patients would not be satisfied with discharge and that the wait for medicines would be the cause of any delays to patient discharge. These preconceptions were useful during the development of the questions, as it meant that she knew the areas that needed to be investigated. By being aware of her preconceptions, the researcher managed to write

the questions objectively, without leading the respondents. Assistance was also sought from the supervisory team to ensure that questions were suitable. Utilising questionnaires in this instance was also useful as it meant that the respondents could complete the questionnaire themselves and their views were not hindered by the researcher's during any discussions.

A concern during phase 4 was that the researcher had been heavily involved in the design of the new model of care which may have influenced the discussions. The reflexive approach used in phase 1 to carry out the research was again utilised during this phase. The researcher attempted to remain open-minded during the interviews. Although familiar with the new model, the researcher was unsure how different stakeholders would view the proposed new model of care, which allowed her to remain open-minded about their responses. As topics and issues arose throughout the interviews and focus groups, the researcher questioned others about the same topics in later interviews to determine a variety of perspectives on the issues.

The fluid, evolving and dynamic nature of qualitative research as described by Strauss⁽¹⁾ was a new experience for the researcher, whose limited background of research was based on a quantitative approach. This research programme was a learning curve – particularly during the first phase. By the final phase, qualitative research felt more natural to the researcher, as she became more familiar with the approach. Reflecting on the research process throughout the PoW helped the researcher to achieve this.

8.4 Key findings

Phase 1 was the first study to identify and evaluate the discharge process at a range of acute NHS hospitals across the North West of England. This phase alone is beneficial for those interested in improving the provision of pharmacy services within hospitals. It highlighted a number of significant findings, such as lack of staff training on patient discharge, lack of patient involvement in the discharge process and poor communication between hospital and community pharmacists. All of the issues identified within this phase are important to resolve in order to improve the discharge process. The findings

also discussed a range of solutions implemented by hospitals to overcome problems at discharge and found that most of these were based on small-scale pilots and had not become part of routine practice. The phase 1 findings led to the conclusion that in order to improve the discharge process, a new model of care for patient discharge was required, as the existing discharge process had too many obstacles to overcome.

Phase 2 followed on from phase 1 by assessing patient experience of the current discharge process. Literature around patient experience at discharge was limited. This phase identified that despite the majority of patients feeling satisfied with their hospital discharge, issues commonly arose, supporting previous studies.⁽⁹²⁾ Furthermore, the study highlighted several areas requiring improvement to provide safe, quality care for patients and improve patient experience at discharge. In particular, the findings support phase 1 findings which suggested that both patient counselling by pharmacists and patient involvement in discharge are limited. Findings also show that patients perceive their discharge to take too long and is largely due to the wait for discharge medicines. These are issues that if improved, will positively impact the discharge process and patients' experience of discharge from hospital. Phase 2 broadens the knowledge from existing literature and phase 1, of problems at discharge by adding the patients' perspective to known issues. Patient experience is important to determine if services are providing high quality care. From the results of this phase there is much room for improvement. This supported phase 1 findings that suggested a new model of care was required. The findings were combined with the phase 1 findings and used to inform the development of the new model of care for patient discharge.

Phase 3 successfully incorporated the findings from phases 1 and 2 of the PoW to develop a new model of care for patient discharge from hospital. The implications of developing a model of care for discharge, based on the requirements of healthcare professionals and patients are huge. As stakeholders in the discharge process, these are the people aware of the important matters regarding discharge. The highlighted issues discussed throughout this thesis, such as speed and quality of discharge have been targeted specifically and addressed by the new model of care. This could have a major

impact on patient experience, bed-blocking and readmission rates. All of which, as discussed in Chapter 2 are essential problem areas to target.

The final phase, phase 4, was key to provide formative feedback on the proposed new model of care, which has been used to refine and improve the model. This phase demonstrated encouraging results. Stakeholders were aware of the issues were are keen to identify a more efficient discharge process. They were therefore all keen to embrace any improvement ideas. Many stakeholders anticipated that the new model of care for patient discharge would be successful. However a variety of logistical issues were highlighted. These were broadly in two areas – pharmacists having the time to write discharge prescriptions during the ward round and logistical issues of community pharmacists supplying discharge medication. The proposed model of care was refined based on the stakeholder feedback, with the suggestions for overcoming logistical issues taken on board. This phase resulted in the finalised, innovative model of care for patient discharge at a suitable stage to pilot (see Figure 7-1)

If this new model of care is to improve the patient discharge process and outcomes of discharge it needs to be usable in practice to ensure successful uptake of the new model of care. This may be challenging in the present NHS climate, with the increased patient throughput in hospitals and the limited resources in many hospitals as discussed in Chapter 2. However, the findings from phase 4 indicate the new model of care described in Chapter 6 (see Figure 6-2) appeared feasible to stakeholders, provided any logistical issues are overcome.

8.5 Originality of the PoW

Despite the overwhelming amount of evidence showing that the current discharge process is ineffective, the literature review indicated that very little work had been undertaken to explore different models to enhance continuity of care on transfer between hospital and community care in the UK. The PoW was the first to consider multiple perspectives from both healthcare professionals and patients on the discharge process in the North West of England in order to determine local best practice and areas

where issues commonly arise. The findings subsequently informed the development of an innovative model of care for patient discharge from hospital. This model is original and contributes to the resolution of the known medication problems as a result of patient discharge (see section 2.7.2 Medication errors at discharge from hospital).

8.6 Impact of the PoW

Many policies and recommendations for hospital discharge have been published (see section 2.8 Improving hospital discharge), however they focus on the current discharge process and leave limited scope for the new model of care. Problems with current patient discharge have been ongoing for some time, and relying on improving some aspects of the current discharge process may not be an efficient mechanism to improve patient discharge. If this new model of care for patient discharge were to be implemented, new policies may have to be considered.

The potential impact of this research is wide reaching. Ensuring a seamless discharge process that will provide safe, quality and effective transfer for patients could lead to many implications for practice and includes quality and timely patient care on discharge from hospital and could minimise patient safety incidents. The new model of care could also potentially lower hospital readmission rates which is part of the UK government policy, as the new model should reduce any medication errors that could put patients at higher risk of readmission. Another impact on resources will be a reduction in medication waste, as only appropriate supplies of medication will be provided.

The potential for improved patient convenience and satisfaction with an efficient discharge system that will work for the patient as well as the hospital, will lead to a positive patient experience. To healthcare professionals, speed of patient discharge is not the main concern. Other factors are considered, such as patient safety, ensuring medication is supplied appropriately and information is transferred to the community for continuity of care. Whilst this is vital in the new model of care, to ensure quality and safety, it is often missed by patients, who just want to be discharged quickly from hospital. Factoring increased speed into the new model of care is important to improve

patient experience. By improving patient experience, this will improve the hospital's reputation.

The impact from this new model of care would not just be on the discharge process itself. As highlighted by the stakeholders in phase 4, there are many other potential benefits to the new model. Examples include the improved pharmaceutical care for patients, as a result of pharmacists having more time to spend with patients and being present on ward rounds where medical decisions are made. Equally, there is a huge potential benefit involved if signposting patients to community pharmacies. The ongoing support that they can provide for patients is beneficial, however many patients are unaware of the services such as MURs or NMS. The community pharmacist input will benefit patients that receive regular repeat medication as they will be able to anticipate any problems with further supplies of repeat medication and prevent medication errors.

8.7 Conclusion

The PoW has successfully met the overall aim which was to develop an innovative model of care for hospital discharge that will provide safe, quality and effective transfer for patients from hospital to community care.

Specific objectives were achieved during the PoW. These included: to identify the current discharge process used in a range of acute NHS hospitals which was achieved during telephone interviews with Chief Pharmacists in phase 1. The second objective, to explore the perceptions of pharmacists and patients of the current discharge process, which were achieved in phases 1 and 2 respectively, using a qualitative approach in phase 1 and quantitative questionnaires in phase 2. The third objective, to develop an innovative model of care to resolve the issues associated with patient discharge from hospital was achieved in phase 3, based on the findings from the earlier phases. The final objective, to evaluate the proposed model of care using stakeholder feedback was achieved during phase 4, using a qualitative approach involving interviews and focus groups.

8.8 Proposal for future work

Whilst they can be hypothesised, implications of the new model of care on delays to discharge, cost, healthcare staff providing the service and patients receiving the service are currently unknown. The new model of care for patient discharge requires a full evaluation to determine its true impact. The new model of care is considered a complex intervention as it contains several interconnecting components. Problems often arise in the evaluation of complex interventions because researchers have not fully defined and developed the intervention.⁽¹¹⁰⁾ This PoW, specifically phases 3 and 4, set about fully defining and developing the new model of care for discharge which will assist the evaluation.

A randomised controlled trial is considered the most reliable method of determining effectiveness⁽¹¹⁰⁾ and should be used to evaluate how the new model of care for discharge influences the discharge process and affects patient outcomes. As described by Campbell et al,⁽¹¹⁰⁾ it can be useful to break the process down into several phases, beginning with an exploratory trial before the randomised controlled trial. A possible research design could involve a pilot of the new model of care for patient discharge would as an initial step. Once the pilot had been fully evaluated, which could take up to 12 months depending on how long it took to set up, the data collected could then inform the randomised controlled trial.

For feasibility, the pilot could involve one hospital and a small number of community pharmacies across a geographical location. Implementing a pilot across all community pharmacies initially would not be practical. The new model of care would be carried out as described in Figure 7-1. The continuity of care aspect of utilising the patients' own community pharmacy would not be involved during this pilot, so it would be difficult to measure the impact that the continuity of care would have on the patient. However, for a small scale pilot any logistical issues described by stakeholders within phase 4 could be investigated, prior to involving all community pharmacies. As described in phase 4 (see section 7.4.4.2.1 Infrastructure) the appropriate infrastructure in place is required before a pilot could be undertaken.

For the purpose of determining effectiveness, the pilot would need to involve an appropriate alternative as a comparator. This could involve some of the patients to be discharged using the new model of care for patient discharge and the others using the traditional discharge process used in current practice. Consideration regarding appropriate sample sizes and selection of participants will be essential for an appropriate evaluation. Issues around patient capacity and consent to participate will also be important during the planning of this pilot.

A range of aspects of the innovative model of care for patient discharge will be important to evaluate. A service evaluation, including the length of time that it would take a patient to be discharged using the new process, compared to the current discharge process. An economic analysis will be important, to determine the potential cost implications of full implementation of the new model. Other aspects such as the implications for healthcare staff and their workload would be interesting to determine during a pilot. In particular, the impact on community pharmacists' and hospital pharmacists' workload. In addition to the impact on pharmacists' workload, an evaluation should establish whether it frees up nurses and doctors time as anticipated by stakeholders in phase 4. Finally, the implications of the new model of care for patient discharge for patients are vital. Assessing the patient experience will be important, along with evaluating patient outcomes. Particularly whether the new model of care affects readmission rates to hospital. Additional funding will be pursued by the researcher to carry out this further work.

This pilot would involve a combination of quantitative and qualitative methods in order to efficiently evaluate the model of care. Quantitative data would be required to establish outcomes such as the length of time the process takes, the cost of providing the service and patient outcomes (for example hospital readmission rates). Structured data capture forms would need to be developed to evaluate such outcomes. A qualitative approach would be required to capture the impact of the new model of care on both patients and the healthcare professionals delivering the new model. Semi-structured face-to-face interviews or focus groups would be an appropriate method of

data collection to determine healthcare professionals views and the impact that providing the service has had on their role. A more structured interview would be appropriate for patients, to ask focussed questions on how they perceive the new model of care.

This thesis concludes having achieved all that it set out to do. The overall PoW aim and objectives have been met, resulting in the development of an innovative model of care for patient discharge from hospital. Stakeholder feedback of the model of care was positive, with suggestions for improvement. The model was refined based on this feedback and is at a suitable stage to pilot to assess its impact, as described in the section for further work.

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Appendices

Appendix 1 – Literature Search Strategy

Database	Search Terms	Number hits	Number browsed abstracts	Number Saved abstracts
AMED	discharge	2953		
Allied and Complementary Medicine	discharge (with limit: english language)	2799	20	1
1985 to present	discharge; medication	74	7	1
Allied health professions, complementary medicine	continuity of patient care	136	9	3
	"continuity of patient care"	0	0	0
	"continuity of care"	136	9	3
	transitional care	54	4	2
	"transitional care"	18	2	2
	discontinuity	29	1	0
	patient discharge; patient compliance	3	3	0
	adherence; patient discharge	7	1	1
	adverse events; patient discharge	4	4	4
	medication error	16	0	0
	"medication error"	3	0	0
	pharmacist	88	4	0
	healthcare quality; patient discharge	18	0	0
	drug therapy; patient discharge	8	2	0
	community pharmacy services	6	1	0
	ambulatory care; drug therapy	14	0	0
	patient discharge; drug therapy	8	1	1
	primary healthcare; patient discharge	1	1	1
	primary healthcare; drug therapy	14	0	0
	patient outcomes; patient discharge	36	0	0
	delivery of healthcare; patient discharge	47	5	0

	transition of care; drug therapy	4	0	0
	"transition of care"	7	0	0
	hospital readmission	71	0	0
	"hospital readmission"	22	0	0
	handover	5	1	1
	"information technology"	101	10	3
	computer*; discharge	45	0	0
	"medic* use review*"	57	0	0
	"transfer of care"	10	2	2
	"incomplete discharge"	0	0	0
	electronic discharge	0	0	0
	records	47	2	1
	discharge summary	3	0	0
	patient care management	511	11	9
	patient perspectives			
	patient involvement			
BNI	discharge; drug therapy	43	13	6
British Nursing Index	discharge; medication	37	16	
1992 to present	continuity of care	1966		
Nursing, midwifery, health visitors	continuity of care; medication	41	22	14
	"continuity of patient care"	6	3	2
	"continuity of care"	440	69	43
	transitional care	135	5	2
	"transitional care"	91	13	9
	discontinuity	19	0	0
	patient discharge; patient compliance	21	2	1
	patient discharge; patient adherence	8	0	0
	patient discharge; patient concordance	2	0	0
	adverse events	580	26	10
	"adverse events"	491	11	8

	medication errors	469	19	4
	"medication errors"	354	4	
	pharmacists	219	9	3
	healthcare quality; patient discharge	12	2	1
	"community pharmacy"	27	3	1
	medic* use review*	3	1	1
	"ambulatory care"	95	4	2
	primary healthcare; discharge	9	4	2
	"secondary care"; discharge	4	1	1
	outcomes and prognoses; discharge	29	5	2
	delivery of healthcare	19	0	0
	"transition of care"	16	3	3
	"transfer of care"	24	10	4
	"hospital readmission"	41	3	0
	handover	168	16	6
	"information technology"	359	28	19
	"incomplete discharge"	0	0	0
	electronic discharge	2	1	1
	computer*; discharge	15	7	7
	patient care management	4	0	0
CINAHL	patient discharge; drug therapy	657	128	62
	transfer , discharge	0	0	0
Cumulative Index to Nursing and Allied Health Literature	patient discharge; medication	458	65	37
Nursing, allied health professions	continuity of care; medication	251	30	10
	continuity of patient care (limit english language)	9533	114	43
	"continuity of care" (limit english language)	1794	47	17
	"transitional care"	345	21	9

	discontinuity	332	5	4
	patient discharge; patient compliance	205	21	5
	patient discharge; patient adherence	80	2	2
	patient discharge; patient concordance	16	2	0
	"adverse events"; patient discharge	127	6	2
	"adverse event"; patient discharge	26	4	1
	medication errors; patient discharge	158	7	2
	pharmacist; patient discharge	58	7	3
	healthcare quality; patient discharge	6	0	0
	"community pharmacy"	239	5	3
	"medic* use review*"	10	0	0
	"ambulatory care"; medication	140	6	4
	primary healthcare; patient discharge	178	17	5
	secondary healthcare	8	0	0
	"secondary care"; patient discharge	33	1	1
	outcomes; discharge; medication	63	0	0
	delivery of healthcare	1557	14	7
	"hospital readmission*"	831	20	14
	handover	325	2	1
	"information technology"; patient discharge	23	4	1
	"information technology"; medication	122	1	1
	"incomplete discharge"	3	0	0
	"electronic discharge"	25	8	3
	computer*; discharge	14	0	0
	computerised patient record; patient discharge	156	8	6
EMBASE	hospital discharge; drug therapy (limit english language)	859	101	53
Excerpta Medica Database	"trans* of care"; hospital discharge	464	37	14
Drugs and pharmacology , other aspects of human medicine	"continuity of care"; medication	334	16	10

	"continuity of care"; hospital discharge	390	9	4
	"adverse event*"; hospital discharge; medication	106	2	2
	pharmacist; hospital discharge	458	12	7
	healthcare quality; hospital discharge			
	"community pharmac*"; hospital discharge	130	8	5
	"medic* use review*"	80	1	1
	primary medical care; hospital discharge; medication	145	0	0
	handover; hospital discharge	36	2	1
	"information technology"; hospital discharge	46	2	1
	"information technology"; medication	238	1	1
	"incomplete discharge"	15	0	0
	"electronic discharge"	155	6	3
	computer*; discharge	73	0	0
	medical record; information technology, medication	19	0	0
	discharge prescription; community pharmac*	14	0	0
Pubmed	hospital discharge; drug therapy (limit english language)	1809	28	4
	"transfer of care"; hospital discharge	2	0	0
	"continuity of care"; medication	238	12	4
	"continuity of care"; hospital discharge	90	21	5
	"adverse event*"; hospital discharge	68	3	2
	pharmacist; hospital discharge	118	11	3
	"community pharmacy"; hospital discharge	21	0	0
	"medic* use review*"	6	0	0
	primary care; hospital discharge	365	9	1
	handover, discharge	42	1	0
	"information technology"; hospital discharge	21	0	0
	"incomplete discharge"	10	0	0
	"electronic discharge"	71	4	3
	electronic patient record; hospital discharge	26	1	1
	discharge prescription; community pharmac*	3	0	0

Appendix 2 – Liverpool John Moores ethical approval letter for phase 1

Dear Sally

With reference to your application for Ethical approval by Proportionate review

14/PBS/008 – Sally Bullock, PGR - Investigating Models of Care in the NHS: Patient transfer to community care on discharge from hospital (Phase 1: Telephone interviews to identify the discharge systems in use across North West England) (Charles Morecroft)

Liverpool John Moores University Research Ethics Committee (REC) has reviewed the above application and I am pleased to inform you that ethical approval has been granted and the study can now commence.

Approval is given on the understanding that:

- any adverse reactions/events which take place during the course of the project are reported to the Committee immediately;
- any unforeseen ethical issues arising during the course of the project will be reported to the Committee immediately;
- the LJMU logo is used for all documentation relating to participant recruitment and participation eg poster, information sheets, consent forms, questionnaires. The LJMU logo can be accessed at <http://www.ljmu.ac.uk/corporatecommunications/60486.htm>

Where any substantive amendments are proposed to the protocol or study procedures further ethical approval must be sought.

Applicants should note that where relevant appropriate gatekeeper / management permission must be obtained prior to the study commencing at the study site concerned.

For details on how to report adverse events or request ethical approval of major amendments please refer to the information provided at <http://www.ljmu.ac.uk/RGSO/93205.htm>

Please note that ethical approval is given for a period of five years from the date granted and therefore the expiry date for this project will be January 2020. An application for extension of approval must be submitted if the project continues after this date.



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Appendix 3 – Participant recruitment email used in phase 1

Subject: Invitation to take part in discharge process research study

Dear....(insert name)

I am a hospital pharmacist currently undertaking research towards a PhD at Liverpool John Moores University, exploring the development of a new model of care for the discharge of patients from hospital back into the community.

I am currently recruiting participants for the first phase of the research. This initial phase aims to determine what discharge processes are currently in use at hospitals across the North West of England. This will involve a single telephone interview lasting between 15-30 minutes, covering a detailed overview of the discharge process in your hospital. You have been selected due to your experience and knowledge of the discharge process as a whole. If you feel that there is a more appropriate senior member of staff within your pharmacy department, please feel free to nominate them to participate in your place.

I have attached a participant information leaflet and a consent form. Please take some time to read through the information provided and decide if you would like to take part. You will be contacted after three working days of receiving this email to determine if you wish to participate in the study.

If you do wish to participate, please be aware that during the interview you will be asked how many members of staff make up your pharmacy team, the number of beds at your hospital and the number of discharges that take place per day. You may wish to look this information up prior to the interview if you do not know it offhand.

Participation is entirely voluntary and I appreciate that you are busy, however developing new improved ways of working is very important in this present climate and your participation would be very helpful.

Yours Sincerely,

Sally Bullock

Sally Bullock, pharmacist

School of Pharmacy and Biomolecular Sciences, Liverpool John Moores University

📍 Room 7.46, James Parsons Building, Byrom Street, L3 3AF

✉ s.bullock@2014.ljmu.ac.uk

☎ 0151-231-2308

Appendix 4 – Participant information leaflet (PIL) for phase 1



PARTICIPANT INFORMATION SHEET

Telephone interviews to identify the current discharge processes in use at NHS hospitals across North West England

You are being invited to take part in a research study. Before you decide it is important that you understand why the research is being done and what it involves. Please take time to read the following information. Ask if there is anything that is not clear or if you would like more information. Take time to decide if you want to take part.

What is the purpose of the study?

This study will form the first of three phases of a wider PhD study. The overall study aims to develop a new model of care for discharging patients from hospital. There is no current research into the variation between discharge systems in the North West of England, this study will address this gap in the evidence. This first phase involves a telephone interview exploring how patients are currently discharged from different hospitals across the North West and whether this process varies in different hospitals. The study will also explore your opinions on the discharge system in your hospital. The results will hopefully help identify the most effective methods of discharging patients and inform the design of a new discharge system that will safely and effectively discharge patients from hospital back into the community.

The study will recruit one person from each hospital with a detailed working knowledge of the discharge process. You have been chosen to participate in this study due to your knowledge of the discharge process in your hospital. The questions will be detailed and specific. If you feel there is a more appropriate member of staff in your department who should participate in the interview, then please nominate this person in your place.

Do I have to take part?

No. It is up to you to decide whether or not to take part. Your cooperation is voluntary, but it would be very helpful if you do choose to participate.

If you do participate you will be asked to sign and return a consent form. An electronic copy of the consent form will be emailed to you alongside this participant information sheet. The consent form can be signed electronically and returned via email to the researcher. Alternatively, a copy can be returned by post. The telephone interview cannot take place until the signed consent form has been received by the researcher. Please ensure that you keep a copy of the consent form, along with this participant information sheet for your reference.

You are still free to withdraw at any time during the study and without giving a reason. A decision to withdraw will not affect your rights.

What will happen to me if I take part?

Participation in this phase of the study will involve a telephone interview only. After receiving the information about the study, the researcher will contact you to determine if you have read the information and decided if you want to participate.

If you choose to participate, a mutually agreed time will be arranged for the telephone interview to take place. The interview will be semi-structured and will take approximately 30 minutes, depending on the extent of the discussion. The interview questions will be based on the discharge process in your hospital trust. In addition, the questions will promote discussion of any discharge schemes or projects that your trust may be involved with. As a participant, you are free to refuse to answer any questions you feel inappropriate or uncomfortable with. The telephone interview will be recorded to aid the researcher with note-taking and analysis.

Once all data has been collected and analysed, the results will be disseminated to all participants for your information. The results will also be included in the PhD thesis. No further participation will be required in later phases of the overall project.

Are there any risks / benefits involved?

No potential risks have been identified to participants.

Participating in this study will help to provide a true representation of the discharge systems used across North West England. This data will not only inform the design of a new discharge system for the purpose of the study, but will also be of use to staff in hospitals across the North West to provide information on the most successful discharge systems.

Will my taking part in the study be kept confidential?

Any information discussed in the interview will remain confidential. Access to the original audio recording of the interview will be granted to the researcher and supervisory team only. Any participant identifiable information will be removed during transcribed for analysis.

None of the participating hospitals or staff members will be identified in any report or publications. The focus of any results will be on the range of systems in use rather than where they originated from. Where any hospital could easily be identified by any of the data (e.g. any recognisable projects or schemes they have been involved in) consent to include this information in any report will be sought from the designated individual.

Funding/ Sponsors

This project has been funded through the Centre for Pharmacy Innovation, which is a joint collaboration between Liverpool John Moores University, Royal Liverpool and Broadgreen University Hospitals and LloydsPharmacy.

This study has received ethical approval from LJMU's Research Ethics Committee

14/PBS/008 on 16/01/2015

If you would like any further information relating to this research study, please contact the researcher for further information on the contact details below.

Researcher

Sally Bullock, Pharmacist
School of Pharmacy and Biomolecular Sciences, Liverpool John Moores University

Room 7.46, James Parsons Building, Byrom Street, L3 3AF

s.bullock@2014.ljmu.ac.uk

0151-231-2308

Director of Studies/ Research Supervisor

Professor Charles Morecroft
School of Pharmacy and Biomolecular Sciences, Liverpool John Moores University

Room 10.03, James Parsons Building, Byrom Street, L3 3AF

C.W.Morecroft@ljmu.ac.uk

If you have any concerns regarding your involvement in this research, please discuss these with the researcher in the first instance. Contact details for both the researcher and the research supervisor are listed above. If you wish to make a complaint, please contact researchethics@ljmu.ac.uk and your communication will be re-directed to an independent person as appropriate.

Appendix 5 – Consent form for phase 1



PARTICIPANT CONSENT FORM

Telephone interviews to identify the current discharge processes in use at NHS hospitals across North West England

Please read the points below and initial each box to confirm that you agree before signing. The completed form will need to be returned to the researcher by email or by freepost. See contact details below.

1. I confirm that I have read and understand the information provided for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily
2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving a reason and that this will not affect my legal rights.
3. I understand that any personal information collected during the study will be anonymised and remain confidential
4. I agree to take part in the above interview
5. I understand that the interview will be audio-recorded and I am happy to proceed
6. I understand that parts of our conversation may be used verbatim in future publications or presentations but that such quotes will be anonymised.

Name of Participant _____ Date _____ Signature _____

Name of Researcher _____ Date _____ Signature _____

Researcher contact details:

Sally Bullock, pharmacist
School of Pharmacy and Biomolecular Sciences, Liverpool John Moores University
Room 7.46, James Parsons Building, Byrom Street, L3 3AF **FREEPOST**
s.bullock@2014.ljmu.ac.uk
0151-231-2308

Consent form version 2 08/01/15

Appendix 6 – Interview schedule for phase 1

Participant Reference Number:

Interview Schedule

Telephone interviews to identify the current discharge processes in use at NHS hospitals across North West England

Introduction

Hello, my name is Sally Bullock.

I'm just going to start with a bit of an introduction to the project. As mentioned in the original email I am a pharmacist currently undertaking research towards my PhD at Liverpool John Moores University. This interview forms part of the first of three phases of the PhD, which is looking at developing a new model of care for the discharge of patients from hospital back into the community. This initial phase is looking at the current models of care for discharge from hospital in use across the North West. It will help to determine if all hospitals use a similar discharge system and what is thought to be effective and ineffective.

You have been asked to participate due to your experience of the discharge process in your hospital and your knowledge of the overall system.

I would just like to reiterate that I am recording this interview for analysis purposes only. Everything that you tell me will be kept confidential and you will remain anonymous in any reports published.

*n.b If not yet received signed consent form, read out consent form and obtain recorded signed consent.
OR : I have received your signed consent form. Thank you.*

Can I just confirm that you are happy to be interviewed?

Please feel free to interrupt to ask any questions or for clarification throughout the interview.

This will be a semi-structured interview. I will start with some straight forward questions about your hospital before moving on to a discussion about the discharge process.

For each question asked, the following question prompts will be used throughout the interview:

*How did that come about? Where did it happen? When did that happen? Do other people feel the same?
That's interesting. I've heard other people say (something different) how do you feel about that? Why?
Can you help me to better understand your position/ why you felt that way/ why you say that?
Could you give me an example of that/ tell a story about that?
Is that also true for another aspect/ all the time?
Are there any times when it doesn't work??*

Hospital Demographic Information

Hospital name:

Job title of participant:

Size of hospital (no. beds):

How would you describe the type of hospital, for example (district general/ city centre/ teaching hospital etc.):

Number of pharmacists working in department:

Number of discharges per day:

Do you offer a 7 day service in the hospital? :

What are your core working hours?:

Can you describe the discharge process in your hospital?

Prompts:

Interview Schedule version 2 08/01/15

Prompts:

- Who coordinates the discharge process
- Who writes the discharge prescription/summary
- Who checks it and where
- Where is it dispensed and by whom?
- What medication does patient receive on discharge: all/none (get from GP)/only newly started etc.
- Who counsels patient on discharge
- Who sends summary to GP
- How is the summary transferred to GP, why do you use this particular method? Any barriers involved with other methods?
- How long does the transfer of summary usually take
- Do you send discharge information out to other healthcare professionals? E.g. community pharmacists. If yes, who? Is this done routinely or for specific patients only
- Do you refer any of your patients for NMS/ MUR at their community pharmacy after discharge? Is this thought to be beneficial?
- Do you provide the same service out of hours (weeknights/ weekends) as during the week
- Do you have any contact with patients after they have been discharged for any reason?
- How the discharge process has changed over time. In response to what? Have the changes improved the system?
- Are you or have you been involved with any schemes to improve discharge. (will give examples of current schemes as further prompt if necessary) If so what did this involve? What worked well, what didn't work so well.

In your opinion, which parts of the discharge process are considered effective and ineffective?

Prompts:

- Have you completed any local service evaluations/ audits on the discharge process, if yes what were the findings
- Do your staff members have enough time to provide a thorough service for each patient on discharge
- Are you aware of any patient feedback on your discharge process, anything that they find especially good/ any concerns

In light of your experience, if you could make any changes to the discharge process, what would they be?

Prompts:

- Doesn't matter if unrealistic
- Can be 2 or 3 changes

That brings us to the end of the interview. I'd just like to thank you for giving up your time to participate. Would you be interested in receiving a copy of the results in a report once this phase is complete? If yes, is this ok via the email address that I originally contacted you on.

Thank you and goodbye.



Health Research Authority

South Central - Berkshire B Research Ethics Committee

Whitefriars
Level 3, Block B
Lewins Mead
Bristol
BS1 2NT

Telephone: 0117 342 1385

29 October 2015

Miss Sally Bullock
7.46 James Parsons Building, LJMU
Byrom Street
Liverpool
L3 3AF

Dear Miss Bullock

Study title: Patient perceptions of the discharge process at the
Royal Liverpool and Broadgreen Hospital Trust
(RLBUHT)
REC reference: 15/SC/0669
IRAS project ID: 178518

Thank you for your letter of the 29th October 2015, responding to the Proportionate Review Sub-Committee's request for changes to the documentation for the above study.

The revised documentation has been reviewed and approved by the sub-committee.

We plan to publish your research summary wording for the above study on the HRA website, together with your contact details. Publication will be no earlier than three months from the date of this favourable opinion letter. The expectation is that this information will be published for all studies that receive an ethical opinion but should you wish to provide a substitute contact point, wish to make a request to defer, or require further information, please contact the REC Manager Tina Cavaliere, nrescommittee.southcentral-berkshireb@nhs.net. Under very limited circumstances (e.g. for student research which has received an unfavourable opinion), it may be possible to grant an exemption to the publication of the study.

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.

Conditions of the favourable opinion

The favourable opinion is subject to the following conditions being met prior to the start of the study.

Management permission or approval must be obtained from each host organisation prior to the start of the study at the site concerned.

Management permission ("R&D approval") should be sought from all NHS organisations involved in the study in accordance with NHS research governance arrangements.

Guidance on applying for NHS permission for research is available in the Integrated Research Application System or at <http://www.rdforum.nhs.uk>.

Where a NHS organisation's role in the study is limited to identifying and referring potential participants to research sites ("participant identification centre"), guidance should be sought from the R&D office on the information it requires to give permission for this activity.

For non-NHS sites, site management permission should be obtained in accordance with the procedures of the relevant host organisation.

Sponsors are not required to notify the Committee of approvals from host organisations.

Registration of Clinical Trials

All clinical trials (defined as the first four categories on the IRAS filter page) must be registered on a publically accessible database. This should be before the first participant is recruited but no later than 6 weeks after recruitment of the first participant.

There is no requirement to separately notify the REC but you should do so at the earliest opportunity e.g. when submitting an amendment. We will audit the registration details as part of the annual progress reporting process.

To ensure transparency in research, we strongly recommend that all research is registered but for non-clinical trials this is not currently mandatory.

If a sponsor wishes to request a deferral for study registration within the required timeframe, they should contact hra.studyregistration@nhs.net. The expectation is that all clinical trials will be registered, however, in exceptional circumstances non registration may be permissible with prior agreement from the HRA. Guidance on where to register is provided on the HRA website.

It is the responsibility of the sponsor to ensure that all the conditions are complied with before the start of the study or its initiation at a particular site (as applicable).

Ethical review of research sites

The favourable opinion applies to all NHS sites taking part in the study, subject to management permission being obtained from the NHS/HSC R&D office prior to the start of the study (see "Conditions of the favourable opinion" above).

Approved documents

The documents reviewed and approved by the Committee are:

<i>Document</i>	<i>Version</i>	<i>Date</i>
Evidence of Sponsor insurance or indemnity (non NHS Sponsors only) [Insurance certificate]	1	20 October 2015
IRAS Checklist XML [Checklist_20102015]		20 October 2015
IRAS Checklist XML [Checklist_20102015]		20 October 2015
IRAS Checklist XML [Checklist_29102015]		29 October 2015
Letter from sponsor [Sponsor letter]	1	19 October 2015
Non-validated questionnaire [Questionnaire version 2 28102015]	2	28 October 2015
Other [Summary CV second supervisor]	1	20 October 2015
Other [Summary CV third supervisor]	1	20 October 2015
Other [Tracked changes PIL]	2	10 September 2015
Other [Tracked changes questionnaire]	1	07 October 2015
Other [Protocol version 1 tracked changes]	1	15 October 2015
Participant consent form [Participant consent form version 1 28102015]	1	28 October 2015
Participant information sheet (PIS) [Participant Information Leaflet version 3 28102015]	3	28 October 2015
REC Application Form [REC_Form_20102015]		20 October 2015
Research protocol or project proposal [protocol version 2 28102015]	2	28 October 2015
Summary CV for Chief Investigator (CI) [Summary CV Chief Investigator]	1	20 October 2015
Summary CV for supervisor (student research) [Summary CV supervisor]	1	08 October 2015

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

After ethical review

Reporting requirements

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
- Adding new sites and investigators
- Notification of serious breaches of the protocol
- Progress and safety reports
- Notifying the end of the study

The HRA website also provides guidance on these topics, which is updated in the light of changes in reporting requirements or procedures.

Feedback

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 HRA website:

<http://www.hra.nhs.uk/about-the-hra/governance/quality-assurance>

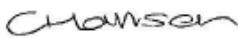
We are pleased to welcome researchers and R & D staff at our NRES committee members' training days – see details at <http://www.hra.nhs.uk/hra-training/>

15/SC/0669

Please quote this number on all correspondence

With the Committee's best wishes for the success of this project.

Yours sincerely

Pp 

Dr John Sheridan
Chair

Email: nrescommittee.southcentral-berkshireb@nhs.net

Enclosures: *"After ethical review – guidance for researchers"*

Copy to: *Professor Charles Morecroft*

Appendix 8 – LJMU REC approval email for phase 2

With reference to your application for Ethical approval:

15/SC/0669 - 15/PBS/012

Sally Bullock - Patients' experiences of discharge from The Royal Liverpool and Broadgreen University Hospital Trust (Charles Morecroft)

I am pleased to inform you that, following confirmation of full, unconditional ethical approval from your IRAS REC, Liverpool John Moores University Research Ethics Committee (REC) is content to endorse this approval.

Approval is given on the understanding that the approving REC will be made aware of any adverse events or substantive changes in protocol and that LJMU REC will be informed of any such events.

Please note that ethical approval is given for a period in line with that approved by IRAS and application for extension of approval must be submitted to the approving REC and LJMU.

Yours sincerely



Mandy Williams
Research Support Officer, Research Support Office
Kingsway House, Hatton Garden, Liverpool L3 2AJ
t: 01519046467 e: a.f.williams@ljmu.ac.uk

Click logo to view our PGR Facebook page. Like for news and information



The Royal Liverpool and Broadgreen University Hospitals 
NHS Trust

Royal Liverpool University Hospital
Prescot Street
Liverpool
L7 8XP

TRUST APPROVAL LETTER FOR NON-CTIMP STUDIES

Tel: 0151 706 2000
Fax: 0151 706 5806

Ms Sally Bullock
Liverpool John Moores University
School of Pharmacy and Biomolecular Sciences,
Room 7.46, James Parsons Building
Byrom Street, Liverpool
L3 3AF

REC: 15/SC/0669
Date: 25/11/2015

Dear Ms Bullock

RD&I No: 5123

Patient perceptions of the discharge process at the RLBHHT

The above study is a Non-Commercial, Questionnaire / Quantitative study, sponsored and funded by Liverpool John Moores University. The Trust is now happy for you to commence work on this study, using the following ethically approved documents. Please note that the table below lists only the key documents rather than all ethically approved documents. For details of all ethically approved documents please refer to the REC favourable opinion letter and the subsequent amendment letters.

Document	Version	Dated
Participant consent form [Participant consent form version 1 28102015]	1	28 October 2015
Participant information sheet (PIS) [Participant Information Leaflet version 3 28102015]	3	28 October 2015
Research protocol or project proposal [protocol version 2 28102015]	2	28 October 2015

May I to take this opportunity to remind you of your responsibilities as PI for this study to:-

- Report SAE's as per protocol and Trust policy and record total number on OSIRIS
- Ensure that all screening and recruitment activity is updated on OSIRIS every Friday (training can be obtained if required by phoning Ext 3782)
 - Department of Health target for this study is first patient recruited by **24 December 2015**

From 11 March 2015, our hospitals and grounds will be smoke free.
Please don't smoke inside or outside our hospitals.

WTA006 8/14
TEM001.RSOP016 - RLBHHT Trust Approval Letter (Non-CTIMP) - V15

For help to quit go to www.nhs.uk/smokefree or ask a member of staff.

Page 1 of 2

Appendix 10 – LJMU liability certificate

Hasilwood House
60 Bishopsgate
London EC2N 4AW
Tel: 020 7847 8670
Fax: 020 7847 8689



TO WHOM IT MAY CONCERN

20th July 2015

Dear Sir/Madam

**LIVERPOOL JOHN MOORES UNIVERSITY
AND ALL ITS SUBSIDIARY COMPANIES**

We confirm that the above Institution is a Member of U.M. Association Limited, and that the following covers are currently in place:-

1. EMPLOYERS' LIABILITY

Certificate No.	Y016458QBE0115A/016
Period of Cover	1 August 2015 to 31 July 2016
Limit of Indemnity	£25,000,000 any one event unlimited in the aggregate.
Includes	Indemnity to Principals
Cover provided by	QBE Insurance (Europe) Limited and Excess Insurers.

2. PUBLIC AND PRODUCTS LIABILITY

Certificate of Entry No.	UM016/93
Period of Cover	1 August 2015 to 31 July 2016
Includes	Indemnity to Principals
Limit Of Indemnity	£30,000,000 any one event and in the aggregate in respect of Products Liability and unlimited in the aggregate in respect of Public Liability.
Cover provided by	U.M. Association Limited and Excess Cover Providers led by QBE Insurance (Europe) Limited

If you have any queries in respect of the above details, please do not hesitate to contact us.
Yours faithfully

A handwritten signature in black ink, appearing to read 'Susan Wilkinson'.

Susan Wilkinson
For U.M. Association Limited



U.M. Association Limited
Registered Office: Hasilwood House, 60 Bishopsgate, London, EC2N 4AW
Registered in England and Wales No. 2731799



PARTICIPANT INFORMATION SHEET

Patient perceptions of the discharge process at The Royal Liverpool and Broadgreen University Hospital Trust

You are being invited to take part in a research study. Before you decide whether to participate, it is important that you understand why the research is being done and what it involves. Please take time to read the following information. Ask if there is anything that is not clear or if you would like more information. Take time to decide if you want to take part.

What is the purpose of the study?

This study will form part of a wider PhD study. The overall study aims to develop a new process for discharging patients from hospital. The aim of this part of the research study is to explore patients' experiences and opinions of the discharge process at the Royal Liverpool and Broadgreen University Hospital Trust (RLBUHT). The information from this study will be used to develop a new process for the supply of medicines at the point of discharge, which is why it is important to understand what patients want from their hospital discharge.

Why have I been chosen?

The researcher is seeking the opinions of patients who have been admitted to this hospital. It is important that you have been told that you can be discharged to your normal address and are waiting for this to happen. In this situation, you will be aware what the current discharge process involves. Your family member or carer may act on your behalf in this study, if you both agree to this.

Do I have to take part?

No. It is up to you to decide whether or not to take part but it would be much appreciated if you do choose to do so.

If you do decide to take part, you will be given this information sheet to keep and a printed copy of the survey to complete. By completing the survey, you are consenting to participate in the research study. If you do participate you are still free to withdraw at any time, without giving a reason. A decision to withdraw or not to take part will not affect the quality of care you receive from the hospital or staff in any way.

What will happen to me if I take part?

The researcher will ask you if you are willing to complete a questionnaire, which should take no longer than 20 minutes. This can be filled in while you wait to be discharged and handed back to the researcher once it is completed. The questionnaire includes a series of questions about your experience and opinions of hospital discharge. Some personal details will be asked, for example age and number of prescribed medications. You can decide to stop completing the questionnaire at any time or decide not to answer specific questions. None of the information collected will identify you.

No further participation will be required after completing the questionnaire.

Are there any risks / benefits involved?

Participating in this study is not thought to have any risks. The questions that you will be asked are unlikely to cause any distress; however if you do have concerns about this study, please see the section at the end of this leaflet on who to discuss these concerns with.

Participating in this study will help to provide the researcher with a true representation of the discharge process from patients' perspectives. It is hoped that this will not only ensure that a new discharge process is designed to best serve the patients, but will also be of use to staff in the hospital, by providing information on how they are currently performing and how they can improve.

Will my taking part in the study be kept confidential?

All information that is collected during the course of this research study will be kept strictly confidential. Each questionnaire will be identified by a reference number, which will have no connection to your name, hospital number or medical record. It will therefore not be possible to identify you from the completed questionnaire.

All documentation will be kept in a secure filing cabinet in an office within Liverpool John Moores University. This cabinet will be locked whenever the researcher is not present. All electronic files relating to this study will be password protected, such that only the researcher involved in this project will have access.

What will happen to the results of the research study?

A written report of this study will be forwarded to the hospital and used to develop an improved discharge service. In addition, the findings of the study will be presented to hospital staff, at professional conferences and submitted to professional journals. As this study is part of a PhD study, the findings will also be published in the final PhD thesis. However, participants of this study will not be identified in any of these.

Funding/ Sponsors

This project has been funded through the Centre for Pharmacy Innovation, which is a joint collaboration between Liverpool John Moores University, Royal Liverpool and Broadgreen University Hospitals and LloydsPharmacy.

This study has received ethical approval from the Berkshire B NHS Research Ethics Committee and LJMU's Research Ethics Committee

If you would like any further information relating to this research study, please contact the researcher for further information on the contact details below.

Researcher

Sally Bullock, Pharmacist
School of Pharmacy and Biomolecular Sciences, Liverpool John Moores University

✉ Room 7.46, James Parsons Building, Byrom Street, L3 3AF

✉ s.bullock@2014.ljmu.ac.uk

☎ 0151-231-2308

Director of Studies/ Research Supervisor

Professor Charles Morecroft
School of Pharmacy and Biomolecular Sciences, Liverpool John Moores University

✉ Room 10.03, James Parsons Building, Byrom Street, L3 3AF

✉ C.W.Morecroft@ljmu.ac.uk

If you have any concerns regarding your involvement in this research, please discuss these with the researcher in the first instance. Contact details for both the researcher and the research supervisor are listed above.

If you remain unhappy and wish to complain formally, you can go through the Patient Advice and Liaison Service, PALS

☎ 0151 706 4903

✉ PALS@rlbuht.nhs.uk

Alternatively, you can contact the university via email on researchethics@ljmu.ac.uk and your communication will be re-directed to an independent person as appropriate.

Appendix 12 – Gatekeeper consent form for phase 2



GATEKEEPER CONSENT FORM

Patients' experiences of discharge from The Royal Liverpool and Broadgreen University Hospital Trust (RLBUHT)

Please read the points below and tick to confirm your understanding of the study and that you are happy for your organisation to take part and your facilities to be used to host parts of the project. This completed form will need to be returned to the researcher.

1. I confirm that I have read and understand the information provided for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.
2. I understand that participation of our organisation and members in the research is voluntary and that they are free to withdraw at any time, without giving a reason and that this will not affect legal rights.
3. I understand that any personal information collected during the study will be anonymised and remain confidential.
4. I agree for our organisation and members to take part in the above study.
5. I agree to conform to the data protection act

Name of Gatekeeper: _____ Date: _____ Signature: _____

Name of Researcher: _____ Date: _____ Signature: _____

Researcher contact details:

Sally Bullock, pharmacist
School of Pharmacy and Biomolecular Sciences, Liverpool John Moores University
Room 7.46, James Parsons Building, Byrom Street, L3 3AF
s.bullock@2014.ljmu.ac.uk
0151-231-2308

Appendix 14 – Rationale and coding scheme for questions in phase 2

Question number (SPSS number)	Variable name	Variable definition	Value label	Value	Rationale for question
Part A - About you					
1 (1)	Respondent	Who is completing the questionnaire	Patient Carer/ family member Missing data	1 2 0	Determine if the patient is completing or carer/ family member. Different respondents may offer a different viewpoint and therefore is important to put remainder of questionnaire into context
2a (2)	Gender	Gender	Male Female Other Missing data	1 2 3 0	Determine if there are any differences in responses between male and female participants - objective 3
2b (3)	Age	Age	Continuous scale Missing data	0	Determine if there are any differences in responses between patients of different age groups. Objective 3. Asked the age rather than age categories because can do better stats on continuous variables rather than categorical data. Also can always re-code into a category during analysis if required.
3 (4)	Ward	Which hospital ward	AMU ESAU Medical ward Surgical ward Missing data	1 2 3 4 0	Determine where the patient has received their care, answers may differ depending on whether based on medical or surgical ward - objective 3
4a (5)	RegMeds	Any regular medication prior to admission	Yes No Don't know Missing data	1 2 3 0	Determine if findings differ between patients previously on medication – objective 3
4b (6)	NumRegMeds	How many regular medications	0-4 5-9 10 or more Don't know	1 2 3 4	To determine if number of medicines has an impact on understanding, does the number of medicines impact having a regular community pharmacy. This relates to objective 3.
5a (7)	RegPharm	Regular community pharmacy?	Yes No Don't know	1 2 3	Establish how many patients have a pharmacy that they visit regularly - important for later in PhD when developing a new model of care to determine if patients would visit their community pharmacy. This is loosely linked to objective 4, as it will link into development of a new model, but strongly linked to objective 6.
5b (8) (9) (10) (11) (12) (13)	CloseToHome CloseToGP DeliveryService RepeatMeds Relationship Other Reasons	Reasons for using this regular pharmacy Close to home Close to doctors surgery Provides delivery service Order repeat medicines for me Pharmacist knows me and what I need Other	Selected Not selected	1 9	These responses were taken from a question in a validated questionnaire used in a study by Gill-Banham et al (2014). The answer categories are particularly relevant as they will help to gain insight into why patients choose a particular pharmacy, this will be useful when developing a new model of care involving community pharmacy, to determine reasons for choice of pharmacy. Objective 6 Gill-Banham S, Mackridge A (2014) Patients' need for information and support with medicines after discharge from hospital. Unpublished MPharm dissertation. Medway School of Pharmacy and Liverpool John Moores University.
Part B - about your medicines while you have been in hospital					
6a (14)	MedsChanges	Any changes to regular medicines	Yes No	1 2	To determine if patient has been made aware of any changes and to see if any counselling

			Don't know	3	was essential on discharge. This relates to both objective 2 and objective 5.
6b (15)	KnowsMeds	Clear on what medicines to take after discharge	Fully Partly Not at all	1 2 3	To determine the extent of communication about any changes to medicines and if the patient understands what has happened. Objectives 2, 3 and 5.
7		Have various aspects of counselling taken place			
7a (16) 7b (17) 7c (18) 7d (19) 7e (20) 7f (21)	CounselOnUse CounselOnBenefit CounselOnSideEff CounselOnWhen CounselOnHow CounselOnDuration	What your medicines are for The benefits of the medicine Likely side effects of the medicine When to use the medicine How to use the medicine Whether you will need any further supplies of this medicine	Yes No Don't know	1 2 3	Phase one of the study determined that patient counselling was inefficient across North West NHS acute hospitals. This question is to check if important aspects of patient counselling are being delivered. Objective 5.
7g (22)	CounselOnSupply	How to obtain further supplies once you have left the hospital			
8 (23) (24) (25) (26) (27) (28) (29)	ConsultantCounsel DoctorCounsel NurseCounsel PharmacistCounsel UnsureCounsel NooneCounsel OtherCounsel	Which healthcare professional counselled patient	Consultant Doctor Nurse Pharmacist Don't know No one Other	1 – this was checked 9 – this wasn't checked	Useful for service improvement for the hospital to see who is actually carrying this out, but also when developing a new model of care as counselling will be a big part of this and it is important to establish who takes on this role. Objective 5.
Part C- About your discharge					
9 (30)	DischargeExplained	The discharge process was explained to me by a member of staff	Strongly agree Agree Neutral Disagree Strongly disagree	1 2 3 4 5	In order to manage patient expectations it is important to explain what the process involves and how long it takes to give them realistic expectations. This question will see if this is occurring as good communication will have an impact on patient experience. Objectives 1, 2 and 3.
10 (31)	InvolvedPlanning	I have been involved in planning my discharge from hospital	Strongly agree Agree Neutral Disagree Strongly disagree	1 2 3 4 5	There is a huge drive for patients to be involved during discharge planning. This question will explore if they think this is happening – objective 2
11 (32)	Updated	There has been regular updates about my discharge when needed	Strongly agree Agree	1 2	Communication was highlighted in phase one as an issue, especially between patients and

			Neutral Disagree Strongly disagree	3 4 5	healthcare professionals. This question is to determine if the same is true from the patient's perspective. Objectives 1, 2 and 3.
12 (33)	Understood	I fully understand the discharge process	Strongly agree Agree Neutral Disagree Strongly disagree	1 2 3 4 5	Based on objective 3
13 (34) (35) (36) (37) (38) (39)	AwaitingMeds AwaitingTests AwaitingResults AwaitingTransport AwaitingSocial AwaitingOther	Which tasks are outstanding before you can be discharged?	Discharge medicines from pharmacy More tests Test results Transport home to be organised social care to be organised Other	1 - selected 9 – not selected	Answers for this have been developed based on prior knowledge (phase one and experience as hospital pharmacist) and also the results of an in-depth analysis of delays to patient discharge by Hendy et al 2012. The rationale for this question is to determine whether the patient is waiting for their medication alone, or if there are other causative factors. This will be used to compare to current literature and also to inform the new model of care. By the nature of the patient having been told they can be discharged and still being in hospital to be able to complete the questionnaire they have had to wait for something. This is to do with understanding (objective 3) and communication between staff and patient in order to deliver a positive patient experience (objective 1 and 2).
14 (40)	DischargeRating	Overall, how would you rate your experience of discharge from hospital	Good Satisfactory Poor	1 2 3	This question will look at how patients perceive the discharge process as a whole, addressing the overall aim of the study. (Objective 1)
15 (41)	PositiveAspects	Have there been any positive aspects about your discharge experience?		String	Open ended question to allow scope for patient to comment on any positive experiences to address objective 1
16 (42)	NegativeAspects	Have there been any negative aspects of your discharge experience?		String	Open ended question to allow scope for patient to comment on any negative experiences to address objective 1

17a (43)	ImproveSupply	Could we improve the service of supplying your discharge medicines?	Yes No Don't know	1 2 3	
17b (44)	HowToImprove	If yes, How?			Open ended question to explore patient's suggestions for improving the current discharge process (objective 4). Also to scope for patient's ideas for new models of care to inform the development of the new model.
Part D – After your discharge from hospital					
18a (45)	HelpAtHome	Could we help you with your medicines once you are settled at home?	Yes No Don't know	1 2 3	
18b (46)	HowToHelp	If yes, how?			Open ended question to explore patient's suggestions for improving the current discharge process (objective 4). Also to scope for patient's ideas for new models of care to inform the development of the new model.
19a (47)	PharmacyVisit	Will you be visiting a community pharmacy soon after you are discharged from hospital	Yes No Don't know	1 2 3	As the current ideas for the new model of care involve a bigger community pharmacist involvement than at present, this question will look to see if patients would be visiting their community pharmacist anyway. Relates to objective 6).
19b (48) (49) (50) (51) (52)	ObtainSupply OrderRepeat DiscussMeds DiscussProblems VisitOther	If yes, what will the purpose of your visit be?	To obtain further supplies of your medicines To order your next repeat prescription To discuss your new medicines To discuss any problems with your medicines Other	1 - selected 9 – not selected	To scope for reasons why patients would be using their community pharmacist after discharge, for reasons stated in Q 20a.
20 (53)	MedsCollect	If you had the option, where would you prefer to collect your discharge medicines from?	Hospital Community pharmacy of your choice GP surgery Other	1 2 3 4	This question is only loosely related to the specific objectives of this study. It is a scoping question to determine if patients would be receptive to the idea of collecting their medication through a route other than the traditional hospital pharmacy supply. This relates to the development of a new model of care.
(54)	CollectOther	Free text			
21 (55)	AdditionalInfo	Room for any additional information			
(56)	Date	Date questionnaire completed			

Appendix 15 – Questionnaire used in phase 2



Patients' experiences of discharge from The Royal Liverpool and Broadgreen University Hospital Trust

The aim of this questionnaire is to explore patients' experiences and opinions on the process of supplying medication on discharge from hospital. Your opinion is very important to us and will be used to help develop discharge services in the future. It is important that this questionnaire is completed as accurately as possible.

This questionnaire will focus on the supply of your medicines at the time of discharge from hospital.

Completing this questionnaire should take no longer than 20 minutes.

None of the data collected by this questionnaire could be used to identify you.

How to fill in this questionnaire:

- Please read the instructions for each question carefully
- Please answer all of the questions truthfully, if you do not want to answer a question leave it blank
- For questions with tick boxes, please put a tick () in the box that is closest to your answer
- If you need any help completing this questionnaire, please ask the researcher

Thank you for completing this questionnaire

Date questionnaire completed

/ /

Part A: About you

Please read each question and tick the box next to the correct answer

Q 1. Are you:

- ¹ The patient ² A family member or carer

Q 2a. Sex:

- ¹ Male ² Female ³ Other

Q 2b. Age:

Q 3. Which hospital ward are you currently on:

- ¹ Acute Medical Assessment Unit (AMAU) ² Emergency Surgical Admissions Unit (ESAU) ³ Medical ward ⁴ Surgical ward

Q 4a. Were you taking any medicines regularly before this admission to hospital:

- ¹ Yes (go to Q 4b) ² No (go to Q 5) ³ Don't know (go to Q 5)

Q 4b. If your answer to Q 4a was yes, how many medicines did you take regularly before this admission to hospital:

- ¹ 0 - 4 ² 5 - 9 ³ 10 or more ⁴ Don't know

Q 5a. Do you usually collect your medicines from the same community pharmacy:

- ¹ Yes (go to Q 5b) ² No (go to Q 6) ³ Don't know (go to Q 6)

Q 5b. If your answer to Q 5a was yes, can you say why you prefer to use this pharmacy:
Please tick all answers that apply

- It is close to my home
 It is close to my doctor's surgery
 It provides a delivery service
 They order my medicines for me
 The pharmacist knows me and what I need
 Other *please specify*

Part B: About your medicines during your stay in hospital

This part relates to any changes to your medicines that may have occurred while you have been in hospital. This could be medicines stopped, started or changes made to your usual dosage.

Please read each question and tick the box next to the correct answer.

Q 6a. Were your regular medicines changed during your stay in hospital:

- Yes (*go to Q 6b*)
 No (*go to Q 9*)
 Don't know (*go to Q 9*)

Q 6b. If your answer to Q 6a was yes, are you clear what medicines you will be taking after discharge:

- Fully
 Partly
 Not at all

Q 7. If there have been changes to your medicines, have you been given information about:

	Yes	No	Don't know
Q 7a. What your new medicine(s) are for	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q 7b. The benefits of the medicine(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q 7c. Likely side effects of the medicine(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q 7d. When to use the medicine(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q 7e. How to use the medicine(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q 7f. Whether you will need any further supplies of the medicine(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q 7g. How to obtain further supplies of the medicine(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q 8. Who did you discuss any changes to your medicines with:

Please tick all answers that apply

¹ Consultant ² Other doctor ³ Nurse ⁴ Pharmacist

⁵ Don't know ⁶ No one ⁷ Other *Please specify*

Part C – About your discharge

This part relates to your experience of discharge from hospital so far.

The following is a set of statements about your opinions on the discharge process. For each statement please select one option that best describes your opinion.

Tick the appropriate box.

	Agree strongly	Agree	Neutral	Disagree	Disagree strongly
Q 9. The steps involved in the discharge process were clearly explained to me by a member of staff	<input type="checkbox"/>				
Q 10. I have been involved in planning my discharge from hospital	<input type="checkbox"/>				
Q 11. Regular updates on my discharge have been provided when needed	<input type="checkbox"/>				
Q 12. I fully understand the discharge process	<input type="checkbox"/>				

Q 13. Which of the following tasks still need to be completed before you can be discharged:

Please tick all answers that apply

Medicines to arrive from pharmacy More tests Test results Arranging transport home

Organising social care Don't know Other *Please specify*

Q 14. Overall, how would you rate your experience of discharge from hospital:

Good Satisfactory Poor

Q 15. Have there been any positive aspects about your discharge?

Please give details below

Q 16. Have there been any negative aspects about your discharge?

Please give details below

Q 17a. Could we improve the supply of your discharge medicines?

Yes (*go to Q 17b*) No (*go to Q 18*) Don't know (*go to Q 18*)

Q 17b. If your answer to Q 17a was yes, how?

Part D: After your discharge from hospital

This part refers to your plans once you are discharged from hospital and how you will manage your medicines.

Q 18a. Could we help you manage your medicines once you are settled at home?

- ¹ Yes (go to Q 18b) ² No (go to Q 19) ³ Don't know (go to Q 19)

Q 18b. If your answer to Q 18a was yes, how?

Q 19a. Will you be visiting a community pharmacy soon after you are discharged from hospital:

- ¹ Yes (go to Q 19b) ² No (go to Q 20) ³ Don't know (go to Q 20)

Q 19b. If your answer to Q 19a was yes, what will the purpose of your visit be:
Please tick all that apply

- ¹ To obtain further supplies of your medicines ² To order your next repeat prescription ³ To discuss your new medicines ⁴ To discuss any problems with your medicines
- ⁵ Other Please specify

Q 20. If you had the option, where would you prefer to collect your discharge medicines from?

- ¹ Hospital ² Community pharmacy of your choice ³ GP surgery ⁴ Other Please specify

If you have any further comments that you think will be valuable to this survey, please feel free to include these in the blank space provided below:

Thank you very much for completing this questionnaire

Appendix 16 – LJMU ethical approval email for phase 4

 Thu 26/05/2016 12:03
Williams, Mandy
Approved

To: Bullock, Sally
Cc: Morecroft, Charles; Mullen, Rachel

 You forwarded this message on 26/05/2016 12:37.
This message was sent with High importance.

16/PBS/002 - Sally Bullock, PGR - Investigating Models of Care in the NHS: Patient transfer to community care on discharge from hospital. Phase 4: Evaluation of a new model of care for the discharge of patients from hospital to community (Charles Morecroft/Rachel Mullen)

The University Research Ethics Committee (UREC) has considered the above application by proportionate review and I am pleased to inform you that ethical approval has been granted and the study can now commence.

Approval is given on the understanding that:

- any adverse reactions/events which take place during the course of the project are reported to the Committee immediately;
- any unforeseen ethical issues arising during the course of the project will be reported to the Committee immediately;
- the LJMU logo is used for all documentation relating to participant recruitment and participation e.g. poster, information sheets, consent forms, questionnaires. The LJMU logo can be accessed at <http://www2.ljmu.ac.uk/corporatecommunications/60486.htm>

Where any substantive amendments are proposed to the protocol or study procedures further ethical approval must be sought.

Applicants should note that where relevant appropriate gatekeeper / management permission must be obtained prior to the study commencing at the study site concerned.

For details on how to report adverse events or request ethical approval of major amendments please refer to the information provided at <http://www2.ljmu.ac.uk/RGSO/93205.htm>

Please note that ethical approval is given for a period of five years from the date granted and therefore the expiry date for this project will be May 2021. An application for extension of approval must be submitted if the project continues after this date.

 **LIVERPOOL JOHN MOORES UNIVERSITY**

Mandy Williams, Research Support Officer
(Research Ethics and Governance)
Research and Innovation Services
Kingsway House, Hatton Garden, Liverpool L3 2AJ
t: 01519046467 e: a.f.williams@ljmu.ac.uk

Appendix 17 – Participant recruitment email used in phase 4

Introductory Email

Subject: Invitation to take part in discharge process research study

Dear....(insert name)

|

I am a hospital pharmacist currently undertaking research towards a PhD at Liverpool John Moores University, exploring the development of a new model of care for the discharge of patients from hospital back into the community.

I am currently recruiting participants for the final phase of the research. Research in earlier phases of the PhD study evaluated the current discharge process. The findings from the research have been used to propose a new model of care for patient discharge, which aims to improve discharge, patient experience and patient safety.

This study aims to determine what potential service providers and service users think of the proposed model of care. It will involve a focus group or an interview lasting between 20 minutes to one hour depending on the method chosen. The questions will be the same in both the focus groups and interviews and will cover a detailed overview of the proposed discharge process. You have been selected due to your experience and knowledge of the discharge process.

I have attached a participant information leaflet and a consent form. Please take some time to read through the information provided and decide if you would like to take part. You will be contacted after three working days of receiving this email to determine if you wish to participate in the study.

Participation is entirely voluntary and I appreciate that you are busy, however developing new improved ways of working is very important in this present climate and your participation would be very helpful.

Yours Sincerely,

Sally Bullock

Sally Bullock, Pharmacist

School of Pharmacy and Biomolecular Sciences, Liverpool John Moores University

Room 7.46, James Parsons Building, Byrom Street, L3 3AF

s.bullock@2014.ljmu.ac.uk

0151-231-2308

Introductory email version 1 28/04/16

Appendix 18 – Participant information leaflet used in phase 4



PARTICIPANT INFORMATION SHEET

Evaluation of a new model of care for the discharge of patients from hospital to community

You are being invited to take part in a research study. Before you decide it is important that you understand why the research is being done and what it involves. Please take time to read the following information. Ask if there is anything that is not clear or if you would like more information. Take time to decide if you want to take part.

1. What is the purpose of the study?

This study will form the final of four phases of a wider PhD study. The overall study aims to develop a new model of care for discharging patients from hospital.

Research in earlier phases of the PhD study evaluated the current discharge process. The findings from the research have been used to propose a new model of care for patient discharge, which aims to improve discharge, patient experience and patient safety. This study aims to determine what potential service providers and service users think of the proposed model of care. It is important to evaluate the proposed model of care and this study seeks to do this.

This study involves either a focus group or an interview exploring your views of the new model of care, which will be presented to you during the session. Focus groups are the preferred method of data collection as this will allow for a group discussion and a range of views to be explored. The results will hopefully help identify the suitability of the new model of care, including any areas for improvement.

You have been chosen to participate in this study due to your knowledge or experience of the current discharge process.

2. Do I have to take part?

No. It is up to you to decide whether or not to take part. Your cooperation is voluntary, but it would be very helpful if you do choose to participate.

If you do participate you will be asked to sign and return a consent form. An electronic copy of the consent form can be emailed to you. The consent form can be signed electronically and returned via email to the researcher. Alternatively, a hardcopy can be returned to the researcher in person. You cannot participate until the signed consent form has been received by the researcher. Please ensure that you keep a copy of the consent form, along with this participant information sheet for your reference.

You are still free to withdraw at any time during the study and without giving a reason. A decision to withdraw will not affect your rights.

3. What will happen to me if I take part?

Participation in this phase of the study will involve either a focus group discussion or an interview only. After receiving the information about the study, the researcher will contact you to determine if you have read the information and decided if you want to participate.

If you choose to participate, the researcher will arrange for you to participate in a focus group, or if this is not practical, arrange a mutually agreed time for the interview to take place. Focus groups are thought to take approximately one hour and the interview approximately 20 - 30 minutes, depending on the extent of the discussion. The questions will be broad and based on your views of the proposed new model of care for discharge. As a participant, you are free to refuse to answer any questions you feel inappropriate or uncomfortable with. This will be recorded to aid the researcher with note-taking and analysis.

Once all data has been collected and analysed, the results will be included in the PhD thesis and a paper will be published based on the findings. No further participation will be required in later phases of the overall project.

4. Are there any risks / benefits involved?

No potential risks to participants have been identified.

Individuals in this study will not experience any direct benefits, however the potential benefits of this research are wide ranging because the research will lead to an improved model of care for discharge. This includes safe, quality and timely patient care at discharge from hospital. The potential for improved patient convenience and satisfaction with an efficient discharge system that will work for the patient as well as the hospital will lead to a positive patient experience. A new model of care could also potentially lower hospital readmission rates, as the new model will reduce any errors that could put patients at higher risk of readmission. Another impact on resources will be a reduction in medication waste, as only appropriate supplies of medication will be provided.

5. Will my taking part in the study be kept confidential?

Any information discussed will remain confidential. Access to the original audio recording will be granted to the researcher and supervisory team only. Any participant identifiable information will be removed during transcription for analysis.

None of the participants will be identified in any report or publications. The focus of any results will be on the range of views rather than where they originated from.

6. Funding/ Sponsors

This project has been funded through the Centre for Pharmacy Innovation, which is a joint collaboration between Liverpool John Moores University, Royal Liverpool and Broadgreen University Hospitals and LloydsPharmacy.

This study has received ethical approval from LJMU's Research Ethics Committee 16/PBS/002

If you would like any further information relating to this research study, please contact the researcher for further information on the contact details below.

Researcher

Sally Bullock, Pharmacist

School of Pharmacy and Biomolecular Sciences, Liverpool John Moores University

✉ Room 7.46, James Parsons Building, Byrom Street, L3 3AF

✉ s.bullock@2014.ljmu.ac.uk

☎ 0151-231-2308

Director of Studies/ Research Supervisor

Professor Charles Morecroft

School of Pharmacy and Biomolecular Sciences, Liverpool John Moores University

✉ Room 10.03, James Parsons Building, Byrom Street, L3 3AF

✉ C.W.Morecroft@ljmu.ac.uk

If you have any concerns regarding your involvement in this research, please discuss these with the researcher in the first instance. Contact details for both the researcher and the research supervisor are listed above. If you wish to make a complaint, please contact researchethics@ljmu.ac.uk and your communication will be re-directed to an independent person as appropriate.

Appendix 20 – Topic guide used in phase 4

Reference Number:

Topic guide

Evaluation of a new model of care for the discharge of patients from hospital to community

Introduction

Hello, my name is Sally Bullock.

I'm just going to start with a bit of an introduction to the project. As already mentioned I am a pharmacist currently undertaking research towards my PhD at Liverpool John Moores University. This research study forms part of the PhD, which is looking at developing a new model of care for the discharge of patients from hospital back into the community.

As part of the PhD I have proposed a new model of care for patient discharge which I would like to evaluate. I will share this with you and will then ask you to openly discuss your opinions of the model of care. Please be as honest as possible as your feedback will be used to further develop and improve the new model of care.

I would just like to reiterate that I am recording this session for analysis purposes only. Everything that you tell me will be kept confidential and you will remain anonymous in any reports published.

n.b If not yet received signed consent form, read out consent form and obtain recorded consent or hand out consent forms to be signed.

OR : I have received your signed consent form. Thank you.

DISCUSSION OF NEW MODEL OF CARE – HAND OUT PRINTED SHEET DETAILING OUTLINE MAP OF NEW MODEL

For each question asked, the following question prompts will be used throughout the interview:

How did that come about? Where did it happen? When did that happen? Do other people feel the same? That's interesting. I've heard other people say (something different) how do you feel about that? Why? Can you help me to better understand your position/ why you felt that way/ why you say that?

Demographic Information

Job title of participant(s):

What would they consider their role in the discharge process?:

Key topics for discussion in focus groups/ interviews:

General feedback on new model

Where any improvements could be made

Any practical issues with new model

What resources would be required to provide new model – is this feasible

What knowledge/ skills would be required for those providing the new model of care

In your opinion, which parts of the discharge process are considered effective and ineffective?

What impact if any do you think this new model would have on other aspects of discharge?

That brings us to the end of the questions. I'd just like to thank you for giving up your time to participate.

Hospital patient discharge process: an evaluation

Sally Bullock,^{1,2} Charles W Morecroft,¹ Rachel Mullen,¹ Alison B Ewing^{1,2}

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ABSTRACT

Objectives Medication discrepancies for patients after discharge from hospital are well documented. They have been shown to cause unnecessary harm to patients and can result in hospital readmission. To improve patient discharge, the current process of discharging patients from hospital (the discharge process) needs evaluating to determine where and why medication issues occur. This study aimed to identify and evaluate the discharge process used in a range of acute National Health Service hospitals across the North West of England.

Methods This qualitative study involved semi-structured telephone interviews with 13 chief pharmacists or an appropriately nominated member of the hospital pharmacy team. Thematic analysis of the transcribed interview data was performed. Data analysis revealed eight main themes which all impacted on the discharge process.

Results The study was successful in identifying the discharge process across the range of hospitals as well as key issues and examples of good practice. The hospitals involved in the study were found to have similar discharge processes with issues common to all. One significant finding was a lack of patient involvement in the discharge process.

Conclusions To improve the patient discharge process, innovative solutions are required to overcome the current issues. In future work, the study findings will be used to develop a new model of care for patient discharge from hospital.

INTRODUCTION

Discharging patients from acute NHS hospitals is a complex process which involves various members of the multidisciplinary team.¹ Good coordination and communication between the healthcare providers involved is essential to ensure that patients are discharged safely with robust ongoing care. Discharge can involve a variety of health and social care aspects depending on individual patient needs. A complete description of all aspects of the discharge process is beyond the scope of this paper, which will focus on the issues surrounding the process of medication supply at discharge and during transfer of care to the community.

The supply of medication at discharge begins with the creation of a discharge prescription which is commonly referred to as ‘To Take Out’ (TTO). The TTO is a complete and accurate list of all medication the patient should take after discharge from hospital. A typical discharge process involves a doctor writing a TTO for a patient which is then checked by a pharmacist. Any medication needed is dispensed by the hospital pharmacy based on this TTO. The nurse looking after the patient will check the medication against the TTO before

giving them to the patient along with the discharge summary.

Transfer of care to the community involves the discharge summary, including the TTO, being sent to the patient’s general practitioner (GP) within 24 hours of patient discharge. Providing a complete and accurate discharge summary aids the transfer of care from hospital into the community and allows the GP to coordinate appropriate ongoing care.¹ It is essential that the discharge summary contains all relevant information regarding the episode of hospital care. In an attempt to promote uniformity of content there are published standards detailing the necessary information to include in a discharge summary.^{2,3}

Another aspect of transfer of care into the community is the role of the community pharmacist in assisting patients discharged on medication. Research in the late 1990s found that providing community pharmacists with a copy of patient discharge summaries was an effective method of reducing unintentional medication discrepancies.⁴ Further research has demonstrated the value of the community pharmacist in separating old and new medications, disposing of any unnecessary medication, counselling patients and answering medicine-related questions,⁵ ensuring continuity and quality of patient care during the discharge process.^{6–9} More recently, community pharmacies can offer the New Medicine Service (NMS) and Medicines Use Reviews (MURs) to support patients recently discharged and improve transfer of care between the hospital and community.¹⁰ The NMS involves a community pharmacist assessing adherence and identifying problems with certain newly prescribed medication. MURs are an in-depth review of a patient’s medication to ensure they understand how and when to use their medicines.¹⁰

There are four target groups of patients for which MURs are aimed, which are based on their medicines or clinical condition. One of these target groups is patients recently discharged from hospital with changes to their medicines.¹¹ Despite the availability of evidence-based community pharmacist services, studies show that uptake of discharge medication reviews is limited.¹² Evidence also suggests that a lack of communication between hospital pharmacists and community pharmacists is common.^{13,14} In the main, community pharmacists are not aware that their patients have been into hospital.¹⁵

Discharge from hospital is known to be fraught with issues. It is a time consuming process often resulting in patients waiting for their medicines and temporarily blocking beds.¹⁶ In particular, medication discrepancies are common at discharge. A significant percentage of older patients experience medication discrepancies after transferring from

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Original article

hospital to home,¹⁷ leading to medication errors. Medication errors can cause unnecessary harm to patients and can result in readmission to hospital.¹⁸ According to a 2014 report, preventable harm from medicines is thought to cost the NHS anywhere between £1 billion and £2.5 billion annually.¹⁹ A number of factors are thought to contribute to medication discrepancies after hospital discharge,^{13 14} including incomplete information on discharge summaries sent to GPs,^{13 14 20 21} lack of prompt transfer of information to a patient's GP^{13 14 21 22} and lack of patient understanding of discharge instructions.^{13 14 23}

As discussed, hospital discharge can result in a variety of problems affecting patients and hospitals. It is important to determine how and where in the process these problems arise. Additionally, despite the well-documented problems associated with discharge, little is known about solutions developed by hospitals to address these problems. This study attempts to broaden the literature on this topic by investigating the discharge process at a range of hospitals.

AIM

To identify and evaluate the discharge process used in a range of acute National Health Service (NHS) hospitals across the North West of England.

METHOD

This qualitative study involved semi-structured telephone interviews with participants from acute NHS hospitals across North West England. Participants from specialist hospitals such as children's and mental health trusts were excluded because their discharge process is likely to be tailored to that specialty and may not be relevant to an acute general hospital.

Participants who met the inclusion criteria were either chief pharmacists or an appropriately nominated senior member of pharmacy staff with knowledge of the discharge process from each of the 22 acute NHS hospitals across North West England. Each potential participant was sent an introductory invitation via their NHS hospital email account outlining the study and consent form. This was a convenience sample of experts and all those who responded were included in the study.

The interview schedule consisted of closed questions collecting demographic information and open-ended questions about the discharge process. The participants were asked to describe the discharge process in their hospital and were probed for more detail and prompted to express their experiences, priorities and concerns throughout the interview. No topics were discussed that any of the participants found distressing during the interviews. Telephone interviews were recorded. Data collection continued until data saturation was achieved.

The audio-recorded interviews were transcribed by the researcher and checked to ensure content and meaning was maintained. All data were anonymised at the transcription stage by removing participant identifiable information. Thematic analysis was used to analyse the data using NVivo 10 software to code transcripts.

A pilot study was undertaken with two pharmacists to verify the recruitment procedure and the interview schedule prior to commencing data collection. No significant amendments were required as a result of the pilot.

RESULTS

Thirteen telephone interviews (average duration 30 min, range 15–50 min) were conducted between January and April 2015. Participants included nine chief pharmacists, three clinical services managers and one technical ward-based services manager.

The participants were from a range of hospitals: six large teaching hospitals, six district general hospitals and one integrated care organisation.

Eight main themes emerged from the data analysis. The salient points from each theme are discussed below. The anonymised quotes in the themes that follow are annotated with the type of hospital in which the interviewee was employed.

Main themes**Planning for discharge**

Discharge planning was taking place, but patient discharge was thought to be poorly coordinated.

So no-one coordinates it most of the time, although there's lots of attempts to coordinate it. (large district general hospital)

Another issue was that, although most patients are discharged within pharmacy working hours, there were some exceptional circumstances where patients were discharged out of hours. Problems occur when the pharmacist is not available to complete discharge prescriptions out of hours which can lead to patient safety issues.

Discharge documentation

All of the hospitals in the study used electronic discharge systems, despite some not using electronic prescribing systems. Electronic discharge allows hospitals to send discharge summaries to GPs within the current target of 24 hours. The hospitals participating in the study were mostly compliant with current standards^{2 3} by including relevant information in the discharge summary template. However, issues regarding incomplete discharge summaries were highlighted by several of the participants during the interviews.

Obviously it's garbage in garbage out, you find individual doctors not doing a very good job on the discharge summary, but this tends to be the minority (small district general hospital)

Preparing the discharge prescription and summary for an inpatient episode is traditionally carried out by the junior doctor involved in a patient's care during their admission.²⁴ This study showed further evidence of this as common practice. Participants agreed that writing the discharge prescription was not a priority for doctors and often took too long.

Verifying the discharge prescription to ensure medication prescribed at discharge is accurate, safe and includes all the required information was seen as an important stage in the discharge process. Participants had audit data demonstrating that the pharmacist clinical check significantly reduces medication discrepancies on discharge prescriptions. A patient safety issue was identified for discharge prescriptions sent out without a pharmacist's review.

Supply of medication for discharge

Despite guidance to help reduce medication waste at hospital discharge,^{25 26} participants found that the supply of medication at discharge from hospital was highlighted as an area of waste in terms of cost and time.

Dispensing the required medication for discharge traditionally takes place in the pharmacy dispensary. However, the majority of hospitals now also have facilities for the ward-based pharmacy team to dispense medication for discharge at ward level. Participants had evidence demonstrating that providing ward-based dispensing had reduced the wait time for patients compared with sending the TTO to the pharmacy, which is in line with current evidence.¹³

Post-discharge community pharmacy involvement

Despite current recommendations that, for a successful discharge service, communication should include community pharmacists,¹³ it was uncommon for information to be sent to the community pharmacy by the hospitals involved in the study. Findings suggest that this usually only occurs if a patient has their medication supplied in a multi-compartment compliance aid by a regular community pharmacy.

Few hospitals in the study refer patients to their community pharmacy for MURs or NMS as is currently recommended.¹⁰ One hospital has developed an electronic application which allows easy identification of the patient's local community pharmacy and sends a referral, including patient's discharge information, to that pharmacy. The onus is then on the pharmacy to contact the patient to provide an NMS or undertake an MUR.

Communication within the discharge process

Communication within the multidisciplinary team was considered important by participants in delivering quality patient care in agreement with current evidence²⁷ and in the planning and organisation of care and the systems used. One participant felt that the pharmacist should play a more integrated role in the team in order to improve communication, add to the skill mix of professionals and provide better patient care at discharge.

Overall, the use of technology to communicate within the discharge process was seen as positive. The research showed variation between the hospitals in the extent and type of technology being used. There were a variety of mechanisms for sending the completed discharge summary to the GP including: direct electronic transfer, email (via NHS.net email address) or by post. Not all medical practices use electronic systems and the mechanism to send completed discharge summaries depends on the capabilities of the medical practice.

Factors affecting the discharge process

Throughout the interviews a variety of pressures impacting on the discharge process were mentioned. This was often implicit, as a reason for certain aspects of the discharge process not running smoothly. Hospitals and staff are under pressure from a variety of sources including meeting targets across the hospital, meeting patient expectations and ensuring quality patient care is provided within the constraints of staff time and resource.

Staff training was highlighted by participants as a factor impacting on the discharge process. Many issues identified throughout the discharge process resulted from a lack of staff training. For example, in one hospital, improved training for prescribers on the discharge process was a focus; specifically, educating prescribers to prescribe earlier and how to complete discharge summaries so that they contain all of the necessary information to send to the GP. The lack of staff training highlighted was linked to the hospitals being under-resourced.

Patient involvement

Patients and their carers should be involved in planning for their discharge in order to manage patient expectations and help them understand potential complexities or issues.²⁸ A significant finding from the study was that patients had limited involvement in their own discharge from hospital. This was noted throughout all interviews and supports findings from a recent report showing that patients do not feel involved in decisions about their care.²⁹

Patient counselling should take place whenever any new medication is prescribed. It is important that the patient is counselled

on their medication by the point of discharge. All of the participants agreed that patients are not always counselled and that it is unclear who is responsible for providing counselling.

Who counsels? That's a good question. The answer is probably we don't, nobody does it well enough I'd say. It's an area which is poorly managed. I think doctors think nurses do it, nurses think pharmacists do it and pharmacists think everybody else does it apart from them. I think pharmacists do it to a certain extent, but not universally and comprehensively. It is an area for development still

(small district general hospital)

Participants had anecdotal evidence that, when a patient is medically fit for discharge, doctors tell the patient that they can go home without giving a realistic timescale of how long the process will take. This poor communication gives patients unrealistic expectations that they can leave straight away, which is often not the case and will impact on their experience in hospital.

Innovative discharge processes

Patients have high expectations of the services provided to them by the NHS.³⁰ In order to address the issues of high pressures and meeting patient expectations, hospitals have developed innovative solutions to issues with the discharge process. This theme—innovative discharge processes—focused on innovative solutions to issues with the discharge process used by the hospitals.

Pharmacists writing discharge prescriptions in place of junior doctors had been piloted in several hospitals. As a result, participants had data to show that this reduced the time taken to obtain a written discharge prescription and also improved their accuracy. Several hospitals in the study had access to pharmacy-led community interface teams who visit patients after discharge. Patients are referred to the teams if they need help with their medication or are high risk for readmission. There is anecdotal evidence that this support is beneficial for patients.

One innovative technology solution currently used in one hospital is an Integrated Care Record which allows healthcare professionals to input and obtain patient information from both sides of the interface—hospital and medical practices.

An important finding from the study suggested innovative work thought to improve the discharge process has been piloted in hospitals for over 10 years¹⁶ but not developed into routine practice across all hospitals. Participants cited difficulties in obtaining funding as a reason for struggling to provide new services.

Generalised discharge process model

From the findings, a generalised discharge process has been identified. This is displayed in figure 1 in the form of a flowchart representing the stages involved in the discharge process for the hospitals in the study. For most hospitals this is an accurate description of the process. Individual hospitals may show minor variance from this generalised model. The shaded areas in the flowchart represent those stages in the discharge process where problems were identified by the thematic analysis.

Limitations and further work

As with all qualitative research, a limitation of the study was the inherent risk of personal bias from the researcher because of their role as a hospital pharmacist. In an attempt to reduce this risk, all analysis was grounded in the data. Despite the range of hospitals involved in the study, a limited sample specific to the North West of England was used. As a result, the findings are

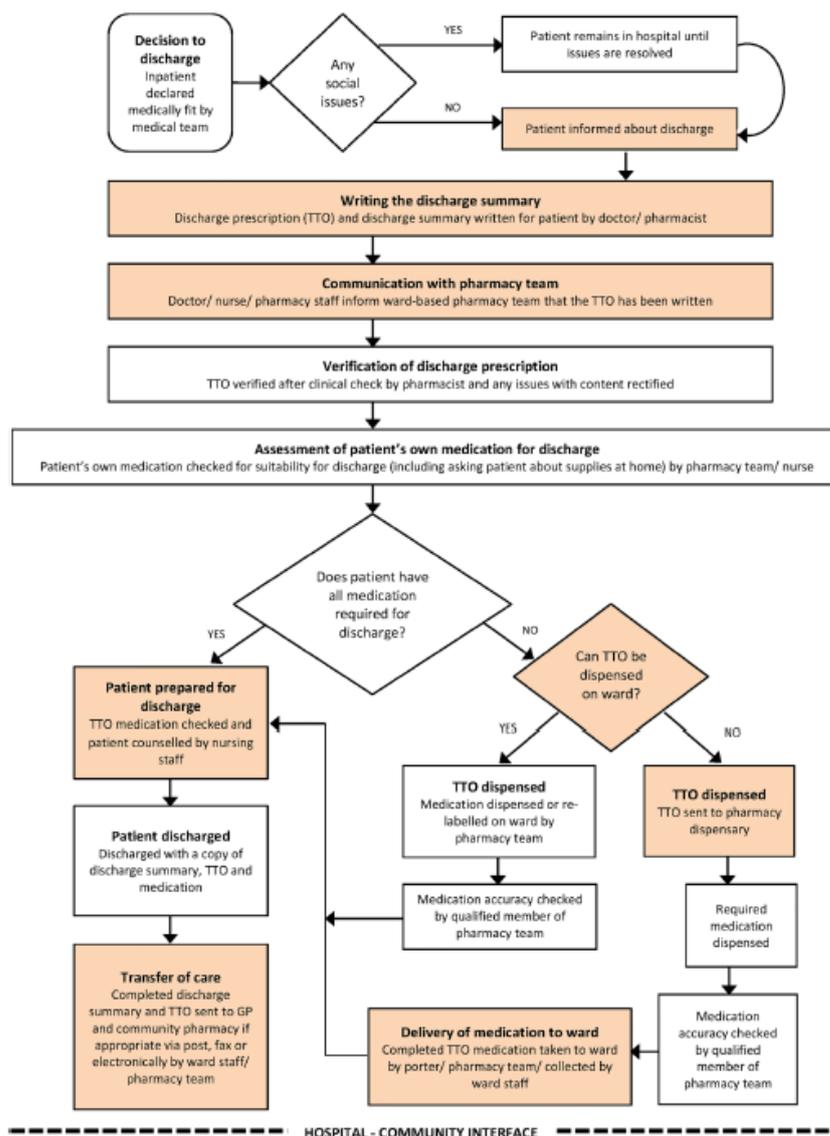


Figure 1 Generalised discharge process: with shaded steps indicating where issues were thought to arise during discharge.

not generalisable to other regions and there may be variations in the discharge process across the UK.

The research was intentionally developed to gain a deep understanding of the discharge process from an operational perspective. As a result of this, the study provided a limited insight into the patients' perspective. The lack of patient involvement in the process was demonstrated, particularly with regard to communication and counselling. In view of this finding, further

work is being undertaken to assess the discharge process from the patients' perspective.

This study forms part of a larger research project to develop a new model of care for the discharge of patients from hospital back into the community, with the aim of providing quality care across the interface. The study findings, both positive and negative, will be used to inform the development of a new model for the discharge process.

CONCLUSION

This study is the first to identify and evaluate the discharge process in acute NHS hospitals across North West England. This research has identified that the hospitals in the study operate similar discharge processes. Furthermore, the findings revealed areas of the discharge process that worked well and highlighted areas where problems exist and their causes. This study builds on the existing knowledge of issues at discharge.

The study highlighted a number of significant findings, such as lack of staff training on patient discharge, lack of patient involvement in the discharge process and poor communication between hospital and community pharmacists.

Many of the problems highlighted by the study are longstanding and attempts have been made to overcome them. Most of the innovative solutions to these problems suggested by the participants were based on small-scale pilots and have not become part of routine practice. A new model of care is required to improve patient discharge from hospital, overcoming the current issues.

Key messages**What is already known on this subject**

- ▶ Medication problems for patients after hospital discharge are well documented and can result in patient harm and hospital readmissions.
- ▶ It is important to determine where and why problems arise in the discharge process in order to improve patient discharge.

What this study adds

- ▶ A generalised discharge model has been described, along with common issues and examples of good practice, for acute NHS hospitals across North West England.
- ▶ Despite attempts to overcome problems at discharge, issues still arise and innovative solutions are required to improve patient discharge.

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Competing interests None declared.

Ethics approval Ethics approval (14/PBS/008) was received from Liverpool John Moores University Research Ethics Committee on 16 January 2015.

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UK hospital patient discharge: the patient perspective

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ABSTRACT

Objectives Hospital discharge is a complex process that can result in errors and delays for patients, particularly around the supply of medicines and communication of information. To improve patient discharge, patient perspectives of the discharge service must be explored to determine where patients feel problems arise. This study aimed to explore inpatient perceptions and experiences of the current discharge process.

Methods This study involved questionnaires with patients at a large city-centre teaching hospital. **Results** A total of 104 inpatients participated, 60% (n=62) were male with an average age of 55 (age range 19–93). Participants were from a range of medical, surgical and admissions wards. The majority, 71% of respondents (n=74), took regular medicines, with 65% (n=48) taking five or more medicines daily. Most patients, 89% (n=87), were satisfied with their hospital discharge but felt that it took too long. The perceived main cause of delay was waiting for medicines. Other highlighted issues included lack of counselling by pharmacists and the need for more patient involvement throughout the discharge process.

Conclusions This study showed that certain aspects of the discharge process need improving to provide safe, quality care for patients and improve patient experience of discharge. The findings from this study will inform the development of a new model of care for patient discharge from hospital.

INTRODUCTION

NHS England's mission is to secure high-quality care for all.¹ High-quality care in the NHS is defined and measured by three components: clinical effectiveness, patient safety and patient experience.^{2,3} High-quality care has historically focused on ensuring clinical effectiveness and safety of service provision, but more recently focus has shifted to improving the patient experience.^{3–5} NHS England is involved in many programmes of work aiming to improve the patient experience.⁶ One example is the medicines optimisation programme, which involves ensuring that the right patients get the right choice of medicine, at the right time.⁷ By focusing on patients and their experiences, the programme aims to improve patient outcomes, quality and value from medicine use.⁷

Effectively managing the patient journey is crucial to improving the patient experience,⁸ and discharge from hospital back into the community is an important aspect of this. Hospital discharge is a complex process with many potential sources of

error and delay,^{9,10} particularly with regard to the supply of discharge medicines.

Research around patient perspectives of the discharge process is surprising; Horwitz found that patients reported a high level of satisfaction with discharge, despite evidence suggesting that patient care on discharge was inadequate.¹¹ Similarly, the National NHS Inpatient Survey which assesses patient experience at hospitals across England¹² showed that 84% of respondents rated their hospital experience as at least 7 out of 10, despite 42% of respondents' discharges being delayed. A large proportion (61%) of those delayed discharges were perceived to be caused by waiting for medicines.¹² These studies suggest that patients may not be aware of some of the internal problems that occur during discharge.

Patient involvement in their care is high on the government's agenda and thought to be important in improving patient outcomes. The government's aim is for all patients to be fully involved in decisions about their own care and that this becomes the norm across the NHS.¹² Despite guidance advising that discharge planning should involve the patient,^{13–15} research has found that patient involvement appears to be limited during hospital discharge.⁹ Several studies have explored the reasons for low levels of patient participation at discharge. Patients cited the following reasons: many older people can be passive in relation to discharge planning,¹⁶ some people may be less assertive when they are ill^{16,17} and perceive their contribution to be unnecessary or not valued by their providers.¹⁸ Interestingly, one study suggests that healthcare providers' and patients' views differ on whether patients are involved.¹⁶

Patient involvement in their care is a major component of the medicines optimisation programme.¹⁹ In particular, good communication between healthcare professionals and patients is needed for involvement of patients in decisions about medicines and for supporting adherence.¹⁹ This communication with patients is key at discharge to support them with their medicines. One study showed that healthcare providers did not sufficiently prioritise discharge consultations with patients and family members due to time restraints and competing care obligations.²⁰ Patient counselling is also thought to be limited at discharge.⁹ Some hospitals encourage patient counselling throughout the inpatient episode rather than at discharge. This could account for the perceived lack of counselling at discharge; however, the extent of inpatient counselling that occurs is also thought to be limited.^{9,21}

Clearly, there is limited and conflicting evidence surrounding patient perspectives of hospital

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discharge, specifically relating to the supply of medicines at discharge. As a result, this descriptive study aims to bridge the current knowledge gap by exploring patient perspectives of the discharge process. This study follows on from the researcher's previous work, which explored the discharge process from the pharmacist perspective⁹ and focuses on medication supply at discharge as well as communication of information.

This research forms part of a larger project to develop a new model of care to improve patient discharge from hospital. The patient should be at the heart of all services within the NHS,^{1 3 22} which is why patients' perspectives of the current service are essential to inform the new model of care.

AIM

This study aimed to explore patient perceptions and experiences of the current discharge process at the Royal Liverpool and Broadgreen University Hospital Trust (RLBUHT).

METHOD

This study consisted of a questionnaire-based survey to explore the current discharge process at the RLBUHT from the perspective of NHS patients. The study focused on the supply of discharge medicines and information provided to patients during their discharge. NHS research ethics committee (15/SC/0669) was obtained.

The RLBUHT is a large, multispecialty city-centre teaching hospital with a broad range of patients and approximately 110 discharges per day. Inclusion criteria for the study included ward-based inpatients (hereafter referred to as patients) ready for discharge to their usual place of residence, recruited from medical and surgical wards across the hospital. Exclusion criteria included patients with cognitive impairment unable to participate, along with those discharged to intermediate care, as this was considered an extension of their hospital admission. Patients discharged to new care homes were also excluded due to potential changes in their regular community-based care. Individual ward managers or the nurse-in-charge identified potential patient participants, who were then approached at their bedside by the researcher. Recruitment took place on the day of the patient's discharge so they had a clear recollection of their experience. Questionnaires were left with participants to complete and collected by the researcher after a mutually agreed period of time.

The questionnaire (see online supplementary file) contained 20 questions, consisting of mainly closed questions with a tick-box format for ease of use for participants. The questions were developed based on relevant existing validated questionnaires¹¹ and the researcher's knowledge of the discharge process from a previous study.⁹ The questions covered a range of topics relating to different aspects of discharge. There were four main areas: patient perceptions of discharge, patient suggestions for improving the process and patient views on both their involvement during discharge and any counselling they received. The latter two areas of interest stemmed from a previous study highlighting that both patient involvement and patient counselling are issues within the discharge process.⁹

The time taken to complete the questionnaire ranged between 5 and 20 minutes depending on the individual participants and circumstances. Data collection took place on different days of the week including weekends during the period from 30 November 2015 to 7 February 2016.

Descriptive statistics were generated from the data using SPSS V.22. Several of the open-ended questions resulted in the

collection of free text data which was used to contextualise the findings.

A pilot study was undertaken with four patients prior to commencing data collection. This verified the recruitment procedure, evaluated the questionnaire and developed the researcher's data entry and data analysis skills. These data were included in the main study as only minor amendments were made to the questionnaire.

RESULTS

Demographic data

All 104 patients approached, agreed to participate (100% return rate). However, response rates to individual questions varied as not every participant answered all questions. Individual response rates are listed throughout the results tables. The demographic characteristics of the study sample are shown in table 1.

The majority of participants (71%) were taking regular medicines prior to admission to hospital. Of the patients taking regular medicines, 65% were taking five or more daily.

Patient perceptions of the discharge experience

Of the 98 participants who responded to the question concerning perceptions of discharge, most found that their discharge experience was either good (57%, n=56) or satisfactory (32%, n=31), with the remaining (11%, n=11) rating discharge as poor.

Participants provided additional information regarding the positive and negative aspects of their discharge experience. While some participants commented that their discharge had been well organised with helpful staff, other participants noted several problems, most commonly 'it takes too long'. Individual examples of issues included one patient's regular medicines were forgotten until the last minute, which delayed their discharge. In another case, a bed was given to another patient while that patient was still awaiting discharge, much to the embarrassment of the ward staff.

Table 2 details the perceived reasons for delays to discharge. Participants were able to select more than one option if they felt that applied to their situation.

As can be seen in table 2, the most commonly perceived reason for a delayed discharge was waiting for medicines (70%). Participants that selected 'other' reasons (n=6) cited arrangement of follow-up care or awaiting further review by another healthcare professional prior to discharge.

Table 1 Demographic characteristics of study sample

	Response
Age in years, mean (SD)	55 (18)
	n (%)
Gender (n=104)	
Male	62 (60)
Female	42 (40)
Did patient take regular medicines? (n=104)	
Yes	74 (71)
No	30 (29)
Number of regular medicines taken daily (n=74)	
1-4	24 (32)
5-9	32 (43)
10+	16 (22)
Do not know	2 (3)

Table 2 Perceived reasons for delays to discharge

	Response n (%)*
Perceived factors causing delay to patient discharge (n=92)	
Waiting for discharge medicines	64 (70)
Waiting for test results	13 (14)
Waiting for further tests	9 (10)
Waiting for transport home	9 (10)
Unsure	6 (7)
Other	6 (7)
Waiting for social care arrangements	2 (2)

*Categories not mutually exclusive.

Participants were asked how involved they felt in their discharge, as well as their understanding of the discharge process. Responses are reported in table 3.

Only 63% of participants felt that they had been involved in their discharge. Several patients commented that they felt they were sent home too early. One respondent in particular had mixed messages from different doctors about whether they were medically fit to go home which caused some anxiety.

The discharge process was explained to 74% of participants and 79% of participants felt that they understood the discharge process. However, only 57% felt that they were updated with the progress of their discharge.

Patient counselling at discharge

Participants were asked if any changes to their regular medicines during their hospital admission were verbally discussed with them. If changes had been discussed, participants were then

Table 3 Patient understanding and involvement at discharge

	Response n (%)
Patient involvement in discharge process (n=92)	
Strongly agree	20 (22)
Agree	38 (41)
Neutral	12 (13)
Disagree	10 (11)
Strongly disagree	12 (13)
Was the discharge process explained to patients? (n=95)	
Strongly agree	24 (25)
Agree	46 (49)
Neutral	17 (18)
Disagree	6 (6)
Strongly disagree	2 (2)
Did patients understand the discharge process? (n=94)	
Strongly agree	32 (34)
Agree	42 (45)
Neutral	14 (15)
Disagree	2 (2)
Strongly disagree	4 (4)
Was patient updated on progress of discharge? (n=94)	
Strongly agree	20 (21)
Agree	34 (36)
Neutral	30 (32)
Disagree	8 (9)
Strongly disagree	2 (2)

Table 4 Changes to regular medicines during admission

	n (%)
Changes to medicines during admission (n=100)	
No changes to medicines	56 (56)
Changes to medicines	32 (32)
Patient did not know	12 (12)
Was patient clear about what medicines to take after discharge? (n=32)	
Fully	20 (63)
Partly	10 (31)
Not at all	2 (6)

asked if they understood what medicines they should be taking after discharge. Participant responses are shown in table 4.

The majority (88%) of participants were aware if any changes had been made to their regular medicines during their hospital admission.

Participants were questioned about counselling they had or had not received about their medicines and which member of staff had discussed their medicines with them. These questions were directed at participants with changes to their regular medicines. Although not all 32 responded to every question, responses can be seen in table 5 along with the number of respondents.

Of the patients with changes to their medicines, the majority were told what their new medicine was for (89%) and how to use their medicines (93%). An important finding is that not all of the counselling points listed in table 5 were routinely covered with patients. Interestingly, according to participants only 13% of patient counselling was by a pharmacist.

Patient suggestions for improvement of the discharge process

Respondents were asked if the process of supplying discharge medicines could be improved and if so, how. Responses are given in table 6. Table 6 also includes respondents' views on whether hospital staff could help patients with their medicines after discharge.

Less than one quarter (23%) of participants felt that the service of supplying their discharge medicines could be

Table 5 Patient counselling for new medicines

	n (%)
Patient received counselling on the following points	
How to use the medicine(s) (n=27)	25 (93)
What new medicine(s) are for (n=27)	24 (89)
Benefits of new medicine(s) (n=26)	23 (88)
When to use the medicine(s) (n=26)	22 (85)
Whether further supplies are needed (n=26)	19 (73)
How to obtain further supplies (n=26)	15 (58)
Side effects of medicine(s) (n=26)	15 (58)
Healthcare professional patient was counselled by (n=32)	
Consultant	15 (47)
Nurse	11 (34)
Other doctor	9 (28)
Pharmacist	4 (13)
No one	2 (6)
Do not know	1 (3)

*Categories not mutually exclusive.

Table 6 Patient suggestions for improvement of discharge

	n (%)
Could the supply of discharge medicines be improved? (n=91)	
No	41 (45)
Do not know	29 (32)
Yes	21 (23)
Could the hospital help patients with their medicines after discharge? (n=96)	
No	69 (72)
Do not know	20 (21)
Yes	7 (7)

improved. These participants made suggestions for improvement of the service and responses included improving speed and communication, as well as having the option of collecting discharge medicines from an outside pharmacy to save time. One participant suggested that a community-based EMIS (EMIS Web is commercial software available in some hospitals and GP surgeries) collaboration to organise the prescription could be helpful.

Most participants (93%) felt that hospital staff could not support them with their medicines after discharge, with one participant commenting 'people in the community should help me, it should be my general practitioner (GP) in charge'.

DISCUSSION

Patient perceptions of discharge

The findings indicate that a surprisingly high number of patients were satisfied with their experience, while still encountering issues during discharge. This study supports previous research where patients have reported a high level of satisfaction with discharge.^{11, 12} There could be many reasons for this. It could be argued that patients' low expectations of hospital discharge are responsible for them reporting a high level of satisfaction with the discharge process despite known problems. Equally, the very fact the patient is being discharged could have resulted in a more positive response. Despite the majority of patients finding their discharge experience at least satisfactory, there is much room for improvement, as over two-fifths of patients found the experience 'poor' or only 'satisfactory' which is unacceptable.

Patients commonly felt that discharge from hospital took too long. Unfortunately, waiting for pharmacy to supply discharge medicines is commonly perceived by hospital staff as the main delay to discharge.²³ This study suggests that patients also hold this view. This belief may stem from either real or perceived pharmacy-related delays. Real, for example, if pharmacists are unavailable to authorise discharge prescriptions, or discharge medicines take a long time to arrive from pharmacy. Perceived pharmacy-related delays could be through misinformation supplied by ward staff, or because the discharge process and its expected duration are not explained to patients. Previous research has shown that discharge delays are a much wider issue and pharmacy is not the only cause.^{9, 23} Regardless of where the responsibility lies, the wait for medicines needs addressing to reduce the delay for patients and improve their experience.

Patient suggestions for improving discharge

Less than a quarter of patients felt that their discharge could be improved. This correlates with the findings that the majority of patients are satisfied with their discharge. Providing a faster service was the most common suggestion for improvement.

The findings suggest that community healthcare providers should support patients with their medicines after discharge, rather than hospital staff. It is interesting that patients see their GP as the main source of help with medicines after discharge. This could be due to a lack of awareness of the support available from community pharmacies who offer the New Medicine Service and Medicines Use Reviews to support patients recently discharged from hospital. Hospital pharmacists have an important role in signposting or referring patients to community pharmacies for support with their medicines.

Patient involvement at discharge

The findings for patient involvement at discharge are lower than national figures. The National Inpatient Survey 2014 found that 54% of patients strongly agreed that they were involved in decisions about their discharge,¹¹ compared with only 22% in this study, demonstrating room for improvement. Although respondents were similar in age and gender, the variation could be due to the slight difference in how the questions were asked in both questionnaires and the much larger sample size in the national survey.

As previously mentioned, providing patients with the information required to enable involvement in their care is a government priority.^{12, 19} The findings indicate that information about discharge was given to most patients. Nonetheless, all patients should be involved in their care and should therefore receive information about discharge. Explaining the complexities of the discharge process so that patients understand the numerous steps that need to take place before they are discharged would empower the patient and improve their experience. This includes regular accurate information about the duration of any delays during episodes of care.²⁴ Owing to the discharge process being a time consuming and complex one, inevitably delays can occur. Providing updates if discharge is delayed or if any changes occur will help the patient to understand what is happening and improve their overall experience.

Patient counselling at discharge

A component of the medicines optimisation programme is to support medicines adherence¹⁹ by providing patients with information about medicines. As it is estimated that between 30% and 50% of patients do not take their medicines as intended,¹⁹ improving medicines adherence is vital. The majority of patients in the study stated that they were aware of changes made to their medicines during their admission. However, over a third of patients were unclear about what medicines they should be taking after discharge. This could be due to a lack of patient counselling, poor understanding of information or the patient not remembering information. It does highlight that improved communication of information is required and calls into question the quality of information given to patients and whether it is provided at an appropriate time.

Interestingly, findings indicate that pharmacists are the least likely healthcare professional to provide patient counselling, despite perhaps being the most appropriately trained in medicines use. This supports previous evidence that hospital pharmacists are unlikely to be providing adequate patient counselling.^{9, 21}

Further work

The study has successfully identified areas for improvement in the current discharge process. These findings will be used to inform the development of a new model of care for patient discharge in further work. This new model will rebuild the discharge process by drawing on elements that work well and

redesigning ineffective parts of the process, as identified in this study.

LIMITATIONS AND FURTHER WORK

Recruitment for this study proved more difficult than anticipated with the main reason being the threat of junior doctors' strikes during the data collection period. Standard processes were altered during this period to ensure that patient safety was not compromised. This was not a true representation of the current discharge process and therefore data collection was interrupted.

In all questionnaires, there is a risk that participants may be reluctant to give honest answers to questions. However, the topic of discharge was not thought to affect participant responses. Nevertheless, participants were made aware that any information provided was confidential and anonymous. Not all participants answered every question, which may have led to response bias for individual questions. It was not possible to ascertain whether all possible patients were approached to participate because appropriate patients were referred by individual ward gatekeepers. This may have also caused response bias. As the study was specific to one hospital, the findings are not generalisable to other hospitals.

This study forms part of a larger research project and the findings will help inform the development of a new model of care for patient discharge from hospital back into the community, improving quality of care across the interface.

CONCLUSION

By assessing patient experience, this research has identified that despite the majority of patients feeling satisfied with their hospital discharge, issues commonly arise. Furthermore, the study has highlighted several areas that require improvement to provide safe, quality care for patients and improve patient experience at discharge.

The study builds on the existing knowledge of problems at discharge by adding the patients' perspective to issues commonly highlighted by healthcare staff. The findings support previous research which suggested that both patient counselling by pharmacists and patient involvement in discharge are limited.⁹ Findings also show that patients hold the same view as healthcare staff that discharge takes too long and is largely perceived to be due to the wait for discharge medicines.^{9,23}

The study findings are invaluable to inform the development of a new model of care for patient discharge. The new model

will include discharge medicines counselling provided by trained pharmacy staff as standard, support with medicines after discharge by community pharmacists, communication of information during discharge to all patients and preventing the wait for discharge medicines delaying patient discharge.

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What this paper adds

What is already known on this subject?

- Medication problems for patients after hospital discharge are well documented and can result in patient harm and hospital readmissions.
- It is important to determine the patient perspective of hospital discharge to improve patient discharge.

What this study adds?

- Despite the majority of patients claiming that they were satisfied with their hospital discharge, on further questioning they received less than optimal care.
- The discharge process needs improving to provide safe, quality care, and to improve patient experience the findings will inform the development of a new model of care for patient discharge from hospital.