

**The use of process improvement methodologies to
equip receptionists for their clinical roles in
General Practice.**

by

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A thesis submitted to the University of Birmingham for the degree of

DOCTOR OF PHILOSOPHY

Institute of Applied Health Research
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September 2019

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Abstract

The contributions of the receptionist in general practice are overlooked. General practice in England faces unprecedented demand, and the receptionist is critical in meeting these, as well as contributing to the successful and safe functioning of the practice. Yet our understanding of this role is limited.

A multiple-methods study began with a systematic review of the existing literature. The findings showed receptionists to be female, white, and middle-aged. They undertake a number of clerical and clinically related roles, including repeat prescribing, providing clinical information and triage/appointment making. However, research was scarce and out-of-date.

Following this, two questionnaires were employed. The first explored receptionists' demographics, job roles, duties, perceived satisfaction, importance and appreciation. Findings showed, a largely female white and middle-aged workforce, that training was unsatisfactory and centred on non-clinical activities, and overall satisfaction with their role was low. The second questionnaire, the Work Design Questionnaire (WDQ), explored the parameters of the role. The WDQ showed a complex and highly varied role, requiring significant knowledge and specialised skill and which has a high cognitive load for the receptionist, potentially impacting patient safety.

Process mapping the receptionist's role in appointment making, showed a complex process, driven by the receptionist with input from patients and clinical staff. Key points of potential failure were identified, concerning sufficient and accurate information on which to base decisions, again, with clear patient safety implications.

This thesis updates the existing knowledge base and our understanding of GP receptionists' roles, showing them to undertake clear clinically related roles, with concomitant patient safety implications. The receptionist works in an environment of high demand, requiring significant knowledge and skills to navigate it, however training is potentially inadequate and largely absent for those clinically related roles. Further training, practical changes and a reconceptualization of the role are suggested to more formally recognise the vital, but all too often overlooked role of the GP receptionist.

Dedication

This thesis is dedicated to all those who participated, in particular, the receptionists who gave their time and voices to the project.

Acknowledgements

Thanks to my supervisory team, Professor Sheila Greenfield, Doctor Ian Litchfield and Doctor Nicola Gale for their support and guidance throughout the PhD and for giving me space to make errors and to learn and develop as a result.

Thanks also to the Health Foundation for funding the PhD and for the various away days, summer schools and other networking events, which enabled interaction with other PhD students and academics in the field.

Thanks also to Doctor Francesca Walsh, Doctor Elizabeth Bates, Rachel Posaner, Adam Hardie, Lisa Hadley, Andrew Manning, Debbie Steele, Stephan Manning, Kelly Houseman, Wendy Loveridge, Robert Varnum, Professor Judith Smith, the team at 'The Transcription Company' and all those who supported, guided and contributed to various aspects of the research. Also, my thanks to Catherine Taylor, whose help and support were invaluable to me.

Finally, thank you to my friends and family who supported and helped me during the last four years.

Authorship statement

The research presented in this thesis was undertaken by the author (MB) with support and guidance from the supervisory team: Professor Sheila Greenfield (SG), Doctor Ian Litchfield (IL) and Doctor Nicola Gale (NG). Specific contributions for each article/chapter are presented below.

The research study was conceived and designed by SG, IL and NG, as part of the Health Foundation bid for funding (the published protocol is located in Appendix 2.14). MB in collaboration with SG, IL and NG modified the proposed research (Chapter two).

Introduction (Chapter one) - MB drafted the chapter, SG and IL reviewed, critiqued and edited the chapter for content and focus.

Method (Chapter two) - The study was conceived and designed by SG, IL, NG and MB. MB wrote the draft chapter, SG and IL reviewed, critiqued and edited the chapter for content and focus.

Systematic Review Protocol (Chapter Two) – The protocol, focus and selection criteria of the systematic review were developed by MB, SG, IL and NG. MB developed the search strategy with support from Rachael Posaner (RP). MB piloted the search strategy and wrote the manuscript draft. SG, IL and NG reviewed and edited the manuscript for content and MB wrote the final draft.

Systematic Review (chapter three) - MB instituted the search strategy. SG, IL, NG and Elizabeth Bates (EB) were involved in the selection and screening of studies included. MB, wrote the draft, SG, IL and NG reviewed and critiqued the draft manuscript for intellectual content, and MB wrote the final draft.

Receptionist's Survey Analysis (Chapter four) - MB developed the survey, in collaboration with SG, IL and NG. MB undertook the statistical analysis, with support from Dr Francesca Walsh (FW). Thematic analysis of open text data was undertaken by MB, with guidance from NG, SG and IL. MB wrote the draft manuscript and SG, IL, NG and FW commented, critiqued and edited the manuscript for clarity and intellectual content.

Work Design Questionnaire Analysis (Chapter five) - IL, SG, NG and MB conceived and designed this research component. MB undertook data analysis and wrote the manuscript. IL, SG and NG critiqued and edited the manuscript for clarity and intellectual content.

Process Mapping Analysis (Chapter six) - IL, SG, NG and MB conceived and designed this research component. MB supported by IL and NG facilitated all focus groups and conducted all interviews. MB coded and analysed the transcripts thematically supported by SG, IL and NG. MB wrote the draft manuscript, and SG, IL and NG provided feedback, critique and edited the manuscript for clarity and intellectual content.

Discussion (Chapter seven) - MB wrote the draft and SG, IL and NG provided feedback on clarity and intellectual content.

A note on formatting

This thesis is formatted following the University of Birmingham's alternative format thesis guidelines.

<https://intranet.birmingham.ac.uk/as/studentservices/graduateschool/documents/public/rsa/alternative-format-thesis-guidelines.pdf>

These guidelines allow for the inclusion of published material or material which is suitably formatted for publication. The previous section acknowledges the authorship and contributions to each section and details of publication progress are given in chapter one.

Additionally, reference lists are given at the end of each chapter, for both those chapters presented as papers (chapters three, four, five and six) and those presented as traditional thesis chapters (chapters one, two and seven). This is to aid the reader by keeping references with relevant documents and ensuring that formatting is consistent across the thesis.

Contents

Chapter One: Introduction	1
1.1 Introduction.....	2
1.2 General Practice in the UK	3
1.2.1 Defining primary care	3
1.2.2 The development of general practice	4
1.2.3 Defining modern general practice.....	6
1.3 The GP receptionist	6
1.3.1 The roles of GP receptionists.....	7
1.3.2 The GP receptionists and patient safety	9
1.3.3 Receptionist’s training	11
1.4 The GP receptionist in context	11
1.5 Importance of the research.....	12
1.6 Research questions	13
1.7 Objectives.....	14
1.8 Meeting the objectives: an overview of the method	14
1.8.1 Multiple-methods	14
1.8.2 Quality improvement tools.....	15
1.9 The structure of this thesis.....	17
1.10 Chapter summary	20
References.....	21

Chapter Two: Method.....	27
2.1 Introduction.....	28
2.2 The research paradigm.....	28
2.3 Pragmatism and mixed-methods research	30
2.3.1 Mixed-methods	30
2.3.2 Pragmatism.....	32
2.4 Research overview	34
2.5 Systematic review protocol.....	36
2.6 Research strands	43
2.6.1 Strand one – Receptionist Questionnaire	43
2.6.2 Strand two - Case studies	47
2.7 Ethical considerations	61
2.7.1 Rights, Safety and Wellbeing of the participants	61
2.7.2 Confidentiality and Anonymity.....	62
2.8 Chapter summary.....	64
References.....	65
Chapter Three: Systematic Review	70
3.1 Introduction.....	71
3.2 Systematic Review: Exploring the clinically orientated roles of the General Practice receptionist: A systematic review	72
3.3 Chapter summary.....	117

Chapter Four: Results 1	118
4.1 Introduction.....	119
4.2 General Practice Receptionists, Visible but Invisible: The Forgotten Workforce	120
4.3 Chapter summary	155
Chapter Five: Results 2	156
5.1 Introduction.....	157
5.2 A quantitative assessment of the parameters of the role of receptionists in modern primary care using the work design framework	158
5.3 Chapter summary	179
Chapter Six: Results 3	180
6.1 Introduction.....	181
6.2 Mapping triage in general practice: the roles of the general practice receptionist. ...	182
6.3 Chapter summary	220
Chapter Seven: Discussion	221
7.1 Introduction.....	222
7.2 Summary of findings.....	222
7.3 Summary of mixed methods approach	223
7.4 Specific findings	224
7.4.1 Objective one.....	224
7.3.2 Objective two.....	228
7.5 Overall thesis findings	230

7.5.1 Clinically related roles and patient safety in comparison to the existing literature	230
7.5.2 GP receptionist training in comparison to the existing literature.....	233
7.6 Strengths and limitations	236
7.6.1 Strengths.....	236
7.6.2 Limitations	238
7.7 Recommendations	239
7.7.1 Objective three	239
7.7.2 Recommendation one - Training.....	239
7.7.3 Recommendation two - Protocols.....	240
7.7.4 Recommendation three - Receptionist work in practice	241
7.7.5 Recommendation four - Reconceptualising the receptionist	242
7.8 Suggestions for future research	243
7.9 Conclusion	244
References.....	246
Appendices.....	251
Appendix 1: The future role of receptionists in primary care.....	252
Appendix 2: Additional file 1 - PRISMA-P 2015 Checklist	254
Appendix 3: Additional file 2 - Medline search strategy.....	257
Appendix 4: GP receptionists' survey and Work Design Questionnaire	259
Appendix 5: University of Birmingham ethical approval	282

Appendix 6: NHS Health Research Authority (HRA) letter of approval	284
Appendix 7: Receptionists' information sheet.....	292
Appendix 8: Receptionist consent form.....	296
Appendix 9: Patient recruitment materials.....	298
Appendix 10: Interview Schedule.....	300
Appendix 11: Practice staff information sheet	301
Appendix 12: Practice staff consent form.....	306
Appendix 13: Patient information sheet.....	308
Appendix 14: Patient consent form	312
Appendix 15: Protocol for using mixed methods and process improvement methodologies to explore primary care receptionist's work.....	314
Appendix 16: Search Strategy	322
Appendix 17: PRISMA-P checklist.....	324

List of Tables

Chapter three

Table 1: Overview of included studies results83

Table 2: Studies included in each theme and sub-theme.....95

Chapter four

Table 1: Participant demographics and occupational characteristics126

Table 2: Receptionist’s indication of their main duties128

Table 3: Self-Reported clinically related duties129

Table 4: Training content reported by the respondents130

Table 5: Ratings of overall satisfaction with the role and with different aspects of the receptionist’s role131

Table 6: Number of respondents for each open text box134

Chapter five

Table 1: Participant demographics and occupational characteristics164

Chapter six

Table 1: Participating practice and their key characteristics.....188

List of Figures

Chapter two

Figure 1: Research map.....35

Chapter three

Figure 1: Prisma flow diagram (39)81

Chapter four

Figure 1: Mean rating for appreciation, importance and satisfaction133

Figure 2: Thematic map - showing themes and sub-themes.....135

Chapter five

Figure 1: Work design questionnaire, categories and subcategories162

Figure 2: Task characteristics subscales, percentage of total score166

Figure 3: Knowledge characteristics subscales, percentage of total score167

Figure 4: Social characteristics subscales, percentage of total score.....167

Figure 5 Work context subscales, percentage of total score168

Chapter six

Figure 1: The research from recruitment to data analysis186

Figure 2: Process Map of the Appointment Making/Triage process.....205

List of Abbreviations

A&E	Accident and Emergency (A&E)
AMSPAR	Association of Medical Secretaries, Practice Managers, Administrators and Receptionists
ASSIA	Applied Social Sciences Index and Abstracts
BOS	Bristol Online Survey
BMJ	British Medical Journal
CASP	Critical Appraisal Skills Programme
CCG	Clinical Commissioning Groups
CINAHL	Cumulative Index to Nursing and Allied Health Literature
CRN	Clinical Research Network
CQC	Care Quality Commission
GP	General Practice
GPs	General Practitioners
HEE	Health Education England
HRA	Health Research Authority
IT	Information Technology
IMD	Indices of Multiple Deprivation
MMAT	Mixed Methods Appraisal Tool
NHS	National Health Service
PCT	Primary Care Trust
PPG	Patient Participation Group
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analyses

RCGP	Royal College of General Practitioners
SPIDER	Sample, Phenomenon of Interest, Design, Evaluation, Research type
SPSS	Statistical Package for Social Sciences
UK	United Kingdom
WHO	World Health Organisation
WDQ	Work Design Questionnaire
QI	Quality Improvement

Chapter One: Introduction

1.1 Introduction

The ‘...dragon behind the desk,’(1) unhelpful, obstructive or jobsworth, these comments typify the less than flattering, but all too common, perceptions of the general practice (GP) receptionist; but why? Certainly, we have all had or heard of negative experiences with a receptionist. The receptionist gatekeeps access to care (2) and often handles the most difficult of patients (3). No wonder then, they are the second most complained about member of the general practice team (28%), second only to clinical practitioners (4). But general practice without the receptionist would not function, no-one would book appointments, manage repeat prescribing and patients, oversee the waiting room, act as a buffer between the clinical staff and the patient and much more besides (5-7); chaos would reign. As such their role is central to an efficient general practice, the appropriate utilisation of resources, the management of general practitioner (GPs) workloads and patient care (8).

So perhaps the ‘dragon’ is not really a dragon. Perhaps this stereotype is too crude; eschewing the nuance and complexity of the role and the often competing demands of the surgery, patients and clinical staff; demands which the receptionist is responsible for managing in modern general practice. The research presented in this thesis brings focus onto the GP receptionist and will challenge this negative stereotype through evidence. The research explores the context, extent, complexities, and demands of this role. It is in some cases the first time that this information has been investigated and presented (Chapter three, five and six) or the first time in up to 50 years (Chapter four).

Chapter one sets the scene for the research, defines and discusses primary care and general practice in the UK, before exploring the role of the GP receptionists. The objectives will be stated comprehensively, and a discussion will then briefly cover the methods employed and

process improvement tools, specifically 'lean', before finally presenting the structure of the thesis that follows.

1.2 General Practice in the UK

1.2.1 Defining primary care

Primary care is, at its simplest, healthcare delivered outside of a hospital and includes a number of services such as general practice, midwifery, dentists, pharmacists, and opticians (9). As such, it is an umbrella term for a number of vital services forming a crucial foundation for the healthcare system (10). It is the first point of entry into healthcare for the patient and delivers care, over time, which is patient and not disease focused (10).

Primary is expansive and covers a range of medical issues, from dentistry, optometry to general practice, with the exception of medical issues where secondary/hospital or specialised care is required. In these cases, the role of primary care is to co-ordinate access to and the care delivered by other agencies (10).

The Royal College for General Practitioners (RCGP) adopts the World Health Organisation's (WHO) definition of general practice, as a system providing all initial (non-emergency) consultations with healthcare professionals (11). Where general practitioners provide "comprehensive and continuing generalist care, irrespective of age, sex and state of health" (11).

General practice sits within and is an important aspect of primary care. However, there have been significant changes to how general practice is conceptualised, arranged, as well as the services it provides, and the role it plays beyond patient care. These will be explored in the next section, resulting in a comprehensive definition of general practice.

1.2.2 The development of general practice

Since the codification of general practice within the fledgling NHS in the 1940s, general practice has undergone significant change, development, and redesign (12). Prior to the NHS, general practice was a private commodified enterprise, with GPs working single-handed offering care to patients in exchange for payment (13). With the introduction of the NHS in 1948, all patients in the UK found themselves eligible for access to free health care (14) and general practice became a gateway to accessing other aspects of the healthcare system, such as hospitals or specialised care (12). General practice, however, faced significant issues early on as GPs assumed greater responsibility for the care of the population, but with limited support and as lone practitioners, often isolated from other healthcare professionals and GPs. As a consequence, standards were found to be poor and deteriorating (15).

Without adequate support from the NHS or government, the profession set about reforming its own practice, the College for General Practice (later the Royal College of General Practitioners) was founded, in 1952, and the drive to enhance conditions and develop postgraduate training for GPs was launched (13). By the 1966 family doctor charter, improved GP contracts had led to increased funding for professional development and to hire support staff (nurses and reception/administrative staff). This coupled with improved practice buildings and capped patient list sizes, resulted in better conditions for patients and GPs (12, 13). By the 1980/90s, attempts to measure quality were being made, quality-related pay was instituted, and the drive for evidence-based practice was enhanced. This in turn further improved the quality of the service offered, GP conditions, and patient care.

By the turn of the century, general practice had become increasingly involved in commissioning local services for patients (12). With the abolition of Primary Care Trusts (PCTs) and the development of 211 Clinical Commissioning Groups (CCGs) in 2013, in England, the role of general practice in commissioning expanded further. The GP-led commissioning groups assumed responsibility for managing over two-thirds of the NHS budget for commissioning of acute and community services, within their area, as well as the responsibility for promoting quality improvement in primary care (16).

1.2.2.1 Changes to practice structure

Over the past 70 years, successive governments have instituted changes or ‘reformed’ general practice and a recent key trend has been a shift away from single-handed GPs or smaller practices (12), to larger multi-disciplinary practices housing considerably more services (adjoining pharmacies or small surgical suites for example). However, general practice was always and remains an independent contractor to the NHS (17).

1.2.2.2 The workload and purview of general practice

Changes to healthcare policy have seen the care of long term/chronic and multi-morbid conditions fall under the purview of general practice (18). Some 18 million patients presented with chronic and long term conditions in 2017, around 53% of all patients in England (19, 20), and between 2008 and 2018 the numbers presenting with multiple morbidities increased from 1.9 to 2.9 million and are likely to increase further (20). This is coupled with an ageing population, around 15% of whom are over 65 (estimated to rise to 25% by 2040) and over 1.5 million are 85 and over (21). As a result, general practice is experiencing unprecedented demands (22, 23). 340 million consultations occur each year (20) and 90% of patient contact with health services occurs through primary care (24) and

whilst utilisation has increased (25), patients may not have better experiences (26). These demands are compounded by a decline in general practitioner numbers and unfilled training places (20), as well as increasing costs (up 2.3% in 2017) and decreasing income (down 11% in 2017) (20).

1.2.3 Defining modern general practice

It is challenging to define general practice, particularly because the role has significantly expanded over the last 70 years. At its core, the role involves having the overall responsibility to manage the care of the patients registered with the practice: this involves undertaking consultations, treatments and where needed referring patients on to other more appropriate or specialised services, co-ordinating the care patients received from other agencies, internal and external to the NHS, and undertaking programmes of prevention, screening, and immunisation (17). However, the roles and responsibilities of general practice are much more complex, and so the definition must move beyond patient care and include the drive towards increasing quality, quality assessments, and evidence-based practice, as well as the role in the commissioning of services, via CCGs (12, 13, 16). While there is overlap between primary care and general practice, the terms are not interchangeable. The term general practice will be used throughout this thesis except where the aim is to situate general practice in the wider primary care context.

1.3 The GP receptionist

The receptionist role to undertake the administrative needs of the GP has been a part of general practice since its inception. Generally, a role staffed by women who were typically a member of the GP's family, echoing the role that women have historically played in healthcare; inhabiting 'less professional' roles within the system (27). The receptionist has

been shown to be more likely to be female, middle-aged, married and white (6, 28, 29). However, research on receptionists' demographics is at least 20 years old and so may not reflect the current situation.

1.3.1 The roles of GP receptionists

General practice receptionists are the first point of contact for the patient and they have been seen variously as a 'bridge' between the patient and the GP (6), as 'gatekeepers' rationing access to healthcare (1, 30), or as a buffer between the patient and the GP (3). As the front of the practice, the receptionist is more likely to face hostility from patients (3) when compared to GPs (29). Discussed next are several key roles the receptionist undertakes.

1.3.1.1 Administrative roles

Administrative roles typify the public perception of the receptionist in general practice and include handling and sorting mail, filing reports, preparing notes, administering medical records and letters, manning the reception desk and telephone line, as well as checking patients in for appointments (6, 29-34). In undertaking these administrative roles, the receptionist contributes to the efficient and effective running of the practice for clinicians and patients (5).

1.3.1.2 Roles with clinical relevance

The GP receptionist appears to have, overtime, assumed a number of roles which have some clinical dimension. Three key clinically relevant roles are seen in the literature, and Chapter three explores these roles in more detail.

Firstly, repeat prescribing, which is the process of refilling a previously prescribed medication. Receptionists bridge the gap between requests for repeat prescriptions and the information that is held on the practice's computer systems, using their own judgement to ensure patients receive the medication requested. Receptionists have input into patient safety, but rely on GPs to check the accuracy of the final repeat prescription (35); this input is mostly invisible (36).

Secondly, triage or appointment making (Chapter six maps this process), in this case, receptionists use clinical information to inform the allocation of urgent appointments or referrals to emergency care (37, 38). However, patients are reluctant to give this information to receptionists as they believe that this falls outside of the purview of their role (30). Receptionists may misinterpret or overlook important symptoms or clinical information (39), and so failures in the process may result in patients not seeking urgent care when needed or indicated (37) and delayed access to care.

Finally, receptionists can also be involved in the reporting of clinical information to the patient, for health promotion (40) or to feedback the results of blood testing (41, 42). However, concerns over the appropriateness of receptionists communicating this information, and the lack of further information and the ability to ask questions, may make the process potentially stressful for the patient involved (41, 42).

The receptionist undertakes an array of roles; however, research may not reflect current practice as some studies were conducted prior to computerisation, or the significant changes made to the system in recent years. In addition, research may highlight a number of clinically related roles but does so as discrete roles. How the receptionist functions across those roles, how they work together in practice, and what the parameters of their current

roles are, are absent from the literature (Chapters four and five clarify this issue). Understanding this is essential, as the receptionist's roles are not undertaken discretely, but simultaneously and in conjunction with other practice staff.

1.3.2 The GP receptionists and patient safety

Due to their involvement in clinical related tasks, the receptionist must *de-facto* be implicated in patient safety. Patient safety has been defined in a variety of ways but generally refers to a concern with avoiding, preventing and ameliorating the adverse outcomes or injuries as a result of healthcare processes, including errors, deviations, and accidents (43). Establishing a culture of patient safety requires that processes and systems are instituted which minimise the likelihood of, and increase the chance of intercepting, patient safety incidents and, crucially, that the organisation takes steps to learn from any incidents (44).

Recent research has codified and categorised the adverse incidents relevant to general practice into five categories. These include communication with and about patients, medication and vaccine provision, errors in investigative processes, treatment and equipment provision, and timely diagnosis and assessment (45). In addition, four contributory factors (i.e. those which contribute to an incident but do not cause it) were also identified. These include patient, staff, equipment and service related factors. Staff (37%) and service (30%) related factors were the most frequently recorded (45). Staff-related factors included elements of decision making, such as failure to follow protocols, inadequate skill or knowledge, inappropriate staff, and mistakes. Service related factors included inadequate protocols, continuity of care, working conditions, education and training, and service availability (45).

Between October 2017 and September 2018, 7,818 incidents were reported in general practice by NHS Improvement. Most frequently these errors were related to medication (n=2127, 27%) and implementation of care/ongoing monitoring/review (n=1798, 23%) (46). Research has indicated that serious harms or death result from 7% of patient safety incidents in general practice, and these were generally caused by communication errors in patient referral and discharge and physician decision making (45). Patient safety incidents were also identified in relation to access, admission, transfer and discharge (n=485, 7%) (46).

It is clear that a number of these patient safety issues could relate to the roles and duties that receptionists have in practice, thereby heavily implicating them in patient safety (35, 37, 38, 40-42). The receptionist routinely makes clinically-related decisions, especially in relation to repeat prescribing (35), and access to general practice (37, 38) In addition, the receptionist is the hub of communication for the practice, and where the management of referrals and communication from and to secondary care is situated (1, 29, 31, 33, 47).

Until recently, the onus has been firmly with the general practitioner or clinical staff to play a leading role in quality monitoring and to report incidents relating to patient safety or suboptimal care (48). However, recently, the Patient Safety Toolkit was developed (49-51) as a comprehensive tool for reporting safety incidents in general practice. Recognising the need to monitor and measure patient safety as the first step towards improvement, the authors/developers set out to draw together a number of established resources which cover a wide array of potential incidents of patient safety in general practice (49-51). This accessible and comprehensive toolkit offers practice staff an opportunity to develop baseline measure of patient safety, engenders an environment where patient safety is

central to all staff, including non-clinical practice staff, and highlights the importance of patients' own experiences of safety (51). As a result, this tool is an important step in recognising the role that receptionists can play in improving the culture of patient safety in general practice.

1.3.3 Receptionist's training

Although receptionists have clear clinically related roles, they often lack formal training. There are no minimum qualifications needed for the role (52) and training which covers medical terminology, administration, and primary care and health management, is available, though not mandatory (53, 54). Training is provided in practice, but receptionists report this as inadequate or insufficient for their role (6, 55). In addition, training covering managing relationships and communicating with patients (35, 55), dealing with aggressive or violent patients (3), or to better equip them for their clinical roles (37) appears to be scarce. Training has been shown to increase the receptionist's knowledge and effectiveness (56), and improve their confidence in dealing with and responding to patients (57).

1.4 The GP receptionist in context

General practice is not technically part of, though is funded by, the NHS, as such the practice is generally a self-directed organisation under the management of the practice manager and the GP partners (12, 17). As a result, the receptionist occupies an interesting position funded by the NHS but employed by the practice. As such, the training and management and the relative status of the practice staff are dependent on the viewpoint and perspectives of the individual practice and management team. Receptionists have often reported feeling scapegoated, a lack of appreciation, and that GPs and less frequently practice managers were unaware of the extent of their roles (6, 29, 58). In this context, it is

easy to see how the issues with training arise, and as receptionists are likely to play a significant part in managing both increasing patient demand and allocation of limited resources (8), adequate training and support are essential.

The authors of the 2014 'Five Year' forward plan (59), layout a 'shared vision' of the future of the NHS and the newly proposed models of care (the development of multispecialty community providers or care navigators to divert patients to more appropriate care sources). However, the role of the receptionist is referenced once under the heading of supporting the modern workforce. It is listed alongside other supporting roles within the NHS as being essential to health care and important in establishing these new models of care. However, the authors do conclude that support for the receptionist is essential (59). This position is clarified in the 2016 General Practice Forward View, where support and funding for the receptionist to play a greater role in signposting patients and dealing with GP paperwork is discussed (60). This goes some way to highlighting the importance of the receptionist, but conflating the GP receptionist with other support staff obscures the central role that they play in general practice.

While the role of the receptionist is mentioned only briefly in the NHS and General Practice Forward Views, the context is promising. Both suggest that there is a joint responsibility between the employers (practice management teams) and Health Education England, to highlight gaps in training, as well as to retain and support existing staff; ensuring that there are sufficient staff with sufficient training (59, 60).

1.5 Importance of the research

The GP receptionist is the focal point of this thesis as the receptionist is likely to be vital to how general practice meets its current challenges, of high demand and restricted resources.

However, little is known regarding who the modern receptionist is, as existing research is likely to be out-of-date and not reflective of modern practice.

Additionally, the receptionist undertakes roles, which have significant, albeit largely invisible, input in general practice. These include roles with a clear clinical dimension, such as appointment booking, repeat prescribing and providing clinical information to patients; for which they are potentially insufficiently trained or qualified. What is known regarding the receptionist's input into these clinically related roles is likewise potentially out-of-date or centred on exploring the receptionists' input into discrete roles and as part of a wider practice team, somewhat obscuring their individual contribution. This is problematic given the central role the receptionist plays in general practice, their clear input into several clinical processes and by implication possible medico-legal implications for patient care.

1.6 Research questions

In light of these issues, it is clear that there is a paucity of information in the existing knowledge base regarding the GP receptionist. An overview of the current role of the GP receptionist and an exploration of the processes and practices they undertake is, therefore indicated. As such, the thesis has the following research questions:

- 1 What does the current literature tell us about the roles of the receptionist in practice?
- 2 What are the current roles of the GP receptionist; specifically, what clinically related roles do they undertake?
- 3 Can process maps (61, 62) provide a greater understanding of the process and influences on receptionists, in their clinically related roles?

- 4 In turn, can process improvement tools inform recommendations for appropriate support for the receptionist?

1.7 Objectives

To answer the questions above the research has three objectives (the research plan around these objectives will be discussed in the next section):

1. To establish the parameters of the current role of the receptionist and determine perspectives of receptionists, patients, and other practice staff, on which factors and characteristics of practices, and patients, facilitate or provide barriers to this role.
 - a. To explore and synthesise existing research on the GP receptionist in a systematic review,
 - b. Undertake primary research with receptionists, GP staff and patients to explore the current roles of the receptionist.
2. To create process maps (61, 62) to understand the input receptionists, patients and general practice staff have on and the flow of materials involved in, clinically related processes led by the receptionist. This, in turn, will highlight areas of delay and failure.
3. Produce a series of recommendations to reshape current work processes or otherwise provide support for administrative staff to offer a more robust and consistent service.

1.8 Meeting the objectives: an overview of the method

1.8.1 Multiple-methods

A more detailed discussion of the methods is presented in the next chapter (Chapter two).

However, in brief, the research assumes multiple methodological approaches. Beginning

with a systematic review of the existing research (Chapter 3) and combining both quantitative methods and statistical analysis (surveys; Chapters four and five) and qualitative methods and quality improvement (QI), process mapping (61, 62), interview, focus groups; Chapter six. The pragmatic combination of these methods will serve to meet the objectives set (Chapter two).

1.8.2 Quality improvement tools

Quality improvement, in the healthcare context, can be defined as the combined effort between all stakeholders involved in healthcare processes (patients, clinical staff, researchers) to make changes which will improve patient outcomes, system performance and professional development (63). A number of tools fall under the banner of quality improvement, and these surround the mapping, charting or in some way diagrammatically representing the processes undertaken by patients, clinicians or both (61, 62). Chapter six presents the findings from a thematic analysis (64), which have informed the development of a process map (61, 62).

1.8.2.1 The philosophy and tools of lean

Regardless of the approach, QI and process mapping are underpinned by the philosophy of 'lean'. First developed by Toyota engineer John Kracfik, and later codified by Womack, Jones and Roos lean is a process and/or a philosophy of improvement, where processes are explored, waste or 'Muda' limited or eliminated and those processes ultimately streamlined (65, 66). Essentially more is done for less, less time, less effort, less space, less money, but still providing the consumer/customer with the product (or service) they desire (65).

Womack and Jones (1996), developed the five principles of lean (67):

1. Identification of value: Values are placed on processes and/or services, as a result of what customers' needs are and how far these process/services fulfil that need.
2. The value stream: at this stage, the process/service is evaluated by undertaking the process of value stream mapping (67). This analytical device evaluates all of the parts of the process, highlighting those parts which contribute to the pre-defined values and perhaps, more importantly, those parts of the process which do not add value are also highlighted. These non-valued added aspects are termed as waste or Muda or aspects which while not adding value are necessary to the process.
3. Creating flow: with the waste removed, the VSM is utilised to offer areas where the flow can be optimised and processes streamlined, production redesigned or broken down, for example, into constituent steps.
4. Establishing pull: for this principle, the aim is to ensure that information and materials are available for use based on customer need for the product/service at a time that they need it.
5. Seek perfection: Continuous improvement is built into the working practices and organisational structure, with the aim that all employees undertake lean thinking across their work.

Lean, while ostensibly a set of tools to underpin quality improvement is more accurately an improvement philosophy. It consists of tools designed and used to explore the processes and services an organisation offers and to ingrain within the organisation and workforce the core principles of lean and the benefit of continuous improvement.

1.8.2.2 Lean in Healthcare

Lean thinking and the principles it encompasses has become a significant strand of research within healthcare since the early 2000s, to enhance patient care (68, 69). Since then, the use of lean in healthcare has been advocated by the NHS, based on the proven record of lean in other sectors (70), and further integrated into the NHS, with training and support for the integration and use of lean within the sector (71). Research too, has expanded its repertoire, and Lean's input into healthcare research covers a wide range of areas and topics. For example it has been used in exploring the processes of emergency departments (72), the reduction of medication waste (73), the process of pap testing (74), blood test result feedback to patients in general practice (41, 42), operating theatres or surgery (75, 76) efficiencies in laboratory or pathology process (77) or to reduce errors and enhance quality in emergency rooms and in primary care health visiting (78-81).

1.9 The structure of this thesis

The thesis is presented in an alternative format. The results chapters are presented in the form of self-contained papers, which are suitable for, undergoing or have undergone peer-reviewed publication (Chapters 3-7). The remaining chapters (1, 2 and 7) are presented as normal thesis chapters.

Chapter Two

This chapter covers the methodology and multiple methods which have been employed in this research. A mixed-methods (82) study was designed. The quantitative element utilised both an established, the Work Design Questionnaire, WDQ (83) and bespoke questionnaire, which were presented to participants simultaneously (Chapters four and five). The qualitative element included interviews and focus groups with receptionists and patients

and practice staff. The data analysed was then used to inform the development of a process map (61, 62); chapter six. Given the presentation of the thesis is in an alternative format, there is likely overlap and repetition between chapter two and the methods section of each of the results chapters (as these are presented as papers); however chapter two presents a more detailed and comprehensive methodological overview.

Chapter Three

This chapter covers the findings from a systematic review of the literature. Presented as a paper, the chapter draws together the existing research on the roles receptionists have overall and what specifically might be defined as clinically related; as well as any potential effects on patients. This chapter forms the basis of the research highlighting areas of paucity within the existing literature. It was undertaken early in the process (2016) and has been updated each year to reflect changes or additions to the literature. The protocol for this review was accepted for publication in *Systematic Reviews* (presented in Section 2.5). The paper presented in the thesis has been submitted for consideration to the journal *Systematic Reviews*.

Chapters four and five

These chapters (presented in their published or publishable form) represented two sections of the GP receptionist's survey analysed and are presented separately; to allow sufficient space to fully explore the findings and their implications.

Chapter four is presented in this thesis first as this better suited the narrative and flow of the thesis, however chapter five was submitted for publication first. As a result both chapters have detailed methodology section and present the same demographic information/results tables for the participants.

- **Chapter four**

This chapter covers the results from a survey of GP receptionists. In light of the findings from the systematic review (Chapter 3), it was not clear if the demographics of the receptionist have changed. As such, the survey aimed to explore not only who the receptionist is in modern practice (demographic information), but the roles they undertake, their satisfaction, training, and support. This chapter is presented as a paper.

- **Chapter five**

This chapter covers the results from the Work Design Questionnaire (WDQ) an established and validated metric for exploring the characteristics of work roles (Chapter 2 gives a detailed discussion of the WDQ). The WDQ enabled the exploration of the parameters of the receptionists work and duties, as well as providing an understanding of how work is designed for the receptionist and as such how this impacts the efficacy and success of the receptionist's roles. This paper has been submitted for consideration to the journal, *BMC Family Practice*.

Chapter Six

This chapter, presented as a paper, reports on the results from the qualitative data collection (interviews with receptionists and focus groups with practice staff and patients) and the use of thematically analysed data to construct and develop a process map (62). This map lays out the triage/appointment making process which the receptionist and patient engage in and to which the GP/clinical staff also have input.

Chapter Seven

This chapter serves as the discussion for the thesis overall and presents and synthesises key findings from each of the results papers demonstrating how they integrate as a single body of work. An overall findings section discusses overarching findings, which are then contextualised in light of the existing research. Strengths, limitations, implication/suggestions for supporting receptionists and suggestions for future research are also discussed.

1.10 Chapter summary

This chapter has introduced the research that will be presented in this thesis. It has defined and explored the development of general practice, from the inception of the NHS to the current situation. Additionally, it has discussed who receptionists in general practice are and what their changing roles are in practice. Finally, the objectives of the research and a brief overview of the methods involved were provided. The next chapter (Two) presents a more detailed and comprehensive overview and justification of the multiple methods employed.

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Chapter Two: Method

2.1 Introduction

This chapter introduces and comprehensively discusses the methods employed in this thesis. The chapter begins with a discussion of research paradigms, pragmatism, and mixed-methods research; making a case for the use of a mixed-methods approach. An overview of the research is given, and each part discussed in detail. It begins with a protocol for the systematic review (chapter three) and moves on to discuss the different strands, in turn, the methods employed as well as information on the sample, recruitment, procedure, and data analysis. Ethical considerations will be discussed at the end of the chapter.

2.2 The research paradigm

Understanding and defining the research paradigm is important, as it will inform all stages of the research. From the initial conceptualisation, the research focus, methods employed, the analysis undertaken, and the framework for interpreting and explaining the data and drawing implications (1-5).

Defining a paradigm is potentially a contentious issue, and the term is used in various ways. For example, as an all-encompassing worldview, as a set of shared beliefs within a field of research, as a model or examples of research, or as epistemological perspectives (1, 2). The all-encompassing world view definition is perhaps too broad, although certainly the points of view, beliefs, morals and values of the researcher are important. For example, the researcher's ideological stance will aid them in developing research questions and approaches best suited to those perspectives. However, clarity is needed to understand fully the concept of a 'worldview' and what it does, and does not contain, and is therefore too imprecise for the purposes of this research. The definition of a paradigm as a set of shared beliefs concerns agreement between practitioners or researchers within a field as to

appropriate research questions and methodologies is helpful but not sufficient to explain how it has shaped the research. Defined as a model (1, 2), a paradigm is an example of a prototype of how research is conducted within a given field, but this leaves little room for interpretation or adaptation to the particular needs of the research.

Finally, the definition of a paradigm as an ontological and epistemological perspective (1, 2) concerned with the nature of knowledge and knowing (1), is the definition most useful for guiding this research. Under this conceptualisation, differing paradigms hold different views on what constitutes 'knowledge' and as such which methods are best suited to access or measure that knowledge. At its most simplified, it is the division between objectivism or positivism (generally using quantitative approaches) and constructionism or interpretivism (generally using qualitative approaches) (3, 4).

Objectivism relies on the assumption that 'things' exist (3), and do so independently of the researcher/observer (6). In this regard, the researcher and the researched are separate entities; meaning or truth is then to be obtained objectively from the phenomena targeted in the research.

Constructionism, on the other hand, assumes that the object, phenomenon or 'thing' only has meaning in relation to its interactions with the mind of the observer (3) and that knowledge and truth are created via social interaction and shared meaning (7). Meaning is constructed through experience and interaction, and there is *de-facto* no single truth. Truth has multiple perspectives and is negotiated (7).

However, methods that are most commonly associated with polarised epistemological perspectives can be utilised in parallel or synthesised in research for pragmatic purposes.

2.3 Pragmatism and mixed-methods research

A mixed-methods study was selected as it offered the best way to adequately and effectively address the thesis research questions (Chapter one). The study mixed both quantitative and qualitative methods and included large scale questionnaires of GP receptionists (to explore the parameters of the role and the demographics of the receptionist) and case studies with GP surgeries (to support the use of process improvement tools). The research adopts a pragmatic approach, as an epistemological paradigm, and is presented as a means to overcoming the challenge of mixing methods.

In the next section, the mixed-methods approach is described, and the advantages explored; as are the issues of mixing epistemologically divergent methods.

2.3.1 Mixed-methods

A mixed-methods approach is defined as a type of research which combines elements of qualitative and quantitative approaches, for the purposes of breadth, depth, and corroboration (8), and can be used to address some research questions more comprehensively than either quantitative or qualitative methods can alone (9). Mixed-methods are suited to questions that are broad, complex and multi-faceted (10).

The confluence of both qualitative and quantitative methodologies can enhance research by bringing the strengths of these different methods to bear and proving a richer understanding of the research topic (11). For example, quantitative methods are often larger scale and so may be more representative and generalisable (this is especially relevant as this research is designed to affect policy surrounding the GP receptionist and so the larger scale credibility of this data will help to justify shifts in policy suggested by the findings; Chapter seven). Qualitative methods, in contrast, are inductive, open-ended and

allows for the collection of in-depth and rich data, which can be better employed in the creation of high-level hypotheses (10); while acknowledging the effect of the researcher in the collection and analysis of this data (11). More than just combining the strengths of each of these methods, the mixed-methods approach mitigates their individual weakness. Small scale, ecologically valid data collected qualitatively, merged with larger-scale data collected quantitatively can help to overcome the weak generalisability and low explanatory power of each of the methods on their own (9, 11).

Integration of qualitative and quantitative methods can occur at any point in the process. During data collection, analysis and interpretation were undertaken in a number of ways depending on the aims of the research and the principal research method; either a convergent, additional coverage or a sequential design (12). In a convergent design, the qualitative and quantitative data are collected at the same time, and the findings are combined in the analysis, in this way triangulating the results of the two streams of data collected. The additional coverage method assigns separate methods to individual aspects of the overall research project, but there is little integration of findings. The sequential method relies on the methods preceding and then informing the other method. For example, a qualitative method could be used to explore and understand a topic and then the data collected used to construct a valid and appropriate questionnaire with which to reach a wider audience. On the other hand, quantitative data collection may precede and inform the qualitative methods which provide a means of explaining the findings from the quantitative data (13). Data for this thesis was collected largely sequentially (with some overlap), analysed separately, and the findings were synthesised post-analysis to triangulate methods and enhance understanding.

2.3.2 Pragmatism

Employing methods which typically fall into divergent paradigms with different ontological and epistemological perspectives presents a challenge as the research paradigm should inform all aspects of research studies. However, the pragmatic approach (1, 14, 15) which deemphasises both the ontological and epistemological disconnects, can help in overcoming these issues. Frequently linked with multiple method research (1, 14-17), pragmatism instead concentrates on the research questions and the outcome or product of the research (14, 16, 17), utilising the notion of the best tools for the job, or more accurately identifying practical solutions to answer established questions (1).

In this way, the competing issues of 'what is knowledge' and 'how do we know' between the positivist and constructivist paradigms (1, 3, 4) are downplayed. Instead, the focus is concentrated on the "complementariness" of the different research paradigms (1). This, in turn, suggests that both can be brought together to complement their individual strengths and weakness, breaking down the philosophical divide between positivism and constructivism to instead explore what is meaningful from both paradigms (14).

Some have argued that the notion of 'the best tool for the job' suggests that pragmatism lacks any philosophical depth (15). However, pragmatism is based on Dewey's concept of experience and inquiry as research, where human experience is central (18). Experience, as defined by Dewey, is cyclical, where reflecting on beliefs inspires action and reflecting on actions inspires belief. In this way, experience involves the interpretation of beliefs and prior actions to generate future actions and beliefs and therefore meaning. Experiences may be habitual, where pre-existing beliefs inspire actions in the individual's current situation or when experiences are novel or problematic, a careful methodological inquiry is required to

inform belief and action (18). From this brief exploration, it is clear that Dewey places a greater emphasis on the nature of human experience, rather than the conflicting definition of knowledge and knowing as described above (3), eschewing these philosophical conflicts and focusing on the process of acquiring knowledge through inquiry.

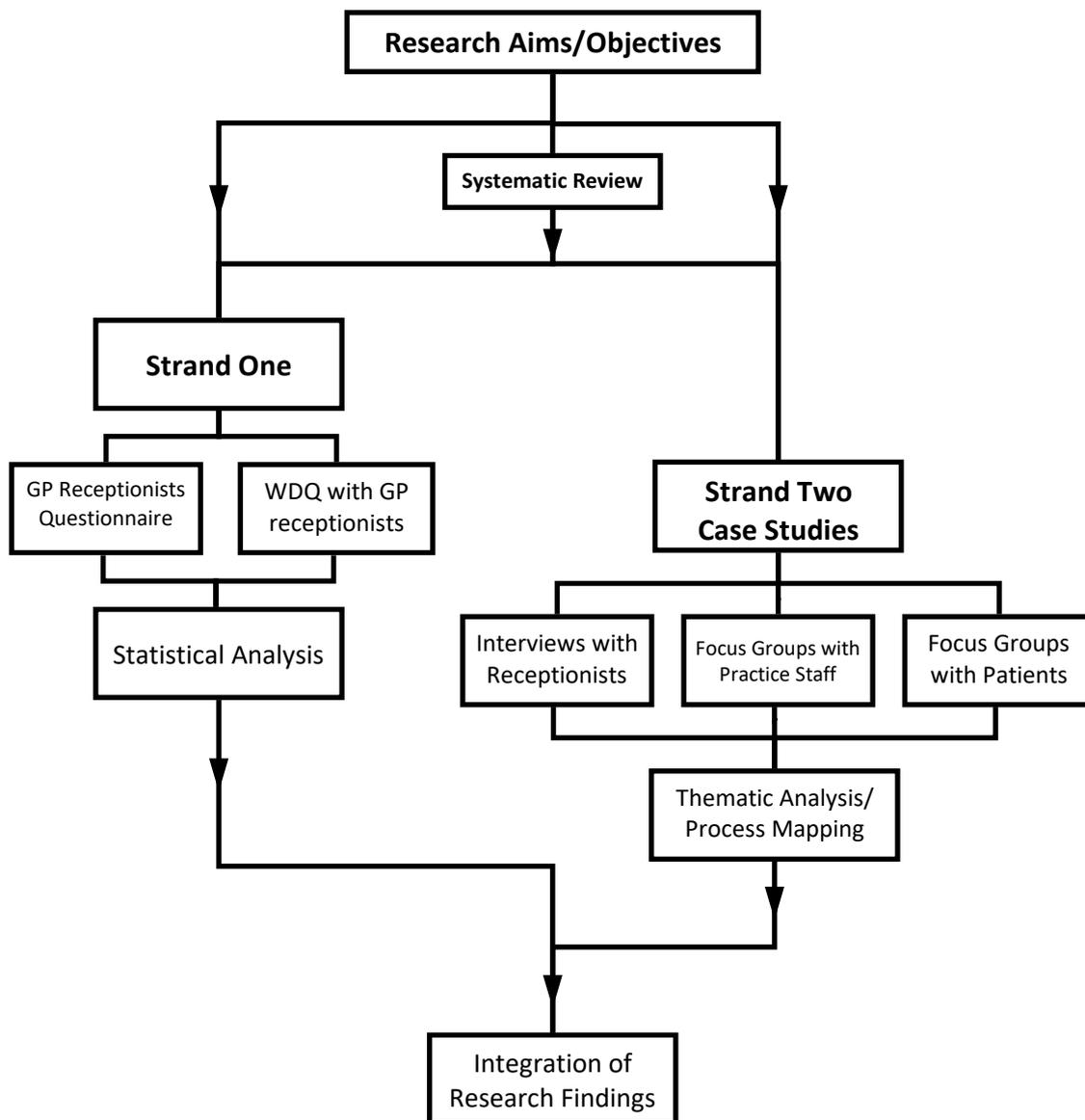
Inquiry is the process by which knowledge is acquired, problematic beliefs or concepts explored and resolved; research is simply a more systematic, careful and self-aware form of inquiry (15, 18, 19). The five steps to inquiry include: recognition of problematic situations, considering multiple definitions of the problem, developing actions in response, evaluating actions in terms of possible consequence and taking action to address the situation (15, 19, 20). Pragmatism identifies practical solutions and clearly underpins the process by which the focus of the research is generated, and the rational and logical decisions around suitable research approaches and methodologies are made. Overall inquiry as a form of experience, reliant on the interaction between action and belief, is central to the production of knowledge.

Pragmatism is appealing to those undertaking multiple methods research as it provides an alternative epistemological paradigm (21). Questions of ontological difference, of what is knowable between the divergent paradigms (3) are replaced with an emphasis on human experience and inquiry, where questions of epistemological difference are examined in the context of what characteristics (methods) best suit the inquiry at hand. This provides the most appropriate approach to adopt for this thesis. Based on the objectives established (chapter one), the mixed-methods employed are practical means to answer these objectives and to synthesise data from these divergent paradigms together by emphasising what is meaningful within each approach.

2.4 Research overview

This study was divided into a systematic review of the existing literature (the published protocol for the systematic review is included in section 2.5) and then two distinct research strands. The systematic review was undertaken prior to and informed both research strands (Figure 1). Strand one was quantitative, utilising two questionnaires. The bespoke questionnaire (Chapter four) was informed by the findings of the systematic review and the aims of the research to explore the role of the receptionist. The second questionnaire was the validated Work Design Questionnaire (WDQ; Chapter five) (22). Strand two (Chapter six) was qualitative and consisted of interviews and focus groups with key stakeholders and the development of process maps (23).

Figure 1: Research map



Mixed-methods were used sequentially: the questionnaires began prior to and then ran alongside the qualitative data collection. The reasoning for this arrangement was so that the initial analysis from the questionnaires could be used to inform the questions and topics covered in the interviews, feeding into and informing the qualitative data collection. Individually these methods conferred their own benefits; questionnaires offered scale and simplicity, and interviews and focus groups offered in-depth understanding and validity.

2.5 Systematic review protocol

Protocol for using mixed-methods and process improvement methodologies to explore primary care receptionist work (word count – 2773)

The systematic review (Chapter three) was a central and critical aspect of this study and forms an important part of the findings of the thesis. As such, a comprehensive protocol was developed and submitted for peer review and publication. The protocol was published in Systematic Reviews and is presented here. Additional material 1 is located in appendix 2 (PRISMA-P checklist) and additional material 2 (Medline search strategy) in appendix 3

PROTOCOL

Open Access



Exploring the clinically orientated roles of the general practice receptionist: a systematic review protocol

Michael Burrows¹, Nicola Gale², Sheila Greenfield^{1*} and Ian Litchfield¹

Abstract

Background: The receptionist is the focal point of the practice, undertaking an array of clinically orientated roles such as triaging patients for GP consultations or managing repeat prescribing. However, the full nature and extent of the receptionist's clinical activities is unknown as are the implications for patients. The aim of the proposed review is to explore the nature of the receptionist's clinical roles, their extent and their implications for patients. In doing so, we will highlight any gaps in the evidence base which future research may explore.

Methods: The databases Medline/PubMed, Ovid, Cinahl, ASSIA, Cochrane, EMBASE and Science Direct will be searched for relevant literature. We will look at both qualitative and quantitative research on GP receptionists, based within primary care to explore their roles within the primary care team, the clinically relevant roles they undertake, the extent of these roles and any implications these roles might have. No limits are placed on the date or place of publication; however, only research published in English will be included. Screening, quality assessments and data extraction will be carried out by two reviewers, who are not blinded to study characteristics. Analysis follows a four-stage method, established by Whittemore and Knaf (2005).

Discussion: The review will explore existing research covering the clinically orientated roles of the GP receptionist. The findings of the review will be important for healthcare professionals and academics working within primary healthcare. It will highlight and for the first time synthesise research relating to the complex and essential work of the GP receptionist. Our findings will inform the direction and focus of further research, as gaps in the knowledge base will be uncovered.

Systematic review registration: PROSPERO registration no: CRD42016048957.

Keywords: GP receptionist, Primary care, Clinical roles, Triage

Background

General practice receptionists are the first point of contact for patients. Their functions are varied and encompass administrative duties, such as filing, maintaining medical records and making appointments [1, 2]. In addition, the receptionist undertakes what can be described as clinically orientated roles which include repeat prescribing [2–4], interacting with patients [3, 5–11], making critical decisions and appointments (de facto triage) [5–7, 10, 11] and managing patients' emotions [12]. The tasks they perform are rendered more difficult by

working within an overtaxed primary care system [13]. The resulting pressure on primary care means that receptionists appear to be increasingly relied upon to assume clinically orientated roles. This affords medical staff more time to dedicate to their increasing clinical workload.

In a 2013 survey, 18% of GP practices surveyed reported that reception staff have some involvement in telephone triaging. Though the authors do not define 'involvement', it is clear this task has clinical implications as the inaccurate assessment of symptoms can lead to a delay in consultation and diagnosis or patients being referred to inappropriate services [10]. Though less visible, the receptionist's role in repeat prescribing is considerable [4]. They bridge the gap between the request and

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the information held on file, using their own judgement to ensure and bolster patient safety and relying on the GPs to check accuracy [3].

Receptionists also report clinical information to patients, for example, the reporting of blood test results. In this scenario, receptionists relay results, sometimes with the help of pre-prepared scripts. Frequently, they are unable to respond to further enquiries from patients leading some to question whether this is an appropriate role for the receptionist [14]. Test result data has potentially serious clinical implications and the inability to provide surrounding information about a result can lead to anxiety in patients and discomfort for receptionists unable to offer support [14, 15].

Despite the range of clinically orientated duties, no formal training is required or systematically delivered. Instead, receptionists new in post typically receive their training from existing reception staff for training [2, 16]. Furthermore, GP surgeries are independent organisations and so budgetary and time constraints may mean that training for the receptionist is overlooked in favour of training for medical staff. The lack of any formal training can lead to issues around patient safety and care, including errors in directing patients to the correct service [10] or misinforming or poorly informing patients [14, 17]. These in turn may put the patient at risk and open the practice to severe penalties.

Rationale

The receptionist is an essential feature of the primary care system, contributing to its smooth running and acting as point of contact and buffer, between patient, GP and other clinical staff. Primary care is under increasing pressure; the emphasis has shifted to prevention [13] and management of chronic conditions, and the needs of patients and the care available to them has become more complex. Within this environment, the receptionist is expected to fulfil a number of tasks with clear clinical implications yet without structured training or support; therefore, an up-to-date overview of this role is needed.

An earlier scoping review (undertaken by the lead author MB) indicates that the receptionist is female, married and undertakes a visible role in the practice as well as a number of clinical relevant tasks. However, a more systematic, concentrated search of existing literature is needed to fully explore these issues, to access the extent of the receptionist's clinical roles and to identify if possible what implications the receptionist undertaking these roles might have.

The existing research is both qualitative and quantitative in nature and so our systematic review will be integrative. This will enable us to more fully explore all of the existing research and develop a comprehensive overview [18].

Objectives

This review will summarise past research, draw conclusions and highlight unresolved issues and direct future research, in accordance with Whitemore and Knaff (2005). To do this, the review will explore the receptionist's roles within the primary care team. It will also explore the literature around the clinically orientated roles of the GP receptionist, to identify the type and extent of the roles that these individuals undertake. The review will ask three questions:

1. What is the role of the GP receptionist within the primary care team?
2. What clinically orientated roles does the GP receptionist undertake?
3. What is the extent of these clinically orientated roles and the effects on the patient and patient care?

Methods

The protocol has been prepared in line with the Systematic Review and Meta-analysis Protocols or PRISMA-P [19]. The PRISMA-P flowchart is provided in Additional file 1. In addition, the protocol has been registered with PROSPERO (CRD42016048957); the entry can be accessed via the following:

http://www.crd.york.ac.uk/PROSPERO/display_record.asp?ID=CRD42016048957

Methodology

The systematic review will explore existing literature according to best practice in systematic review methodology [18]. The initial scoping review indicated a paucity of research in the field and what exists uses a number of methodological approaches. As such, the review will include both qualitative and quantitative research and provide a more comprehensive investigation of the topic.

Eligibility criteria

The eligibility criteria used in the study are in accordance with the SPIDER search strategy [20]. SPIDER is a qualitative and mixed methods alternative search strategy to the more typical PICO tool [21] and stands for Sample, Phenomenon of interest, Design, Evaluation, Research type.

Sample The research will include GP receptionists or medical secretaries, these are individuals tasked with providing administrative support to the practice (for example managing patient records, scanning documents or processing repeat prescriptions) and support for patients seeking medical care (booking appointments, dealing with patients attending the practice). In addition, they should be based in general practice, within primary care. This is operationalised as general practice based in the

community offering care for minor or chronic/long term illness and providing referrals to specific services for more serious illness care.

Phenomenon of interest The research included will cover the clinical and general roles of the receptionist as well as any potential implications for or effects on patients.

Design The research will include interviews, focus groups, ethnographic observations, case series and surveys.

Evaluation The review will explore attitudes, beliefs, satisfaction and medical outcomes.

Research type Including qualitative, quantitative and mixed methodologies, only empirical research will be included. No limits are placed on the date of publication.

Research will not be excluded by country of origin. Though there may be differences in the structure, funding and support of medical systems around the world, research conducted within other healthcare models can still provide valuable information on the contrasting roles of the GP receptionist. However, research will only be included from outside the UK, where it is produced in English or a good quality translation is available.

Search strategies

We will use multiple search strategies to obtain a representative sample [22]. Search strategies will be modified between databases where appropriate. The databases we will search are Medline/PubMed, Ovid, Cinahl, ASSIA, Cochrane, EMBASE and Science Direct. The search strategy will employ terms and alternatives to effectively capture all relevant research for the review, without a time limit. For example, the GP receptionist can be described as such or as a practice secretary or medical secretary.

See Additional file 2—for a detailed Medline search strategy.

Individual journals will be hand searched for relevant articles; these will include but not be limited to journals covering primary care research and healthcare research such as the British Journal of General Practice, The British Medical Journal (Open), The Journal for Health Care Quality and BMJ Quality and Safety, in addition to hand searching of the reference lists of included research. Finally, the review will include conference proceedings and National Health Service (NHS) or healthcare policy documents sourced from websites published by the NHS.

Screening

Title and abstract screening

Literature searching will be undertaken by the lead author (MB) and search results will be extracted to Endnote X7.3.1 [23]. After this, stage duplicates will be removed by Endnote and MB will undertake the process of screening by title and abstract. Title screening will involve MB checking each title against the inclusion criteria. Studies deemed suitable for inclusion at this stage will be subjected to abstract review by the lead author; again, those meeting the inclusion criteria will be included for full-paper review.

Full-paper review

Two reviewers will undertake the full-text review. Microsoft Excel will be employed to facilitate this process. Quality assessment will be undertaken on each of the remaining papers; quality will be assessed using the CASP resource for qualitative research [24], the Quality Assessment Tool for Quantitative Studies [25] and the Mixed Methods Assessment Tool (MMAT) [26]. Studies will not be de facto excluded based on poor quality alone. Instead, the two reviewers will decide on exclusion based on the importance and worth of the research to the review, as well as overall quality. Each reviewer will independently review each article and will meet to discuss the inclusion or exclusion of papers at this stage. Where there is agreement between the reviewers, those papers will be included. However, where there are disagreements, these will be discussed and in the case of persisting disagreement, a third reviewer will be consulted.

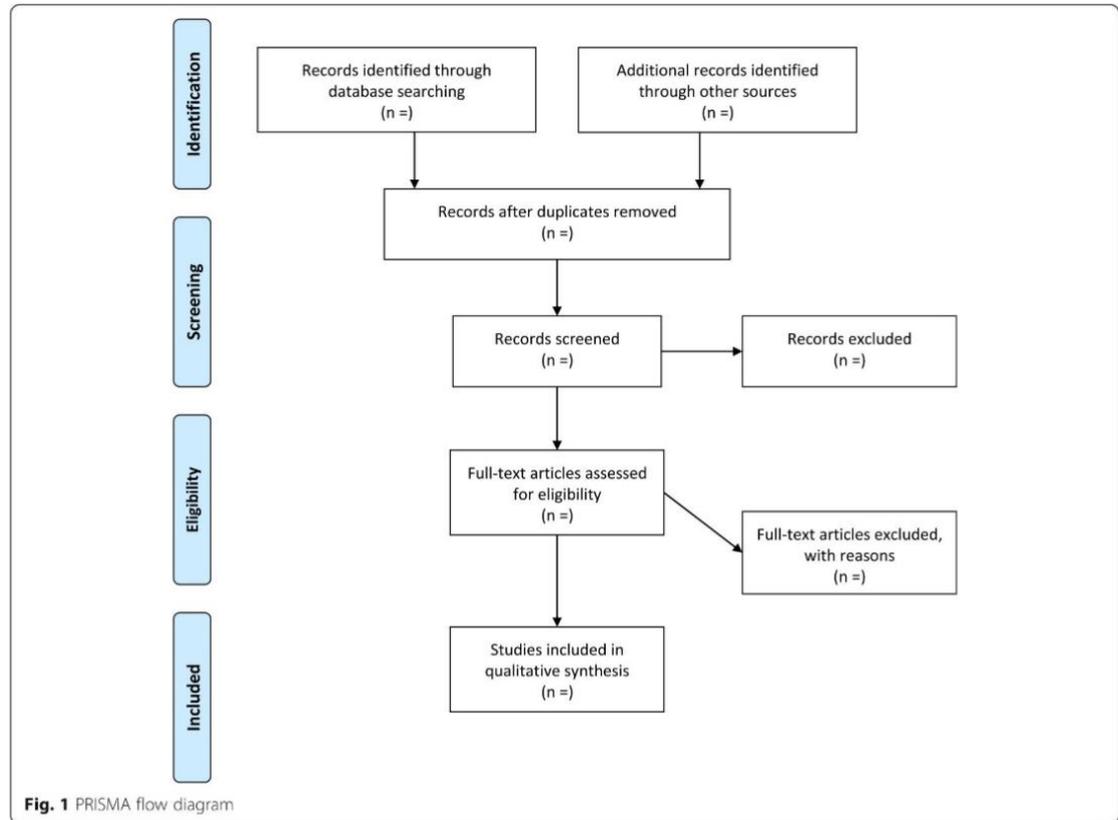
Data management

As discussed, the reviewers will employ EndNote X7.3.1 [23] to facilitate the title and abstract review and Microsoft Excel will be used for full paper screening and quality assessment.

Finally, a PRISMA diagram [19] will be created to show the flow of studies through the various levels of assessment (see Fig. 1).

Data extraction

Data will be extracted independently by the lead author (MB) and a second reviewer. Data extraction will be based on the supplementary guidance chapter 5 to the Cochrane handbook [27]. This template will be modified to extract all data relevant to the research questions. Discrepancies in data extraction and entry will be resolved in discussion with a member of the wider research team. The reviewers will not be blinded to study characteristics. Data extracted will cover information relevant to the review questions established and include:



1. Publication information (author, contact details, funding sources, date of publication),
2. Study characteristics (research setting, design, method),
3. Participant information (number of participants, demographic information, including the age, sex/gender, marital status, educational attainment and additional protected characteristics, inclusion/exclusion criteria),
4. Outcomes (clinically orientated roles, time taken in these roles, developments in the role of the receptionist, potential effects of these clinical roles).

Data analysis

Data analysis will follow the four-stage procedure detailed by Whittemore and Knafel (2005):

(i) Data reduction

Analysis begins with the process of data reduction. Included studies will be divided into groups based on the research design; as such, there will likely be four subcategories:

1. Qualitative research: including interviews, focus groups and ethnographic observations.
2. Case series
3. Surveys (surveys with open responses will be included and analysed with the qualitative research)
4. Mixed methods (i.e. consisting of a qualitative and quantitative element)

This process provides a systematic framework for the analysis.

Data reduction continues with each primary source being coded, employing a priori codes relevant to the review questions (for example, coding for clinical activities, such as repeat prescribing). From each of the studies included, a master file is created. This master file contains all of the codes derived from each study and is the basis for the continued analysis, enabling easier and more systematic comparison and integration of data on specific issues such as sample characteristics, surgery type, receptionist workload/roles or other variables.

(ii) Data display

The individual master files for each of the selected articles will be combined into a single Excel database for each subcategory defined in the reduction stage. At this stage, the process of reconstructing the data begins and within each of the sub categories, the individual codes are drawn together and grouped by similarity. For example, codes showing a clinical aspect can be grouped together as 'clinical roles' at this stage. The process of data display facilitates the recognition of patterns and relationships in the data and enables the development of early broad codes. These will in turn inform the direction of the analysis and the emerging themes.

(iii) Data comparison

This iterative stage of the analysis employs the data displays to compare the selected articles across all of the categories and subcategories. This allows for the identification of patterns, themes and relationships that may be present in the data to be uncovered and for the emerging core themes to be realised and then saturated. For example, a number of studies may discuss a number of clinically relevant duties that the receptionist has, each of these could then be coded across the whole dataset and result in codes for each of the different clinical activities, triage, clinical information provision and repeat prescribing, for example. NVivo v11 [28] will be employed, as it allows the user to examine similarities between the codes and the sources which inform those codes. This will enable a more robust integration of the codes.

(iv) Conclusion drawing and verification

The codes developed across the dataset will be further integrated with each other to form higher level descriptive codes/themes. As in the example given, each of the codes relating to triage, clinical information provision and repeat prescribing are conceptually related as different aspects of clinical work and so could be integrated into a single theme.

Discussion

This review will produce a comprehensive account of the existing literature covering the clinically orientated roles of the GP receptionist. The review's findings will highlight the limitations and gaps in the existing literature and will in turn inform the authors' ongoing research [29] which is funded by the Health Foundation [project reference—7452].

The findings of this review will also be important for healthcare professionals and academics working within the primary healthcare field. The review aims to clarify the roles that the receptionist undertakes, issues around training and any potential implications of the receptionist

taking on clinically orientated roles. Furthermore it will highlight the potentially problematic ad hoc adoption of clinically orientated roles by untrained staff or on the contrary highlight this as a continuation of roles that the receptionist has been undertaking for decades.

The review will explore the need for any additional training for the GP receptionist. It will raise awareness of the need for closer attention to the roles they undertake and the support that is available in practice for this. The GP 5-year forward view details 45 million pounds of funding for the training of receptionists to undertake two discrete roles: managing clinical correspondence and active signposting (care navigating) [30]. There is scope for the role of receptionists to be expanded to take on more medical roles such as phlebotomy or taking blood pressure. This is especially interesting given the move of general practice towards multi-disciplinary team working and the potential this provides for expanding the role of receptionists [31].

Finally, the review will highlight the importance of the receptionist as a focal point of general practice, a role that has been potentially overlooked by the research community and in practice.

Additional files

Additional file 1: PRISMA-P 2015 checklist. (DOCX 36 kb)

Additional file 2: Medline search strategy. (DOCX 15 kb)

Abbreviations

ASSIA: Applied Social Sciences Index and Abstracts; BMJ: British Medical Journal; CASP: Critical Appraisal Skills Programme; CINAHL: Cumulative Index to Nursing and Allied Health Literature; GP: General practice; GPs: General practitioners; MMAT: Mixed Methods Appraisal Tool; NHS: National Health Service; PRISMA: Preferred Reporting Items for Systematic Reviews and Meta-Analyses; PRISMA-P: Preferred Reporting Items for Systematic Reviews and Meta-Analyses Protocol; SPIDER: Sample, Phenomenon of Interest, Design, Evaluation, Research type; UK: United Kingdom

Acknowledgements

Not applicable.

Availability of data and material

Not applicable.

Funding

This work is supported by The Health Foundation grant number 7452. The funders had no input in developing this protocol.

Authors' contributions

MB wrote the initial and final draft and IL, SG and NG provided comments, suggestions and amendments. These were addressed in the final version which was approved by all.

Ethics approval and consent to participate

Not applicable.

Consent for publication

Not applicable.

Competing interests

The authors declare that they have no competing interests.

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Received: 1 December 2016 Accepted: 16 October 2017

Published online: 23 October 2017

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2.6 Research strands

2.6.1 Strand one – Receptionist Questionnaire

The receptionist questionnaire was cross-sectional and sought to update the current information on the role of the GP receptionist. Informed by the systematic review (Chapter three) a questionnaire was designed, in three sections, to understand the modern GP receptionist. Section one was a purposely designed questionnaire for GP receptionists, and section two used an existing validated questionnaire, the WDQ (22) and section three covered the demographics of the receptionist and the GP practice.

2.6.1.1 Section one - GP receptionist questionnaire (Appendix 4)

Section one had 15 questions which were divided into five parts covering:

1. The training receptionists receive,
2. The roles or functions that they undertake,
3. Their satisfaction with their work,
4. Their role and place within the organisation (the GP practice),
5. The technology that their practice employs and what if any effects this has on their roles and functions.

Responses to the questions in the first section were coded in a variety of ways, as either a free text box, a multiple or single response matrix or on a Likert scale.

Satisfaction at work underscored staff retention in healthcare (24), and little is known regarding the satisfaction of GP receptionists. To ensure that the questionnaire accurately explored the concept of satisfaction, a Cronbach's alpha test was conducted on all of the satisfaction scales employed (chapter four).

2.6.1.2 Section two - Work Design Questionnaire (Appendix 4)

The WDQ (22), designed by Morgeson and Humphrey (2006), is an 18 point scale, divided into 4 groups consisting of

- Task characteristics - how the work is completed and the scope and nature of the tasks involved,
- Knowledge characteristics - involve the knowledge and skills that the individual needs to perform the role,
- Social characteristics - refer to the level of social support, dependence on others, feedback and interactions that are a part of the role,
- Work context, refers to the physical environment, the conditions of work or physical demands placed upon the worker.

Responses to the questionnaire were coded on a 5 point Likert Scale; from strongly disagree to strongly agree, and standard practice for scoring the WDQ was followed (22). This research employed the WDQ because it is a general measure of work characteristics and allowed for the gathering of information on the nature of receptionist's work in the current context.

Work design plays a significant role in shaping the contribution that the employee makes to the organisation. When explored and understood, work design can help to inform the re-design of roles to better suit both employee and organisation (25) as well as improving job satisfaction, the quality, safety and efficiency of the work (22, 26), and performance, absenteeism, and turnover (27, 28). The WDQ has produced insight into a range of different industries including Information Technology (29), nursing (30), and policing (31), but to date has yet to be employed with GP receptionists.

2.6.1.3 Section three - Demographic information

Demographic information including protected characteristics in line with the 2010 Equality Act requirements (32) was collected from the participants, this included age, sex, gender identity, marital status, disability, sexual orientation, religion and belief, and ethnicity. Questions regarding ethnicity were coded in line with the ethnic categories given in the 2011 census (33). Additionally, questions about the practice size, large, medium or small practices¹ (34), and locations (by postcode) were included to contextualise the responses by practice size and geographical location. The responses to the questions took several forms; these included nominal (yes/no) answers, Likert scales, checkboxes, and open text boxes.

2.6.1.4 Sample

All GP receptionists in England were eligible to participate. According to the most recent literature available, in 2014, there were 93,037 admin and clerical staff in primary care (35). The sample size was calculated using a 95% confidence interval and a margin of error of 0.5. A sample size of 383 was necessary to accurately reflect the population of GP receptionists. This was likely to be a conservative sample size as the available data was not broken down sufficiently and included all clerical and administrative staff working across all sectors of primary care and not just general practice. Ethical approval was sought and granted from the Ethics Committee at the University of Birmingham (ERN_15-1175; Appendix 5).

¹ Small sized – Single-handed /1 or 2 GPs, serving a small number of patients with single or less than 4 reception/admin staff

Medium sized – Larger practices, between 5-10 GPs, and other clinical staff and over 5 reception/admin staff

Large sized – Multiple GP partners, including multiple additional clinical (nurses, nurse registrars) and non-clinical staff (receptionists), offering a number of services in addition to general practice.

2.6.1.5 Method

GP receptionists are a difficult population to access, as they are not differentiated from administrative staff across primary care and therefore no single point of access exists. As such multiple recruitment methods were employed. These included disseminating the link to the online questionnaire via Clinical Commissioning Groups (CCGs) in England, Health Education England, Association of Medical Secretaries, Practice Managers, Administrators and Receptionists (AMSPAR) and via teaching practices connected to the University of Birmingham, College of Medical and Dental sciences. Bristol Online Survey (BoS) was used to host the questionnaire, and the link directed the respondent to an information page where consent was required to continue. In addition, 500 postal questionnaires were sent to 100 randomly selected GP practices across England between September 2016 and September 2017. Practices were chosen at random from a list of all operating practices in England held by NHS digital (36).

2.6.1.6 Analysis

GP Receptionists' Questionnaire

The questionnaire was open for one year, between September 2016 and 2017. When the questionnaire closed, data were exported from the BoS system directly into SPSS (version no 24). The analysis included basic descriptive statistics and frequencies for data collected.

To explore the relationships between ratings of satisfaction, appreciation, and support as well as to identify the best predictor of satisfaction, a multiple regression was performed. Three factors were chosen, administrative duties, overseeing repeat prescribing and support from practice GPs, as both administrative duties and repeat prescribing are key roles for the receptionist as shown in the systematic review (Chapter three) and previous research

suggests that the support that they receive from GPs was considered of importance in their satisfaction with their role from (37-41).

In order to explore the effects of the length of time in service on feelings of satisfaction, importance and appreciation a between-subjects analysis of variance was performed on two groups, those who had been in the role for zero and five years, and six years and above. This division was chosen, as it represented a natural split in the participant group, half reported being in the post between zero and five years, and a half five years or more.

The questionnaire also contained a number of open text boxes; these allowed the receptionists to further clarify their responses. These were analysed thematically (42).

Work Design Questionnaire

Analysis of the WDQ followed the method developed for this scale (22). The respondent's scores were added together for each of the subscales and a mean calculated. This was then presented as a percentage of the total possible score. Responses were then categorised as low (score less than 50% of the total score), moderate (scores between 50% and 75% of the total score) and high (above 75% of the total score) for each subscale.

2.6.2 Strand two - Case studies

This stage examined in more depth the role of the receptionist, with specific attention to those clinical roles that they undertake. In light of the findings of the review (Chapter three), these roles included triaging patients for urgent appointments, directing patients to emergency care (if and when needed), providing feedback on medical testing to patients, and their involvement in the repeat prescribing process.

This phase of the research employed a series of case studies. Case studies are defined as studies which employ a variety of methodologies to explore the research topic in the context in a single discrete situation and enables the researcher to examine individuals or organisations, explore relationships or communities or interventions, from the simple to the complex (43). In health research, this method is valuable because of the rigour and flexibility it affords the researcher (44).

The justification for the use of case studies is clear, as this strand examines in more depth the nature of the clinical roles of the receptionist. However, there is variability in the role of the receptionists and the context of the practice. GP receptionists can work full or part-time, work within large surgeries in teams of receptionists or in smaller surgeries where they might be the only receptionist (34). In this case, a single case study would not have provided the level of comprehensive detail required, as the role may have varied between differing situations.

Multiple case studies, on the other hand, allow for the researcher to explore the case in variable contexts and to compare and contrast these different situations, furthermore, using multiple case studies provides evidence which is robust and reliable (Baxter and Jack, 2008).

The multiple case studies employed here used two data collection techniques; these include:

- Interviews – Face-to-face interview with receptionists
- Focus groups – Focus groups with GPs and other practice staff and with patients

2.6.2.1 Sample

The sample for the qualitative data collection consisted of a number of different groups, receptionists, patients, and GP surgery staff. These participants were recruited from within

the NHS general practice; participating practices and participants volunteered to take part. Ethical approval from the NHS Health Research Authority was sought and granted on the 23 June 2017 (117/WM/0203 Appendix 6). The research was also included as a Clinical Research Network (CRN) portfolio study and as such was advertised via the CRN network, which facilitated access to practices. Five surgeries, across the West Midlands, were recruited through a number of routes. These included as a response to a presentation given at several local (Practice Manager meetings) and national events (CRN events, or relevant conferences). Access was negotiated with prospective practices to attend practice staff meetings or have the research presented to practices by the practice manager. At these meetings, the aims, methods, outcomes and the importance of the research were highlighted to the staff, and they were afforded an opportunity to ask questions (either face-to-face or via email/telephone) after which permission was sought to undertake this research at the GP practice.

After practice level permissions had been granted, the recruitment of practice staff was conducted as follows

2.6.2.2 Receptionists

Receptionists were defined as those reception staff working with practices recruited to take part. The receptionists were approached to participate in two ways, based on the practice size and structure. In smaller practices, participants were approached one-to-one or according to the preferences of the practice/practice management:

- As a group, the researcher recruited receptionists in a group setting, offering information to the receptionist (verbally and in a written format; see Appendix 7),

answering questions from the group and individual members. Following this, each receptionist was given time alone, to choose to participate or not.

- One-to-one, where the researcher offered information (verbally and in written format; Appendix 7) and answered questions directly, and gave the receptionist a chance to decide to participate alone.

Consent forms (Appendix 8) were completed by those that chose to participate immediately prior to data collection.

2.6.2.3 Practice Staff

Access to practice staff (all other staff working within the practice but excluding the receptionist) was negotiated during the initial meeting with staff or the practice manager, and all practice staff were eligible to participate. When the practice consented to participate in the research, the researcher explored the possibility of utilising group meetings to use as data collection points for practice staff focus groups.

2.6.2.4 Patients

Patients where possible were recruited from existing patient panels from the participating surgeries. These panels (45) were already established in practice and ensured that participants were familiar with each other and reflected the surrounding area and users of the practice. Access to these panels was negotiated with the practice managers at the same time as receptionist and practice staff recruitment took place. Permission was sought to speak to the panel members and seek their participation in a focus group.

Where a patient group had not been established or when permission to access this group had been denied, the researcher sought to recruit a group from the patient population of the surgery. To do this, posters and handouts (Appendix 9) were used to encourage people

to volunteer and to contact the researcher for further information. Sampling, therefore, was by self-selection (46).

2.6.2.5 Method

The next section describes the data collection methods employed in this strand of the research, specifically interviews and focus groups.

Method - Interviews

Interviews are one of the key data collection techniques employed in qualitative research. They allow the researcher to go below the surface, explore in detail, and reveal new areas of interest or insight, or new concepts, not only those that were anticipated *a priori* (47). The interview is an exchange of opinions, around a specific topic, involving at least two people (48) and provides an opportunity for participants to present their own response to the research topic. The participant is central to the data collection process, as such meanings and understandings are jointly developed by the interviewer and interviewee (48) through the reconstruction, during the interview, of the interviewee's perceptions and opinions (49).

Interviews were undertaken to allow space and freedom to explore fully and independently the roles and responsibilities from the receptionist's perspective, a perspective often overlooked in existing research (Chapter three), away from other receptionists, practice management or GPs.

Interview structure

Categorised by differing degrees of structure or rigidity, interviews can be highly structured to test *a priori* assumptions (49-52), semi-structured or unstructured with a less rigid interview schedule of topic areas rather than concrete questions and so better able to accommodate divergence (50, 51).

Unstructured interviews

For this study, interviews assumed a largely unstructured format. Though unstructured, no interview can ever be without structure as there are always goals and aims in undertaking data collection and as such, some structure is needed to ensure that these aims are met (47, 49). As such, an interview schedule was developed covering a range of topic areas (Appendix 10), these were not prescriptive nor did they represent a plan for how and when topics should be broached during the interview. Instead, a conversational style was adopted, beginning with an initial open question and allowing for digressions. Digressions can be productive as it follows the interviewee's interests and knowledge (53) and a train of thought which provides novel insight or information, without influence from the interviewer's own opinions (54). For example, some receptionists, when discussing clinically related processes, would digress and discuss their own feelings and worries about undertaking this work.

A substantial benefit of the unstructured interview is that it allows the researcher to clarify or rephrase questions, and use language, symbols, or concepts comfortable for the interviewee, rather than the researcher's own, which may not be understood by the interviewee (47). The unstructured interview allows the researcher to check the meaning with the participants and if needed make changes, and edit or remove questions which are not useful (49).

However, successful unstructured interviews rely on the development of good interview questions, which are open-ended, sensitive, neutral, and not ambiguous clear. These may include questions about behaviours, knowledge, opinions, beliefs, experiences or feelings, and also demographic information (55, 56). For example, the questions such as 'where do you see your role in the next five years', allowed the receptionist to decode and answer the

question as they sought fit and to use their experiences, knowledge, feelings, and ambitions to project a future receptionist role.

Building rapport

Rapport, an important factor in the interview process, needs to develop rapidly within an interview, as time is limited (49). Trust and respect are required for both the interviewee and the data collection, as such a safe and comfortable environment is an essential requirement (49). Building rapport has a number of stages, apprehension, exploration, co-operation, and participation (49, 57-59). Apprehension is related to the ambiguity and oddness of the interview situation, at this stage the aim is to encourage the participant to engage and talk (49, 57-59). Questions must then be open, expansive and non-threatening to encourage participation which is confident and in their own words (53). The exploration phase, involves in-depth description and learning, listening and testing between the participant and interviewer; bonding and increased sharing then occurs (49, 57-59). The co-operative phase occurs as both parties are suitably comfortable and satisfied with the process; they no longer fear causing offence (49, 57-59). Finally participation may occur if the interview lasts long enough or rapport develops rapidly and the participant guides the interview (49, 57-59). Building rapport with the receptionist group was not as difficult as anticipated. The researcher was male within a predominantly female field, and this may have made building rapport difficult. However, the researcher had a non-clinical status, was not a part of the practice hierarchy and so was not a part of the power imbalance between the clinical staff and non-clinical receptionists; or top and bottom of the practice structure. This, coupled with the researcher's willingness to admit ignorance in how the receptionist functions in practice, negated any of the potential effects of gender difference. In this way, establishing the participant as the expert, and the interview as an opportunity to provide an

often-overlooked group, GP receptionists, with a voice, made rapport building much simpler.

The interviewer

A number of issues may affect the process of data collection, it is important for researchers to be aware of and work to overcome or minimise them. Issues may include interruptions, distractions, asking difficult, sensitive or embarrassing questions, interviewer or interviewee stage fright, an unfocused interview, counselling the participant, the introduction of research biases and undertaking a shallow, superficial interview (60). To that end, the supervisory team accessed early transcripts for feedback on interview technique.

Interview procedure

Interviews were conducted with those receptionists at each of the practices who volunteered to take part and covered the work that receptionists had undertaken and topics that had arisen from the findings of the receptionist questionnaire (see Appendix 10).

Interviews were arranged at a time to suit individual receptionist's needs; they lasted between 45 and 60 minutes and were audio-recorded for later transcription. At the start of the interview, the participants were provided with information about the research, the aims of the interview as well as ethical and confidentiality issues (Appendix 7). Any questions were answered, and if the participant was willing to continue, they initialised and signed a consent form (Appendix 8), and the interview began.

Method - Focus Groups

This section will explore the development of the focus group, how it is used and its benefits as well as justifying the use of focus groups in the research, presented in this thesis.

First used as a market research tool, in the 1920s (61, 62), focus groups are an important tool for exploring healthcare phenomena. Later they were adopted as an alternative to the interview, because they moved the researcher into a less controlling or commanding role in data collection (63). Since the 1980s, academic interest in the method has increased (64) and the focus group has been used to explore research questions from an array of disciplines, including those which are health related (65, 66).

More than a group discussion

Focus groups, a group discussion (65) are designed to explore people's views and experiences and allow participants the opportunity to express their feelings, opinions or behaviours (66). However, the focus group goes beyond opinion and views and explores meaning and motivations (67, 68). The group is 'focused', they take part in a joint activity, such as responding to a health education promotion (65). Group interaction is utilised as a part of the research data and this separates the focus group from the umbrella term of group interviews (67, 68); the interaction is an crucial part of the data and is central to a successful focus group (69).

Group dynamics

Group dynamics are then a vital aspect of the process. However changes to the composition, sex, age and socio-economic status of the group, will have an effect on the data collected and as such should be given consideration prior to data collection (68). For example, negative power relationships between participants, in a group of employees and employers may stifle the interaction (64). Additionally, '*de-facto* leaders', may inhibit other members from disagreeing or offering an opposing stance (70), as such group dynamics may be a hindrance. However, focus groups may overcome some of the issues inherent in other

methods, for example the intensity of one-to-one interviews (67, 71) and the group may provide added security for the participants, which will further support disclosure (72, 73).

Assembling the group

A focus group should be relatively homogenous and be between 6 – 10 people (63, 69, 74) who are representative of the target population, sharing characteristics, such as gender, socio-economic background, ethnicity, and age (63). Additionally the group should be of sufficient size to allow for discussion, but not too large to prevent the interaction of groups members (63). However, a homogenous group could lead to the 'polarization of views' (75).

There is debate around the participants' familiarity with each other. Groups of participants not familiar with each other, may encourage wider, more honest and spontaneous responses, while avoiding the difficulties of hierarchy inherent in existing relationships (76).

In contrast, groups of people known to each other, could enable them to better relate and understand each other's comments and, where needed, challenge other group members (65). Existing groups, where trust is already established, may be an advantage when discussing sensitive or personal issues (77). Pre-existing groups were chosen for this research so as to provide a safe, familiar environment to discuss potentially sensitive issues.

The facilitator

An effective facilitator should create a relaxing environment, where the group is encouraged to engage with the discussion (65, 67), moderating without participating and focusing the discussion but not leading and prepared for critical views on the topic (78). One facilitator may not be suitable for all groups, but essentially they should be comfortable with the role, in doing so put the participants at ease (78). The role of the facilitator is complex as they ensure all participants can contribute by encouraging reluctant participants and by

preventing others from dominating the group; creating an engaging and confidential environment. During the focus groups, the facilitator established the ground rules and establishing a confidential environment. Where needed the facilitator, called on members of the group to join in the discussion, and moved the participants on from topics which did not add to the data collection; important given the time limits on the groups.

Focus groups in this thesis

Focus groups with practice staff and patients were used in this research for a number of reasons. Pragmatically due to time constraints and practical considerations interviews with patients and individual practice staff were unfeasible. However, the element of group discussion, dynamics, and negotiation and shared understandings helped to better explore the receptionist's roles and actions from these differing perspectives.

Focus group procedure

Focus groups with the GPs and other practice staff were conducted during the regular established practice meeting, with the permission of the senior management team. At these meetings, information was provided to each participant (Appendix 11), and prior to the start of the focus group, consent was obtained (Appendix 12).

Focus groups with patients were arranged to suit them, and permission was sought to hold these groups within the practice (where possible). Each PPG group was addressed and provided with information about the research (Appendix 13) and offered the chance to ask questions. Those that chose to participate were noted and invited to attend a focus group at a time that was convenient for them (most often prior to or after existing PPG meetings). Participants were again reminded of the aims, as well as the ethical and practical issues, that

the focus group would be audio-recorded, and they were asked to sign the consent forms (Appendix 14).

For both groups, each session lasted between 30 and 45 minutes.

Prior to beginning the discussion, the ground rules were discussed with the group; these included:

- The need for each of the participants to accommodate and to respect the views and opinions of the other members of the group,
- That differences in opinions were normal, and the research looked to gather all of these opinions,
- To discuss differences between participants politely and without judgement,
- To respect the confidential nature of the group discussion, 'what was said in the room stays in the room',
- To be willing to engage in the process and interaction within the group.

The rules would ensure the safeguarding of all of the participants and that the data collected was sufficiently in-depth and covered the range of views of the participants.

The participants were given an initial starting point and asked to discuss, "what is the role of the receptionist". The researcher did not actively participate in the interactions between the participants, but prompted the discussion where needed, moved the conversation on and presented new materials or topics for discussion.

2.6.2.6 Analysis

Data gathered during both the interviews and focus groups were transcribed and exported into NVivo 12 (79). The analysis process began during data collection. Data were collected and analysed, and this informed successive data collection so that the topics for discussion

could be focused, salient points explored and concepts saturated with the participants (80). Thematic analysis (42) was employed as a means of extracting data relevant to understanding the processes of receptionists input into the clinically related process, in turn, this analysis informed the creation and development of the value stream/process maps.

Thematic analysis

The process of thematic analysis (42) employed was undertaken as follows. Each manuscript was subject to open coding. Coding was conducted on each group of respondents separately (i.e. receptionists, GP staff and patients). These processes allowed for the development of initial codes, these were descriptive and based within the data (42). These initial codes were specific to each of the stakeholders and their relative contributions to the practice processes. After the initial coding, codes for each of the stakeholder groups were grouped together conceptually, by the different clinically related roles, generated from the data. Failure points from the stakeholder perspective were likewise aggregated, and sub-themes were identified as many of the clinically related roles had multiple aspects involved in the process. Overall this was an iterative process referring back to the raw data collected to establish the validity of the themes and sub-themes (42).

At this stage, themes were generated for each of the three core clinically related roles that receptionists have; these were providing medical advice/test results, repeat prescribing and finally triage/appointment making. Each theme also contained sub-themes; these surrounded distinct parts of these processes and failure points. After reviewing these themes and in relation to existing research (Chapter three) the focus of the thesis shifted to the triage/appointment making a theme. Both the other two themes (repeat prescribing

and providing medical advice/test results), had undergone extensive review in previous research (41, 81-83) while the input that receptionists have in the process of triage has received little attention (see Chapters three and six).

Process mapping

In the final stage, the analysis informed the development of a process map (23). Drawing on the concept and philosophy of lean (84) (see Chapter one) process mapping involves visually representing the patients' (or healthcare worker's) progress through a system or process (23). The map highlights different steps, resources, personal and time involved and affords an opportunity to explore the efficacy and success of the process, as well as highlighting areas of failure or concern.

Process mapping of triage began with a detailed exploration of the three sub-themes in the triage/appointment making theme. These sub-themes included: initial triage, the receptionist decides, defers (to clinical staff) or seeks support, and potential sources of failure and represented the input of patients, the receptionist and other practice staff (GPs) into the process. These data were used to populate the map. For example, in initial triage, the sub-theme suggested a number of routes into the practice for the patient and early decision making on the part of the receptionist, between an offer of an appointment (if available), diversion to external agencies, deferral to another day or to begin a more complex process of booking urgent appointments. The process continued for each of the sub-themes until an outline map was developed. This map provided scaffolding onto which detailed process information was added, expanding on each section of the process and resulting in a complete, detailed map of triage in general practice. This process was iterative, and moved between the fledgling map, the themes, and the raw data, to ensure the key stages were well developed; the map was comprehensive and was a valid

representation of the data collected. The resulting map (Chapter six) charted the flow of the patient through the triage/appointment making process and the receptionist's decision making and any influences upon that process. The map identifies the points where issues arose both for the patient (incorrect triage) or the receptionists (lack of knowledge/support).

2.7 Ethical considerations

Ethical issues for the studies involved were given significant consideration, and the studies passed both university and NHS/HRA ethical approval processes. Ethical issues are discussed in this section as a whole, but where needed references to specific participant groups are made.

2.7.1 Rights, Safety and Wellbeing of the participants

As discussed, all participants were given both verbal and written information sheets (Appendices 7, 11 and 13) during recruitment. They were informed of the nature of the studies, that participation was voluntary; they could withdraw at any point and remove their data up to one month after data collection. Prior to participation, consent (Appendix 8, 12 and 14) was sought and obtained from each participant.

Participants were unlikely to come to harm during the data collection. Interviews and focus groups were conducted within the practice building, in a separate room where the chance of being overheard was minimal. However, the participant may have encountered difficulty having discussed their work, colleagues or the care they received. To that end, the information sheet directed participants to where support could be accessed. The right to withdraw was not affected and was highlighted to the participants. Information on the complaints procedures of GP practices was also included in the information sheet, for

example, the Patients' Association Helpline and the NHS Choices websites detailing how to make a complaint. Those taking part in focus groups were reminded of the ground rules for participation (discussed earlier in the chapter).

As the research was undertaken within general practice, it is possible that the researcher could have encountered issues or examples of poor and potentially harmful practice, where the participant's physical or psychological health or well-being might have been under threat. In the case of such encounters, the researcher had a responsibility to ensure these were flagged to the relevant members of staff and in the extreme, external agencies. As the researcher did not have a medical background, in the event of such an occurrence they would have sought additional support and guidance from members of the supervisory team (and wider university staff if needed) to confirm that further highlighting of the issues would have been required. With support and input from the supervisory team, details of the issue would have been forwarded to the management within the individual practice or the relevant agency for example 'local safeguarding teams' or the Care Quality Commission (CQC). The participants were informed, within the information sheet and at the start of any data collection; under what situations the researcher would have broken confidentiality

2.7.2 Confidentiality and Anonymity

All participants were informed that they would not be referred to by name but given a code. This code would include information on their position, and research site, for example, the first receptionist in the second site would bear the code would read, **Res01Site2** (for the first GP in the second site the code was GP01Site2 or the first Nurse, N01Site2 or the first patient Pa01Site2).

Audio recordings were downloaded to an encrypted USB drive, prior to departing from the research site. This ensured that if data were lost, it was unreadable, preserving the confidentiality of participants. Data storage was secure as per data protection guidelines (85). Hard copies of participant data and consent forms were stored in a secure and locked location. Digital files were encrypted, with passwords, and likewise stored securely on the University of Birmingham server. Finally, a transcription company, with a good reputation, was tasked with those transcriptions not produced by the researcher, ensuring confidentiality and anonymity.

2.8 Chapter summary

This chapter has described the overall methodology of the research study, designed to answer the aims and objectives of the thesis. A mixed-methods study was divided into two separate strands, and a systematic review of the literature was undertaken prior to beginning the empirical research. Strand one, a large-scale quantitative questionnaire aimed at the GP receptionist and strand two, the qualitative aspect of the project, consisted of case studies in general practice.

A protocol for original funding submission was published (86) and is included in Appendix 15. However, the study undertaken in the thesis differs generally in terms of focus in the qualitative stage (on appointment making/triage), the methodology used (process maps and not value stream mapping) and the inclusion of the receptionist questionnaire.

The next four chapters discuss the results from the systematic review and each of the studies described above, beginning the process of dismantling the negative stereotypes of the GP receptionist (Chapter one) which are so pervasive and often erroneous. The next chapter, Chapter three, is a systematic review of existing literature.

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Chapter Three: Systematic Review

Exploring the clinically orientated roles of the General Practice receptionist: A

systematic review

3.1 Introduction

This chapter, presented in the form of a paper, which has been submitted to the Journal of Systematic Reviews, covers the results of a systematic review. The review meets the first objective of this thesis (chapter one) to establish the parameters of the role of the GP receptionist and aimed to explore the roles of the GP receptionist, in particular, those which may be described as clinically related. The study aimed to explore to what extent the receptionist undertakes these clinically orientated roles and what effects they may have on the patient and patient care.

The systematic search strategy is presented in Appendix 16; the additional files listed at the end of the paper have been included in the main body of the paper for ease. Finally, Appendix 16 included the search strategy employed (Additional materials 1) and appendix 17 includes the PRISMA-P checklist (Additional file 2).

3.2 Systematic Review: Exploring the clinically orientated roles of the General

Practice receptionist: A systematic review

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Keywords: GP Receptionist, Primary Care, Clinical Roles, Triage.....

Abstract

Background

Receptionists are an integral part of general practice and play an important role as the service faces unprecedented levels of demand from patients. The receptionists undertake an array of clinically related roles, which support the service. These include repeat prescribing, communicating blood test results, and prioritising patients for appointments. The review aims to explore, what role of the GP receptionist is within the primary care team, what clinically related roles the GP receptionist undertakes, what is the extent of these clinically related roles, and the effects on the patient and patient care?

Methods

Medline/PubMed, Ovid, Cinahl, ASSIA, Cochrane, EMBASE and Science Direct were searched, and 41 studies were identified. Studies were both qualitative and quantitative and as such, quality appraisal employed specific tools for each type of research. Analysis followed a four-stage method for integrative systematic review, so all studies could be integrated into a comprehensive overview of the literature.

Results

Three major themes were identified, the relationship with the patient, the assumption of administrative and clinically related roles and the receptionist in relation to practice staff and management. Appointment booking, repeat prescribing and clinical information provision were all highlighted as key roles, training was inadequate, and safety and practice liability issues were apparent.

Conclusion

The receptionist's role is key to general practice, assuming as they do clear clinically related roles with implications for safety and liability. However, research in this area is limited, and training guidelines absent. The scarcity of research is a clear limitation; however, further investigation of this visible but invisible role is warranted.

PROSPERO registration no: CRD42016048957

Word Count: 257

Background

The changing environment of general practice

General practice (GP) in the UK is the first and most common point of patient contact with the NHS, providing upwards of 340 million consultations per annum (1). However, England's population is ageing (2), and increasing numbers presenting with chronic and long term conditions (18 million in 2017) (1, 3) are leading to changing models of care. These models involve a growing responsibility for chronically ill patients placed on primary care (4), which, as a result, is experiencing unprecedented demand (5, 6). This pressure on primary care is compounded by a decline in GP numbers, with hundreds leaving the profession and training places remaining unfilled (1). As a consequence, costs are increasing (up 2.3% in 2017) (1) as is healthcare utilisation (7), but not necessarily with better experiences for patients (8).

The receptionist, clinical and non-clinical responsibilities

The general practice receptionist is an integral member of the primary care team, playing an essential role in patient care in the UK (5). Receptionists contribute to the smooth running of practice systems and act as a point of contact, and buffer between patients and a range of clinical staff, in particular, general practitioners (GPs). The increasing pressures on UK general practice require both clinical and non-clinical members of the practice team, including receptionists, to play a role in coping with the current situation (9, 10). Currently, the receptionist undertakes a range of administrative duties, including booking appointments, filing and other clerical tasks (11, 12). They also interact with patients and perform a range of clinically relevant roles such as repeat prescribing, communicating test results and prioritising patients for appointments (13-20). Internationally, some of these clinical roles have been formalised with explicit training provided for example in triaging for

urgent care in Norway and Australia (21-23) as well as screening and prevention in Australia (24, 25). Similarly, in the UK, the Health Education England (HEE) has recently made £45 million available, over a five-year period, to support training for receptionists in two clearly defined roles of clinical significance; firstly the active signposting (care navigating) of patients to the most appropriate sources of help or support and secondly, managing clinical correspondence (26). However, beyond the narrow scope of this training programme, there are no UK guidelines for the training of general practice receptionists in other aspects of their work and much of the training that does exist is largely provided in-house by the existing reception staff (12).

Why this review is needed?

There is a clear need to understand the roles and responsibilities of primary care receptionists as the landscape of modern primary care begins to shift. If receptionists are to extend their role to encompass more clinically related functions, there are clear implications for patient safety and practice liability, as well as for job satisfaction and turnover. In order to provide the appropriate support, training and work environment, to allow receptionists to continue to perform safely and effectively, it is important to understand their existing roles both in the UK and globally, the clinically orientated functions they perform, and the potential implications of these findings for patient care now and in the future (27).

Research Questions

1. What is the role of the GP receptionist within the primary care team?
2. What clinically orientated roles does the GP receptionist undertake?

3. What is the extent of these clinically orientated roles, the effects on the patient and patient care?

Method

Methodology

The review was undertaken following the process for conducting integrative, systematic reviews, developed by Whitemore and Knafelz (28) and the protocol underwent peer-review and publication (27). The initial scoping review indicated a paucity of research in the field and a diversity of methodological approaches. As such, the review includes both qualitative and quantitative research to provide the most comprehensive investigation possible.

Search Strategies

Search strategies were developed in accordance with the SPIDER² search strategy tool (29). Multiple strategies were used to ensure a comprehensive search was conducted (30); these included multiple database searches, keywords, terms and synonyms, and Boolean operators. The databases searched included Medline/PubMed, Ovid, Cinahl, ASSIA, Cochrane, EMBASE, HMCIC, and Science Direct. The search strategy employed terms and alternatives to effectively capture all relevant research for the review. For example, the GP receptionist can be described as a practice secretary or medical secretary, as such terms were used together, and search strings constructed as follows:

- (“GP receptionists” or “Practice receptionist” or “medical secretary”) and (“Primary care” or “GP practice” or GP Surgeon*) and (Role* or Job* or Work or Function!) and (patient* outcomes or patient*satisfaction or patient*)

² SPIDER is alternative search strategy for qualitative/mixed methods research, and stands for Sample, Phenomenon of Interest, Design, Evaluation, Research type (see chapter 2.7).

- (GP receptionist* or Practice receptionist*) and (repeat prescribing) or (clinical information giving) or (test* results or triag*) or (appointment*)

See additional file 1 – for a detailed search strategy

Individual journals were hand searched for relevant articles; these included but were not limited to journals covering primary care research and healthcare research, as well as searching the reference lists of the included articles.

Inclusion and Exclusion Criteria

The review included all published empirical research, using both qualitative and quantitative methods, looking at the role of the GP receptionist. To be included the research had to be undertaken with GP receptionists or medical secretaries, working within primary care settings, though this was not limited to the UK only. Although there may be differences in the structure, funding, and support of medical systems around the world, research conducted within other healthcare models can potentially provide valuable insights into GP receptionist roles; helpful for understanding the situation of general practice in the UK. No limits were placed on the date of publication of the research. The review excluded research not published in English, or which was conducted in primary care settings outside of general practice. In addition, research which detailed results from interventions and discussed isolated roles which are not typical of the receptionist's roles were excluded. Finally, articles that provided commentary, opinion or editorial and which did not speak to the systematic review research questions were not included.

Study selection and quality assessment

Full-text articles meeting the inclusion criteria were retrieved and screened by two independent reviewers (MB and EB) to ensure consistency and resolve potential conflicts. Following the screening, quality assessment was undertaken (by MB & EB) on each of the remaining papers using the CASP (Critical Appraisals Skills Programmes) resource for qualitative research (31), the Quality Assessment Tool for Quantitative Studies (32) and the Mixed Methods Assessment Tool (MMAT) (33). The flow of studies through the various levels of assessment is shown in Figure 1 (34).

Data Extraction

Data were extracted by MB and included publication information (author, contact details, funding sources, date of publication), study characteristics (research setting, design, and method), participant information (number of participants, demographic information, inclusion/exclusion criteria), and outcomes, including, key findings in relation to the current study aims, clinically related roles (those roles which have a clinical or medical aspect related to patient care), the time taken in these roles, and the developments in the role of the receptionist).

Data Management

Results from individual searches were imported into EndNote x7.3.1 (35) and duplicates were removed.

Data Analysis

Data analysis was undertaken through an established process for conducting an integrative review (28). This process has four stages of analysis: data reduction, data display, data

comparison, and conclusion drawing and verification. These stages allowed for data to be extracted from each study, aggregated into a single database and compared across the dataset. Patterns and relationships between the data were recorded as they emerged, and these were used to inform the creation of themes. These themes, in turn, described the existing literature. NVivo 11 (36) was utilised to aid in the analysis. All four authors were involved in discussions about the development of themes. In addition, early explorations of themes were shared with receptionists, at an Economic and Social Research Council event (37), for member-checking (38).

Results

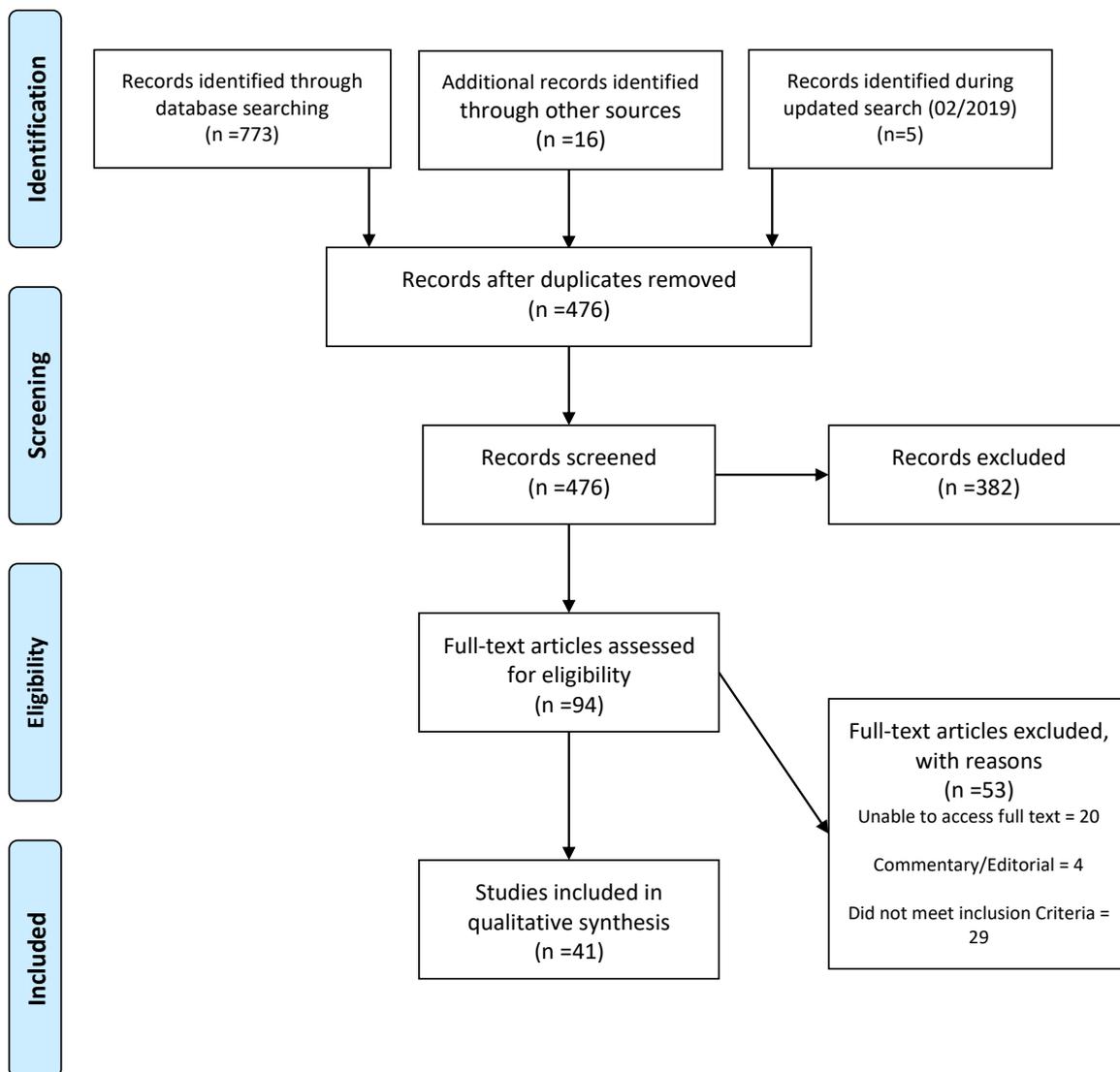
Study selection

The initial database search was conducted in September 2016, 773 records were identified through the initial searches and 16 through hand searching of journals and article reference lists. This search was updated in February 2019, and an additional 5 records were added. After the removal of duplicates, along with the title and abstract screening, 94 records were subjected to a full paper review (Figure 1).

Figure 1: Prisma flow diagram (39)



PRISMA Flow Diagram



From the 94 studies taken forward, 20 were excluded as the full texts were no longer in print, 4 were commentaries, editorials or letters and 29 did not meet the inclusion criteria or were outside the remit of the review.

Forty-one studies were subjected to quality assessment, 29 were assessed using the CASP resource for qualitative research (31), 10 were assessed with the Quality Assessment Tool

for Quantitative Studies (32), and two were assessed with the Mixed Methods Assessment Tool (MMAT) (33). Qualitative research was classified as high quality when the design and methods were robust and appropriate, and the study well justified. For qualitative research, the research was deemed as valuable, when the study design was appropriate and well defined, aims were clearly stated, and analysis was rigorous. All studies were taken forward and included in the review.

Included Studies

Of the 41 studies included in the review (Table 1) the majority (26) were qualitative research designs, 10 used a survey/structured interview design, three were case series/studies, and two employed a mixed-methods approach. In all the included articles the role of the GP receptionist was either the focus of the research (29 studies) or as a part of the practice staff (12 studies) or in relation to a specific function of the practice, for example, repeat prescribing or screening. In total, 32 studies were based in the UK, four in Australia, two in New Zealand, and one each in Norway, the Netherlands, and Denmark. All 41 studies were conducted between 1972 and 2018. Two studies were conducted between 1972 and 1980, two between 1981 and 1990, three between 1991 and 2000, 14 between 2001 and 2010 and 20 between 2011 and 2018.

Of the 41 included studies, 18 reported no application of theoretical frameworks either in the analysis or as a research framework. Seventeen studies applied a theoretical framework to their analysis, employing such techniques as grounded theory (14, 40), constant comparative analysis (15, 41, 42) or ethnography (43-48). Finally, six studies included both a theoretical framework for the analysis and the research overall (40, 43, 44, 49-51).

Table 1: Overview of included studies results

Authors	Year	Title	Country	Method	Sample	Theoretical/ analytical approach	Findings
Buchan I. C. and I. M. Richardson	1972	Receptionists at work. A time study in general practice	UK (Scotland)	Case series	4 GP practices, 12 Receptionists (FTE)	N/A	Filing and sorting, took 42% of receptionists' time, while the phone interactions took 15% and face-to-face interactions with patients took 18%. Some variation between practices
Mulroy, R	1974	Ancillary staff in general practice	UK	Survey	75 GP receptionists	N/A	Demographic information on ancillary staff. 60% were 35 or older, 90% were in post for a year or longer.
Arber and L. Sawyer	1985	The role of the receptionist in general practice: a 'dragon behind the desk'?	UK	Survey	Over 1000 patients in London and South East UK	N/A	Larger practices have more rigid rules and saw increased hostility from patients Young adults and parents reported more antagonism as they more often experience the receptionist as a gatekeeper
Copeman and T. D. V. Zwanenberg	1988	Practice receptionists: poorly trained and taken for granted?	UK (England)	Structured Interviews	70 Receptionists, 20 Practices	N/A	Receptionists are integral members of primary care, 31% did not feel appreciated by their GP, but felt their main role was to help patients

Authors	Year	Title	Country	Method	Sample	Theoretical/ analytical approach	Findings
Eskerud, J, E et al.	1992	Fever in general practice. I. Frequency and diagnoses	Norway	Case Series	General practice patients in 2 rural municipalities in Norway	N/A	Receptionists have a significant role in the treatment of febrile children with 30% of telephone encounters being managed by the receptionist.
Zermansky, A. G.	1996	Who controls repeats?	UK	Qualitative (Interviews/Observations)	50 General Practices	N/A	Practices had inadequate controls in the repeat prescribing process. 68% of repeat drugs showed no sign of being authorised by a GP and 72% had not been reviewed by a GP in the last 15 months
Eisner and N. Britten	1999	What do general practice receptionists think and feel about their work?	UK (England)	Mixed Methods (Survey/Semi-structured interviews)	26 GP practices, 119 (out 150) receptionists responded to questionnaires, 57 receptionists were interviewed.	N/A	Receptionists chose the job to fit in with their lives. Stress was caused by difficult patients and being caught between the GP and patients. Receptionists did not feel part of the practice team or appreciated by the GP.

Authors	Year	Title	Country	Method	Sample	Theoretical/ analytical approach	Findings
Patterson, Del Mar, and Najman	2000	Medical receptionists in general practice: Who needs a nurse?	Australia	Survey	85 completed surveys (represents a 51% response rate)	N/A	Receptionists employed for clerical duties were found to be involved in direct patient assessment, monitoring, and therapy. Clinical work is being transferred to lesser paid, non-clinical staff.
Gallagher, Pearson, Drinkwater, and Guy	2001	Managing patient demand: a qualitative study of appointment making in general practice	UK (England)	Qualitative (Observations)	3 GP surgeries in Tyneside - 13 Receptionists	Grounded Theory	Appointment making is a complex social process; outcomes are negotiated between receptionist and patients. Receptionists require clinical information to legitimise patients requests
Heuston, J, P. Et al.	2001	Caught in the middle: receptionists and their dealings with substance misusing patients	UK (London)	Survey	57 Receptionists in General Practices across south-east London	N/A	Receptionists are important in the management of patients with substance abuse issues, often acting as a buffer between the patient and the GP
Petchey, W. Farnsworth, and T. Heron	2001	The maintenance of confidentiality in primary care: a survey of policies and procedures	UK (England)	Survey	66 Practices responded (61% response rate). 65% were practice managers, 27 % GPS, 8% did not report	N/A	Non-clinical staff are seen to have access to confidential or medical records. Few practices discussed confidentiality with patients and policies need further review to ensure that confidentiality is maintained.

Authors	Year	Title	Country	Method	Sample	Theoretical/ analytical approach	Findings
Perkins, C. Carlisle, and N. Jackson	2003	Opportunistic screening for Chlamydia in general practice: the experience of health professionals	UK (England)	Qualitative (Interviews)	Receptionist and healthcare staff	Thematic Analysis	Receptionists were key to the screening model, however, they felt they were ill-equipped or wrongly located to deal with patients' communication
Infante, F. A. Et al.	2004	How people with chronic illnesses view their care in general practice: a qualitative study	Australia	Qualitative (Focus Groups)	76 consumers in 12 focus groups in New South Wales and South Australia	Thematic Analysis	Receptionists can help to maximise the care of patients with chronic illnesses. Help reduce waiting times because of existing knowledge of the patient's case
Patterson, Forrester, Price, and Hegney	2005	Risk reduction in general practice and the role of the receptionist	Australia	Qualitative (Interviews)	7 Receptionists in Queensland Australia	N/A	The findings highlight a number of significant issues in relation to the potential liability of receptionists, medical practitioners, medical centre owners, and insurers
Meade and J. S. Brown	2006	Improving access for patients - a practice manager questionnaire	UK (NI)	Survey	Practice Managers from 56 practices (94.9% response rate)	N/A	Training was highlighted as an issue with receptionists, in a quarter of participating practices, not having training in patient appointment management.

Authors	Year	Title	Country	Method	Sample	Theoretical/ analytical approach	Findings
Heritage and Jones	2008	A study of young people's attitudes to opportunistic Chlamydia testing in UK general practice	UK	Qualitative (Focus Groups and Interviews)	12 Children between 16 -17 (recruited from school population) 4 participants between 16-18 were (recruited from with the practice)	Long Table Approach	General practice is suitable for opportunistic chlamydia screening, but should not be provided by GP receptionists
McNulty, E. et al.	2008	Strategies used to increase chlamydia screening in general practice: a qualitative study	UK (England)	Qualitative (Semi-structured Telephone Interviews)	10 programme areas, 10 co-ordinators	Interpretative Phenomenological Analysis (IPA)	All practice staff should be encouraged to act as champions of the chlamydia screening programmes through education. Receptionists, in particular, are highlighted as potential champions
Alazari, Heywood, and Leese	2009	How do receptionists view continuity of care and access in general practice	UK (England)	Questionnaire Survey	148 Receptionists 50 Practices	N/A	Continuity of care was a team response and not longitudinal. Receptionist felt that patients would benefit more in urgent cases from seeing a GP on the same day regardless of whether it was their usual GP

Authors	Year	Title	Country	Method	Sample	Theoretical/ analytical approach	Findings
Hesselgreaves, Lough, and Power	2009	The perceptions of reception staff in general practice about the factors influencing specific medication errors	UK (Scotland)	Qualitative (Semi-Structured and Group Interviews)	5 Semi-structured interviews and 1 Group interview with receptionists	Content Analysis	Receptionists have an important role in understanding how medicine-related errors occur. Receptionists rely on GP to undertake tasks relating to the safety issues around medication prescribing.
Hewitt, McCloughan, and McKinstry	2009	Front desk talk: a discourse analysis of receptionist-patient interaction	UK (Scotland)	Qualitative (Ethnographically Situated Discourse Analysis)	Three NHS GP surgeries in Scotland	Conversation Analysis	Receptionists use verbal routines and styles that are task centred, polite and rapport building. However, routines can inhibit resolution to patients' issues when dealing with problem situations.
McKinstry, P. Et al.	2009	Confidentiality and the telephone in family practice: a qualitative study of the views of patients, clinicians and administrative staff	UK (Scotland)	Qualitative (Focus Groups)	10 focus groups with HCPs and administrative staff	Framework Approach	Patients reported concerns about discussions with receptionists being overheard. Confidentiality breaches can be overcome by careful management of the communication processes
de Jong, M. R. Et al.	2011	Who determines the patient mix of GP trainees? The role of the receptionist	The Netherlands	Survey	326 Respondents (68% response rate) GP Trainee Surgeries	N/A	97% receptionists reported often or always assigning every possible problem to GP trainees

Authors	Year	Title	Country	Method	Sample	Theoretical/ analytical approach	Findings
Swinglehurst, T. Greenhalgh, J. Russell, and M. Myall	2011	Receptionist input to quality and safety in repeat prescribing in UK general practice: Ethnographic case study	UK (England)	Qualitative (Ethnographic Case Study)	4 Urban UK General Practices (25 Doctors, 16 Nurses, 4 HCA, 6 Managers, and 56 Receptionists)	Ethnography Narrative Synthesis Interpretive Perspective of organisation	Receptionists make, hidden, but important contributions to quality and safety in repeat prescribing in general practice
Ward and R. McMurray	2011	The unspoken work of general practitioner receptionists: A re-examination of emotion management in primary care	UK (England)	Qualitative (Ethnographic Study)	3 GP Surgeries, 28 reception staff across the 3 sites	Ethnography Intuitive comparative analysis Thematic analysis	GP receptionists perform complex emotional management in providing effective care to patients
Hammond, J. Et al.	2013	Slaying the dragon myth: an ethnographic study of receptionists in UK general practice	UK (England)	Qualitative (Observations)	7 Urban GP surgeries in the North-West of England	Thematic Analysis Constant Comparative Analysis	Receptionists have a difficult task prioritising patients with little time, information or training. Feel responsible for protecting vulnerable patients from those attempting to game the system
Orchard, S. B. Et al.	2014	iPhone ECG screening by practice nurses and receptionists for atrial fibrillation in general practice: the GP-SEARCH qualitative pilot study	Australia	Qualitative (Pilot Study)	14 Semi-Structured interviews, 3 General Practices, 2 receptionists, 1 nurse, 3 GPs and 8 patients	N/A	Receptionists were reluctant to undertake iPhone EEG screening, due to inhibition about approaching patients and uncertainty about communicating screening information to patients.

Authors	Year	Title	Country	Method	Sample	Theoretical/ analytical approach	Findings
Litchfield, I. Et al.	2015	Routine failures in the process for blood testing and the communication of results to patients in primary care in the UK: a qualitative exploration of patient and provider perspectives	UK (England)	Qualitative (Focus Groups)	Patients and staff across 4 primary care practices	Constant Comparative Analysis	Failures in testing and communicating results to patients were found. It was suggested that receptionists handling sensitive data undertake additional training
Litchfield, I. Et al.	2015	Patient perspectives on test result communication in primary care: a qualitative study	UK (England)	Qualitative (Focus Groups)	26 Patients from 4 primary care practices	Constant Comparative Analysis	Frequent delays and inconsistency in the communication of test results were identified by patients. Patients were dissatisfied with non-clinical staff reporting results.
Mellor, R. M. Et al.	2015	Receptionist rECognition and rEferral of Patients with Stroke (RECEPTS): unannounced simulated patient telephone call study in primary care	UK (England)	Mixed Methods (Case Series/Survey)	52 General Practices, 520 Simulated calls for emergency care. 180 receptionists completed questionnaires	N/A	Receptionists correctly referred 69% simulated patients for immediate care. 'Difficult' calls (with only 1 FAST symptom reported) were not immediately referred. Improvement in the knowledge of lesser-known stroke symptoms required.
Neuwelt, R. A. Kearns and A. J. Browne	2015	The place of receptionists in access to primary care: Challenges in the space between community and consultation	New Zealand	Qualitative (Focus Groups)	3 Focus groups, 14 GP receptionists (covering 11 General Practices)	Critical Theoretical Stance Adapted Straussian GT	GP receptionists have the potential to have a positive influence on patients' access to and the acceptability of care.

Authors	Year	Title	Country	Method	Sample	Theoretical/ analytical approach	Findings
Grant, Mesman, and Guthrie	2016	Spatio-temporal elements of articulation work in the achievement of repeat prescribing safety in UK general practice	UK (Scotland/ England)	Qualitative (Observations)	8 GP Surgeries (62 members of staff - GP, Nurses, Manager, and admin staff)	Articulation Work (Strauss, 1985)	Receptionists have a central role in the initiation and safe coordination of repeat prescribing
Moffat, J., et al	2016	Identifying anticipated barriers to help-seeking to promote earlier diagnosis of cancer in Great Britain	UK	Survey	1986 Respondents (54% response rate)	N/A	Dislike of speaking to receptionists about symptoms is endorsed as a barrier to help-seeking behaviours.
Neuwelt, R. A. Kearns and I. R. Cairns	2016	The care work of general practice receptionists	New Zealand	Qualitative (Focus Groups)	32 GP receptionists from Urban and Rural practices	Critical Public Health Lens Social Constructivist interpretive approach	Receptionists saw their roles as primarily a caring role. However, there are competing demands between the patient and the practice which cause work tensions.
Sikveland, E. Stokoe, R. O., and Symonds, J	2016	Patient burden during appointment-making telephone calls to GP practices	UK	Qualitative (Conversation Analysis)	3 General Practices, 2780 incoming calls to the practice	Conversation Analysis	Communicative practices which underscored patient (dis) satisfaction; The patient burden in driving the conversation, with the receptionist, forward was seen as a barrier to the successful resolution of patient issues.

Authors	Year	Title	Country	Method	Sample	Theoretical/ analytical approach	Findings
Stokoe, R. O. Sikveland, E and Symonds, J.	2016	Calling the GP surgery: patient burden, patient satisfaction, and implications for training	UK	Qualitative	3 General Practices, 2780 incoming calls to the practice	Conversation Analysis	Patient burden was noted when the receptionists could not offer alternatives to the patient request or suggest follow up actions. The burden was associated with dissatisfaction.
Wilson, D. Et al.	2016	Service factors causing delay in specialist assessment for TIA and minor stroke: a qualitative study of GP and patient perspectives	UK (England)	Qualitative (Semi-Structured Interviews)	42 patients diagnosed with TIA and 18 GPs (when they were involved in the patients care)	N/A	Receptionists have issues identifying urgent cases of TIA and major stroke were identified as a source of delay in the assessment of individuals with these medical issues
Andersen and Aashus	2017	Reconfiguring diagnostic work in Danish general practice; regulation, triage and the secretaries as diagnostician	Denmark	Qualitative (Ethnography)	Six GP clinics	Ethnography	The receptionist is a broker and shapes, forms and re- configures the patient's entry into the clinical setting, assisting the patient in gaining access to care

Authors	Year	Title	Country	Method	Sample	Theoretical/ analytical approach	Findings
Grant, S. K. Et al.	2017	The role of informal dimensions of safety in high-volume organisational routines: an ethnographic study of test results handling in UK general practice.	UK	Qualitative Ethnography Semi-structured interviews	Eight GP practices 62 general practice staff	Ethnography	Results handling safety took a range of local forms depending on how different aspects of safety were prioritised, with practices varying in terms of how they balanced thoroughness and efficiency depending on a range of factors
MacKichan, F. Et al.	2017	Why do patients seek primary medical care in emergency departments? An ethnographic exploration of access to general practice	UK (England)	Qualitative Ethnographic Case study	Six GP practices in England	Ethnography	Past experience of accessing GP care recursively informed patient decisions about where to seek urgent care, and difficulties with access were implicit in patient accounts of ED use. GP practices had complicated, changeable systems for appointments. This made navigating appointment booking difficult for patients and reception staff and engendered mistrust of the system.

Authors	Year	Title	Country	Method	Sample	Theoretical/ analytical approach	Findings
Grant S. and B. Guthrie,	2018	Between demarcation and discretion: The medical-administrative boundary as a locus of safety in high-volume Organisational routines.	UK	Qualitative Ethnographic Case study	Eight urban and rural general practices in England and Scotland	Ethnography	GPs demarcated receptionists work, defining it as routine, unspecialised and dependent on the GPs clinical knowledge. GPs and receptionists engaged in informal boundary-blurring to safely accommodate the complexity of everyday high-volume routine work.
Brant, H, D Et al	2018	Receptionists' role in new approaches to consultations in primary care: a focused ethnographic study	UK	Qualitative Ethnographic	Eight general practices in England and Scotland	Ethnography	Receptionists have a key role in raising awareness of new consultation approaches to patients while ensuring that the patient receives the correct approach. However, they have little input into the planning and implementation of the new approaches.

Table 2: Studies included in each theme and sub-theme

Theme	Sub-theme	Studies in each theme
Theme One: Accessing Care - the receptionist's interactions with patients	Patient and receptionist communication	13
	The Receptionists as facilitator or barrier to clinician access/primary care services	13, 15, 40, 47, 54, 55, 56, 57
Theme Two: The roles of the receptionist	Administrative roles	11, 12, 15, 17, 40, 44, 50, 54
	Prioritising patients for available appointments	15, 19, 21, 23, 46, 55, 58, 59, 60, 61, 62, 63, 64
	Repeat prescribing	12, 43, 49, 51, 65
	Reporting clinical information	13, 41, 42, 45, 51
	Screening	18, 23, 25, 66, 67
Theme Three: The receptionist's relationships with other general practice staff	The receptionists status in the practice	12, 48, 54
	Managing workloads	12, 40, 68

Characteristics of the GP Receptionist

Six studies described the receptionist as being female, (12, 17, 19, 52-54) and aged between 16 and 68 years old, with an average age range of between 30 and 40 years old (12, 19, 52, 53). Two studies reported the marital status of the receptionist, in one study, 83% were married, widowed or separated (12) and in the other 90% were married (53). Only one study reported on ethnicity, describing 73% of respondents as white (19).

The occupational characteristics of the receptionist were discussed in four studies; in three studies, the majority of respondents had been in post for 5 years or more (12, 52, 54). Part-

time positions appeared to be the most prevalent working practice, with few working full time, which was classified as 38 hours or more (12).

Theme One: Accessing Care: The Receptionist's Interactions with Patients

The receptionist was seen as the first point of contact for patients/users of general practice (44), and they determine what access to the healthcare team is appropriate and required, and so act as an intermediary between patient and GPs (52) and the practice as a whole. Furthermore, they manage the tensions between the patients' demands and expectations with respect to what the practice can and is able to deliver (50).

Patient and Receptionist communication

Quality of communication between the patient and receptionist was shown to have a number of mediating factors, including age, 20% of patients 25-34 and 19% of those aged 35-44 reporting three or more difficulties in communicating with the receptionist, whilst 11% of those 55 and over, reported three or more issues. As well as practice size and organisational structure, with larger practices having more difficult interactions than smaller or solo GP practices (13).

The Receptionist as a Facilitator or Barrier to clinician access/primary care services

Communication quality is key in considering the receptionist's role in facilitating access to general practice. The receptionist has been described as the intermediary through whom most contact between patients and general practice is made, forming a buffer between the GP and patient, and making judgements as to access (13). In this regard, according to Andersen and Aarhus, the receptionist fulfils the role of a 'broker' acting as an intermediary

between the patient and the GP (46). The receptionist shapes the patient's entry into the clinical setting, assisting the patient in gaining access to care (47).

A study in 2013 described how receptionists saw it as their role to 'protect' the GP from patients who might be 'gaming the system', or who were demanding or difficult (40), and by extension protecting the most vulnerable of patients (15). A survey, in 2016, found that 40% of patients considered the receptionist as a barrier to accessing care, and highlighted their dislike of having to tell the receptionist the nature of their illness or symptoms (55). Another recent study employed ethnography in reception areas of six general practices. Patients reported feeling that they must 'get through' the receptionist first before they are able to access care (46). This has potentially serious implications; the receptionists may be an inadvertent barrier to accessing care, especially in earlier cancer diagnosis (55).

This same discretionary power can also help facilitate access as receptionists' existing relationships with patients and knowledge of their illnesses and needs, mean they are better able to judge the urgency of the need for medical care (56). For example, Alazari, Heywood, and Leese (2007) explored the continuity of care in a survey of 148 receptionists (from 50 practices in a large city in Northern England) (57). They described the role of receptionists in maintaining continuity of care, balancing perceptions of patients need with the availability of specific doctors. When routine, 93% (n=139) would offer the patient their usual doctor on a different day. However, when requests for care perceived as urgent the majority of receptionists, 93% (n=139), felt it was more important the patient see any doctor on the same day rather than wait to see their usual doctor.

Ultimately it appears that the assumed dyad of patient and GP does not reflect the actual experiences of navigating general practice where the receptionist is a significant component of that relationship (13).

Theme Two: The Roles of the Receptionist

This theme describes the range of roles the receptionist fulfils in general practice, both administrative and clinically related such as triaging or signposting.

Administrative responsibilities

Nine studies discussed the receptionist's administrative duties in detail. A number of tasks were described, including handling and sorting mail, filing reports, preparing notes and administering medical records and letters, manning the reception desk and telephone line, as well as checking patients in for appointments (11, 12, 15, 17, 40, 44, 54).

Receptionists believed that undertaking these administrative tasks contributed to the smooth running of the practice for clinicians and patients alike (50) and saw themselves as a general 'factotum' (12). However, administration tasks were seen as routine and the least satisfying, though the majority of their work. In contrast to their involvement in patient care, which they considered the most rewarding, but smaller aspect of their role (40).

Clinically Orientated Responsibilities

Prioritising patients for available appointments

Receptionists pursue numerous appointment related activities, including requests for routine, urgent or emergency appointments, for home visits, as well as, registering attendance, re-arranging appointments and telephone calls to resolve queries. These

appointments could be initiated by the practice through the receptionist, either as part of managing a chronic condition or otherwise the result of an abnormal test that requires a consultation with a care provider (58, 59). Alternatively, they may be driven by the patient. In either case, appointment booking may be seen as a negotiation between the patient and the receptionist (15) with the responsibility placed on the receptionist to move the discussion forward towards a mutually successful resolution, one which suited the needs and preferences of both the patient and practice (58, 59).

In balancing the demand from patients, with limited appointments, receptionists triage patients and determine the level of urgency. This process is underpinned by tacit knowledge gained from the experience of specific patients or more broadly from performing this role previously (46). Receptionists encounter situations where their decision-making skills are directed towards serious cases. In Australia, a study found that while there were guidelines for triaging patients, these were ignored, and the receptionist used their own judgement based on their perceptions of need or urgency (23). Elsewhere, training has been conducted to raise awareness in receptionists about a specific illness or set of symptoms. In Norway, this has involved the process of treating febrile children (21). In the UK, in 2015, a study examining the recognition and referral by receptionists of patients simulating stroke found that in 39% of cases, the patient was referred incorrectly (19). However, when more of the F.A.S.T (recognising the signs of stroke and taking action, Face, Arms, Speech and Time) (60) symptoms were provided, to the receptionist, the likelihood of being correctly referred increased (19). Receptionists also showed similar issues identifying cases of Transient Ischaemic Attack (TIA) and major stroke in patients, and this was a source of assessment delay for urgent care (61).

Receptionists require information about patient symptoms to make informed decisions, but patients are often reluctant to provide this information (55, 62). Receptionists felt it was wrong to ask patients for further information, to provide appropriate appointments, more so in urgent cases (57%, n=84), than in routine cases (42%, n=62) (57). A survey of 66 practices conducted in a large urban city in the UK reported that only 14% of receptionists would routinely ask for this information (63). Additionally, there is evidence that confidentiality in waiting areas (62) and the confirmation of personal information or medical information (64) or also issues which make the patient more reluctant to provide further information.

Ultimately, in negotiating the conflicting priorities of the practice and patients, it is up to the receptionist to drive the conversation and find a compromise (58, 59). Despite this, only one paper explored training in this area; finding that as few as 7.5% of practice managers reported that the receptionist had training in appointment booking (64).

Repeat Prescribing

Repeat prescribing, “prescriptions issued without consultation for patients on long term treatment” (65) is reported as a time-consuming activity (12) and one which is now undertaken electronically, yet requires considerable input from the receptionist, which is mostly invisible (43). In performing this function, the receptionist undertakes several key steps. These include the management of the repeats system, the printing of correct prescriptions, obtaining GP signatures and dispensing the prescription to patients. The GP often relies on the receptionist to ensure that the prescription is accurate and needed. (49) Furthermore, to save time, the GP expects the receptionist to appropriately issue

prescriptions for signing without the need for further review by them unless the repeat had been specifically flagged up (43).

A series of interviews with receptionists in eight GP surgeries in the UK explored repeat prescribing safety. Findings showed that the process was managed by the receptionist with the GP, making the final authorisation in signing the prescription. The receptionist bridges the gap between requests for repeat prescriptions and information held on the system. The receptionist uses their own judgement by comparing requested medication with medication prescribed, (65) and even, at times, bypassing the safety programs of the computer system to issue the prescription (43, 65).

Grant, Mesman, and Guthrie (2016) conducted an ethnographic study with eight UK GP practices, and their results underline the key role that the receptionist plays in the initiation and safe management of the process of repeat prescribing. Just over half of the practices (5/8) had protocols to cover the process. However, while policies existed, these were often not followed, and the receptionists themselves were not always aware that they existed (49, 51).

Reporting of Clinical Information

An ethnographic study of eight UK practices by Grant et al. (2017), detailed the roles that receptionists play across the management of clinical, laboratory and imaging results and the concomitant safety implications (45). Receptionists handled the distribution of incoming clinical results to clinical staff. These decisions were based on who requested the test or if unavailable to other appropriate GPs; these decisions were based on tacit knowledge the receptionist had of the patient history and the surgery's internal norms and practices.

The receptionist is involved in contacting the patients when a follow-up to clinical testing was needed. The receptionist made decisions as to the most appropriate communication method, based on their interpretations of the patient's situation and urgency (45). Furthermore, the GP defined their role in the reporting of clinical information as chiefly around complex or unusual test result and so no routine or normal test results. These cases were outside of the protocol the receptionists had and to avoid the back-and-forth liaising with the GP, patient, and the receptionists, the GP would step in and handle the reporting themselves (51).

Research conducted by Litchfield et al. (2015) explored the reporting of blood test results, by using a series of focus groups with patients and staff at four general practices (41, 42). Receptionists were shown to be involved in the reporting of blood test results to patients by working from scripts produced by GPs. The patients reported similar concerns over the appropriateness of receptionists communicating this information to them, especially when there may be serious consequences. Problematically, with a rigid script, they are unable to offer further information and answer the patient's questions, making the process potentially stressful (42). Additionally, the research discussed previously by Arber and Sawyer (1985) supported findings that patients did not feel that it was the receptionist's role to offer health advice, just 6% of the sample, reporting actually asking for health advice (13).

Screening

The receptionist is potentially well placed to provide several clinical services to the patients in the waiting room. In an Australian study, a qualitative pilot study explored the use of iPhone electrocardiograph (iECG) by practice receptionists. Fourteen interviews were

conducted with practice staff, and patients and results showed that this is an area where they are able to provide additional clinical support to the practice as they felt at ease with using the apparatus, but inhibited and nervous in approaching patients or explaining the screening to them (25). Three-quarters of solo GPs in a separate survey, in Australia (n=84), reported that only a few or none of their receptionists were competent to take ECGs from patients, provide first aid, assess and give advice to patients over the phone, triage or take vital signs (23). However, 60% of the same sample reported not employing a nurse because of financial issues and the lack of need as their roles were assumed by the receptionist (23).

The receptionist offers testing or screening kits to patients booking into the surgery and responding to patients' requests for information (18). Perkins, Carlisle, and Jackson (2003), conducted research into opportunistic screening for chlamydia in general practice. Interviewing 53 general practice staff (14 practice nurses, 13 GPs, 15 receptionists and 11 practice managers), they concluded that although the inclusion of the receptionist in delivering the screening was a factor which underscored successful screening practices, more training was needed to ensure they were able to adequately inform patients about information regarding chlamydia screening (66). This was because receptionists reported that they sometimes felt they were drawn into conversations with patients regarding chlamydia that they did not feel equipped to have (66). Patients also expressed concerns with receptionists' involvement citing issues of confidentiality and feelings of intimidation at being asked out of the blue to undertake a screening as their main concerns (67).

Theme Three: The Receptionist and General Practice Staff

This theme describes the interaction of receptionists with other general practice staff, their perceived feelings of appreciation and support, and their assumption of responsibility for managing the workloads of clinical staff.

Receptionist's status within the practice

In a recent ethnographic study, Brant et al. (2018) explored the role of the receptionists in the adoption of new approaches to consultations. Interestingly, while the receptionists were expected to be involved in the delivery of the project, by facilitating patient knowledge of the new systems, they were not offered the opportunity to be involved in either planning or implementation (48).

Copeman and Zwanenberg (1988), employed structured interviews with 70 receptionists in England and found that over 30% of receptionists, felt unappreciated by their practice overall (12). Just 31% of receptionists felt appreciated by the GPs specifically (12) and the majority of respondents in another study did not regard themselves as being on the same team within the practice as the GP/clinical staff (54). Furthermore, they generally felt that the GPs did not understand the complexity of the receptionist's role, though they did appreciate the recognition from GPs regarding their work (54). However, another study with receptionists, using questionnaires (n=150) and semi-structured interviews (n=20), reported the positive influence of the practice manager on supporting the receptionist (54).

Managing workloads

Receptionists have a role in the management of GPs' time and work within the practice (12, 40) including training programmes for GPs. A survey in the Netherlands (in 2011) described

how the receptionist ensures that trainee GPs see a wide range of patients and medical cases (68).

Discussion

Summary

Our review describes the role receptionists play in three domains; 1) accessing care which includes the nuanced relationship with patients, peers, and management; 2) the array of administrative and process driven roles they undertake and 3) organisational relationships describing the receptionists in relation to other practice staff and management. Receptionists were found to be predominantly female, white, middle-aged and working part-time (12, 17, 19, 52-54). In the majority of studies, the description of receptionist duties was not their main focus (11, 12, 15, 17, 40, 44, 54). A range of clinically related duties centring on specific responsibilities has been reported, such as appointment booking; repeat prescribing or relaying clinical information to patients (15, 16, 41-43). This would suggest a consistent focus on these roles as important to general practice. More recently, evidence has emerged regarding the appointment or emergency appointment booking processes (45, 49, 51). There are safety issues for patients and medico-legal implications for the practice, with the receptionist undertaking these roles with implicit clinical responsibilities without adequate training (19, 23, 43, 45, 49, 65).

The role of the GP receptionist within the primary care team

The receptionist is the first point of contact for patients, occupying both the physical and conceptual front of the practice; often seen as a 'gatekeeper' (13) or 'broker' (47) through which access to GPs is made or negotiated. The receptionist does not seek to deny access to

care, but to negotiate with patients to ensure they access the most relevant source of care and effectively manage the capacity and resource of the practice.

Despite the apparent importance of their role, one study described how receptionists did not feel valued by their practice management (12, 54), and in another that two-thirds of receptionists surveyed did not feel they were members of the same practice team as clinical staff (12, 54). These perceptions may develop as they are expected to undertake work, with minimal input into the planning or implementation of that work (48). The receptionist is still seen primarily in terms of their administrative duties (11, 12, 15, 17, 40, 44, 54), but acknowledging that the receptionist undertakes clinically related tasks is potentially problematic as they are not trained, registered or indemnified to undertake these potentially complex roles.

General practices have an established hierarchy, and receptionists' perceptions of being undervalued or under-appreciated could be seen as rooted within their position at the bottom of this structure (12, 48, 54, 69-71). A more complete and accurate understanding of their role by practice management may help receptionists to feel more appreciated within the practice and identify ways in which receptionists can be supported in their work.

The clinically orientated roles of the GP receptionist

The research reviewed showed that receptionists undertake a number of roles which have clinical implications, these include repeat prescribing, clinical information management and provision, screening and triaging patient for appointments (15, 16, 41-43). The contribution receptionists make to clinically related duties is often invisible or overlooked by practice staff and patients (43, 49, 51, 65).

Training may in part ameliorate some of these issues and an established, visible protocol covering the clinically related tasks the receptionists undertake would help define the boundaries of their work and where the responsibility for patient safety and care lies. However, general practices are independent organisations, and so funding for training and support is often the responsibility of the practice itself. However, practice costs have increased while funding has decreased (1), which perhaps explains the preponderance of in-house training.

The potential effects on the patient and patient care

Potential safety issues with existing receptionist roles are identified particularly around appointment booking/triage and repeat prescribing. During appointment booking, there is a conflict between managing the booking system, limited appointment availability and the need to ask why the patients need an appointment. There may be reluctance on the part of the receptionist to seek information to help them make decisions about patients need while booking appointments (42) and the patient may feel that seeking this information falls outside of the remit of the role of the receptionist (57). The ultimate result is that the triage process has potentially serious implications for patients seeking medical care and again medico-legal implications for practices. There is evidence that receptionists in the absence of either vaguely described or poorly established protocols rely on their own judgement and knowledge of patients to suggest a course of action and can overlook or misinterpret important clinical clues or information (23); giving incorrect advice to patients (19).

The receptionist manages the repeat prescribing process, from submission to the final GP signature (43). They do this in line with formal regulations and policies around repeat

prescribing. However, there are informal processes, learned through interaction with staff, and the context of the individual practice, which may supersede formal processes (69). The reliance of GPs on the receptionist to check and validate the prescription, (43, 49) opens up serious questions about responsibility and safety.

Receptionists of the future

In the context of the current population diversity within the UK, it is essential to understand the characteristics of the individuals undertaking these roles and how they reflect the population they serve. Traditionally middle-aged, white women working part-time around childcare, it is important to understand if the demographics of the receptionist are changing and the impact this may have on their role. A greater understanding of the parameters of their role as well as how their work is designed and organised is missing from the current literature. Such an analysis would highlight the extent of their role in practice. In particular, there is a need to understand the place of receptionists in the changing way in which patients are triaged. Although receptionists have been central figures in the process for decades, new models of triage and care navigation are being introduced. However, little is known about how these are impacting on receptionists and the discretionary power they have traditionally wielded.

Limitations

We utilised data from 41 studies the first conducted in 1972. Though some (11, 13, 53) were conducted before the introduction of much of the technology that supports receptionist roles today, however, the fundamental nature of the work has not changed. The receptionist undertakes appointment making in much the same way. However, the

pressures placed on them in light of the extensive general practice workloads and the limited availability of appointments (5, 6) means that there are greater implications for receptionists undertaking these roles.

The review included international research, from Australia, New Zealand, Norway, and the Netherlands. Nine of the 41 studies reviewed were from outside of the UK, and different countries may have different approaches to general practice and the roles of the receptionist. In New Zealand, for example, the receptionist is charged with the billing of patients and chasing unpaid bills (40), and this may affect how they discuss or rank the duties they undertake. However, these international studies may be suggestive of the potential direction of the expansion of the role.

Additionally, while the search strategies were robust and comprehensive, we cannot conclusively state that all research relevant to the research questions has been included in the review.

Conclusion

Despite the central importance of the general practice receptionist's role in the UK and the intense and increasing pressures general practice faces, there is a limited amount of existing research focusing on the receptionist and no established national training guidelines. The receptionist has to some extent been overlooked by both the research community (with some exceptions) and the healthcare system and as a result little is known about the GP receptionist, within the context of the modern general practice in the UK. This is a concern given the continued ad-hoc delegation of a number of complex clinically related roles to them, with the concomitant potential safety implications for the patient and medico-legal

implications for the practice. Further investigation of this highly visible but overlooked role, is not only warranted but essential.

List of Abbreviations

ASSIA – Applied Social Sciences Index and Abstracts

BMJ – British Medical Journal

CASP - Critical Appraisal Skills Programme

CINAHL - Cumulative Index to Nursing and Allied Health Literature

GP - General Practice

GPs – General Practitioners

MMAT – Mixed Methods Appraisal Tool

NHS – National Health Service

PRISMA - Preferred Reporting Items for Systematic Reviews and Meta-Analyses

SPIDER - Sample, Phenomenon of Interest, Design, Evaluation, Research type

UK – United Kingdom

Declarations:

Ethics approval and consent to participate

Not Applicable

Consent for publication

Not Applicable

Availability of data and material

Not Applicable

Competing interests

The authors declare that they have no competing interests

Funding

This work is supported by The Health Foundation grant number 7452. The funders had no input in developing this protocol.

Authors' contributions

MB wrote the initial and final draft and IL, SG and NG provided comments, suggestions, and amendments. These were addressed in the final version, which was approved by all.

Acknowledgments

The authors acknowledge the contribution of Dr. E Bates (EB) as the second reviewer for the screening and analysis process

Authors' information (optional)

Additional File Information

File Name: Additional file 1_MedlineSearchStrategy.docx

Title of data: Systematic Review – Medline Search Strategy

Description of data: the additional file contains the search strategy to be employed for the systematic review.

File Name: Additional File 2_Table 1 Overview of Included Studies Results.docx

Title of data: Table 1: Overview of Included Studies Results

Description of data: the additional file contains table 1, too large to be included in the main body; this table contains information relating to each of the studies included in the review. Presented in chronological order, and containing information on the author, year, title, location, method, sample, theoretical approach and findings.

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3.3 Chapter summary

The systematic review collected together all of the current research surrounding the GP receptionist. Overall the receptionist was shown to be female, white, married and middle-aged and has a clear input into a number of clinically related processes, which in turn may have consequences for patient safety and care.

As a result of this systematic review, the stereotype of the 'dragon behind the desk' (13) starts to break down; there are obvious pressures, competing interests, and demands placed on the receptionists which such perceptions do not take into account. The next chapter, (Chapter four), builds on the gaps highlighted by this review and presents the results from a questionnaire of GP receptionists; representing the first time such a questionnaire has been conducted in the last fifty years. As a result, the receptionist in general practice is provided with an opportunity to clarify their perceptions of their role within the practice.

Chapter Four: Results 1

General Practice Receptionists, Visible but Invisible: The Forgotten Workforce

4.1 Introduction

This chapter covers the results from a questionnaire of general practice receptionists. Building on the gaps elucidated in the systematic review, a purposefully designed online and postal questionnaire (see Appendix 4) explored who modern GP receptionists are, what roles they have, the type of training they undergo as well as their satisfaction with various aspects of the role. Questions on the role of information technology were included in the questionnaire. However, they are not presented here, as these questions did not align with the aims of this study and will be presented in future publications. The chapter is presented as a paper.

Additional materials 1, the GP questionnaire is located in appendix 4.

4.2 General Practice Receptionists, Visible but Invisible: The Forgotten Workforce

Michael Burrows, Sheila Greenfield, Nicola Gale, Francesca Walsh, and Ian Litchfield

Introduction

General Practice

General Practice in the UK has developed extensively over the last 60 years, since the inception of the NHS. Developing from the single-handed practice within the GP's home to larger practices with multiple GPs, and now the 'super-practice' housing a multi-disciplinary team within a purpose built medical centre (1-3). A constant throughout all of these changes has been the practice receptionist. However, the current number of receptionists, in general practice, is not clear. In 2014 there were 93,037 admin staff in primary care (4). However, primary care is a broad definition covering general practice as well as dental care, pharmacy, and walk-in centres, as such the number will not accurately reflect receptionists in general practice.

The GP Receptionist

Receptionists are the most visible member of the workforce in UK primary care (5), located as they are at the front of the practice; both physically in reception and conceptually as a gatekeeper or communication hub (6-8). As a result, negative perceptions of the receptionist abound, they are the 'dragon behind the desk', or a busy body whose role it is to bar access to care (9)

General practice, over the last 15 years, has seen significant increases in workload without similar increases in investment in the service (3, 5, 10). General practice now copes with the

demands of an ageing population, the transfer and management of patients with multiple chronic/co-morbid conditions, a focus on prevention and health checks (11-13) and a more diverse (14), informed population, with greater access to health/medical information via the internet (15). As a consequence, the role of the receptionist needs to meet the demands of the current patient population and healthcare context; however, there has been relatively little recent focus on who they are and what they do.

The job of the receptionist

Some of the studies which discuss the receptionist's role are over 20 years old, carried out between 1972 and 1999 (16-18) and focus almost exclusively on their administrative roles. However some receptionists are now more frequently called upon to formally undertake a number of clinically related duties (defined here as those which have input into clinical processes or which can directly affect the patient's health or care), for example telephone triage or appointment making, managing repeat prescribing and providing clinical information to patients (8, 19-33). This has resulted in a widening of the scope of the receptionist's role bringing with it important implications for patient safety and care (22, 23, 32, 33). Recent research has explored a number of clinically related roles, (8, 19-33) and whilst more up-to-date (though some are still around 20 years old) these studies have examined them as discrete aspects of the role rather looking at the role overall. Additionally, these studies often include no reference to the receptionist's perspectives on how they undertake these roles.

Demographic information and psychological characteristics of GP receptionists

There are a few studies which have explored receptionist demographics as the main focus of their research (17, 18, 34, 35). These studies show the receptionist to be female, middle-aged, married and white. However, it is important to note that, these studies are over 20 years old, conducted between 1974 and 1999, and as such, it is unclear how this reflects the current workforce. Research shows that other receptionists are seen as sources of support and satisfaction, but, support and appreciation from the GP and practice manager are far more complex, and their influence on the receptionist can be positive or negative (17).

Staff retention (another metric which is unknown in the case of the GP receptionist), the successful undertaking and completion of duties (36) and the physical and psychological health of the worker (37) are all underpinned by job satisfaction. However, research exploring the receptionist's satisfaction with their role is almost non-existent.

Training

Despite the importance of the receptionist's multi-faceted and expanding role, it is unclear what training current receptionists receive and how appropriate they feel it is. Only three articles have explored training in some detail (18, 38, 39), carried out between 1989 and 2006, they show that training is often in-house, provided by existing staff and seen as inadequate by receptionists themselves. More recent research (19, 29, 40, 41) while not focusing solely on training, by implication, suggested the need for receptionists to have further training in specific areas, for example, to recognise stroke symptoms (29).

This paper reports on data collected from a questionnaire of GP receptionists in England in 2017, which aimed to update the current understanding of the receptionist's social and occupational characteristics, the support they receive and their attitudes towards the role.

Method

Materials

A five section questionnaire, with 11 questions, was purposefully designed to explore the characteristics of the receptionist and enquired about their training, role content, and self-reported job satisfaction, as well as their perceptions of the importance of the role, the way it is valued by their colleagues, practice managers, and GPs. Questions also covered demographic information, including protected characteristics, which were in line with the 2010 Equality Act requirements (42).

Questions about the practice were included to locate the responses within the context of their working environment (large, medium or small practices) (43) and also geographically to locate their practice nationally. Responses to the questions were in the form of nominal (yes/no) answers, Likert scales, checkboxes and nine open text boxes (see additional material 1 for the full questionnaire). A 'prefer not to answer' response was also provided. Questions regarding ethnicity were coded in line with the ethnic categories given in the 2011 census (14).

Sample

All GP receptionists in England were eligible to participate. There were no exclusion criteria. According to the convention, the sample size was calculated using a 95% confidence interval

and a margin of error of .5. Based on existing population data (4) a sample size of 383 was necessary to accurately reflect the population of GP receptionists.

Procedure

The questionnaire was designed as an online questionnaire (hosted by Bristol Online Survey, BoS) and a postal questionnaire. GP receptionists were recruited via a number of methods. These included disseminating the link via relevant organisations (Health Education England), the In-Contact bulletin (a newsletter for General Practices across the West Midlands), clinical commissioning groups (CCGs) across England), and directly via the University of Birmingham's affiliate GP surgeries (those which are medical student teaching practices). Postal questionnaires were sent to 100 practices, randomly selected from a list of all operating practices in England (44). In both online and postal questionnaires, the participants were provided with an information sheet (requiring an agreement before continuing) and the full questionnaire. Ethical consent for this study was provided by the University of Birmingham ethical review process (ERN_15-1175). The questionnaire was opened and ran from September 2016 until September 2017.

Analysis

Reliability analysis was carried out on the items that made up the satisfaction section of the scale, comprising 8 items (please see additional materials 1), to ensure that each of the items measured the underlying construct of satisfaction. Cronbach's alpha showed the satisfaction items of the questionnaire were highly reliable, $\alpha = .89$.

After the data collection period ended, data were exported from the BoS system directly into SPSS (version no 24). The analysis included basic descriptive statistics and frequencies for data collected.

Multiple regression was performed to explore the relationships between ratings of satisfaction, appreciation, and support as well as to identify the best predictor of satisfaction. Three factors were chosen, administrative duties, overseeing repeat prescribing and support from practice GPs, as both administrative duties and repeat prescribing are key receptionist roles, and also the importance of the support they receive from GPs, both identified from the literature, (16, 18, 23, 24, 33).

In order to explore the effects of the length of time in service on satisfaction, importance and appreciation a between-subjects analysis of variance was performed on the two groups, those who had been in the role for up to five years and six years and above. This division was chosen, as it represented a natural split in the participant group, half of whom reported being in the post up to five years.

The questionnaire also contained nine open text boxes, to explain, clarify or develop responses beyond a binary choice or scale. Open text boxes covered training (what training was needed and issues with access), defining clinically related roles, explaining satisfaction scores, how the receptionist perceives their role and to clarify the extent to which they feel appreciated by the practice management and GPs. These were analysed thematically (45), and three themes were generated from the data: the receptionist's role, interaction with patients and the receptionist relationships with other members of the practice.

Results

Receptionist demographics

70 participants completed the questionnaire (16 postal and 54 online responses). A summary of the full demographic data can be found in Table 1. The results indicated receptionists socio-demographic characteristics do not appear to have changed significantly since the 1970s. Receptionists were still white (n=68, 97.2%) female (69, 98.6%), married or in a civil partnership (n=34, 49.3%) and aged 40 and over (n=38, 56.7%). No respondent reported other gender identities or that birth sex differed from their gender. The majority of the sample were heterosexual, (n=68, 95.6%) and over half gave their religion or belief system as Christian (n=35, 51.5%). Two (2.9%) respondents reported having a disability. 4.3% (n=3) reported no qualifications and 27 (38.6%) reported GCSE/CSE (Table 1).

Table 1: Participant demographics and occupational characteristics

Demographics				
Gender Identity % (n=70)				
Woman		Man		
98.6 (69)		1.4 (1)		
Age Range % (n=67)				
18-28	30-39	40-49	50-59	60+
20.9 (14)	22.4 (15)	16.4 (11)	29.9 (20)	10.4 (7)
Marital Status % (n=69)				
Single		Living with a partner		Married/civil partnership
37.7 (26)		13 (9)		49.3 (34)
Disability % (n=68)				
Yes		No		
2.9 (2)		97.1 (66)		
Sexual Orientation % (n=68)				
Heterosexual	Gay woman/Lesbian	Bisexual	Other	
95.6 (65)	1.5 (1)	2.9 (2)	0	

Religious Belief % (n=68)							
No Religion	Christian	Muslim	Other				
45.6 (31)	51.5 (35)	1.5 (1)	1.5 (1)				
Ethnic Background % (n=70)							
White	Pakistani	Other					
97.1 (68)	1.4 (1)	1.4 (1; Italian)					
Highest Level of Education % (n=70)							
No Qualifications	GCSE/CSE	Further Education	A Levels	Bachelor's Degree	Post-Graduate Qualification		
4.3 (3)	38.6 (27)	27.1 (19)	15.7 (11)	11.4 (8)	2.9 (2)		
Occupational Characteristics							
Time in post % (n=69)							
0-5 Years	6-10 Years	11-15 Years	16-20 Years	21 Years +			
50.7 (35)	23.2 (16)	14.5 (10)	5.8 (4)	5.8 (4)			
Respondents Practice Size % (n=69)							
Small	Medium	Large					
5.8 (4)	55.1 (38)	39.1 (27)					
Geographical range % (n=66)							
West Midlands	South	South West	East Anglia	North West	North East	East Midlands	South East
45(30)	14 (9)	9 (6)	14 (9)	8 (5)	4 (3)	3 (2)	3 (2)

*as a result of rounding some figures do not equal 100

Half the sample reported being in the post between 0 and 5 years (n=35, 50.7%), only 4 (5.8%) had been in post for 21 years and over suggesting that retention might be an issue with the role. The majority 55.1% (n=38) worked at medium sized practices, 39.1% worked at a large practice, 4 (5.8%) were from small practices (43). Sixty-six receptionists provided their postcodes. There was a broad representation across England, but the largest number of respondents (45%, n=30) were located in the West Midlands, further data are summarised in Table 1.

Receptionists' duties

Participants were given a list of duties generally undertaken by the receptionist derived from existing research and asked to indicate which they considered to be their main duties, by ticking all that applied (Table 2).

Table 2: Receptionist's indication of their main duties

Role	N	%
Administration duties	67	95.7
Arranging appointments	67	95.7
Talking to patients (in any capacity)	66	94.3
Dealing with difficult patients	63	90.0
Repeat prescribing	43	61.4
Reporting test results	42	60.0
Other roles (defined below)	31	44.3

Administration duties, arranging appointments, talking to patients and dealing with difficult patients were the most commonly reported duties. Fewer, though still the majority, reported repeat prescribing (61.4, n=43) and reporting test results (60%, n=42). Other roles include liaising with hospitals, pharmacies, and other external agencies (7.7%, n=11) and rota management (4.2%, n=6); just one reported testing blood pressure and urine (n=1) and chaperoning patients (n=1).

Respondents were provided with a general definition of clinically oriented tasks:

“Roles that you believe involve the need for medical knowledge or information, arranging urgent appointments or repeat prescribing.”

They were asked to indicate and then to provide details (in an open text box) on any of their roles/duties which met this definition. Over half of the sample (57.4% n=39) reported they would define some of their duties in this way.

Table 3 is an overview of what the receptionists reported these roles to be and is grouped by similarity ordered by prevalence.

Table 3: Self-Reported clinically related duties

Clinically related Duties	Number of respondents	% of respondents
Triaging patients when booking appointments	14	36
Adding new medication (subject to GP approval), amending prescriptions	9	23
Reporting test results, changes in medication or diagnosis	6	15
Answering general medical queries, discussing medication with patients	5	13
Dealing with discharge paperwork	2	5
Chaperoning patients	2	5
Testing blood and urine	1	2

Training

All but one respondent reported receiving training for their role, (n=69, 98.6%). 56.5% (n=39) reported training in-practice and by external agencies, 30.4% (n=21) reported only in-practice training and 13% (n=9) reported only external training. Training centred on customer service (n= 51, 72.9%), telephone (n=45, 64.3%), and medical administration skills (n=41, 58.6%). Less than half were trained in medical terminology (n=30, 42.9%) or basic triage (n=18, 25.7%). Those who reported other training (n=12, 17.1%), described basic CPR, or various safeguarding issues (Table 4).

Table 4: Training content reported by the respondents

Training Content	N	%
Customer Service	51	72.9
Telephone Skills	45	64.3
Medical Administration Skills	41	58.6
Handling Difficult Patients	41	58.6
Dealing with Complaints	38	54.3
Communication Skills	38	54.3
Medical Terminology	30	42.9
Assertiveness	24	34.3
Basic Triage	18	25.7
Other	12	17.1

Lack of time (37.1%, n=26) and funding (20%, n=14) were the most common reasons given for preventing respondents from accessing training. Lack of support from practice managers (n=5, 7.1%) GP partners (n=4, 5.7%) and lack of relevant training (n=10, 14.3%) were also reported. 41.2% (n=28) were highly or just satisfied with the training, just over a third, 38.3% (n=26) were either unsatisfied or very unsatisfied with training, 20.5% (n=16) were neither satisfied nor unsatisfied.

Importance, Satisfaction, and Appreciation

Receptionists were asked to rate their perception of the importance of the role of the receptionist, on a scale between 1 (highly important) and 5 (highly unimportant). The majority, 95.7 % (n=66), classed the role as very important or important, just 2.8% (n=2) classed the role as unimportant or very unimportant. Almost half of the sample were unsatisfied or highly unsatisfied (n=31, 45.6%) with their role.

Respondents were also asked to provide a rating of satisfaction with elements of their job (Table 5) selected based on the most important aspects of the role suggested by existing literature. Overall respondents generally were highly satisfied or satisfied with

administrative duties, triaging, support from practice managers and GPs, repeat prescribing and dealing with difficult patients.

In terms of the receptionist's self-reported appreciation, 42.9% (n=30) felt appreciated or highly appreciated, and 32.8% (n=23) felt unappreciated or highly unappreciated by their practice.

Table 5: Ratings of overall satisfaction with the role and with different aspects of the receptionist's role

	Highly Satisfied	Satisfied	Neither Satisfied nor Unsatisfied	Unsatisfied	Highly Unsatisfied
Overall Satisfaction with role % (n)	12.9 (9)	15.7 (11)	24.3 (17)	32.9 (23)	11.4 (8)
Administrative Duties % (n)	41.4 (29)	20.0 (14)	10.0 (7)	12.9 (9)	15.7 (11)
Triaging for urgent appointments % (n)	20.9 (14)	25.4 (17)	25.4 (17)	14.9 (10)	13.4 (9)
Support from practice GPs % (n)	27.5 (19)	18.8 (13)	24.6 (17)	14.5 (10)	14.5 (10)
Support from Practice Managers % (n)	22.9 (16)	25.7 (18)	17.1 (12)	17.1 (12)	17.1 (12)
Repeat Prescribing % (n)	32.8 (19)	22.4 (13)	20.7 (12)	13.8 (8)	10.3 (6)
Difficult Patients % (n)	18.6 (13)	21.4 (15)	32.9 (23)	18.6 (13)	8.6 (6)

Exploring Satisfaction

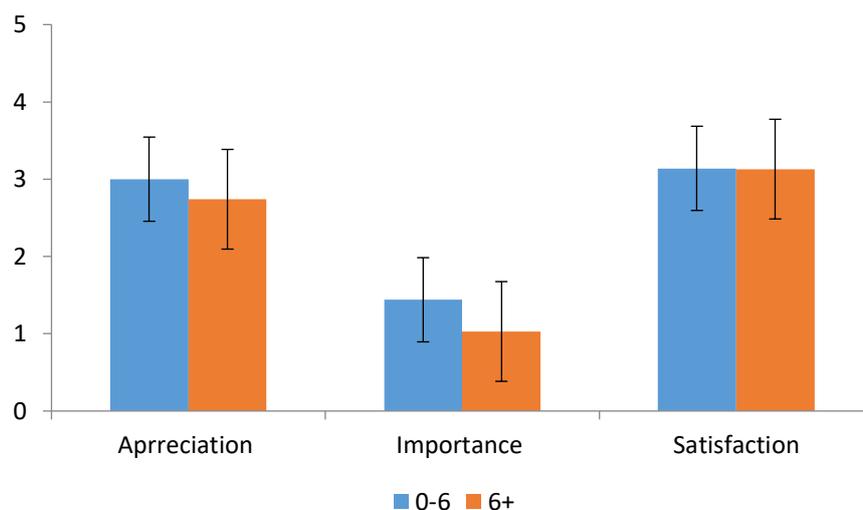
The standard multiple regression model revealed that the three predictors, administrative duties, support from practice GPs and overseeing repeat prescribing accounted for 43% of

the shared variance in satisfaction, $F(3, 52) = 14.86$; $p < .001$. The strongest predictor of satisfaction was support from practice GPs ($\beta = .65$, $p < .001$). The remaining predictors, administrative duties ($\beta = .14$) and overseeing repeat prescribing were not significant ($\beta = .11$).

In addition there were significant positive correlations between overall satisfaction and appreciation, $r(68) = .609$, $p < .001$, as well as between appreciation and support from practice GPs $r(69) = .694$, $p < .01$ and practice managers $r(70) = .665$, $p < .01$. These were significant factors in the receptionist's feelings of appreciation.

Results revealed (Figure 1) no difference either in satisfaction rating between those in the role for less than six years ($M = 3.12$, $SE = .21$) and those in the role for six years or more ($M = 3.13$, $SE = .22$) $F(1, 64) = .00$, $p = .98$, or with the appreciation rating ($M = 2.97$, $SE = .21$) ($M = 2.75$, $SE = .21$), $F(1, 64) = .552$, $p = .46$. Results did however show those in post for 6 years or less scored significantly less on perception of importance of role ($M = 1.44$, $SE = .93$) compared to those in their role for more than 6 years ($M = 1.03$, $SE = .18$), $F(1, 64) = 6.04$, $p < .05$. This may indicate that longer the receptionist occupies the role; the more important they come to view it.

Figure 1: Mean rating for appreciation, importance and satisfaction



*1 = highly satisfied - 5 =highly unsatisfied

Findings: Open Text Boxes

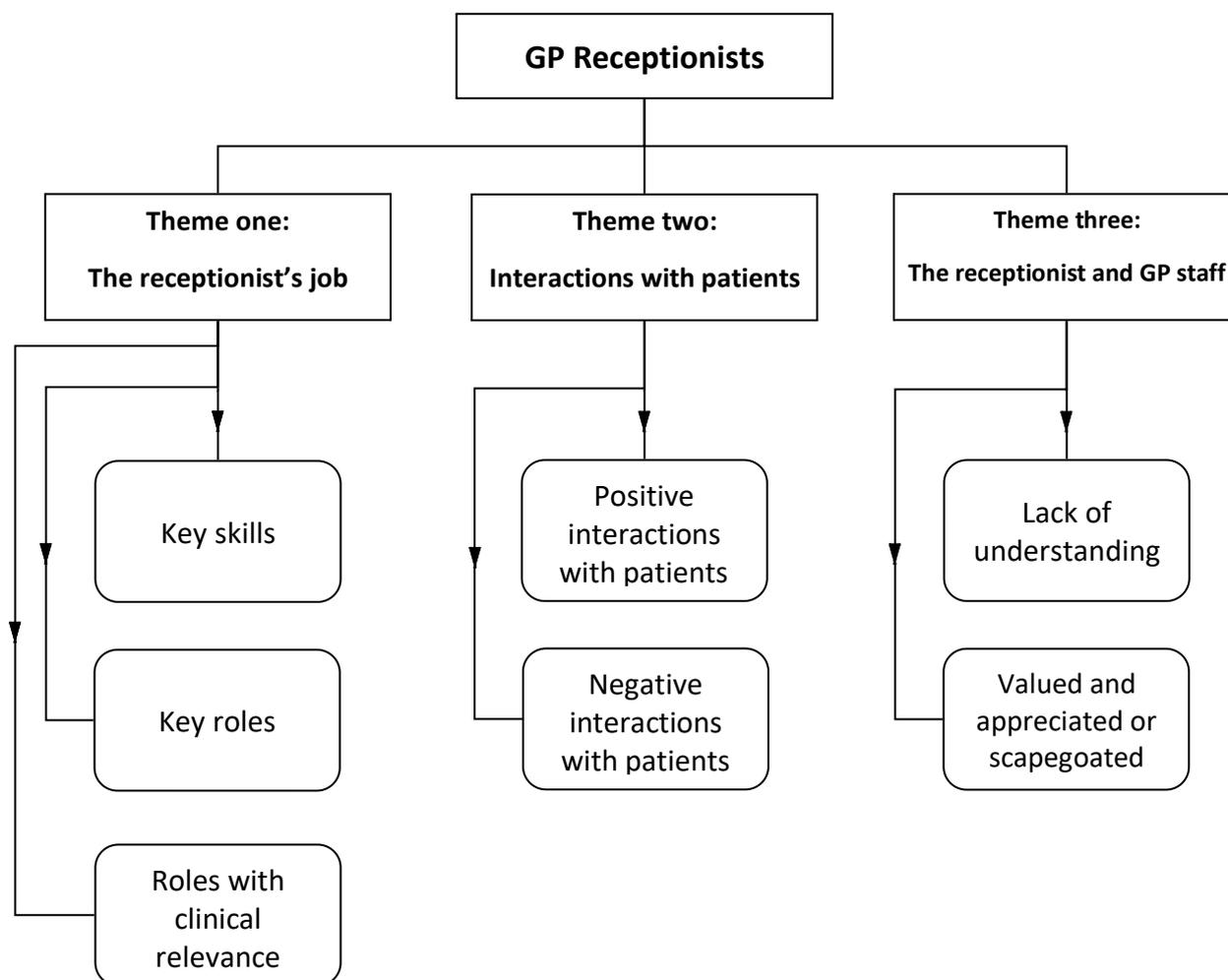
Nine open text boxes were included in the questionnaire. Table 6 shows the number of respondents to each text box alongside those who could have provided comments. Data from open text boxes was collated and thematically analysed (45), and three key themes (with sub-themes) were identified (Figure 2), including the receptionist's job, their interactions with patients and relationships with other practice staff and GPs. The analysis of the open text boxes provides important insight into the current role of the GP receptionist and supports and enhances the statistical analysis, providing a deeper exploration for the data reported in the previous section.

Table 6: Number of respondents for each open text box

Open text box	Number of response (n=70)
Other training providers	9 (n=9)
Other training content	12 (n=12)
What training would they like	6 (n=6)
Issues preventing access to training	4 (n=4)
Other main duties reported	25 (n=31)
Self-reported clinically related roles	35 (n=39)
Self-reported satisfaction	57 (n=68)
Self-reported sense of importance	60 (n=69)
Self-reported sense of appreciation	70 (n=70)

Each theme is presented using the participant's text to reflect the range of views that were expressed and to support the themes identified. Where participant's responses have been aggregated together, no identifiers are given. However, the number of participants making the response is given; single direct quotes are, however, attributed to the participant.

Figure 2: Thematic map - showing themes and sub-themes



Theme one: The receptionist’s job.

This theme centres on the job of receptionists, and covers their self-reported skills, key roles, and roles with a clinical dimension.

Key skills

The receptionists reported an array of skills they needed to contribute to the day-to-day running of the practice and consisted of skills relating to knowledge and understanding, “...knowledge of the practice and procedures and services...”, as well as communication, “...good communication skills...” interpersonal skills “...confidence and compassion...”, and

practical skills “...*the ability to multi-task...*” Given the receptionists’ position as patient-facing in a highly demanding and busy practice, it is not difficult to appreciate why good communication, multi-tasking, and interpersonal skills might be seen as the most essential of skills.

Key Roles

Acting as a ‘*gatekeeper*’ (21 references) or ‘*the first point of contact*’ (41 references) and ‘*the first line of defence*’ (5 references) were mentioned as key roles for the receptionist by the majority of the sample. While these three concepts have much in common, representing the patient’s first’s access into the system, both gatekeeper and the first line of defence suggest that interactions with patients can be seen as an adversarial process; the receptionists are defending the system.

The receptionists conceptualised their role within the practice as one of support to the patients attempting to access services and the GP or clinical staff in managing workloads. They stated that:

“We help patients obtain what they need from the surgery...” and *“...to help patients with all the help and support they need.”* **(R03)**

That they are... *“Saving clinicians time by doing admin work.”* **(R03)**

Or that they *“... filter out a lot of patients by dealing with their enquiries which saves GP time. We also book patients with the correct clinician; sometimes the nurse is more appropriate, also saving GP time.”* **(R24)**

The receptionists here seem to suggest that their role is to facilitate patient access, which might seem to contradict the notion of 'gatekeeper' and 'first line of defence'; however the receptionist's filter-out patients (a clear gatekeeping activity) and direct them to other services. This suggests that neither gatekeeper nor facilitator seems to be adequate conceptualisations of the role the receptionist has.

However conceptualised, the receptionist is a buffer between the GP and the patient. As the 'gatekeeper', the first point of entry or facilitator, the receptionist clearly acts as the communication hub for the practice.

"We are the communication gateway from clinicians to patients, we are key to the running of the surgery." (R01)

"We have to liaise between patients, GPs, nurses and other healthcare providers effectively and sometimes under a high degree of pressure." (R16)

Reflecting the need for good communication and interpersonal skills, the notion of the receptionist as a communication hub is a core role. The receptionist liaises with patients and GPs and with GPs and other clinical staff and external agencies. As a part of this role as a buffer or communication hub, they manage the needs, demands, and expectations of these diverse groups.

They are, *"...balancing the needs of the patients and clinicians, triaging, making sure appointments are used to everyone's advantage..." (R48)*, and *"We have a big responsibility being a receptionist. Trying to keep the patients happy, GP's, nursing staff, other colleagues and yourself." (R04)*

The receptionist is a key figure in the patient, GP and receptionist triad, as clearly the dyad of patient and GP does not seem to be an accurate reflection of practice. In this role, the receptionist juggles many competing demands to make sure that all parties are suitably supported and care is delivered in appropriate settings.

Roles with clinical relevance

Receptionists were asked if they believed any of their duties had a clinical dimension. An open text box was provided to expand on their answer and to provide examples of what clinically related work they undertake. From the responses, it was clear that they included tasks that fall under the heading of medical administration as well as patient-facing clinically related roles.

Medical administration roles which the receptionists reported as having a clinical dimension included:

'Coding patients new to the surgery (R03, 36), 'inputting all data from hospital letters and deciding whether to forward those on to the GP or not' (R25, 26) as well as, 'typing referral letters.' (R04, 25, 29, 33, 61)

Undertaking these roles required the receptionist to make decisions around the coding of medical information or whether information warranted GP attention. Such decisions might require a degree of clinical or medical information, and the receptionists themselves reported that familiarity with medical terminology would help to undertake these roles.

Repeat prescribing is also a medical administration task which, according to the receptionist, is clinically related as they are involved in:

“...assessing whether a prescription requested as urgent is definitely urgent before forwarding to GP,” (R07) or “amending prescription medications,” (R34) and “adding new medication (subject to drs approval).” (R37)

Additionally, the repeat prescribing process was reported as complex, requiring significant knowledge of the impact of a number of variables on the prescription. As such repeat prescribing requires,

“...a certain amount of knowledge to ensure that incorrect medications are not prescribed. And that certain medications cannot be taken together. Patient condition awareness and what is suitable for them.” (R24)

It is clear why the receptionists reported repeat prescribing as a clinically related function, as it requires knowledge of medication, patient history, and making decisions of need during the process.

Patient facing clinically related roles were also reported as tasks, for example, triage or appointment booking (16 references). The respondents stated:

‘...taking telephone calls and booking in patients,’ (R02)

or “Very basic triage to determine urgency of apt[ointment], whether on the day or future, or how quickly within a day - determining whether GP or more urgent care is needed - determining whether a tel[ephone] call is needed or f2f [face-to-face] apt[ointment].” (R49)

The appointment booking process requires the receptionists to make decisions which have clinical implications, for example, around patient need/urgency and appropriate sources of

care. However, there was some indication that this is not seen as a part of the receptionist's job but was difficult to avoid, stating that:

"...decisions of urgency are often made based on the information given as it's impossible not to." (R22)

Providing medical information was another example of patient-facing clinically related roles. This information was provided, either in the form of test results (8 References) or in answers to queries regarding medication or general medical issues (6 references). In some cases, they provided medical advice to patients, suggesting that they were:

"Talking to patients and advising them on medical issues," (R19)

or "discussing medication with patients," (R22)

Or "answering general queries concerning clinical information from records." (R22)

This would suggest that receptionists may overstep the boundaries of their role, by offering support, and responding to questions from patients, this was indicated in the data:

"We are often asked for medical advice by patients but obviously in most cases it's not appropriate for us to help." (R48)

It is clear that there are boundaries to the functions of the receptionist, however, in practice, it might not be easy to police and stay within those bounds, as the line between the administrative and clinically related functions is blurred. In fact, two receptionists reported undertaking basic medical testing with patients (testing blood pressure and urine samples). These are not complex tests, but the question of the suitability of the receptionists to undertake those remains.

Theme Two: Interactions with patients

This theme covers the receptionist and their interactions with patients, including the positive features of working with patients, as well as the difficulty with abusive patients, patient demands and the patient's perception of the receptionist.

Positive interactions with patients

The receptionists in a number of instances reported that they saw working with the public as a rewarding and positive aspect of their role, stating:

"I enjoy speaking to patients and sorting out appointments," or "that it is a rewarding job especially when you know you have helped a patient obtain what they need from you." (R10)

In fact, helping people was often cited by the receptionists as a source of enjoyment and satisfaction with the role:

'I enjoy the job and like helping patients.' (R50) And *'I just love my job helping people, especially when they are most at need.'*(R20)

Negative interactions with patients

However, there were negative features involved in interacting with patients. Receptionists routinely have to deal with demanding or abusive patients, they:

"Bear the brunt of the patient's frustration" (R68)

and that, *"Some patients can be demanding and aggressive with reception, but as soon as they see their GP they are compliant and polite."* (R24)

Receptionists cope with demanding and potentially aggressive patients and do so in ways they perceive to be very different from the GPs. Patients can and do act more aggressively towards the receptionists perhaps as they see them as less involved in or important to their care.

Theme Three – The Receptionist and GP practice staff

This theme discusses the receptionists in relation to the practice and their colleagues. Covering the perception of poor understanding of the receptionist's role, the support the receptionists receive, and the appreciation they feel from the practice management and GPs. As well as negative feelings of scapegoating, as the receptionists feel their role is not understood and they are at the bottom of practice hierarchy.

A lack of understanding

A number of respondents reported that there was a lack of understanding about the role and workload of the receptionists among their colleagues, especially the practice GPs, stating:

“Some colleagues do not understand the work pressures we have; others do not appreciate the workload. In my opinion some people see our role as very black and white.” (R05)

And, *“I don't feel that GP partners understand or value what works goes into the admin side of the practice,” (R42)*

as well as, *“I don't feel most of the GPs have any idea how much we help them. The nurses, managers and admin staff are more aware”. (R48)*

This perceived lack of awareness and understanding of the nature of the receptionist's role, especially from GPs is important. Feeling undervalued or that a contribution (as vital as the receptionists) goes unseen may have an impact on the satisfaction and retention of receptionists.

Valued and appreciated or scapegoated

While the data suggests a lack of understanding about the role of the receptionist, receptionists felt appreciated by the practice management and GPs (29 references), valued and supported (though their pay was reported as an issue; 4 references);

"I have been thanked and praised in my role," (R50)

And, "I feel the GP's appreciate the work we do," (R16)

And "Very appreciated and supported by all staff members." (R19)

However, more references were made which suggest the sample also feel undervalued, not respected, lacking in support from management and GPs and most interestingly they felt that they were scapegoated, held to account for mistakes, but not praised (32 references).

"We get little or no appreciation for a job well done but will always be held to account if we make a mistake or misjudge a situation," (R44)

Or "Occasionally it feels like the buck always stops with us." [we are the] "bottom of the heap!" (R59)

And, "no praise, only blame. sometimes mistakes of gps shifted on to clerical staff." (R69)

This is important, feeling unsupported is one issue, feeling actively scapegoated or held to account for mistakes but not successes is another and as this is the receptionist's perception, a more detailed exploration is required.

Discussion

Summary

The findings represent the first time since the 1970s that the demographic make-up, working practices, and duties of GP receptionists have been the main focus of research, rather than a by-product of receptionists participating in other research projects. Our sample showed the receptionist to be a middle-aged, white woman, working part-time, with an array of administrative or clerical roles as well as a number of self-reported clinically related duties, including appointment booking, repeat prescribing and providing information to patients.

In addition, the receptionist's satisfaction with various aspects of their roles was explored. Satisfaction overall was generally low and perceived support from the practice manager, and GPs plays a significant part in these ratings, with support from senior members of the team being more meaningful.

Finally, the training the receptionists reported, and its content was explored. Administration, communication or customer service skills were reported more often than clinically relevant skills.

Results in context

GP receptionist Demographics

In our study receptionists were still more likely to be white, middle-aged females (6, 18, 34), this may reflect a general trend in the demographics of receptionists or just those who completed our questionnaire; with 70 participants it is difficult to be conclusive. However, if this trend is reflected within the wider receptionist population, it is an important finding, as the patient population now is far more diverse (14). In areas of high ethnic diversity, a lack of ethnic representation at the practice, especially at the entrance to the practice, might be a barrier to accessing care. Potential barriers may include, the need for translation of verbal and written communication (46) as well as cultural differences and a lack of culturally specific knowledge (47), such as booking female patients with male GPs, or stereotypical attitudes towards ethnic minority groups. As well as practice and organizational factors relating to complex systems of access, and communication styles (46), these may all act to bar access to ethnically diverse patients.

Based on the findings from this research and the existing literature (6, 18, 29, 34), the role of the receptionist was and remains particularly gendered (48). It was originally undertaken by the GP's wife or female relation, and later by married women seeking part-time work to accommodate childcare. Women historically have been cast in supporting activities in medicine. Prevented from entering the profession, they were sidelined to 'less professional' roles, such as midwives or nurses, with stringent limits and demarcations placed on those roles (48). The receptionist's role encapsulates this idea of a less professional, supporting role and therefore is characterised as a female role. This may account for the lack of men who undertake the role of the receptionist; just one man completed the questionnaire.

Satisfaction

The job satisfaction of GP receptionists has been largely overlooked in the existing literature (17, 18). The receptionists reside at the bottom of their practice structure, which is not only at odds with the centrality of their role, as the first point of contact at the practice (5), but undermines the contribution that receptionists make to the practice. This is often overlooked or invisible to both practice staff and patients (24, 30, 33, 49) and input into planning or implementation of their own work is often minimal (50). Both praise and positive feedback are clearly important (17) however receptionists often do not feel appreciated by their practice or senior management (18) nor did they feel that the complexity of their work was understood (17). Dissatisfaction with their roles may well be rooted in this conceptualisation of the receptionist at the bottom of the practice structure, overlooked and invisible. This is a vitally important factor as satisfaction and appreciation underscore retention and staff turnover in healthcare (51). Given the central importance of the receptionist's role (5) at a time of great demand (5, 10), losing trained and experienced staff would be a significant blow.

The roles of the GP receptionist

Administrative duties define the receptionists' role, and while technology may have changed how receptionists undertake these duties, electronic booking, and filing systems replacing paper-based resources, the duties themselves have not significantly changed since the inception of general practice (16, 18). The receptionists also undertake clinically related duties, which include triage/appointment booking, repeat prescribing, and provision to patients of clinical information (19-24, 33, 41, 52-54). It is clear that the receptionist undertakes these roles, potentially without adequate training (24, 29, 32, 33, 41, 49). For

example, few receptionists report training underpinning appointment booking (38). As such there may be important patient safety and care implications rooted in this inadequate training (23, 24, 32, 33, 41); for example, a lack of symptom knowledge may cause inaccurate triage and delay treatment (29). Previous literature is in places over 20 years old; however, findings from this research suggest similar training gaps, in medical terminology or basic triage.

Strengths and Limitations

Various response formats were used including binary choice, Likert scales, and open text boxes. This allowed for the exploration of important factors (demographics, workload/disposition, training, and satisfaction) of the role statistically with a group of receptionists. At the same time, the open text format generated qualitative data that brought a greater, more in-depth examination of these key concepts. Providing an understanding of how the receptionists viewed their work, exploring and explaining what factors supported or undermined their satisfaction with their roles. Together the results provided a richer understanding of what it means to be a receptionist in modern-day practice.

In the postal questionnaire to receptionists (See appendix 4), for question six (On a scale of 1 – 5 overall how satisfied with your job as a GP receptionist are you?), instructions for the scale were omitted. This may have affected the responses to this question. However, the instructions were the same across the questionnaire and the omission did not occur in the online version from which the majority of responses came. Respondents to the paper version may have responded differently but this issue was confined to the 15 paper

responses. Furthermore, as the Cronbach's Alpha, suggested there was high internal consistency between all of the measures of satisfaction, indicating a consistency in the participants' responses.

While the questionnaire collected data from an array of practice sizes and locations across England, and so reflected a range of general practice environments, only 70 receptionists completed the questionnaire; falling short of the calculated sample size. However, this is based on the best population data available (4) for administrative staff in primary care and was likely to be an overestimation as this includes administrative staff in pharmacy, dentistry, and optometry.

Practice emails are difficult to obtain (there is no single national list), and other means of dissemination all involved the practice GPs or managers which represented an additional barrier to recruitment. Practice management may overlook the importance of the role (24, 30, 33, 49) or be mindful of the potential medico-legal implications of receptionists undertaking clinically related tasks, and as a result not disseminate the link to their receptionists. GP receptionists could, therefore, be classed as a 'hard to reach' group, and this may account for the low response rate (55). It is also possible the questionnaire did not appeal to the receptionist, that they felt that they did not have time, or they were fearful of completing the questionnaire owing to their lower status in the practice.

Implications for practice

Our findings indicated the potential need for further training to support receptionists to undertake the clinically relevant roles they have safely and effectively, as current training is centred on administrative or clerical skills. However, there are potential barriers to training and time and funding were the most widely reported, which may prevent additional training

from taking place. Health Education England (HEE) (56) have already established a £45 million fund to train receptionists for two discrete functions, which are clinical correspondence and signposting for patients. This recognises a deficit but perhaps falls short of what is needed to fully support receptionists in practice.

Training, however, may not be the only means of enhancing the role. As we have seen, the role is still highly gendered, ethnically bound and potentially overlooked. As such, formalising or professionalising this role may encourage men or diverse ethnic groups to view this role as a potential career. In addition, it would provide further support for those in the role to formally expand their duties, competencies and knowledge, while at the same time enhancing the receptionist's satisfaction with the role. A potentially more professionalised role might encourage a reconceptualization of the role on the part of the public, moving away from the stereotype of the "dragon behind the desk" (9) and highlighting the receptionist as important in general practice as facilitators and not gatekeepers.

Conclusion

This study provided the first attempt to directly explore the roles and demographics of receptionists since the 1970s. Their duties encompass the traditional administrative roles but also self-reported clinically relevant roles. These are roles for which training appears, at times to be inadequate and unsatisfactory; with medico-legal implications for the practice and patients. Further training and professionalising of the role could ameliorate a number of these issues. Future research should seek greater participation from receptionists to confirm the current findings. In addition, further exploration of the cognitive, informational and training demands of their clinically related roles would be warranted, to better understand

how these roles function in practice for the receptionist, what is required to effectively undertake these role and as a result, whether training needs are being met.

Funding: This work is supported by The Health Foundation grant number 7452.

Ethical Approval: Ethical approval was granted by the University of Birmingham's ethical board (ERN_15-1175).

Competing Interests: The authors declare no competing interests.

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4.3 Chapter summary

This chapter addressed the first objective of this thesis (Chapter one), exploring the receptionist in modern general practice for the first time in up to 50 years. The findings suggest that receptionists appear to have remained the same demographically; in the patients surveyed, they are still more likely to be female, married, middle-aged, and white. Furthermore, while undertaken differently in modern general practice, the receptionist's administrative duties form the core of their role. Receptionists conceptualised their work as having a clinical dimension for which training is perhaps insufficient. Findings presented in this chapter, accord with those of the systematic review (Chapter three).

Overall there is more to the GP receptionist, the work they undertake, the importance of their roles and their interactions with patients, than the crude 'dragon behind the desk' stereotype allows. In addition, this chapter has highlighted some of the challenges that receptionists face in terms of their perceptions of being appreciated within the practice, let alone being cast in this stereotype by patients.

The next chapter (Chapter five), explores the parameters of the role further with a focus on how the receptionist's job is designed and what effect this might have for the receptionist and the patient.

Chapter Five: Results 2

**A quantitative assessment of the parameters of the role of receptionists in
modern primary care using the work design framework**

5.1 Introduction

This chapter builds on the findings of the previous chapter and presents findings from the Work Design Questionnaire (WDQ; see Appendix 4). This represents the first time that this metric has been used with GP receptionists. The WDQ is a 21 point validated questionnaire, covering various aspects of work design. Data collected from 70 participants are presented, explored, and implications drawn and discussed. This chapter has been written in the form of a paper, which has been submitted for consideration in the peer-reviewed journal *BMC Family Practice*.

Additional material 1, the WDQ is found in Appendix 4.

5.2 A quantitative assessment of the parameters of the role of receptionists in modern primary care using the work design framework

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Abstract

Background

General practice faces unprecedented demands as the UK population ages and care complexity increases. Amidst these increased pressures, the receptionist continues to fulfil key administrative and clinically related tasks. Their role is pivotal in the successful and safe functioning of the practice yet our understanding of the precise parameters of the role, in terms of receptionist's relationship with their clinical and non-clinical colleagues, their organisation and the cognitive load of their multiple responsibilities is unknown.

Aim

Quantitatively assess the various characteristics of receptionists in UK primary care using the validated Work Design Questionnaire.

Design and Setting

A cross-sectional survey design was employed with receptionists randomly sampled from general practices across the UK.

Method

The Work Design Questionnaire (WDQ) is a 21 point validated questionnaire, divided into four categories: task, knowledge and social characteristics and work context with a series of

sub-categories within each. The analysis produced a mean score and percentage of the total score for each sub-category.

Results

Seventy participants completed the WDQ. Receptionists reported high task variety, task significance and high level of information processing, confirming the high cognitive load placed on them by performing numerous yet significant tasks. This complex role required an array of skills, and there was a reliance on colleagues for support and feedback.

Conclusion

Our findings suggested a number of potential ways in which to support the modern receptionist, including, separating roles into discrete duties to avoid the errors involved with high cognitive load, providing informal feedback and developing training programmes.

How this fits in

Research with modern GP receptionists is sparse and little is known formally regarding the parameters of the role. This research explores the work design of GP receptionists and offers clinicians in practice a practical overview of this important and essential role and its implications for the modern GP practice.

Introduction

Over the last 15 years, general practice, in England, has experienced a profound increase in workload as the population ages and the complexity of care increases (1-4). Demand has reached unprecedented levels (2, 5), and the primary care landscape is changing (6-8). As a result, staff are now delivering care in a far more complex and dynamic environment with implications for clinical and non-clinical members of the primary care team. Amongst the most visible of these are receptionists, who not only undertake an array of administrative duties (9, 10) but also fulfil clinically related tasks such as triaging patients, reporting results or administering screening (11-19) often without adequate training (10). The failure of receptionists to successfully fulfil these responsibilities has potentially serious implications for patient outcomes and safety (15, 20-22).

The need for more robust support for these key personnel to ensure they stay focussed and motivated is apparent, but to be effective, a more systematic understanding of the parameters of their work is required. This includes the tasks they fulfil, their relationships with colleagues and their organisation, and their attitudes and behaviour at work. This concept of understanding how the nature of work can reflect how well it is performed was first introduced by Herzberg (23, 24) who described how jobs could be enriched and managed to foster responsibility and growth in competence. Building on this, the concept of job characteristics theory described how people would perform at their best when they were internally motivated to do so as opposed to the promise of some external reward or the threat of supervisory attention (25). By its nature, the design of an individual's work shapes the contribution made to the organisation and offers an understanding of the

experiences and behaviours of employees (26). This 'work design' is a critical component of human resource management that when understood and optimised improves job satisfaction, the quality, safety and efficiency of the work (27, 28) and has positive impacts on performance, absenteeism and turnover (29, 30). In understanding work design and supporting its improvement, the validated Work Design Questionnaire (27) has proved a valuable tool for producing benefits in a range of industries including Information Technology/IT (31), nursing (32), and policing (33).

To date, there has been no detailed exploration of the 'work design' of GP receptionists in the context of the changing landscape of primary care. Here we present our results from using the WDQ in an England wide survey of GP receptionists to understand how we can help them remain motivated, productive and effective.

Method

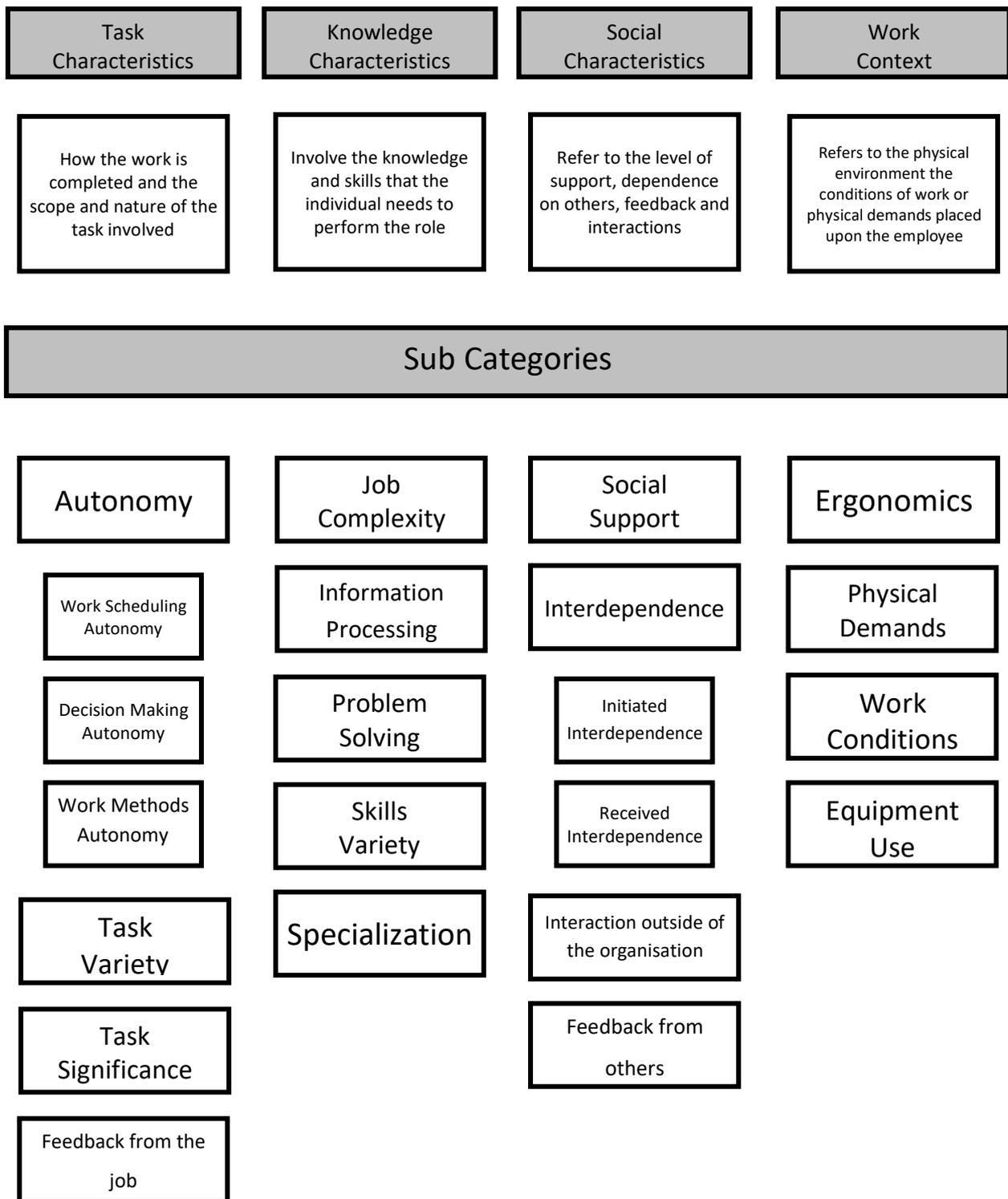
Study design

The study was designed as a large scale survey study of receptionists in England, utilising an existing validated questionnaire, the WDQ (27). (See additional material 1)

Research instrument

The WDQ (27) is a validated measure of work characteristics. It consists of a 21 point scale, divided into four groups, each with sub-categories, responses to which are coded on a 5 point Likert Scale; from strongly disagree to strongly agree (Figure 1). In addition, demographic details were collected for each participant, including age, gender, disability, and ethnicity.

Figure 1: Work design questionnaire, categories and subcategories



Recruitment

Receptionists are difficult to access as there is no overall UK list; therefore, multiple recruitment methods were employed. These included disseminating the link to the online questionnaire via Clinical Commissioning Groups (CCGs) in England, Health Education England, Association of Medical Secretaries, Practice Managers, Administrators and Receptionists (AMSPAR) and GP surgeries working with the University of Birmingham. Bristol Online Survey (BoS) hosted the survey and the link directed the respondent to an information page, consent was required. In addition, as most practices have more than one receptionist, 500 postal questionnaires were sent to 100 randomly selected GP practices across England between September 2016 and September 2017.

Sampling

All GP receptionists in England were eligible to participate. There were no exclusion criteria beyond job role. In 2014 (the most recent year for which there was data) there were 93,037 admin and clerical staff in primary care, 67% of the primary care workforce (34). Employing a 95% confidence interval and a margin of error of .5 a sample of 384 was required.

Analysis

Following standard procedures for analysis of the WDQ (27), the respondent's scores were added together for each of the subscales, and a mean was drawn, presented as a percentage of the total possible score. Responses were then categorised as low (score less than 50% of the total score), moderate (scores between 50% and 75% of the total score) and high (above 75% of the total score) for each subscale.

Results

Seventy receptionists completed the questionnaire, 69 (98.6%) were female, over half (56.7%) were aged 40 and three (4.3%) reported no qualifications and 27 (38.6%) reported GCSE/CSE as their highest level of qualification. Half the sample reported being in post for five years or less (35, 50.7%) and the majority (38, 55.1%) worked in medium sized practices (35). These data are summarised in Table 1.

Table 1: Participant demographics and occupational characteristics

Demographics				
Gender Identity % (n=70)				
Woman		Man		
98.6 (69)		1.4 (1)		
Age Range % (n=67)				
18-28	30-39	40-49	50-59	60+
20.9 (14)	22.4 (15)	16.4 (11)	29.9 (20)	10.4 (7)
Marital Status % (n=69)				
Single	Living with a partner		Married/civil partnership	
37.7 (26)	13 (9)		49.3 (34)	
Disability % (n=68)				
Yes		No		
2.9 (2)		97.1 (66)		
Sexual Orientation % (n=68)				
Heterosexual	Gay woman/Lesbian	Bisexual	Other	
95.6 (65)	1.5 (1)	2.9 (2)	0	
Religious Belief % (n=68)				
No Religion	Christian	Muslim	Other	
45.6 (31)	51.5 (35)	1.5 (1)	1.5 (1)	
Ethnic Background % (n=70)				
White	Pakistani	Other		
97.1 (68)	1.4 (1)	1.4 (1; Italian)		

Highest Level of Education % (n=70)							
No Qualifications	GCSE/CSE	Further Education	A Levels	Bachelor's Degree	Post-Graduate Qualification		
4.3 (3)	38.6 (27)	27.1 (19)	15.7 (11)	11.4 (8)	2.9 (2)		
Occupational Characteristics							
Time in post % (n=69)							
0-5 Years	6-10 Years	11-15 Years	16-20 Years	21 Years +			
50.7 (35)	23.2 (16)	14.5 (10)	5.8 (4)	5.8 (4)			
Respondents Practice Size % (n=69)							
Small		Medium		Large			
5.8 (4)		55.1 (38)		39.1 (27)			
Geographical range % (n=66)							
West Midlands	South	South West	East Anglia	North West	North East	East Midlands	South East
45(30)	14 (9)	9 (6)	14 (9)	8 (5)	4 (3)	3 (2)	3 (2)

*as a result of rounding some figures do not equal 100

Almost half, 45% (30) were from practices in the West Midlands, 14% (9) from the south, 9% (6) from the south west. 8% (5) were located in the North West, 4% (3) in the North East; just 3% (2) of respondents came from the East Midlands and the South East (Table 1).

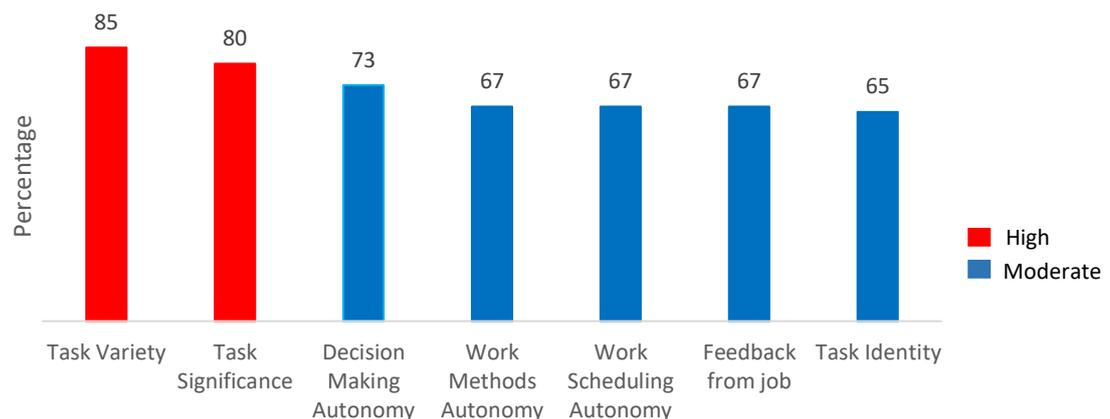
The results from the WDQ are presented below; we describe the key findings in each of the four categories, with the means and percentages given for each sub category.

Task Characteristics

Receptionists reported moderate levels of autonomy across the three subsets of work scheduling, decision making and work methods; decision making autonomy scored the highest (Mean score [M]=3.62, 73%). Both task variety (M=4.25, 85%) and significance (M=4.03, 85%) were high. Task identity relating to whether an individual undertakes a single overall task or contributes to a smaller aspect of a larger service was moderate (M=3.21,

65%). Feedback from the job related to the extent that the role itself provides ‘direct and clear information’ on the effectiveness of their performance (27) was scored as moderate by receptionists (M=3.25, 67%).

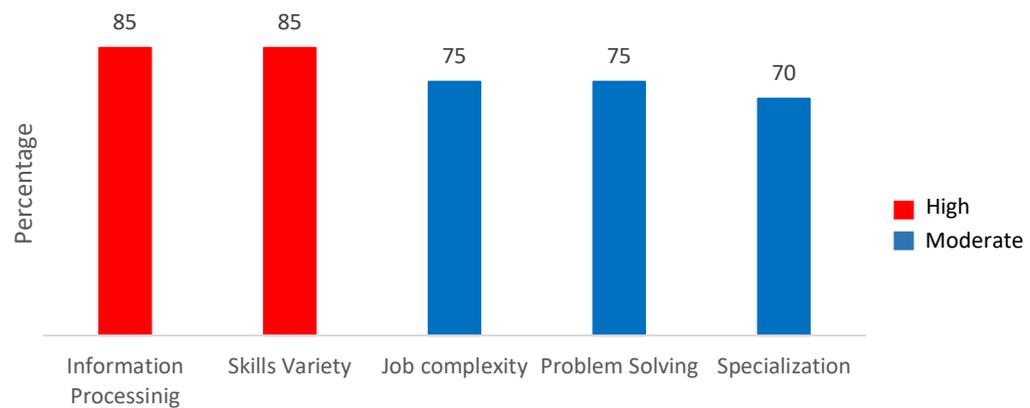
Figure 2: Task characteristics subscales, percentage of total score



Knowledge Characteristics

Knowledge characteristics included job complexity, the amount and type of information an individual must process to perform their role, the problem solving ability required, the variety of skills and the degree of specialisation required. Receptionists reported moderate complexity (M=3.81, 75%), however informational processing demands were classified as high (M=3.81, 85%). The need to develop original solutions and ideas was classed as moderate, bordering on high (M=3.74, 75%). Skills variety was classed as high (M=4.16, 85%). Reflecting the degree to which the role requires a wide variety of skills and the need for specialized or specific knowledge, this was scored as moderate by those we surveyed (M=3.43, 70%).

Figure 3: Knowledge characteristics subscales, percentage of total score

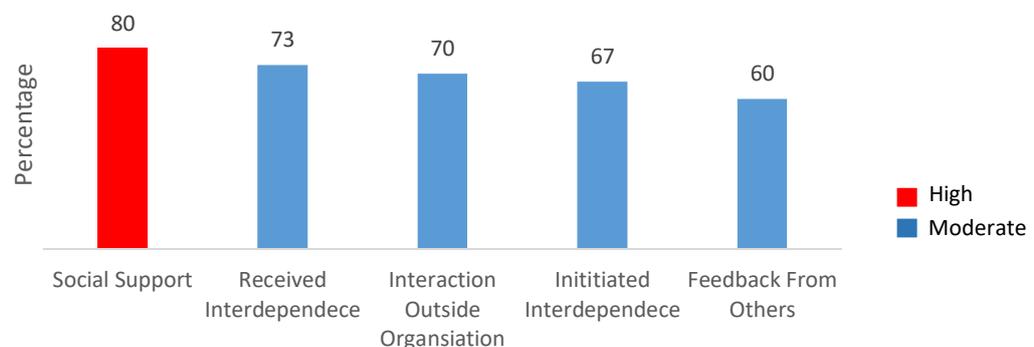


Social Characteristics

The social characteristics of a role related to various social or interpersonal aspects of the job and the degree of support, advice and assistance (needed and received) in the workplace and was classed as high (M=3.99, 80%).

Interdependence was divided into either initiated independence, referring to the extent one job flows into others or received independence, the extent that the one role is affected by work from other jobs; both were classed as moderate (M=3.30, 67%) and (M=3.66, 73%). Receptionists scored the level of interaction with external agencies as moderate (M=3.41, 73%) as they did feedback from their colleagues (M=3.11, 60%).

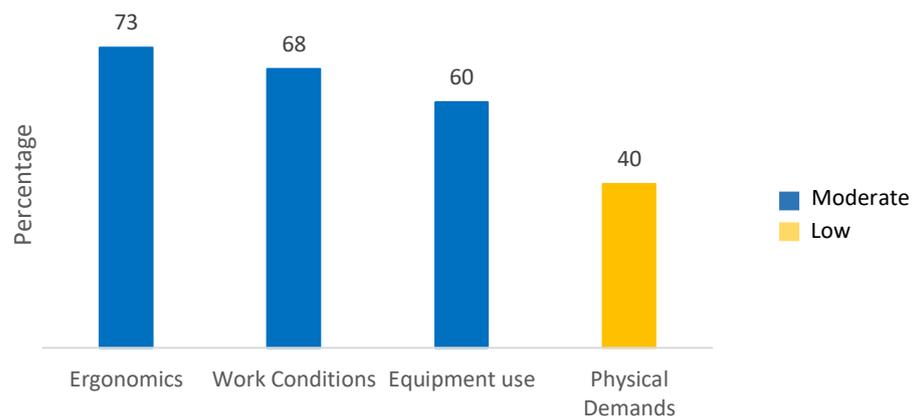
Figure 4: Social characteristics subscales, percentage of total score



Work Context

This covers the environment of the organisation in which the individual works and the physical demands placed on the employee in undertaking their roles. Receptionists scored the ergonomic value of their role as moderate (M=3.51, 73%), the physical activity and effort required as low (M=1.96, 40%) and the variety and complexity of the equipment needed as moderate (M=3.01, 60%). Overall the working conditions which includes factors such as the existence of health hazards, cleanliness, and noise were described as moderate (M=3.43, 68%)

Figure 5 Work context subscales, percentage of total score



Discussion

Summary

Hackman and Oldham's theory of work design (29) was used to aid understanding of how the characteristics of a receptionist's roles can resonate psychologically in terms of the meaningfulness of work, the level of responsibility assumed and the outcomes of their work. These criteria are fundamental to intrinsic motivation, and how successful their work has

been enabling them to learn from mistakes and connect emotionally to the result of their actions.

We found that the receptionists reported a high level of autonomy and variety in the work they do, though were relatively uncertain as to the success of their individual contribution. They were required to process a high level of information and employ a wide variety of skills yet did not regularly receive feedback from their colleagues. The ergonomic and physical impact of their work was low. Below we describe these findings in more detail within each of the four domains of the WDQ; Task characteristics, Knowledge characteristics, Social Characteristics, and Work Context.

Strengths and limitations

A total of 70 participants completed the WDQ, and while not meeting the calculated sample size, they were drawn from geographically diverse locations across England and a range of practice sizes (35). As such, it is representative of a range of GP practices, and primary care environments across England and the WDQ has provided the first quantitative insight into the design parameters of the role of receptionists. It has highlighted key aspects of their work and provided evidence of areas where additional support may prove beneficial, particularly in addressing the high cognitive load inherent in their work.

Comparison with existing literature

Task characteristics

Increasingly, modern surgeries are multi-disciplinary teams consisting of clinical and non-clinical staff each undertaking a range of inter-related tasks to support successfully delivering care (36-39). As such, the work the receptionist undertakes is varied (9-11, 40-43)

and straddles both clinical and non-clinical responsibilities (9-11, 14, 16-19, 41, 44-49). In doing so, the receptionist juggles multiple sources of information from patients, colleagues, and external agencies often with competing demands on attention, for example booking patients into the practice while simultaneously making phone calls (17, 50); divided attention increases cognitive load, reducing focus and increasing error (51). High variety can also be rewarding (27, 28) but can also lead to an overtaxed and underperforming workforce (27, 28).

In other environments such as aviation, issues of competing demands and multitasking have been tackled by introducing the idea of a 'sterile cockpit' which prohibits extraneous activities such as non-essential communication and reading non-essential materials during the critical phases of the flight (52). During informational processing, multi-tasking is effectively "task-switching" between multiple tasks, dividing attention and decreasing efficiency (53). This slows down work and increases the likelihood of errors directly after the 'switch' has occurred (53, 54).

The implications of excessive cognitive load are especially important in healthcare where demand is high, information often incomplete and time-constrained (55-57). Distractions, interruptions, and external, extraneous stimuli disrupt attention and can lead to error (55, 56). For reception work, separating tasks may reduce the likelihood of error, for example separating greeting patients and answering the telephone into discrete roles may help to reduce error by minimising the interruptions encountered when undertaking these roles simultaneously. Similarly, complex work with potentially serious implications for patient safety, such as repeat prescribing would benefit from being undertaken as a separate activity to reduce the cognitive load of multitasking (53, 54, 58).

Knowledge characteristics

The receptionist undertakes a number of roles that, at times require specialised knowledge from triage (15, 20, 21) to repeat prescribing (21, 22). However, no formal qualifications are required (10, 15), and much of the training that exists is provided in-house, from existing reception staff (40, 59-61) and viewed by receptionists as inadequate (10, 40, 60, 61). Barriers to improving this training include time constraints, as well as a lack of funding and relevant courses (62). Recently, this training shortfall has been acknowledged and in 2017 Health Education England established a £45 million fund to support training in two discrete roles, managing medical correspondence and active care navigation (63) although its effect on quality, safety and staff are as yet unknown.

Social characteristics

Social support in the workplace helps underpin well-being (64, 65) and psychological and behavioural functioning (66) in a range of jobs and environments, including policing (67) hospitality (68) and healthcare (66, 69). Our sample described the level of feedback as 'moderate' yet receptionists have previously described how important it is to their well-being and job satisfaction (10, 40). Though systematic mechanisms for providing feedback to receptionists exist, such as annual performance reviews and appraisals (70), the time-constrained and high pressured atmosphere of modern general practice precludes other avenues for providing the type of social support that might improve well-being (71). This social connection also helps engender in reception staff a grasp of the outcomes of the work they complete. In other environments, understanding the implications of their actions can help staff increase motivation and enable mistakes to be observed constructively (29). This

could also be used to provide a framework for receptionists to monitor and improve performance.

Work context

Work environment directly affects an employee's ability to perform their role (26-30). Receptionists are some of the most visible members of the practice team (16), their front of house position can bring them into contact with difficult or aggressive patients (72) or leave them feeling dissociated from the rest of the primary care team (40, 41). Although their location in the practice is unlikely to change, some of the negative effects might be mitigated by the opportunity for receptionists to share their experiences with supervisors and colleagues (73, 74).

The receptionist regularly uses information technology (IT) to manage patient data and service delivery. These clinical software systems are used to manage patient records, prescribing, test results and appointment bookings as well as facilitating communication from GPs to receptionists (75). Despite their pivotal role, a recent survey found that 12% of receptionists received no training in their use despite evidence of errors linked to their misuse (15, 21). A sociotechnical perspective is one theory that has been previously adopted to improve the fit between the individual and the IT system. This can be used to ensure the design of healthcare IT is informed by the context of the individual and their work environment (76).

Conclusion

Though receptionists continue to fulfil many of their traditional roles, the demands and complexity of modern primary care mean that they are being placed under increasing

pressure to fulfil these safely and effectively. Reducing cognitive load, improving training and feedback and ensuring that IT systems harmonize with personnel and work practices, can all help. Further research should aim to explore how these factors can be accounted for in the design of the receptionist's role in its entirety and exactly how it is intended to fit with existing systems and processes.

Funding: This work is supported by The Health Foundation grant number 7452.

Ethical Approval: Ethical approval was granted by the University of Birmingham's ethical board (ERN_15-1175).

Competing Interests: The authors declare no competing interests.

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5.3 Chapter summary

The oversimplified 'dragon' stereotype is increasingly weakening as the findings from the WDQ have provided significant insight into the parameters and nature of the work receptionists undertake. As an under researched occupation, it is the first time this tool has been used with the GP receptionists. The findings show that the receptionist undertakes a complex role, one which is highly skilled, requires specific knowledge and a high degree of information processing and multitasking. The implications of these characteristics of their work were explored. These findings extend the understanding built up in chapters three and four and provide a concrete data set from a validated questionnaire that could be compared to other occupations.

The following chapter, chapter six, presents the results from process mapping the triage/appointment making process, and elucidates the roles of the patient, the receptionists and GPs/clinical staff or other practice staff in that process. This provides additional insights into the complexity of the process and potential failure points, which have implications for the patient and the practice.

Chapter Six: Results 3

**Mapping triage in general practice: the roles of the general practice
receptionist.**

6.1 Introduction

This chapter presents the results from the case studies (Chapter two). Following on from the questionnaires, the aim of these studies was to explore using qualitative methods, the role of the GP receptionist from multiple stakeholder perspectives. Interviews with receptionists and focus groups with practice staff and patients were undertaken and the data subjected to thematic analysis. Three themes were identified from these data relating to the triage/appointment making process which patients and receptionists, as well as other practice staff, participate in. These themes, in turn, informed the development of a process map and elucidated a number of potential sources of failure in the appointment making/triage process. This chapter is presented in the form of a paper.

6.2 Mapping triage in general practice: the roles of the general practice receptionist.

Introduction

General practice in context

General practice in the UK faces unprecedented demand inpatient consultations (1, 2). Clinical staff workloads have increased with the number of consultations growing by 15% between 2011 and 2014, and the average person now seeing their GP six times per year, double the number reported in 2007 (2). This increasing demand has been fuelled by an ageing population (15% are over 65) (3) and the transference of the care of long term/chronic conditions to primary care (4). In 2017, 18 million patients (often with multi-morbidities) presented with chronic or long term conditions (2, 5) resulting in increased healthcare utilisation (1). At the same time, GP numbers are in decline and training places are left unfulfilled. Whilst general practice costs have risen; funding has fallen (2). As such general practices deliver complex care in stressful and challenging environments, potentially without the resources or staffing to cope with these demands.

Appointment booking or triage

An important member of the general practice staff team is the receptionist (6, 7) and a key part of this role is their involvement in the triage/appointment making process (8-13). 96% of receptionists in a recent UK survey considered this to be a key responsibility (14). Patients access general practice, typically, via receptionists who are required to balance high demands with restricted appointment availability. One way of lessening the burden on busy

practitioners is to filter patients away from GPs to consultations with the nurse or nurse practitioners, or to external providers such as pharmacies (15, 16).

The process of booking appointments is complex and requires receptionists to collect and accurately analyse information before making informed decisions. Receptionists often need to ask patients for information when booking appointments (17). However, receptionists have reported a reluctance to ask in cases of routine appointments (18) though they were more willing to when the appointment was deemed urgent (19). A 2001 survey found just 14% of receptionists (20), sampled, routinely asked patients for information, citing confidentiality as the cause of their reluctance (17). Patients are also reluctant to provide medical information to the receptionists, also citing confidentiality as a factor and the suitability of the receptionists to ask clinically related questions (10, 21).

Training and support is a key factor to consider. In order to correctly direct the patient, the receptionist must gather information, often quickly, through listening and asking questions. This may be challenging because receptionists may lack knowledge of what questions to ask patients to elicit accurate information from the receptionist. In addition, receptionists must evaluate whether there are any 'red flags' that would require immediate referral to accident and emergency services. However, receptionist training is not always considered satisfactory or adequate (22-24). Training, most often, covers customer relations and medical administration rather than basic triage. As a result, triaging by receptionists is undertaken with only limited or partial knowledge informing these decisions (9).

With the receptionist potentially having little information and 'inadequate' training, inaccurate triage is a possibility, and as such patient safety and care may be impacted (12). Current research exploring the triage process has examined discrete aspects of the process

(10, 17, 21), or symptom presentation to the receptionists (12, 25); as yet there has been no attempt to explore the appointment making/triage process in significant detail and from start to finish.

Lean and Process Mapping

Process mapping provides an established method to explore complex processes such as the triage of patients. It is an important tool in the 'lean' (26, 27) toolbox. Lean is a philosophy and a set of tools, originally designed by Toyota to explore their manufacturing process, to highlight areas of waste (or 'Muda') for elimination or reduction. The ultimate aim is to streamline processes, save time, labour, and money while providing the same level of service and quality (28). More recently, lean has successfully been applied to healthcare and patient improvement (29-32), moreover, NHS improvement has worked to instil lean practices within healthcare philosophy (33). Process mapping, a lean tool, involves visually representing the patients' (or healthcare professionals') progress through a system (34). Highlighting the different steps, resources, personal and time involved and affording an opportunity to explore the efficacy and success of the process, as well as areas of failure or concern.

Study aims

This study of receptionists working in general practice aimed to explore and to map the triage process for the patients seeking care and highlight areas of potential failure. Mapping the process from the start (i.e. the patient seeking an appointment), through to the resolution (i.e. triage out of the system, appointment/urgent appointment given or telephone triage by GP/Nurse) will offer insight into how this process functions. As well it

will identify the myriad of influences which underscore and affect the decisions made by the receptionist and ultimately, the successful triage of patients (34-36).

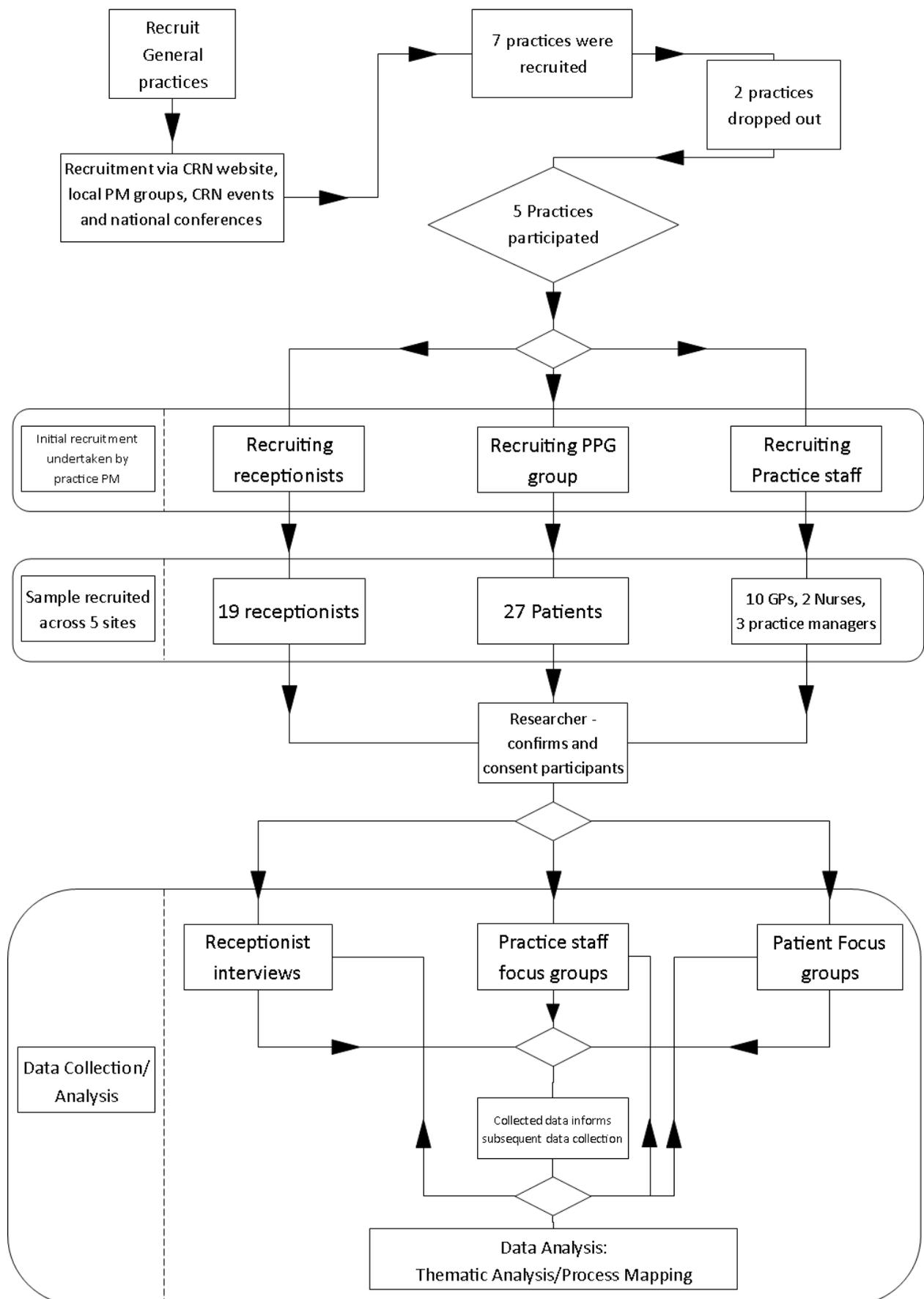
Method

The research employed a qualitative approach consisting of interviews with receptionists and focus groups with patients and practice staff. Confidential, one to one interviews with receptionists provided an opportunity to discuss their roles/actions and issues in a setting independent from any potential biases or constraints resulting from the hierarchical nature of the practice, in which they are low in the hierarchy (22, 37-41). Data from each interview was used to inform successive interviews, to check and re-check the emerging process data; these data were then integrated during analysis.

Practice staff and patients for pragmatic reasons were separated into separate focus groups as it was not possible to bring a group of GP staff and patients together at the same time. As with the interviews, each focus group informed those that followed (Figure 1, shows the research process from recruitment through to the analysis).

Ethical approval was sought and gained from the NHS Health Research Authority's (HRA) research ethics service on 23 June 2017 (117/WM/0203). The study was added to the CRN (Clinical research network) portfolio and was included and advertised on the CRN website. In addition, the researcher advertised the project and sought to recruit practices at several local (Practice Manager meetings held locally) and national events (CRN events, of relevant conferences).

Figure 1: The research from recruitment to data analysis



Using opportunity sampling (42) five general practices, from across the West Midlands, were recruited (seven initially agreed to take part, but two dropped out, citing workload and time constraints). Three practices were small sized (characterised by a smaller list size and less than 5 GPs), one was medium and one large (43), see Table 1.

The postcodes for each practice were used to investigate the Indices of Multiple Deprivation (IMD) scores for each practice location (44). These Indices are the official measures of deprivation for areas of England and are based on seven domains: Income Deprivation, Employment Deprivation, Education, Skills and Training Deprivation, Health Deprivation and Disability, Crime, Barriers to Housing and Services, and Living Environment Deprivation (45). Each area is ranked nationally (from 1 – 32,844; where 1 is the most deprived) and divided into deciles (1-10, where 1 is the most deprived) (45). Scores were generated for each general practice to situate them within their surrounding area Table 1 presents the IMD rank and decile. Three practices, practices 2, 3 and 5, were located in some of the most deprived areas of England; 20%, 20% and 40% most deprived respectively. Two practices, practices 1 and 4, were in some of the least deprived areas; 40% and 10% least deprived respectively. Overall, participating practices were drawn from a range of sizes and socio-economic localities, providing a representative sample of practices across England.

In total, 79 participants were recruited from across these practices. 14 GPs, eight nurses, five practice managers and eight practice staff, 24 patients and 20 receptionists were recruited (Table 1). Participants are coded by participant group and practice site. As such the first receptionist from practice one, is coded as Rec01Site01, the fourth patient at practice one, is coded as PA04Site01 and the second practice staff at the first site is PS02Site01

Table 1: Participating practice and their key characteristics

	Practice Characteristics				Participant Characteristics						
	List Size	Number of GPs	Practice Size	IMD rank and Decile*	Patients	Practice Staff				Receptionists	Total
Practice 1	11,114	5	Medium	21,688 (7 th)	7 (3m/4f)	7 (3m/4f)				5 (5f)	19
						GPs	PM*	Nurses	PS*		
						1	1	3	2		
Practice 2	8,211	4	Small	3,360 (2 th)	-	6 (2m/4f)				4 (4f)	10
						GPs	PM	Nurses	PS		
						3	1	1	1		
Practice 3	21,847	11	Large	6,166 (2 th)	4 (2m/2f)	8 (8f)				4 (4f)	16
						GPs	PM	Nurses	PS		
						1	1	1	5		
Practice 4	7,193	3	Small	31,280 (10 st)	7 (3m/4f)	5 (4m/1f)				3 (3f)	15
						GPs	PM	Nurses	PS		
						3	1	1	-		
Practice 5	7,632	4	Small	9,998 (4 th)	6 (2m/4f)	9 (3m/6f)				4 (4f)	19
						GPs	PM	Nurses	PS		
						6	1	2	-		
Total					24 (10m/14f)	35 (12m/23f)				20 (20f)	79
						GPs	PM	Nurses	PS		
						14	5	8	8		

* IMD: Decile: 1 most deprived – 10 least deprived

*M = Male/F = Female

*PM (Practice manager)/PS (Practice staff)

Receptionist interviews

All receptionists at each practice were approached to participate, and the preliminary approach came from the practice manager. Those who initially agreed were given information sheets and the researcher's contact details should they wish to ask questions. In agreement with each practice, all 19 receptionists were allocated a time during their working day, for the interview to take place. Interviews were conducted at the practice, in a separate quiet room and lasted between 30/50 minutes.

Unstructured interviews (46, 47) were employed as they allowed the receptionist the opportunity to discuss their roles and duties while allowing for any divergence from the topic guide and a more complete exploration of the role with each participant.

The interview consisted of a general open question (what is the role of the receptionist as you see it), to allow the receptionists to relax into the interview process. The interview schedule covered a number of areas of interest, including exploring what a clinically related task is from the receptionist's perspective (i.e. triage), what processes are involved in undertaking these tasks, what support or training do they receive, and how might their roles change in the near future. Leading questions were avoided, and the topic areas were non-linear, they arose at different times in each of the interviews as a result of when the conversation moved into these areas. Finally, a number of prompts were employed to encourage the receptionists to expand on or explore certain points further.

Focus Groups

Practice Staff

In collaboration with each practice, a group of practice staff was recruited and consisted of GPs, Nurses and practice managers. To accommodate the workload and time constraints of the practice and its staff, a single focus group was conducted. The use of focus groups also allowed interactions and discussion between the participants, permitting participants to build on each other's points, negotiate meanings and shared understandings, and finally allowing the researcher to facilitate rather than participate in the interaction (48-50)

Five focus groups took place with practice staff, on site, at the time of existing meetings or when the practice closed for lunch.

Patients

After discussion with each practice, access to the existing patient participation group (PPG) was granted. The use of the PPG meant that the group already knew each other and were used to group discussion, as such they were more relaxed and comfortable during the session and felt more able to discuss difficult health-related scenarios (51). The practice manager made the initial approach to the group at their monthly PPG meeting. Information sheets and a summary of the research were provided to the patient group. This information carried contact details of the researcher for additional questions. Those who initially volunteered to take part were invited to attend a focus group, held prior to or just after their normal PPG meeting on the practice site. In total, four focus groups with patients took place. At one practice, the PPG was virtual and took place online; a call for volunteers had too few respondents, so a patient focus group was not undertaken with that practice.

Procedure

Between five and eight participants took part in each of the focus groups, and this is in line with the ideal size of a group for non-commercial purposes (52). The researcher facilitated the group discussion and began with an overview of the research and the participant's rights. When satisfied, the participants signed the consent forms, the digital recorder was switched on, and the group discussion began. Participants were asked to identify themselves to aid transcription and then the researcher posed a simple question, "What do you think is the role of the receptionist", to spark further discussion. The researcher was on hand with prompts, additional questions and to follow up points raised by the group. However, the aim was to allow the group to discuss the topic with minimal interruption from the researcher. Each session lasted between 35 and 50 minutes.

Analysis

Each interview and focus group was audio recorded for transcription. Once transcribed, the data were exported to NVivo 12 (53), and initial coding began. The analysis began while data collection was ongoing, allowing for the saturation of data (54) around the key steps, and contributions of stakeholders in this clinically related process. These inputs were checked and rechecked, within and between the participant groups to ensure that the resulting analysis and developing map was a valid representation of the processes in general practice. The aim of the initial coding was to extract information specifically relating to the procedural aspects of the receptionist's role. Thematic analysis (55) was employed to begin to make sense of the data extracted, descriptive key themes were used to group data into separate roles, and sub-themes identified important factors, central to the development of the process map. These included procedures for undertaking processes and steps which

show both the patient's and the receptionist's progress through the system, influences on the decision-making process of the receptionist, support (from staff and procedure/policy), and areas of potential failure, which could negatively affect patient care. The theme and sub-themes concerning the role of triage or appointment making were then used to inform the development of the process map and to elucidate the issues and potential failure points along the process of triage.

The themes developed from the data provided the basis on which the map was developed. The themes were used as a rough guide to build a basic outline of the key stages in the process from beginning (patients ringing to seek appointments) through the process of urgent appointment making, seeking help/support, making decision or deferring decisions to clinical staff, to the end of the process (appointments provided or advice/diversion to other sources). This map was developed with the general practice, and patient view represented separately, providing a scaffold onto which detailed aspects (arising from the data) of the process could be added. These included, for example, decision-making points on the part of the receptionists, diversions away from GPs to nurses or external agencies, and what modes of support or information receptionists might access. Finally, issues or potential sources of failure identified by the thematic analysis were superimposed on the map in relevant places. This was an iterative process; the researcher moved between the developing map, the themes, and the raw data, to ensure that the map was comprehensive and represented the data collected.

Following this, the fledgling map was presented to the research team to ensure that it had clarity, made sense and reflected the data collected.

Results

Thematic analysis (55) of these data presented three key themes; these, in turn, informed the content and the layout of the process map and included: theme one, the initial triage/step one, theme two the receptionist decides, defers decisions or seeks support and theme three covers failures in the process.

Theme one: Initial Triage

This theme covers the initial triage process. Initial triage begins when the patient telephones or calls in person into the practice seeking an appointment and preliminary questions are asked to allow the receptionist to triage the patient. In the first instance according to practice policy (children and the elderly are prioritised for appointments) and secondly, to direct the patient to other clinical staff (the nurse or nurse practitioner), or to a pharmacy or even to emergency care, if appropriate.

*"I mean we have a policy where we always see children [uh ha] erm we know things that the nurses can deal with as well [mmm] so, if like somebodies cut their finger or needs a check or something like that then the nurse can always see it so, we'll try and fill the nurses up as well..."***Rec02Site01**

"..we offer an ANP appointment where they're like a prescribing nurse [yeah]. So sometimes we do offer that first before we offer the doctor purely because she's a prescribing nurse and she can see things like chest infections." **Rec02Site03**

"Especially now we've got a nurse practitioner, you know it will be a case of if they want to see a doctor and there isn't anything available it's a case of saying well you can see a nurse".

PSF02Site01

“Well they’ll signpost patients to more acute services like A&E”. PSF03Site04

The receptionist at this stage of the process uses basic information to inform these early decisions, diverting some patients to other sources of care (internal or external) and preserving appointments with GPs for those most at need. The receptionist is making clinically orientated decisions, directing patients to other avenues of care, often based on their existing knowledge, ‘common sense’ and any protocols which the practice employs:

“They follow Practice protocols so there’s protocols that have been developed by the Partners generally and they’re aware of that. That’s discussed often and they go by that, and then some of them are more competent than others in dealing with things” PSF02Site02

However, if an appointment with a GP is required and one is available this is booked for the same day (at this stage, the appointments which are not urgent but which require a GP are also booked). Though not always the case, generally when only urgent appointments remain triage questions, to assess need, are asked.

Theme two: The receptionist decides, defers or seeks support

This theme centres on the second stage of the triage process, a stage with three sub-themes, these are decide, defer and seek support and underscore key points in the receptionist's decision-making process regarding patients seeking urgent care. However, before discussing these sub-themes, it is important to discuss the role the receptionist has in gathering information from the patient. Receptionists ask for further information from patients to ensure that they receive care in the most appropriate place, as such, collecting the right information is essential:

“I think a lot of them are quite intuitive you know, when patients ring, they’re very good at getting information out of the patient quite quickly as to what that they actually need.”

PSF02Site02

While the receptionist can appear to gather information from the patient, there are issues and questions. Firstly are the receptionist’s collecting the right information? Certainly, in some practices, they use protocols to support this work, while in others, they do not.

“Yeah, they need to be able to work to a protocol. And I think they need to be able to have a discussion with the patient, tease out information that the patient may not necessarily give freely like to be able to say, so tell me a bit more about this.” **PSF01Site05**

Here the protocols support their information gathering attempts, however without these protocols, receptionists rely on their experience and training and feedback to guide their information collection.

Knowing what to collect is essential; however problematically for the receptionists, patients do not always wish to provide information. Patients do not see the receptionist as the most appropriate person to ask these questions and question the confidentiality and privacy of those discussions:

“We do ask them why they want the call from the doctor [right]. Some people will say ‘no, it’s personal’; most people are quite happy to say. There is the odd occasional person that says ‘you’re only a mm receptionist, what do you want [yeah] to know for?’ **Rec04Site2**

“Because I had a bit of an incident when I had to come here to book an appointment about something quite personal. Luckily, there weren’t really many people in here. She asked,

‘What’s it for?’ I didn’t want to say really to get embarrassed. I felt I didn’t want to say what it was for when other people were around.” PA03Site04

I don’t have long conversations about what I consider to be private and confidential matters. I’m a private, confidential person and I want to discuss my health with a health professional, so my view is probably different to some others.” PAM06Site01

Decide

Gathering information is crucial, but utilising this information and making accurate decisions based on that information is equally important. As such the receptionist needs to be able to spot ‘red flags’ (20) symptoms which require urgent or even emergency treatment,

I mean we do in terms of that triage and the spotting urgent and the red flags, my experience is that they do generally pick up on those things reasonably well and they do bring them to our attention fairly quickly. Somebody’s just walked in, they’ve got chest pains, somebody’s walked in, they look dreadful, you know. PSM05Site05

In these cases, the receptionist makes a decision based on the information they have gathered and either directs the patient to emergency care or provides them with an urgent appointment:

“You know if they’re having like you say, chest pains, they might, advising them whether they really should be contacting 999 rather than waiting the phone call back from the GP. So, they’re very good first line vettors really, pointing things in the right direction.”

PSF02Site02.

Defer

When more information, from the patient, was required, but perhaps not forthcoming, the decisions on care were deferred to clinical staff.

"...well I can put you on the telephone list if the doctor thinks you need to be seen he'll invite you down at the end of surgery." Rec01Site02

However, this process, also, requires that information is collected from the patient. When this does not happen, there are potential ramifications in terms of the priority placed on the call back:

"...yeah something the doctor is able to put the call in, in order of importance... ..doctor can't triage it if there is no information, they may have to wait until the end of surgery to get the call back" Rec01Site02

In this sub-theme patient access to urgent appointments is handed over to the clinical staff to make decisions regarding the patient's care; however, it is clear that accurate information is needed from the receptionist to support this process.

Seek Support

If decisions are not simple, and there are few or no 'red flags' to support decision making, receptionists seek support in three places, existing protocols, from their reception colleagues and also from the clinical staff.

'Have you got a bit of advice?', 'cause sometimes you don't know some things even though I've done it for so long". Rec02Site03

Receptionists can access support, a safety net, if they do not know or are not sure. However, these areas of support again require that information on patient need be accurate and comprehensive, if not support may not lead the receptionists to the right decision for the patient, and as such undermine patient care.

Theme Three: Potential Failures in the process

This theme covers potential areas of failure in the receptionist triage process, failures which could have serious ramifications for the patient seeking care. This theme highlighted factors which may underpin these potential failure points, relating to the receptionist gathering accurate information from the patients on which to base decisions, to seek support or to support the clinical staff in their decision making.

Seeking Information from patients

The receptionist attempts to ascertain the nature of the patient's issues and determine the best course of action by seeking further information from them. This can prove difficult as often patients do not wish to provide this information and do not see it as appropriate for the receptionist to ask:

"I don't need to give that information. They don't need to have it" PatM01Site3

"...we've had we've had people that want to speak to a doctor but they won't tell us what it's about and you have to try and explain like I need to kind of give them some kind of idea..." Rec02Site02

Patients also report having confidentiality concerns about giving information to the receptionists, as they work, often, at the front desk and could be overheard.

This point of failure arises from a potential lack of information on which the receptionist can base the decisions they make, patients who cannot give more information are perhaps not given sufficient priority with regards to their needs:

*“Obviously if they’re not disclosing what they need they can’t be prioritised as being one of the first to be called because they wouldn’t disclose the reason”. **Rec02Site02***

Much here then depends on the receptionist gathering sufficient information from the patients on which to base their own decisions and for the GPs to accurately and efficiently prioritise their call lists. However, this does not always occur:

*“It has been known that people have gone into the GP’s and they haven’t got enough information so the GP will say go back to the patient and ask the patient for more information.” **Rec03Site04***

Collecting enough information is one thing, but knowing what to collect is perhaps more important, and this is not always clear:

*“Er, we have to gain the information but we’re not, I mean we’re not always sure what information really means because that is more of a medical. But the doctors will let us know what kind of information they need and then we can relay it on.” **Rec01Site01***

Knowing what information to gather seems to come from the existing staff, with input and feedback from the clinical staff when required,

*“So, if I like, if there’s is to say, oh yeah, was that the right thing to do, was to take their contact information or should I have booked them an appointment straight away, and then the Doctor will then come and say, well yeah, you’ve either done that right, or no you haven’t done that right and then”. **Rec01Site05***

A failure here would be in several ways: delaying patient’s access to care because information was incomplete, basing decisions on incomplete information such as offering the patient an urgent appointment when one perhaps was not needed, offering the patient telephone triage without providing sufficient information for the GP, directing the patient to telephone triage when an urgent appointment may have been more appropriate and so using the sparse resources of the practice, ineffectively.

Triage decision making

During the initial stages of triage, based on information provided, the receptionist can direct patients to other services, for example, the practice nurse, or the pharmacy or Accident and Emergency (A&E) when relevant:

*“...lots of places just book them in with their GP and that’s why there’s no GP appointments because we’re booking everything in, get them all in. And sometimes they might just need to see the nurse...” **Rec01Site01***

However, the ability to triage patients out of general practice requires the receptionists to identify when this is appropriate and to identify when symptoms, illness or injury do not fall within the scope of general practice:

“I had a lady call up yesterday afternoon and say that she’s got conjunctivitis [mmm] and we had no appointments left but I told her that she can go and try at a chemist first [mmm] erm

and then if she's no better or the chemist can't help her to give us a call today at 8 o'clock to get an on the day appointment" Rec02Site01

However, this is a potential failure point because the receptionist is undertaking triage without perhaps enough training or information.

The receptionist can also seek support from their colleagues, other receptionists, their knowledge and experience, and any ad-hoc/informal training within the practice, and GPs or clinical staff.

Erm, it's just what I've learned over the years of being here [right] from like what my office manager's told me [yeah], what I've learned that the nurses do and what the doctors like deal with [mm-hmm]. So it's just from experience of being here and speaking to my colleagues. Rec04Site01.

"So I know that if I've ever got an issue or anything I can go to anybody in this surgery and say, 'Can you help me?' Rec02Site03

In addition to other practice staff, protocols and procedures, written by clinical staff/pharmacy, can aid the receptionists to make triage decisions. However these protocols are unlikely to cover all eventualities,

"...no amount of protocol and process is ever gonna be 100%" (Rec03Site05).

A failure here is, in part, based on earlier aspects of the process. If the receptionist does not have any or accurate information from patients, then seeking support from any of these sources may not result in the correct decision for the patient.

If the triage process is undertaken incorrectly based on little information or training, then patients may be incorrectly triaged out of general practice, causing delays in treatment, the use of other services inappropriately, or the patient may give up and not seek help; with clear ramifications for patient safety and care.

“And I was trying to say that in my opinion my husband was ill, he did need an appointment but I couldn’t get one. I rang again the next day, they told me exactly the same, I said look I’m sorry but I do need to see someone, really do. And by Thursday I had to get a taxi and take my husband to A&E and he was admitted and he’d got complete renal failure by the time I got him to hospital and that did make me quite angry.” PatF01Site05

Receptionist knowledge or support from practice staff, or existing protocols are not the only factors which underpin and influence their decision making. The perception of the patient and why, when and how they are seeking care is also important:

“I had a lady phone me, I was on the late one last night and she phoned me after the list had closed, we ask patients to ring in before 5, she phoned me at ten to six and said my leg is swollen um it’s twice the size and it’s blue and I said I’m not sure if the duty doctor is on the premises or not, I’ll have to find him and see if he can give you a call back, we do ask that you call before 5 and well I have only just got home from work and I thought well, if you’ve managed to work or I could have turned round and said to her well um duty doctor is not here, please call back in the morning but I found the doctor and I just said can I pop her on the list and he saw her within 20 minutes she was here at the surgery and he saw her so but you know when we know they’re fobbing us off with whatever it is quite tempting to say um call back tomorrow because it’s not an emergency if she’s worked all day but as it turned out it was quite an emergency so...” Rec01Site02

In this case the receptionist collected information from the patient, but in the course of doing so came to the conclusion that the patient was ‘fobbing her off’ (even though it was clear this was an emergency) and as the receptionists states, she could have easily delayed the patient’s access to care or forced them to seek emergency care later.

Process Map

The appointment making/triage process

The process map (Figure 2) represents the triage process and is an aggregate of data collected from all stakeholders’ (GPs, patients, and receptionists) perspectives. The map shows their roles and actions during the process, with clear delineation between what the patient sees and experiences during the process and what actions or decisions go on ‘behind the scenes’ and so are invisible to them.

The receptionist has the largest role and is the main driver of the process. GPs or clinical staff have the least input until support is needed by the receptionists or decision making is deferred to the GP or triage nurse. Patients are aware of only half of the process and likely will not see what goes on ‘behind the scenes’ or how the receptionists arrive at a decision.

The map is divided into two sections; denoting the flow of the receptionist and patient through the system.

Section one: the initial assessment and decisions. The patient seeks an appointment and the receptionists, when information is forthcoming, could offer the option of a nurse or nurse practitioner (if relevant) or when necessary divert the patient to pharmacy or A&E if deemed serious. If the patient reports that the need is not urgent, they are either offered an appointment at a later date, or asked to call on the day they want the appointment (this is

dependent on individual practice policy), or they are triaged to another service. If urgent but not requiring emergency care, the information collected (if any) is used to make further decisions. If it is clear that the patient needs an urgent appointment, one is given. This initial assessment frees up limited GP time for other, urgent cases.

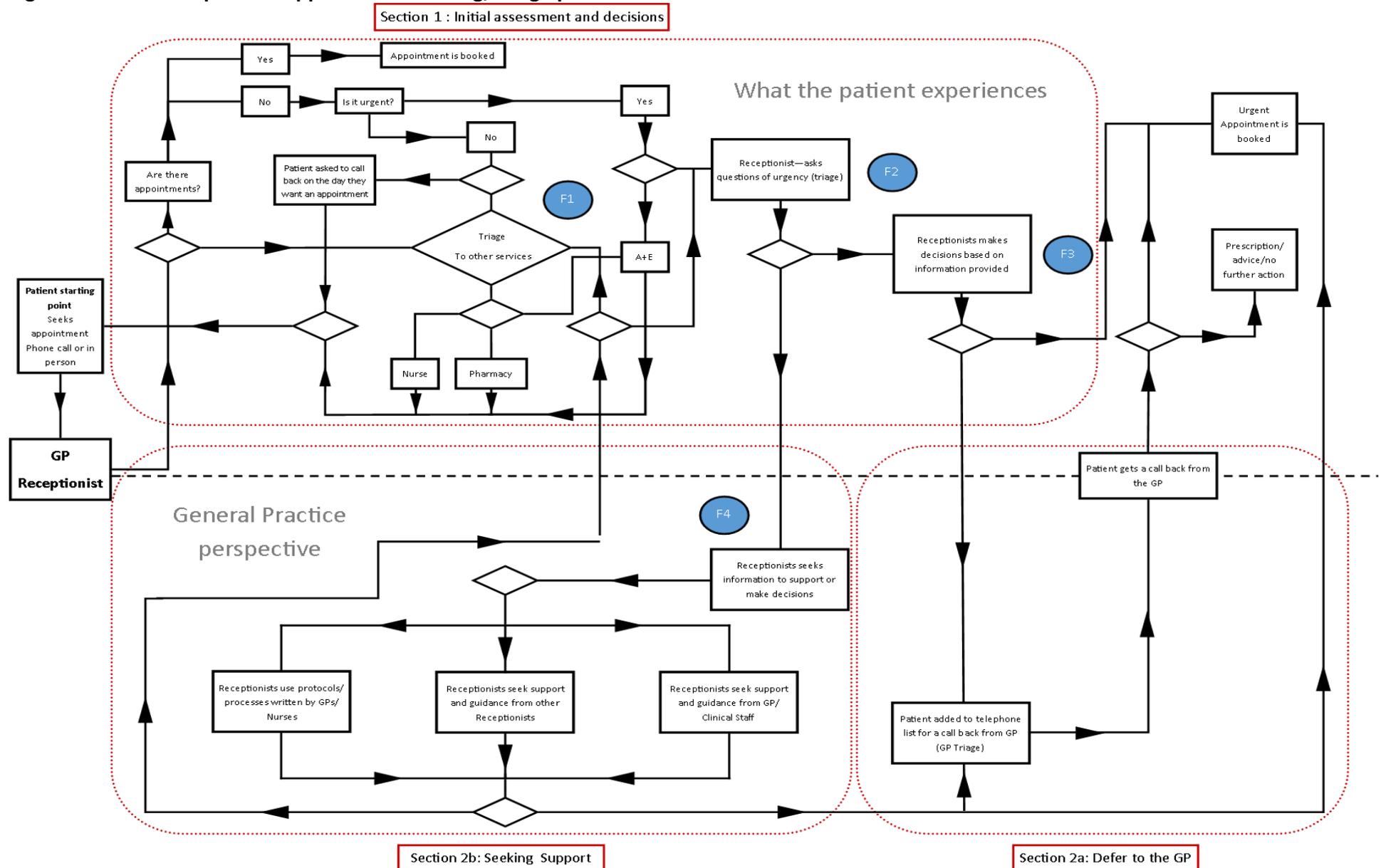
Section two: The process becomes more clinically orientated and a form of triage, this section is divided into two parts.

Section 2a: Defer to the GP; at this stage, the patient has reported an urgent need. However, the receptionist defers to the GP, and the patient is added to the GP's call list for further triage/phone consultation after which the decision is made by the GP.

Section 2b: Seeking support covers the receptionist seeking information from a number of sources on which to base their decisions. These include other receptionists working in the practice, with more experience or seniority or consulting protocols which govern the triage process and finally by consulting the clinical staff (GPs or nurses) for support or guidance. Using these sources, decisions are made as to whether patients are directed to other services, if phone triage/consultation by GPs is warranted or if an urgent appointment is given.

The analysis indicated a number of potential issues or failures within the triage system (see theme three); these have been charted on the process map (denoted by blue circles). These are located at key decision-making points for the receptionists. F1 during initial triage, F2 when seeking further information from the patient, F3 after collecting information and making a decision independently or to defer the decision to the GP, and F4 when seeking further support from colleagues and protocols on which to base their decisions.

Figure 2: Process Map of the Appointment Making/Triage process



Identifying points of failure

Four points of potential failure during the triage process (F1-F4, Figure 2), were identified from the thematic analysis, all of which offer potential safety issues for the patient.

Failure point one: incorrect initial triage

This potential failure point occurs early in the process. Patients may be inaccurately directed away from GP consultations to Nurses or other clinical staff or out of the system, to A&E or pharmacy. This process requires the receptionists to recognise when diversion is needed by identifying when symptoms, illness or injury falls outside of the scope of general practice. However, the receptionists may undertake this process without adequate training, suitable or comprehensive protocols or adequate support. This clearly has implications for patient safety and care.

Failure point two: Issues seeking information

At this point, the receptionist seeks further information from the patients to support the provision of an urgent appointment or on which to make further decisions. However, patients are reluctant to provide this information as they cite issues of the appropriateness of receptionists to ask and confidentiality. In addition, while the patient may be willing to provide information to the receptionist, issues of training may result in the receptionist not knowing what information is needed and consequently an incomplete understanding of the patient's situation is developed. A potential lack of information on which receptionist can base their decisions or seek support may delay access to care for the patient or result in inaccurate triage.

Failure point three: Decision-making errors

This point of failure surrounds errors in decision making based on poor or incomplete information gathered earlier in the process. The receptionist bases decisions on incomplete information and this may result in delays in the patient accessing care or inappropriate use of resources/GP time.

Failure Point Four: Seeking support

This point of failure arises as the receptionist collected information but is unable to make decisions regarding an appointment directly and seeks support. Support comes from several sources, GPs and other clinical staff, other receptionists (based on greater experience and knowledge) and protocols. A failure here occurs when the poor or incomplete information gathered previously is used when seeking support resulting in inaccurate triage for the patient.

Similar components underpin all of the potential failure points. These surround the receptionists making decisions potentially without sufficient training or knowledge, basing decisions on information that is potentially incomplete or missing, as the patient has not provided it. These potential issues could have serious implications for the receptionist, the practice, and for the patient's care and safety within general practice. However, this is not to suggest that the GP receptionist does not act professionally or without attention to patient care. All of the receptionists interviewed pointed to the care of patients as paramount, but this does not negate the potential issues highlighted by the process map, issues which are suitable for targeted improvement.

Discussion

General Findings

The data collected informed the development of the appointment making/triage process map. Coding extracted process focused data, and thematic analysis (55) was employed to understand the process further. Three themes developed out of the data. Two centred on the process, theme one detailed the initial stages of triage and theme two, the decision-making process of the receptionist, i.e. whether to defer, offer an appointment or seek support. The final theme described potential sources of failure such as incomplete or inaccurate information gathered from patients and inaccurate decisions based on this poor information.

A process map was developed, informed by the data analysis. Two sections to the map were highlighted, section one, initial triage and decision making, section 2a, deferring to GP and 2b seeking support. It is clear that receptionists play a significant role in driving the appointment-making process. However, this is clearly a role which goes beyond simply booking patients in for appointments and includes elements which more closely resemble triage. These can include making decisions about the urgency of care, utilising a number of information sources to support these decisions and directing patients to other services based on need/urgency.

Specific findings

Competing demands of the patients and the practice

What constitutes a successful process is not shared between the receptionist, the practice and the patient. From the patient perspective, a successful process is one where a timely

appointment with a specific GP at a time to suit them is gained. However, general practice as we have seen is under significant strain and demand is increasing (1, 2) and such a system is untenable. From the receptionist's (and the practice) perspective success is to filter out or divert those that do not require urgent care to other services (Nurses/Pharmacy/A&E) and so 'protect' appointments for those requiring urgent care. This highlights the first area of failure for the patient, triaging to other services requires the receptionists to understand symptoms and identify when diversion to other services is warranted; often based on the receptionist's knowledge and experience or existing protocols. When knowledge is sparse or incomplete errors can be made (12, 13), to draw from our sample the instance reported by Rec02Site01, the patient with self-reported conjunctivitis was given the option to speak to a chemist. However, this may not have been the best course of action for the patient given that what might seem a simple case, may have warranted professional attention (56).

Additionally, there is no mechanism to ensure that the patient seeks care at the pharmacy or A&E when directed away from general practice. The receptionist can offer this as an alternative, but the patient need not follow this advice, especially as patients do not feel that it is the receptionist's role to offer health advice (21, 57). What might be a success for the practice (triaging patients away from the GP) may be a failure for the patient, potentially forcing them to wait longer to receive care and reapply at the surgery for an appointment at a later time (perhaps when the condition becomes more urgent as we saw in the case of PatF01Site05 and her husband's reported eventual renal failure) or seek emergency care when not needed and use time and resources better directed elsewhere.

Informed decision making

Underpinning the points of failure indicated by the analysis is the quality of information or the existence of information from the patient that the receptionist uses to make decisions. Receptionists are often reluctant to ask for information (18) and patients reluctant to provide it; as it is seen to fall outside of the receptionist's remit (19). This, in turn, makes decisions which require information potentially more difficult, ambiguous and open to error. Without some information, the receptionist cannot make decisions, defer decisions to the GP, arrange telephone triage and prioritise patients, or effectively utilise protocols and other clinical or reception colleagues to help support them to make decisions.

Protocols to support decision making

Protocols are another tool the receptionist can use to make decisions; however, these are not infallible and often not followed if they are not known to exist (58, 59). As such vaguely described, poorly established or unknown protocols requires the receptionists to rely on their own judgement and knowledge to make decisions and in doing so they can overlook or misinterpret important clinical clues or information (60) and give incorrect advice to patients (12). Even when protocols are available, these have been shown to be ignored and decisions made based on the receptionist's own perceptions of need or urgency (60).

Lack of training

It is clear that the receptionist undertakes clinically related work (18, 61-64) and specifically appointment booking or perhaps more accurately triage. Given their central role in the process, problematically, receptionists are often not trained for such a role (14, 23), with training covering skills relating to customer service and administration (14). The

receptionist is then, primarily perceived in terms of their administrative work (22, 40, 61, 65-68), and often their contribution to clinical tasks such as triage, is overlooked by the practice (58, 59, 64, 69). It is not difficult to see why this might be the case; the receptionist undertaking clinically related work is a problematic reality for the practice. Receptionists are not trained, registered (as nurses and GPs are) or indemnified to undertake this work and potential failures (like those we have observed) have medico-legal implications for the practice (12, 58, 60, 64, 69, 70). This perhaps amounts to a systemic failure by the practice and the wider NHS, to acknowledge that, or train reception staff to, undertake such important roles; with concomitant patient safety responsibilities.

However, it is important to note that practices are facing unprecedented demands (1, 2), and the receptionist is at the forefront in helping general practice cope with these demands. The receptionists are perfectly situated as a buffer (57) between the service and the patient to ensure that patients access care in urgent circumstance (61) and those whose can or should seek care from other sources (including the nurse or nurse practitioners) are directed there. However, without sufficient training, the possibility of error and unintended negative consequence for the patient are apparent.

There are no national training guidelines or minimum qualifications for the receptionist as such training falls to the practice itself to undertake. Further training and support to identify important symptoms and to gather complete and relevant information are indicated. However, whilst general practice is facing high demand, it also faces increasing costs and decreasing funding (71), as such, the practice may not be able to fund additional training for the receptionist. External sources of funding and training for the receptionists should be explored; for example, the Health Education England (HEE) established a fund to support

the training of the receptionists to undertake two tasks with a clinical orientation, care navigator and administering medical correspondence. A similar national programme, which offered training guidelines around triage and other clinical roles, would help to ensure that receptionists have a minimum understanding on which to base the various clinically orientated decisions they make; without burdening general practices with additional training costs.

Limitations

The standard approach (34, 35) for collecting data to underpin the development of the process map utilises a series of workshops with multiple stakeholders and the map developing from this interactive and iterative process. However, this study employed a different approach and data collection consisted of interviews and focus groups separately with each participating group, and the map was constructed from the analysed data. Additionally, the iterative process of checking and rechecking the developing map with stakeholders was not undertaken in exactly the same way. Instead, data obtained from each interview and focus group was analysed and used to inform successive data collection. In this way, saturation (54) was achieved, and the major steps in the process of appointment making/triage checked and rechecked. However, we have potentially missed data arising from the discussion and debate between all stakeholders and the opportunity to check the final fully realised map with these stakeholders.

In addition, the map represents an aggregate of the data collected from each of the five practices participating. Practices varied in size and location, as well as policies which governed how the receptionists functioned. For example, some offered only appointments for the same day over the phone, but patients could access future appointments online

while others offered future appointments over the phone. Some asked for information from patients when only urgent appointments remained while others gathered information regularly. With no standard procedure or policies which govern all practices in the UK, the map will not reflect, fully, the situation of all general practices. Some aspects will be familiar while others will not. It would not be possible to develop a comprehensive map which reflects all practice in the UK given these conditions, however the map does show a general, perhaps generic, but no less important and informed overview of the process and highlights the clear and essential role the receptionist plays in managing the appointment making and triaging process effectively.

Data collection was undertaken with practices in the West Midlands, as such how much this reflects practices in the Wales and Scotland and Northern Ireland, as control over healthcare is devolved to local governments, is not clear and so generalisations outside of general practice in England should be made with caution.

Conclusion

Receptionists are an important and integral participant in the appointment making and triage process. They manage and mediate patient access to an urgent appointment, and they do so with a strong regard for patient safety in their work. However, they are not clinically trained, and the training they do receive often does not include triage and appointment making. As such, there are potential failure points in the process which may divert patients out of general practice incorrectly or when decisions are based on limited or poor information. A nationally-funded training programme for receptionists may be indicated; this would provide a minimum foundation on which to base decisions. However, the format and delivery of such a programme requires further investigation. Finally, crucially

the acknowledgement of the clinically related roles the receptionists play in the busy and demanding context of general practice and their direct role in the care/health of patients is needed.

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6.3 Chapter summary

The 'dragon' is all but slayed. The findings from the case studies reveal a complex process for receptionists which requires the gathering and processing of medical information to inform the triaging of patients for urgent care, ensuring that the limited resources of general practice are dispersed appropriately, to patients with genuine need. In this context, the need to ask questions, divert patients to other sources of care, or limit access in cases where the need for urgent care is not met, could certainly create the erroneous impression of the 'dragon behind the desk'.

The final chapter, chapter seven, provides an overall thesis discussion. It synthesises all of the discrete studies presented (Chapters three through six) into a single overarching narrative, with context and suggestions for practice grounded in the research.

Chapter Seven: Discussion

7.1 Introduction

This chapter critically evaluates and contextualises the research presented in this thesis. Methodologies are presented and appraised, key findings from each research strand are presented by the research objectives (Chapter one) and overarching findings from across the thesis are contextualised with existing research. The strengths and limitations of the individual research strands and the thesis overall are discussed. Finally, a series of recommendations for supporting GP receptionists, going forward, are given.

7.2 Summary of findings

The research in this thesis presents several novel additions to the existing knowledge base about GP receptionists, with a focus on the UK National Health Services context. Each method employed represented the first time it has been used with GP receptionists (Chapter three, four, five and six) and with this group in up to 50 years (Chapter four).

The crude stereotyping of the receptionist as the 'dragon behind the desk' (1), has been dismantled and the thesis presents a nuanced picture of the GP receptionist, situated within the context of contemporary general practice.

In this study the receptionists was revealed to be still most likely female, white and middle-aged (Chapter three and four) as has been the case for many decades, this research has provided clear evidence that the receptionist now undertakes a number of roles which have clear clinically related input (Chapter three, four and six). The work design questionnaire has shown the role to be both highly various and complex, requiring significant knowledge and specialised skills (Chapter five). Further exploration of triage/appointment making revealed a process which is highly complex and involves the receptionist gathering and assessing clinical information from the patients before making decisions about urgency and access

(Chapter six). However, given the extent and importance of the role, training is often absent (chapter three), or unsatisfactory, focusing on customer service and the administrative skill of the receptionists, rather than skills which may support these clinical functions (Chapter four).

7.3 Summary of mixed methods approach

To meet these objectives, a mixed-methods project (Chapter three) was designed consisting of a systematic review of the existing literature surrounding the role of GP receptionists and primary empirical research divided into two strands. Strand one consisted of a questionnaire of GP receptionists. The systematic review provided a baseline understanding of the extent of existing knowledge and highlighted areas of paucity. The review informed the development and content of the questionnaire; for example, the need to explore the demographics of GP receptionists was clearly indicated. This questionnaire explored a number of factors, such as the training receptionists receive, the roles or functions that they undertake, their satisfaction with their work, their role and place within the organisation (the GP practice) and receptionist demographics. The WDQ (2), a validated measure of work characteristics, was also included. Data from 70 participants were analysed, and both descriptive and inferential statistics presented. Open text boxes were analysed thematically (3), and the findings were presented separately and synthesised in the discussion (Chapter four). The data from the WDQ were analysed in accordance with the established procedure (2) (Chapter five).

Strand two built on the findings from the systematic review and the findings from the questionnaires informed the direction and aims of data collection. This strand consisted of a series of case studies with GP practices in the West Midlands. Five practices were recruited,

and data collection consisted of interviews with receptionists (n=19), focus groups with practice staff (n=5) and with patients (n=4). These data were analysed thematically (3), and three themes emerged (chapter six). These, in turn, informed the development of the process map (4). Directed by the findings of the systematic review, the map explored the role that the GP receptionist plays in the triage/appointment booking process (Chapter six).

Overall the questionnaires brought scale and generalisability while the qualitative research conferred greater understanding and validity. Both approaches contributed to a deeper exploration of the aims and understanding of the GP receptionist in contemporary general practice.

7.4 Specific findings

This section presents a more detailed overview of the findings from the thesis in relation to the objectives (Chapter one).

7.4.1 Objective one

To establish the parameters of the current role of receptionists and determine perspectives on which factors and characteristics of practices and patients, facilitate or provide barriers to this role.

The systematic review and the receptionist's questionnaire and WDQ contributed to meeting this objective. Key findings and discussion points are presented separately for each aspect of the project.

7.4.1.1 Systematic review

A systematic review of existing literature was undertaken, and this marks the first time that such a review has been undertaken (Chapter three). Forty-one papers were identified for

inclusion in the review and analysis provided three themes covering the existing research on the GP receptionists. The themes included, the receptionists interacting with the patients, the key roles, both administrative and clinically related, that they undertake and finally the receptionist's relationships with members of the practice staff.

The review indicated that the receptionists undertake three clear roles which are clinically related. These were consistently discussed and included, appointment booking (triage), repeat prescribing and relaying clinical information to patients (5-12); the process of triage saw the least comprehensive exploration in the existing literature.

The literature indicates that the contribution receptionists make is often unseen and unacknowledged by other staff and patients (6, 8, 12, 13). Receptionists did not feel valued, nor were they seen as members of the same team by GPs (14, 15). Neither were they, often, involved in planning or implementation of work which involves them (16).

The potential inadequacy of existing training in practice was also highlighted (7, 8, 12, 13, 17-20), especially relating to triage (20-22). The review demonstrated that the training the receptionists undergo might be inadequate for the tasks they undertake.

However, the studies included, in the review, were conducted over the last 50 years (the first in 1972), it is possible that these studies were out of date and do not reflect current receptionists, the roles they have and how they are undertaken. Additionally, the practice itself has changed, demand has increased, and resources limited. As such, who the receptionist is and what roles they have in current practice needs further exploration, to fully understand what the role entails and how they function.

7.4.1.2 Results one:

General Practice Receptionists, Visible but Invisible: The Forgotten Workforce

Building on the findings from the systematic review, the questionnaire explored the characteristics and context of the GP receptionist in modern practice. This represents the first attempt to explore the role and the demographics of the receptionists on a large scale in 50 years. Five sections covered questions about the role, satisfaction, sense of importance and appreciation, training, and finally demographic information. 70 receptionists completed the questionnaire.

The results from the questionnaire indicated that while the general practice environment may have changed the receptionist herself has not, still more likely to be female, white, middle-aged and working part-time (14, 23, 24); this role continues to be highly gendered.

The study showed that receptionists still undertake a number of administrative roles in practice, but a portion of the receptionist's work is taken up with tasks that may be described as having a clinical dimension. Training is more often centred on customer service and administrative skills, and a majority of the sample reported it as unsatisfactory. However, there were a number of potential blocks to accessing training, principally a lack of time and funding.

Receptionist's perceptions of satisfaction with their role were low, and their sense of appreciation was variable. Both satisfaction and appreciation depended on support and feedback from practice managers and GPs, important, as staff retention is linked to satisfaction and appreciation (25).

7.3.1.3 Results two

A quantitative assessment of the parameters of the role of receptionists in modern primary care using the work design framework

The WDQ (2) has been used, previously, within the healthcare sector (26), however, to date this study represents the first time that this metric has been used with the receptionists in general practice. The findings indicated a high level of task variety and significance as well as autonomy across decision making, work methods and scheduling of work. While rewarding, increased cognitive load and competing demands can lead to performance issues and undermined satisfaction or precipitate health concerns (2, 27).

Knowledge demands were equally high; receptionists were required to process large amounts of, often highly specialised, information, for example, when undertaking repeat prescribing or analysing symptom information (triage). In addition, they require a variety of skills, such as communication, interpersonal, information technology skill and need to be expert problem solvers, when dealing with difficult patients or juggling scant resources/appointments; suggesting a highly complex job. As such the receptionist may certainly, initially, struggle to meet these demands, as no formal qualifications are needed (14, 28), and training is variable (14, 15, 29, 30).

Reported social support, from staff and practice management, was high, and this underpins wellbeing (31, 32) and psychological and behavioural functioning in employees in healthcare (33, 34). However, feedback to the receptionist was moderate, and this too has links to wellbeing and satisfaction (14, 15). Finally, the WDQ indicated that the roles of the receptionists were interconnected with other practice staff and their roles. For example, the

receptionists may manage the repeat prescription process, but the GP is required to sign the prescription before it can be dispensed.

Use of technology for the receptionists is ubiquitous and is used to manage patient data and service delivery. That said few receptionists reported having training in the use of IT systems despite their importance and the possibility of errors resulting from incorrect use (13, 28).

The findings show the informational processing and knowledge needs of the receptionists while undertaking these roles were high. Where these demands are not met the possibility of mistakes and errors are present, and likely training and a lack of minimum qualifications are implicated here as potential causes.

7.3.1.4 Conclusion

Objective One was met by drawing together findings from across the research projects (Chapters three, four and five) and the parameters of the receptionist role were elucidated, with particular attention given to clinically related roles.

7.3.2 Objective two

Can process maps provide a greater understanding of the process and influences on receptionists, in the clinically relevant roles?

The focus of the process map was directed to the appointment making/triage process as it became clear from the findings of the systematic review, that the receptionists' roles in the repeat prescribing process and clinical information provision had seen previous attention, while triage had seen comparatively little attention (Chapter three).

7.3.2.1 Results Three: Mapping triage in general practice: the roles of the receptionists

This study represents the first comprehensive attempt to explore the receptionist roles/input into triage/appointment making. Thematic analysis generated three themes. Two centred on the process, theme one detailed the initial stages of triage and theme two, the next stages, decide, defer decisions to other staff or seek support and theme three covered potential sources of difficulty or problem (failure).

The process map clearly indicated that the receptionist is the main driver of the appointment making/triage process. In the initial stage, the receptionist fields initial calls from patients, prioritising the elderly and the young, makes decisions which direct patients to other sources of care (Nurse/Pharmacy/A&E) and when no appointments are available begins the process of triage for urgent appointments.

For urgent care, the receptionist seeks more information from patients to make decisions on urgency themselves or to pass the decision to the GP or other clinical staff or to get assistance with the decision from other receptionists, clinical staff or practice protocols. Patients are then either given an urgent appointment, passed to clinical staff for telephone triage/appointment or diverted out of the system to either emergency care or if urgency is deemed insufficient to the pharmacy.

Four points of failure were identified from the map. These revolve around the receptionist's knowledge of symptoms (and implicates the training receptionists receive) and identification of when these symptoms fall within the scope of general practice. When information gathered from patients is poor and insufficient to make accurate decisions, as patients do not wish to provide information (35), or because receptionists do not feel able

to ask (10) or do not ask appropriate questions. Again the potentially inadequate training the receptionists receive in preparation for this role is implicated.

7.3.2.2 Conclusion

This study met the second objective. Process mapping is a powerful tool in exploring the role of the GP receptionist, as it provided detailed insight into triage/appointment making, revealing the complexity and potential failure points of the process.

7.5 Overall thesis findings

The findings from across the multiple-methods employed are complimentary and centre on two key findings, these are the clinically related roles that receptionists have and the training they receive. The findings are compared with existing literature and are located and contextualised within the existing knowledge base.

7.5.1 Clinically related roles and patient safety in comparison to the existing literature

The findings overall clearly show that receptionists undertake a variety of clinically related roles within the practice and in doing so significantly implicates the receptionist in patient safety. These included booking appointments or triage, repeat prescribing and providing clinical information to patients; findings which map onto those clinically related roles shown in the existing literature (5, 9-12). However, the questionnaire went further and, unlike previous research specifically asked the receptionists if they believed themselves to undertake and would classify any of their roles as having a clinical dimension. The responses indicated that for the most part, they (over half of the sample; Chapter four) are aware of the clinical nature of some of their work. The receptionist's contribution in these areas is often overlooked by the practice (6, 8, 12, 13). The findings presented in this thesis have highlighted potential failure points and issues with their clinically related roles and therefore

points to an urgent need to consider and account for their potential impact on patient safety (36, 37). The receptionist is not qualified, insured, nor often trained to undertake these types of roles, nor has their contribution to patient safety culture been adequately considered.

Findings from the thesis indicate that receptionists play a role in the repeat prescribing process (chapter three and four); however, there are a number of potential safety issues. Repeat prescribing begins when the patient submits a request; this is then generated by the receptionist and finally signed off by the GP. However, the process is far more complex than it seems. Now undertaken electronically, it requires significant, albeit often invisible, input from the receptionist (12) including at times bridging the gap between the submitted request and the medication prescribed on file, and making judgments in the absence of correct information from the patient as to what medication is being requested (13); in some cases, receptionists are overriding the computer safety program to prescribe medication (12, 13). This has clear patient safety implications and, in 2018, 27% of reported patient safety incidents in general practice were medication related (38). Errors in decision making and decision making by inappropriate staff were shown to be factors which contributed to patient safety incidents (39). This study has highlighted that while the GP signs off the prescription, there is ambiguity as to where the responsibility for the final safety checking rests, with both the receptionist and GPs implicating each other.

Accurate triage requires information from patients. However, the findings show that the patient can be reluctant to provide this, as confidentiality and suitability of the receptionists to ask these questions were queried (40, 41). The receptionist may also be reluctant to ask for additional information (10) though less in cases of urgent need (35). If accurate

information is not gathered from the patient because the patient does not give it or the receptionist does not ask, it is less likely that accurate decisions regarding access to care are made. For example, the patient may be redirected to other services in error, utilise limited resources incorrectly (42, 43) or be subject to delays in accessing treatments (20, 22). In 2018, 7% of patient safety incidents, in relation to access, admission, transfer and discharge were recorded in 2018 (38), and again poor decision making is a contributing factor in safety incidents (39). It is important to note that triage undertaken correctly by receptionists may be ignored by the patient, as they feel it is not the role of the receptionist to offer medical advice or opinion (1, 40).

Findings show that protocols can aid decision making, but problematically these are not always suitable for each situation that the receptionist encounters, and they require some information from the patient (Chapter six). Existing research has shown the quality of protocols to be variable; some are vague, poorly defined, unestablished or simply not known to exist (19) and poorly followed protocols are a contributing factor in incidents of patient safety (39). In these cases, the receptionist relies on their own judgement to reach decisions, potentially misinterpreting or overlooking important clinical indications from the patient (19) and offering incorrect advice (20). Additionally, a well-defined and established protocol does not ensure adherence, they can be ignored, and the receptionist's own judgements of need and urgency used as the basis on which to make decisions (19).

Overall, poor knowledge of symptoms, a lack of information on which to base decisions, and ill-defined or unestablished protocols can have potential health care consequences for the patient either in delaying access to general practice or the erroneous filtering of patients out of the system to other care modalities.

Importantly these processes do not take place in isolation but in the busy environment of the GP practice. Working conditions are a part of the service related factors which are implicated in patient 30% of patient safety incidents (39). Receptionists are usually stationed at the front of the practice and have the competing demands of manning the telephone, the front desk and patient interaction, navigating the computer system, as well as dealing with enquiries from both patients and practice staff (Chapter five and six). The cognitive demands of this role are significant and often individual duties are competing for attention, the receptionist undertakes a wide variety of different roles, each with multiple sources of information (Chapter five). These competing demands can lead to a number of potentially harmful consequences for the receptionist in terms of their physical and psychological well-being (2, 27).

However, there are also potentially serious consequences for the patient. High cognitive load and processing demands from multiple sources or tasks have been shown to slow down work and lead to increased errors when attention is switched from one task to another (44, 45). The busy, demanding and time-constrained nature of general practice (46-48), where distractions and interruptions are likely, compounds the cognitive limitations of multitasking and creates conditions where the likelihood of error is increased (46, 47).

7.5.2 GP receptionist training in comparison to the existing literature

Knowledge and information processing are central to the roles of the receptionist (Chapter five); especially those with clinical implications for the patient, and failures in the triage/appointment making process are underscored by potential issues or difficulties in these areas (Chapter six). Receptionists need to have an understanding of an array of symptoms and medical terminology in the first instance to recognise when illnesses are

urgent or serious and when care is required and in what format that care should be presented (for example, GP or A&E). Existing research appears to suggest that this specific knowledge of symptoms and the implications are somewhat lacking. In a Norwegian study, 40% of telephone encounters, where febrile children were discussed, were managed by the receptionist (21). Failures to identify key warning signs or 'red flags' in this context could have real implications for the child, resulting in incorrect triage (20). This suggests a limit to the receptionist's knowledge, and this may contribute to patient delays in accessing care, or not diverting patients to emergency care when it was required (20, 22). More information from patients, regarding additional symptoms, seems to increase the likelihood of accurate triage (20), and the need for information from patients to support the triage/appointment booking process was highlighted in the findings of this thesis (Chapters four and six).

Receptionist knowledge also includes knowing what questions to ask patients to elicit suitable and complete information. There is little research which can help us explore this concept further. However, the thesis shows that knowing what information to ask is crucial to avoiding failure and infringing on patient safety (Chapter six). As training concentrates on administrative roles (5, 14, 15, 49-52) by implication, there is a real possibility that receptionists might not know what question to ask patients to gather information.

Protocols may be used to support the receptionists, to overcome potential issues with training and bridging the gap between their knowledge and identification of 'red flags' (Chapter six) or patient safety (39), especially in repeat prescribing (6, 8). However, as discussed protocols are replete with potential issues (6, 8, 53) requiring receptionists to rely on their own knowledge, which may be inadequate (19, 20).

There are no formal qualifications and no minimum requirements for the GP receptionist role (14, 28). Training is provided in house and covers roles which are customer focused and pertain to administration more often than clinically related skills (Chapters three and four). This could be seen as appropriate given the conceptualisation of the receptionists in terms of their administrative and customer focused roles (5, 14, 15, 49-52), assuming a large amount of the receptionist's time. However, this creates difficulties given the clear input that the receptionist has in a number of clinically related roles (Chapters three, four and six). Roles for which training is undertaken in practice is seen as variably inadequate or unsatisfactory (14, 15, 29, 30) so is likely to be insufficient to support the roles that receptionists undertake. In addition, there are issues patient safety as education, training and inadequate knowledge or skill are all implicated as contributing to patient safety incidents in general practice (39).

Receptionists' training is an issue seen across this research and within existing research; however, it is too simplistic to suggest that more training is required. General practice is currently facing a crisis, demand is increasing (42, 43) as the population ages (54) and chronic/long term conditions with multiple morbidities now fall under the purview of primary care (55). As such there are practical issues which make increased training provision difficult, including little time for additional training, a situation we found in our research (Chapter four), funding cuts and increased costs (43) result in fewer resources for external or seemingly none essential training which may support some of the receptionist's clinical functions. However, while training may be indicated, to aid the receptionists in undertaking their existing clinically related roles, it is potentially an isolated solution to the larger systemic issues of increasing demands (42, 43, 54) and as a result, a service, potentially, no longer fit for purpose. As such, there may be more relevant structural and systemic

solutions; for example, increased funding, GP numbers or even comprehensive service overhaul.

7.6 Strengths and limitations

7.6.1 Strengths

1. This research utilised a pragmatic mixed-methods (56, 57) approach. The combination of multiple methods allowed the research to address its aims from multiple angles and more comprehensively than either a qualitative or quantitative approach could have done alone (58). Multiple-methods allowed the research to draw on a wider range of data from the systematic review, the questionnaires and the qualitative data collection, bringing together the strengths of the individual approaches, to deepen and enhance the findings (59). For example, the systematic review directly informed the questionnaire development and the focus on triage for the process map. In addition, complementary findings from across the methodological approaches were synthesised (see above) to provide greater insight into the receptionist's clinically related roles or their training.

The differing methods employed in this research helped to address specific, complex and multi-faceted questions (57). For example, the research sought to understand who the modern GP receptionist is in comparison to existing literature, as well as the scope and the parameters of the role (Chapters four and five) and in more depth, clinically related processes involving the receptionist from the perspectives of the receptionist, GP/practice staff and patients (Chapter six).

In practice the use of multiple methods allowed the research to use findings and insight from earlier aspects of the project to inform and enhance the later parts (60). For

example, the findings from the review, a synthesis of quantitative and qualitative research (61), provided substantial insight into the successive aspects of the thesis.

It highlighted a number of key, clinically related, roles receptionists have, as well as the paucity of research looking at the demographics of the receptionist, issues relating to training as well as receptionist satisfaction and the parameters of their roles in modern practice. The ability to draw together or triangulate the findings from each of the different research methods has also been the strength of this approach. Findings from both the GP receptionists (Chapter four) and WDQ (Chapter five) questionnaires and the thematic analysis/process map (Chapter six) highlighted a number of key findings across the project (Chapter seven). That the multiple and divergent methodologies produced similar findings is a significant benefit to the project.

2. Participating practices, receptionists, staff and patients were drawn from a range of different practice types, large, medium and small (62), and locations nationally (questionnaires, Chapters four and five) and from across the West Midlands (Chapter seven). As such, they are representative of the range of GP practices and primary care environments present across the UK (62).
3. Overall findings from across the thesis accord with the existing literature on GP receptionists in a number of points, such as demographics (14, 20, 23, 24), key administrative (5, 14, 15, 49-52) and clinically related roles (5, 9-12), and training (5, 14, 15, 17, 18, 20, 21, 49-52), suggesting that the discussed limitations below, aside, the findings have descriptive value on the nature of the GP receptionist in current practice.

4. The use of the WDQ represents the first time this has been used with GP receptionists and has provided the first quantitative insight into the design parameters of the role of receptionists. It highlighted a number of key aspects of their work, and in doing so, the WDQ provided an indication of areas where additional support may prove beneficial to the receptionist.

7.6.2 Limitations

1. It was envisioned that the questionnaires would run and end before qualitative data collection began, after which the analysed data would inform the later data collection by helping to focus questions or suggest areas of interest for exploration. However, whilst the questionnaires began before the qualitative data collection, it in part ran concurrently with the qualitative data collection. The need to run the questionnaire strand of the research for longer was due to low response to the GP/WDQ questionnaire.
2. Overall the questionnaire was open for 12 months, and just 70 receptionists responded to either the link to the online questionnaire or completed one of 500 postal questionnaires sent to 100 GP surgeries, selected at random from a list of practices in England (63). This in itself was an interesting finding, as multiple vectors of recruitment and dissemination of the questionnaires were undertaken (Chapters four and five) with limited success. This led to the suggestion that GP receptionists can be classified as potentially as a hard to reach group (64). As such, the sample size for the questionnaires is a potential limitation of the research. This smaller sample size presents limitations for

the validity and generalisability of the findings generated from the receptionist's questionnaire and the WDQ.

3. The data on which process mapping (Chapter six) was developed was aggregated from five practices across the West Midlands. General practices undertake the triage/appointment making process differently, with different practice policies or procedures. As such, the map represents a general overview and synthesis drawn from each of the practice's data. Whilst a limitation, the map does show the central and important role that the receptionist has in this process.

7.7 Recommendations

7.7.1 Objective three

Produce a series of recommendations to reshape current work processes or otherwise provide support for administrative staff to offer a more robust and consistent service.

The aggregated findings from the systematic review (Chapter three), the receptionist's questionnaire (Chapter four), the WDQ (Chapter five) and the process map (Chapter six), underpinned the development of a number of recommendations. These were both practical and practice-based (surrounding training/support for the receptionist's, use and development of protocols, and the redesign of the receptionists' work) and conceptual (reconceptualising the role beyond the purely administrative).

7.7.2 Recommendation one - Training

- Further research could explore the possibility of establishing national training programmes for GP receptionists and given the variation in general practice research

should explore how training could be delivered and tailored to practices. Training content should provide basic understandings and core competencies to underpin the receptionist's triage/appointment booking activities. Funded national training programmes have previously been established (65). As such, there is clear scope for further similar programmes; although how much such a programme is utilised by general practices and receptionists are unknown, and as stated there are practical impediments to accessing training, such as time and funding.

- Findings from the thesis indicate that in practice training is often centred on administration and customer service roles, important to the functioning of the receptionist's work. However, clinically related roles are equally important, and training in practice could expand to:
 - Explicitly include these clinically related functions,
 - Emphasise key red flags, urgent symptoms or the ability to recognise those requiring emergency care.
 - Cover what information receptionists need to gather from patients to support their own decisions/protocol use or to underpin GP/nurse-led triage.

It is likely that some practices have such training formally or informally, drawing on the knowledge and experience of the existing receptionists in practice. Explicit training will, however, highlight the importance of the role, to the receptionist, and give them the tools to undertake their roles with increased safety.

7.7.3 Recommendation two - Protocols

Protocols are used to govern a number of the key receptionist functions (6, 8, 19). However these have been found in both this study and existing research, to be limited, not

generalizable to all conditions and situations or not known to exist; resulting in them being ignored, overlooked, and the receptionist utilising information to make their own decisions (19, 20). As such practice-based protocols should be:

- Known to all members of staff,
- Developed by clinical staff but in conjunction with the reception staff who have to use them in practice,
- Clear and direct, indicating key stages in the process and as well as concrete and established processes for seeking support/advice or guidance from clinical staff when needed.
- Clearly delineate where ultimate responsibility for safety lies and define both the receptionist's role in the process and the GP/clinical staff's role.

7.7.4 Recommendation three - Receptionist work in practice

- The WDQ highlighted a number of key factors in relation to the work of the GP receptionist (Chapter seven). These include the high information processing and knowledge demands, and the high cognitive load associated with the role. Practices could explore the potential of:
 - Separating work into discrete packages to reduce the potential for errors resulting from task switching (44, 45).
 - This could include separating front desk patient interaction duties from telephone duties (booking appointments, feeding back blood test results) to minimise the chance of interruption and the diversion of concentration when undertaken simultaneously.

- Repeat prescribing and triage/appointment booking, as key complex clinically related roles, could be separated into discrete activities undertaken away from the main reception area. This would help to reduce extraneous stimuli, interruption, non-essential communication and emulating the 'sterile cockpit' used in aviation (66).

7.7.5 Recommendation four - Reconceptualising the receptionist

- The notion of the receptionist as being overlooked or their contribution diminished in some way is clear (6, 8, 12, 13). As such reconceptualising the role of the receptionist is important and should acknowledge:
 - The central and significant roles receptionists play in managing the scarce resources of the practice, in a time of exceptional demand,
 - The full array of roles the receptionist has, especially those which have clinical implications and away from the two-dimensional conception of the receptionist as purely administrative. This may not be straightforward given the medico-legal implications of receptionists having roles for which they are inadequately trained and indemnified.
 - Receptionists should be involved in the development, planning and implementation of the work that they undertake, the processes that they follow and protocols/resources they access.
 - Overall a more professionalised role for the receptionists could be conceptualised, with clear entry requirements, career progression and a greater more appropriate standing within the practice. This may encourage a wider range of individuals into the role (Chapter four).

7.8 Suggestions for future research

Previous research with the GP receptionists is limited. As discussed, what research exists with the current evidence base was conducted over the last 50 years and as such is potentially no applicable to current practice. This research presented in this thesis goes some way to beginning to reverse this and is a step towards developing a more accurate picture of the GP receptionists; however, future research could:

- Explore the GP receptionist with a larger, sufficiently powered sample. This will require identifying strategies to overcome issues with accessing the participant group,
- Go beyond the process map and explore what factors impact on the decision making of the receptionist in relation to triage. For example, knowledge of patient-specific needs, the surrounding geographical area and personal feeling/beliefs were flagged as factors in previous research and during this study. Future research should explore these factors in greater detail. In addition, practice-based policies as well as local and national programmes which focus on specific illness detection or prevention may have significant input into the receptionist's decision making and should be explored,
- Examine and typify the relationship between the receptionist and the patient as this is missing from current understanding. There appeared to be a disconnect between reality and expectation. Patients seek a customer service operative, to take bookings and greet them as they enter the practice, and so question the involvement of the receptionist in any potentially clinically related roles (10). Patients can see the role as antagonistic, the 'dragon

behind the desk' (1, 5), and there to prevent them from accessing care (67). On the other hand, receptionists conceptualise the role of protecting the system for the most vulnerable and in need (1, 51, 67), and require information from the patient to aid this process (40, 41). Understanding this relationship is crucial as aside from the GP/patient relationship, it is perhaps the most significant relationship for the patient.

7.9 Conclusion

Over the course of the thesis, the research presented has challenged and dismantled this potentially crude and unfair stereotype of the receptionists as a 'dragon,' or obstructive to patients.

Process improvement methodologies have proved to be useful tools in both accessing and exploring the role of GP receptionists in contemporary general practice. They highlighted a number of areas of work design, in general, or clinically related functioning, specifically, where an enhancement to the receptionist's training or conception and design of the role may be warranted.

The receptionist has a highly complex role within the practice, with high cognitive demands, requiring specialist knowledge and which given their clinically related input may have serious medico-legal ramifications for the practice and the patient. However, the extent of their roles is unnoticed by patients, and there is a perception that the same is true for practice staff; exacerbating the negative stereotypes through a lack of context or understanding.

Receptionists have a clear input into clinically related roles. To undertake these roles, they must seek and evaluate information from the patient, use that information to make

decisions about patient need and where appropriate to divert patients to other more relevant sources of care.

However, given the complexity of the role and input into the clinical process, there are potential inadequacies in their training. Training is unsatisfactory or concerned with administrative and customer service roles, as such, how far current training supports receptionists in undertaking clinically related roles is not clear but likely to be limited.

General practice is currently experiencing exceptional demands, and the receptionists are a vital part in the ability of general practice to meet those demands. As such, whether conceptualised as a gatekeeper or facilitator, the receptionist's role is to manage and dispense the limited resources of general practice appropriately, within the context of those demands. This no doubt causes disappointment and frustration for some patients, which has led to the stereotype of the 'dragon'. However, by the end of this thesis, the stereotype has been dispelled, and a detailed, evidence-based picture of the complexity and challenges of GP receptionist work in practice has been documented and analysed.

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Appendices

Debate & Analysis

The future role of receptionists in primary care

INTRODUCTION

The postmillennial family practice has moved far beyond its cottage industry origins. The broader range of services and treatments on offer in modern primary care are maintained by sophisticated medical technologies and an equally diverse and specialised set of care providers. In addition, the service is relied on to promote health and deal with a wider scope of social and psychological issues in the face of disappearing social care and increasing fragmentation of families.¹ The growing complexity of the primary care environment and the increasing expectations of patients and policymakers are placing huge demands on the primary care workforce. Recent reports on the challenges and opportunities facing primary care in the UK acknowledge that, to meet these demands, we must realise the potential of all members of the primary care team, including both clinical and non-clinical staff.^{2,3}

Arguably the most visible among the primary care workforce are receptionists, required to work under unprecedented levels of pressure and scrutiny, yet without any concurrent change in their training or support. Their position at the point of entry to the healthcare system means they are the most accessible member of the care team⁴ and have a significant influence on patients' perception of their care. They frequently embody the frustrations of patients: a recent survey of complaints in primary care found those concerning receptionists were responsible for nearly half of upheld complaints, the largest figure of any staff group.⁵ This dissatisfaction with reception staff can have serious implications for non-attendance, increased A&E visits, and health outcomes.⁶

CLINICAL ROLE OF RECEPTIONISTS

Apparently overlooked by policymakers and undervalued by GPs and patients, receptionists are viewed chiefly as either administrators, undertaking clerical duties to ensure the various office systems continue to support the delivery of care, or 'gatekeepers', helping to preserve the boundary of the organisation and controlling access to primary care services.⁷

The receptionist's physical isolation at the front desk means that many of their colleagues remain unaware of the complex reality of the various roles they fulfil,⁸ and it can convincingly be argued that receptionists

"The receptionist's physical isolation at the front desk means that many of their colleagues remain unaware of the complex reality of the various roles they fulfil ..."

in the UK also fulfil at least three critically important clinical roles.

First, and one already alluded to, is their role in facilitating access to primary care and the broader health service. Primary care has professionals at the heart of the organisation supported by the administrative infrastructure responsible for controlling access to their services. Receptionists charged with this responsibility are invested with a degree of power and required to exercise discretion. Although perhaps contentious in concept, this leads them to prioritise the allocation of appointments, effectively making triage decisions that can directly affect patient care and outcome.⁸ Negotiations for appointments are frequently conducted over the telephone, informed by appointment availability and the receptionist's perception of clinical need, and influenced by patients' expectations. The frequent lack of structured guidance means that receptionists rely on personal experience and professional intuition to inform their decision making. This subjectivity can lead to receptionists making a 'moral', if subconscious, decision about patients founded on a variety of non-clinical factors including appearance, accent, and ethnicity.⁹ Considering the unsupported exercise of personal judgement in pressured and uncertain conditions, it is perhaps unsurprising that receptionists fulfilling this obligation continue to be a source of complaint and frustration.

Discretion and experience also inform their role in administering repeat prescriptions, the second of the key clinical tasks receptionists perform without specific training or recourse to any formal support. In the UK, half of all patients receive treatment via repeat prescriptions; that is, those issued without consultation between clinician and patient. The process of acquiring such prescriptions is a complex, technology-supported social practice requiring the input of both clinical and administrative staff.¹⁰ Although systems and protocols are in place to govern the process, research has described how the

sense of responsibility for their patients felt by many receptionists leads them to make often hidden contributions to ensure its successful completion.¹⁰ For example, many repeat requests are not listed as repeats on the patient record or reference drugs listed by a different brand name that receptionists would then identify from the formulary.¹⁰ In bridging the gaps between the intended process and the actual routine as it plays out in practice, they make extensive use of tacit knowledge and contextual judgements. Again, placing this level of responsibility on untrained staff is unsafe, inadvisable, and leaves patients vulnerable.

The third task of direct clinical consequence undertaken by receptionists is the relaying of test results to patients. A recent UK survey of result communication in primary care found that in 98% of practices the default method of communicating normal test results was via reception staff.¹¹ Previous research has described how this feedback should contain information on the implications of the result, options for further care, and the offer of emotional support. However, the level of detail receptionists provide is restricted by the script supplied by the GP and receptionists lack the training to understand the context of blood results or the discourse styles most suited to communicating such potentially sensitive information. The ensuing uncertainty in patients about the meaning or accuracy of normal results has implications for both patient and the health service, as it can lead to additional costly and unnecessary medical visits and diagnostic procedures.¹²

THE FUTURE ROLE OF RECEPTIONISTS

In considering these multiple responsibilities, it is apparent that receptionists have a central influence on patient outcome, safety, and satisfaction, and how potential medicolegal concerns might arise for their employers. The breadth and importance of the role of receptionists is now being recognised in the UK and there is anecdotal evidence of changes being implemented at local level.

Some practices are attempting to more overtly embed the role in the primary healthcare service; for example, by renaming them 'medical receptionists' and extending responsibilities beyond managing clinical appointment schedules to undertaking clinical tasks such as phlebotomy, which were previously the domain of healthcare assistants or phlebotomists.¹³ Receptionists frequently live in the locale of their surgery⁷ and this local knowledge has been harnessed to offer effective reassurance to patients,⁵ and drawn on by GPs to inform their decision making.⁷ Guidance for receptionists is also emerging around triage, and, although countries such as Australia have already produced standards that offer direction on negotiations of urgency and managing patient appointments,¹⁴ in the UK initiatives have tended to be confined to recognising patients with specific conditions such as stroke.¹⁵

If the skills and experience of receptionists in the UK are to be more formally supported then the recent investment in improving their training is to be applauded. Some £45 million has been made available to practices since the beginning of the year as part of the wider General Practice Development Programme. The initiative is intended to release capacity in general practice by training receptionists for two clearly defined roles.¹⁶ The first is as 'care navigators', actively signposting patients to the appropriate service and correct person the first time. The second is as 'clinical administrators', managing paperwork such as referral letters to free up GP time to spend with patients.

The move towards the increased use of administrative staff as part of primary care teams is not confined to the UK; internationally the use of support staff is growing and their activities can now include reviewing test results, prescribing, supporting prevention and population health, and performing basic therapeutic interventions.¹⁷ However, if any extended role of receptionists is to be integrated and sustained in primary care we need more than training programmes for one or two discrete tasks. Instead, the exact parameters of the receptionist's work need to be better understood, as do the processes and systems within which they operate. This includes the content of the tasks they perform, the equipment and technology they use, and their relationship with colleagues and their community. However, after decades of underestimating their contribution, it may be that the single most important step is educating patients, policymakers, and GPs as to the potential of receptionists to become an integral part of the primary care service

that for so long they have been employed to defend.

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Funding

This work is supported by the Health Foundation (grant number 7452). The ESRC also supported public engagement with this research via the Festival of Social Science.

Provenance

Freely submitted; externally peer reviewed.

Competing interests

The authors have declared no competing interests.

DOI: <https://doi.org/10.3399/bjgp17X693401>

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Appendix 2: Additional file 1 - PRISMA-P 2015 Checklist

This checklist has been adapted for use with protocol submissions to *Systematic Reviews* from Table 3 in Moher D et al: Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015 statement. *Systematic Reviews* 2015 4:1

Section/topic	#	Checklist item	Information reported		Line number(s)
			Yes	No	
ADMINISTRATIVE INFORMATION					
Title					
Identification	1a	Identify the report as a protocol of a systematic review	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1/2
Update	1b	If the protocol is for an update of a previous systematic review, identify as such	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Registration	2	If registered, provide the name of the registry (e.g., PROSPERO) and registration number in the Abstract	<input checked="" type="checkbox"/>	<input type="checkbox"/>	18
Authors					
Contact	3a	Provide name, institutional affiliation, and e-mail address of all protocol authors; provide physical mailing address of corresponding author	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3-16
Contributions	3b	Describe contributions of protocol authors and identify the guarantor of the review	<input checked="" type="checkbox"/>	<input type="checkbox"/>	466
Amendments	4	If the protocol represents an amendment of a previously completed or published protocol, identify as such and list changes; otherwise, state plan for documenting important protocol amendments	<input type="checkbox"/>	<input type="checkbox"/>	
Support					
Sources	5a	Indicate sources of financial or other support for the review	<input checked="" type="checkbox"/>	<input type="checkbox"/>	464
Sponsor	5b	Provide name for the review funder and/or sponsor	<input checked="" type="checkbox"/>	<input type="checkbox"/>	464
Role of sponsor/funder	5c	Describe roles of funder(s), sponsor(s), and/or institution(s), if any, in developing the protocol	<input checked="" type="checkbox"/>	<input type="checkbox"/>	464/465
INTRODUCTION					

Section/topic	#	Checklist item	Information reported		Line number(s)
			Yes	No	
Rationale	6	Describe the rationale for the review in the context of what is already known	<input checked="" type="checkbox"/>	<input type="checkbox"/>	133-154
Objectives	7	Provide an explicit statement of the question(s) the review will address with reference to participants, interventions, comparators, and outcomes (PICO)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	161-164
METHODS					
Eligibility criteria	8	Specify the study characteristics (e.g., PICO, study design, setting, time frame) and report characteristics (e.g., years considered, language, publication status) to be used as criteria for eligibility for the review	<input checked="" type="checkbox"/>	<input type="checkbox"/>	192-224
Information sources	9	Describe all intended information sources (e.g., electronic databases, contact with study authors, trial registers, or other grey literature sources) with planned dates of coverage	<input checked="" type="checkbox"/>	<input type="checkbox"/>	226-238
Search strategy	10	Present draft of search strategy to be used for at least one electronic database, including planned limits, such that it could be repeated	<input checked="" type="checkbox"/>	<input type="checkbox"/>	238
STUDY RECORDS					
Data management	11a	Describe the mechanism(s) that will be used to manage records and data throughout the review	<input checked="" type="checkbox"/>	<input type="checkbox"/>	256/263
Selection process	11b	State the process that will be used for selecting studies (e.g., two independent reviewers) through each phase of the review (i.e., screening, eligibility, and inclusion in meta-analysis)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	260-293
Data collection process	11c	Describe planned method of extracting data from reports (e.g., piloting forms, done independently, in duplicate), any processes for obtaining and confirming data from investigators	<input checked="" type="checkbox"/>	<input type="checkbox"/>	298-315
Data items	12	List and define all variables for which data will be sought (e.g., PICO items, funding sources), any pre-planned data assumptions and simplifications	<input checked="" type="checkbox"/>	<input type="checkbox"/>	131 – 141 303 - 305
Outcomes and prioritization	13	List and define all outcomes for which data will be sought, including prioritization of main and additional outcomes, with rationale	<input checked="" type="checkbox"/>	<input type="checkbox"/>	193 - 207

Section/topic	#	Checklist item	Information reported		Line number(s)
			Yes	No	
Risk of bias in individual studies	14	Describe anticipated methods for assessing risk of bias of individual studies, including whether this will be done at the outcome or study level, or both; state how this information will be used in data synthesis	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
DATA					
Synthesis	15a	Describe criteria under which study data will be quantitatively synthesized	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
	15b	If data are appropriate for quantitative synthesis, describe planned summary measures, methods of handling data, and methods of combining data from studies, including any planned exploration of consistency (e.g., I^2 , Kendall's tau)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
	15c	Describe any proposed additional analyses (e.g., sensitivity or subgroup analyses, meta-regression)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
	15d	If quantitative synthesis is not appropriate, describe the type of summary planned	<input checked="" type="checkbox"/>	<input type="checkbox"/>	316-358
Meta-bias(es)	16	Specify any planned assessment of meta-bias(es) (e.g., publication bias across studies, selective reporting within studies)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Confidence in cumulative evidence	17	Describe how the strength of the body of evidence will be assessed (e.g., GRADE)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Appendix 3: Additional file 2 - Medline search strategy

1	'GP receptionist\$'
2	'General practice receptionist\$'
3	'Practice receptionist\$'
4	'Receptionist\$'
5	'Role\$'
6	'Clinical role\$'
7	'Clinical work'
8	'Clinical function\$'
9	'Medical role\$'
10	'Medical function\$'
11	'Job satisfaction'
12	'Attitudes'
13	(1 or 2 or 3 or 4) and (5 or 6 or 7 or 8 or 9 or 10 or 11 or 12)
14	'Patient outcome\$'
15	'Patient satisfaction\$'
16	'Patient participation'
17	'Patient effects'
18	'Patient view\$'
19	'Patient attitude\$'
20	13 and (14 or 15 or 16 or 17 or 18 or 19)
21	'Primary care'
22	'Primary healthcare'

23	'GP practice'
24	'General practice'
25	'GP Surger\$'
26	'General practice management'
27	'General practice staff'
28	20 and (21 or 22 or 23 or 24 or 25 or 26 or 27)
29	(1 or 2 or 3 or 4) adj2 (14 or 15 or 16 or 17 or 18 or 19)
30	(1 or 2 or 3 or 4) adj2 (5 or 6 or 7 or 8)

Appendix 4: GP receptionists' survey and Work Design Questionnaire

Participant Information

You are invited to participate in research exploring the roles, and functions of the GP receptionist. This study is being conducted by **Michael Burrows** (PhD Student) and supervised by **Professor Sheila Greenfield, Dr Ian Litchfield and Dr Nicola Gale** from the **University of Birmingham**. This research is being undertaken as receptionists are the focal point of the GP surgery but are often overlooked by researchers and professionals alike. As such we have little understanding of the current roles, and profile of the GP receptionists, this research will seek to address this lack of understanding.

The aim of this research project will be to explore the role, functions and workload of the GP receptionist, to examine current training, satisfaction, the roles undertake, before then exploring the characteristics of the job in more detail with the Work Design Questionnaire (Morgeson and Humphrey; 2006).

This questionnaire is in three parts. Part one will ask questions about the roles you take, part two, is the work design questionnaire and part three will ask for information about you; we are collecting all of this information as we required to under the Equalities Act 2010, however you are not obliged to answer all questions if you do not want to. It will take you around **25** minutes to complete the questionnaire and the questions are voluntary and you can stop at any time and your data will not be saved.

Participation in this study is unlikely to incur any risks to you; however steps will be taken to ensure confidentiality. As such your name will not be taken, nor will the name of the surgery where you work. Instead you will be given a unique code and data will be amalgamated for analysis and presentation. In this way your individual responses will not be identifiable. It would be helpful for if you completed all of the questions however please feel free to omit any question you don't want to answer. If you wish it withdraw from the research after you have completed the questionnaire, please email the researcher, Michael Burrows to make the withdrawal.

Please send the completed form and the signed copy of the information sheet in the pre-stamped envelope provided.

Thank you for reading this information. For further information or questions, please contact Michael Burrows – mjb538@bham.ac.uk

I you agree to participate and complete this questionnaire please read and agrees to the following statement:

I have read the information provided and agree to participation in the study as it was detailed and I agree to participate, by signing and dating this sheet.

Print Name _____

Sign Name _____

Date ___/___/____

Section 1 - GP Receptionist Survey

Part 1 – Training

1. Have you received any training for your role?

Yes		Go to a
No		Go to d

a. If **YES**, please detail the training that you have received? (Please tick all that apply)

Training within your practice	
External Training	
<ul style="list-style-type: none"> • The Association of Medical Secretaries, Practice Managers, Administrators 	
<ul style="list-style-type: none"> • The British Society of Medical Secretaries & Administrators 	
<ul style="list-style-type: none"> • Other Training Providers 	
Other training: please indicate	

b. Please indicate what training you have received

Medical Administration Skills	
Basic triage	
Medical terminology	
Communication Skills	
Telephone Skills	
Customer Service	
Assertiveness	
Dealing with complaints	
Handling difficult patients	
Other – Please specify	

c. Overall were you satisfied with how much training you have received, for your role? (on a scale of 1-5 please indicate) 1 = highly satisfied, 5 =highly unsatisfied

1	2	3	4	5

d. If **NO**, please indicate what training content you think you would have needed or wanted?

Medical Administration Skills	
Basic triage	
Medical terminology	
Communication Skills	

Telephone Skills	
Customer Service	
Assertiveness	
Dealing with complaints	
Handling difficult patients	

Other training: Please indicate

2. Are there any problems that would prevent you from accessing training?

Lack of time	
Lack of funding	
No support from practice managers	
No support from GP Partners	
Lack of relevant training courses	
Other – Please indicate	

Other - please indicate

Part 2 – The Job

3. Please indicate your normal/current working patterns?

Full Time (35 hours +)	
Part time (less than 35 hours)	
If part time please indicate how many hours you work	

4. Please describe the main duties that you undertake in your job? (Please tick all that apply)

Role	Percentage of working time
Administration duties	
Arranging appointments	
Repeat prescribing	
Reporting test results	
Talking to patients (in any capacity)	
Dealing will difficult patients	
Other roles	

Other - please indicate

5. Would you describe any of the duties that you undertake as being clinical or medically orientated?

Yes	
No	

For example any roles that you believe involve the need for medical knowledge or information, arranging urgent appointments or repeat prescribing.

If so which duties are these?

Part 3 – Satisfaction

6. On a scale of 1 - 5 overall how satisfied with your job as a GP receptionist are you?

1	2	3	4	5

a. Please explain the rating that you gave?

7. On a scale of 1-5 please indicate how satisfied you are undertaking the following duties:
1 = Highly satisfied and 5 = Highly unsatisfied

a. Administrative duties?

1	2	3	4	5

b. Triage patients for urgent appointments?

1	2	3	4	5

c. Support from the practice GPs?

1	2	3	4	5

d. Support from the practice managers?

1	2	3	4	5
---	---	---	---	---

--	--	--	--	--

e. Overseeing repeat prescribing?

1	2	3	4	5

f. Dealing with difficult patients

1	2	3	4	5

Part 4 – Organisation

8. How important do you think the role of the GP receptionist is within the GP practice?

Very Important	Important	Neither important or unimportant	Unimportant	Very Unimportant

Please explain what you see as the role of the receptionist:

9. On a scale of 1 - 5 do you feel appreciated or valued by your practice 1 being highly appreciated and 5 being highly unappreciated ?

1	2	3	4	5

Please explain the rating you gave:

Part 5 – Technology

10. Does your practice use an internet appointment booking system?

Yes	
No	

a. If yes, what if any effect does this have on your workload/efficiency?

11. Does your practice use a self-check-in system for patients arriving for appointments?

Yes	
No	

a. If yes, what if any effect does this have on your workload/efficiency?

12. Does your practice operate an online, phone or external agency repeat prescribing process?

	Yes	No
Online Process		
Over the Phone		
Via an External Agency		

a. Has using these additional repeat prescribing processes helped your practice, if so how have they helped?

13. Does your practice use a text reminder system for patients?

Yes	
No	

a. If yes, what if any effect does this have on your workload/efficiency?

14. Which of the following IT systems does your practice use?

	Yes	No
EMIS		
Vision		
System 1		
Other		

Other - please indicate

15. Did you receive training in the use of the any of the technology/IT systems?

Yes	
No	

a. If yes, which systems were you trained to use

b. If no - If you didn't receive additional training to use these systems, would training have been helpful?

Section 2 - Work Design Questionnaire

The questions in this part concern characteristic of your job itself, this section will explore autonomy, knowledge required for the job, social characteristics and finally the work context.

Using the scale below, please indicate the extent to which you agree with each statement. Remember to think only about your job itself, rather than your reactions to the job.

1 = Strongly Disagree 2 = Disagree 3 = Neither Agree nor Disagree 4 = Agree 5 = Strongly Agree

Please respond as accurately and honestly as possible. There are no right or wrong responses. For each question, choose the response option on the scale that best corresponds to your opinion. This section of the questionnaire should take less than 15 minutes to complete.

Part 1 - Autonomy

Work Scheduling Autonomy

1. The job allows me to make my own decisions about how to schedule my work.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

2. The job allows me to decide on the order in which things are done on the job.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

3. The job allows me to plan how I do my work.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

Decision-Making Autonomy

1. The job gives me a chance to use my personal initiative or judgment in carrying out the work.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

2. The job allows me to make a lot of decisions on my own.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

3. The job provides me with significant autonomy in making decisions.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

Work Methods Autonomy

1. The job allows me to make decisions about what methods I use to complete my work.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

2. The job gives me considerable opportunity for independence and freedom in how I do the work.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

3. The job allows me to decide on my own how to go about doing my work

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

Task Variety

1. The job involves a great deal of task variety.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

2. The job involves doing a number of different things.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

3. The job requires the performance of a wide range of tasks. 4. The job involves performing a variety of tasks.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

Task Significance

1. The results of my work are likely to significantly affect the lives of other people.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

2. The job itself is very significant and important in the broader scheme of things.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

3. The job has a large impact on people outside the organization.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

4. The work performed on the job has a significant impact on people outside the organization.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

Task Identity

1. The job involves completing a piece of work that has an obvious beginning and end.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

2. The job is arranged so that I can do an entire piece of work from beginning to end.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

3. The job provides me the chance to completely finish the pieces of work I begin.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

4. The job allows me to complete work I start.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

Feedback From Job

1. The work activities themselves provide direct and clear information about the effectiveness (e.g., quality and quantity) of my job performance.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

2. The job itself provides feedback on my performance.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

3. The job itself provides me with information about my performance.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

Part 2 - Knowledge Characteristics

Job Complexity

1. The job requires that I only do one task or activity at a time (reverse scored).

1 Strongly Agree	2 Agree	3 Neither Agree nor Disagree	4 Disagree	5 Strongly Disagree

2. The tasks on the job are simple and uncomplicated (reverse scored).

1 Strongly Agree	2 Agree	3 Neither Agree nor Disagree	4 Disagree	5 Strongly Disagree

3. The job comprises relatively uncomplicated tasks (reverse scored).

1 Strongly Agree	2 Agree	3 Neither Agree nor Disagree	4 Disagree	5 Strongly Disagree

4. The job involves performing relatively simple tasks (reverse scored).

1 Strongly Agree	2 Agree	3 Neither Agree nor Disagree	4 Disagree	5 Strongly Disagree

Information Processing

1. The job requires me to monitor a great deal of information.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

2. The job requires that I engage in a large amount of thinking.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

3. The job requires me to keep track of more than one thing at a time.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

4. The job requires me to analyse a lot of information.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

Problem Solving

1. The job involves solving problems that have no obvious correct answer.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

2. The job requires me to be creative.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

3. The job often involves dealing with problems that I have not met before.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

4. The job requires unique ideas or solutions to problems.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

Skill Variety

1. The job requires a variety of skills.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

2. The job requires me to utilize a variety of different skills in order to complete the work.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

3. The job requires me to use a number of complex or high-level skills.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

4. The job requires the use of a number of skills.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

Specialization

1. The job is highly specialized in terms of purpose, tasks, or activities.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

2. The tools, procedures, materials, and so forth used on this job are highly specialized in terms of purpose.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

3. The job requires very specialized knowledge and skills.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

4. The job requires a depth of knowledge and expertise.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

Part 3 - Social Characteristics

Social Support

1. I have the opportunity to develop close friendships in my job.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

2. I have the chance in my job to get to know other people.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

3. I have the opportunity to meet with others in my work.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

4. My supervisor is concerned about the welfare of the people that work for him/her.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

5. People I work with take a personal interest in me.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

6. People I work with are friendly.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

Interdependence

Initiated Interdependence

1. The job requires me to accomplish my job before others complete their job.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

2. Other jobs depend directly on my job.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

3. Unless my job gets done, other jobs cannot be completed.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

Received Interdependence

1. The job activities are greatly affected by the work of other people.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

2. The job depends on the work of many different people for its completion.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

3. My job cannot be done unless others do their work.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

Interaction Outside Organization

1. The job requires spending a great deal of time with people outside my organization.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

2. The job involves interaction with people who are not members of my organization.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

3. On the job, I frequently communicate with people who do not work for the same organization as I do.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

4. The job involves a great deal of interaction with people outside my organization.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

Feedback From Others

1. I receive a great deal of information from my manager and co-workers about my job performance.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

2. Other people in the organization, such as managers and co-workers, provide information about the effectiveness (e.g., quality and quantity) of my job performance.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

3. I receive feedback on my performance from other people in my organization (such as my manager or co-workers).

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

Part 4 - Work Context

Ergonomics

1. The seating arrangements on the job are adequate (e.g., ample opportunities to sit, comfortable chairs, good postural support).

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

2. The work place allows for all size differences between people in terms of clearance, reach, eye height, leg room, etc.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

3. The job involves excessive reaching (reverse scored).

1 Strongly Agree	2 Agree	3 Neither Agree nor Disagree	4 Disagree	5 Strongly Disagree

Physical Demands

1. The job requires a great deal of muscular endurance.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

2. The job requires a great deal of muscular strength.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

3. The job requires a lot of physical effort.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

Work Conditions

1. The work place is free from excessive noise.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

2. The climate at the work place is comfortable in terms of temperature and humidity.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

3. The job has a low risk of accident.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

4. The job takes place in an environment free from health hazards (e.g., chemicals, fumes, etc.).

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

5. The job occurs in a clean environment.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

Equipment Use

1. The job involves the use of a variety of different equipment.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

2. The job involves the use of complex equipment or technology.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

3. A lot of time was required to learn the equipment used on the job.

1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

Section 3 - Demographics

16. 1st Part of your home postcode _____

17. Age (Please mark an X in the relevant box)

18-29		40-49		60+	
30-39		50-59			

18. Please state your gender identity _____

19. Is your gender identity the same as you birth gender?

Yes	
No	

20. Please indicate your marital status? (Please tick the relevant box)

Single	
Living with a partner	
Married/ In a civil partnership	

21. Do you consider yourself to have a disability?

Yes	
No	

22. What is your sexual orientation?

Heterosexual	
Gay woman/lesbian	
Gay Man	
Bisexual	
Other	

23. What is your religion or belief, if you have one?

No religion		Sikh	
Christian		Buddhist	
Jewish		Other religion	
Muslim			
Hindu			

24. Pregnancy and parenthood, please tick where relevant if you are:

Pregnant		The mother of a child under 18 months	
The father of a child under 18 months		The father of an unborn child	
None of the above			

25. Please indicate your ethnic background? (Please tick the relevant box)

<p>White</p> <p>1. English/Welsh/Scottish/Northern Irish/British</p> <p>2. Irish</p> <p>3. Gypsy or Irish Traveller</p> <p>4. Any other White background, please describe</p>	<p>Mixed/Multiple ethnic groups</p> <p>5. White and Black Caribbean</p> <p>6. White and Black African</p> <p>7. White and Asian</p> <p>8. Any other Mixed/Multiple ethnic background, please describe</p>
<p>Asian/Asian British</p> <p>9. Indian</p> <p>10. Pakistani</p> <p>11. Bangladeshi</p> <p>12. Chinese</p> <p>13. Any other Asian background, please describe</p>	<p>Black/ African/Caribbean/Black British</p> <p>14. African</p> <p>15. Caribbean</p> <p>16. Any other Black/African/Caribbean background, please describe</p>
<p>Other ethnic group</p> <p>17. Arab</p>	<p>18. Any other ethnic group, please describe</p>
Please indicate your response:	

26. Please indicate your level of education? (Please tick the relevant boxes)

No Educational Qualifications	
GCSE – CSE/O Level	
Further Education Qualification	
A Level	
Bachelor's Degree	
Post-Graduate	

27. How many years have you been a GP receptionist? _____

28. Please describe the size of the practice that you work at?

Small sized – Single-handed /1 or 2 GPs, serving a small number of patients with single or less than 4 reception/admin staff	
Medium sized – Larger practices, between 5-10 GPs, and other clinical staff and over 5 reception/admin staff	
Large sized – Multiple GP partners, including multiple additional clinical (nurses, nurse registrars) and non-clinical staff (receptionists), offering a number of services in additional to general practice.	

29. How many GPs (including permanent, locum and trainee GPs) work at your surgery?

30. How many administrative staff (including the practice manager) work at your surgery?

31. How many receptionists work at your surgery? _____

Thank you for taking part in this survey, if you would like further information or to change your mind and remove your data, please email Michael Burrows – mjb538@bham.ac.uk

There is no expectation that taking part in the research will cause any ill-effects, however if participation has caused you stress or anxiety support can be sought from the following:

<http://www.samaritans.org/how-we-can-help-you>

<http://www.nhs.uk/conditions/stress-anxiety-depression/pages/low-mood-stress-anxiety.aspx>

If you wish to receive a summary of the results collected from questionnaires, please provide your email address and you will receive a report after the questionnaire closes.

As an incentive for taking part, you will be included into a prize draw with prizes of £50, £30 and two £10 love2shop vouchers, If you would like be entered into the draw please provide your email address. The draw will be taken when the questionnaire closes.

Appendix 5: University of Birmingham ethical approval

Michael Burrows (PhD App Health Resea FT (A900))

From: Susan Cottam
Sent: 30 August 2016 12:31
To: Sheila Greenfield; Ian Litchfield (Institute of Applied Health Research); Nicola Gale
Cc: Michael Burrows
Subject: Application for Ethical Review ERN_15-1175

Dear Professor Greenfield, Dr Litchfield and Dr Gale

**Re: “The use of process involvement methodologies to equip receptionists for the clinical roles in General Practice – phase 2”
Application for Ethical Review ERN_15-1175**

Thank you for your application for ethical review for phase 2 of the above project, which was reviewed by the Science, Technology, Engineering and Mathematics Ethical Review Committee.

On behalf of the Committee, I confirm that this study now has full ethical approval.

I would like to remind you that any substantive changes to the nature of the study as described in the Application for Ethical Review, and/or any adverse events occurring during the study should be promptly brought to the Committee’s attention by the Principal Investigator and may necessitate further ethical review.

Please also ensure that the relevant requirements within the University’s Code of Practice for Research and the information and guidance provided on the University’s ethics webpages (available at <https://intranet.birmingham.ac.uk/finance/accounting/Research-Support-Group/Research-Ethics/Links-and-Resources.aspx>) are adhered to and referred to in any future applications for ethical review. It is now a requirement on the revised application form (<https://intranet.birmingham.ac.uk/finance/accounting/Research-Support-Group/Research-Ethics/Ethical-Review-Forms.aspx>) to confirm that this guidance has been consulted and is understood, and that it has been taken into account when completing your application for ethical review.

Please be aware that whilst Health and Safety (H&S) issues may be considered during the ethical review process, you are still required to follow the University’s guidance on H&S and to ensure that H&S risk assessments have been carried out as appropriate. For further information about this, please contact your School H&S representative or the University’s H&S Unit at healthandsafety@contacts.bham.ac.uk.

Kind regards

Susan Cottam
Research Ethics Officer
Research Support Group
C Block Dome
Aston Webb Building
University of Birmingham
Edgbaston B15 2TT
Tel: 0121 414 8825
Email: s.l.cottam@bham.ac.uk
Web: <https://intranet.birmingham.ac.uk/finance/accounting/research-support-group/Research-Ethics>

Please remember to submit a new [Self-Assessment Form](#) for each new project.

Click [Ethical Review Process](#) for further details regarding the University's Ethical Review process, or email ethics-queries@contacts.bham.ac.uk with any queries.

Click [Research Governance](#) for further details regarding the University's Research Governance and Clinical Trials Insurance processes, or email researchgovernance@contacts.bham.ac.uk with any queries

Notice of Confidentiality:

The contents of this email may be privileged and are confidential. It may not be disclosed to or used by anyone other than the addressee, nor copied in any way. If received in error please notify the sender and then delete it from your system. Should you communicate with me by email, you consent to the University of Birmingham monitoring and reading any such correspondence.



Appendix 6: NHS Health Research Authority (HRA) letter of approval



Health Research Authority

Mr Michael Burrows
PhD Student
University of Birmingham
Institute of Applied Health Research
Murray Learning Centre
University of Birmingham
B15 2TT

Email: hra.approval@nhs.net

23 June 2017

Dear Mr Burrows

Letter of HRA Approval

Study title:	The use of process improvement methodologies to equip receptionists for their clinical roles in General Practice.
IRAS project ID:	223066
Protocol number:	RG_17-062
REC reference:	17/WM/0203
Sponsor	University of Birmingham

I am pleased to confirm that HRA Approval has been given for the above referenced study, on the basis described in the application form, protocol, supporting documentation and any clarifications noted in this letter.

Participation of NHS Organisations in England

The sponsor should now provide a copy of this letter to all participating NHS organisations in England.

Appendix B provides important information for sponsors and participating NHS organisations in England for arranging and confirming capacity and capability. **Please read *Appendix B* carefully**, in particular the following sections:

- *Participating NHS organisations in England* – this clarifies the types of participating organisations in the study and whether or not all organisations will be undertaking the same activities
- *Confirmation of capacity and capability* - this confirms whether or not each type of participating NHS organisation in England is expected to give formal confirmation of capacity and capability. Where formal confirmation is not expected, the section also provides details on the time limit given to participating organisations to opt out of the study, or request additional time, before their participation is assumed.
- *Allocation of responsibilities and rights are agreed and documented (4.1 of HRA assessment criteria)* - this provides detail on the form of agreement to be used in the study to confirm capacity and capability, where applicable.

Further information on funding, HR processes, and compliance with HRA criteria and standards is also provided.

It is critical that you involve both the research management function (e.g. R&D office) supporting each organisation and the local research team (where there is one) in setting up your study. Contact details and further information about working with the research management function for each organisation can be accessed from www.hra.nhs.uk/hra-approval.

Appendices

The HRA Approval letter contains the following appendices:

- A – List of documents reviewed during HRA assessment
- B – Summary of HRA assessment

After HRA Approval

The document “*After Ethical Review – guidance for sponsors and investigators*”, issued with your REC favourable opinion, gives detailed guidance on reporting expectations for studies, including:

- Registration of research
- Notifying amendments
- Notifying the end of the study

The HRA website also provides guidance on these topics, and is updated in the light of changes in reporting expectations or procedures.

In addition to the guidance in the above, please note the following:

- HRA Approval applies for the duration of your REC favourable opinion, unless otherwise notified in writing by the HRA.
- Substantial amendments should be submitted directly to the Research Ethics Committee, as detailed in the *After Ethical Review* document. Non-substantial amendments should be submitted for review by the HRA using the form provided on the [HRA website](http://www.hra.nhs.uk), and emailed to hra.amendments@nhs.net.
- The HRA will categorise amendments (substantial and non-substantial) and issue confirmation of continued HRA Approval. Further details can be found on the [HRA website](http://www.hra.nhs.uk).

Scope

HRA Approval provides an approval for research involving patients or staff in NHS organisations in England.

If your study involves NHS organisations in other countries in the UK, please contact the relevant national coordinating functions for support and advice. Further information can be found at <http://www.hra.nhs.uk/resources/applying-for-reviews/nhs-hsc-rd-review/>.

If there are participating non-NHS organisations, local agreement should be obtained in accordance with the procedures of the local participating non-NHS organisation.

User Feedback

The Health Research Authority is continually striving to provide a high quality service to all applicants and sponsors. You are invited to give your view of the service you have received 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/>.

HRA Training

We are pleased to welcome researchers and research management staff at our training days – see details at <http://www.hra.nhs.uk/hra-training/>

Your IRAS project ID is **223066**. Please quote this on all correspondence.

Yours sincerely

Miss Helen Penistone
Assessor

Email: hra.approval@nhs.net

Copy to: *Dr Sean Jennings*
Ms Christine Woolven, NIHR CRN: West Midlands, PCRST

Appendix A - List of Documents

The final document set assessed and approved by HRA Approval is listed below.

<i>Document</i>	<i>Version</i>	<i>Date</i>
Copies of advertisement materials for research participants [Patient Recruitment Poster V3_20_6_17]	V3	20 June 2017
Evidence of Sponsor insurance or indemnity (non NHS Sponsors only) [Confirmation of Insurance]	V1	24 April 2017
IRAS Application Form [IRAS_Form_26042017]		26 April 2017
Letter from funder [funding letter]		09 May 2017
Letter from sponsor [confirmation of sponsorship]	V1	24 April 2017
Letters of invitation to participant [Patient Recruitment Handout V3_18_01_2017]	V3	18 January 2017
Other [HCP_Rec_Concern_Plan V1_10_01_2017]	V1	10 January 2017
Other [Participant Recruitment Plan V1_18_01_2017]	V1	18 January 2017
Other [Schedule of Events]	2	23 June 2017
Other [Statement of Activities]	1	23 June 2017
Other [Focus Group Plan (FC_Plan_V1_5_6_17)]	V1	05 June 2017
Other [Interview Schedule (Int_sch_V1_5_6_17)]	V1	05 June 2017
Other [Litchfield_etal_2016_Protocol for using mixed methods and process improvement methodologies]	V1	21 October 2016
Other [REC Committee Response_V1_19_6_17]	V1	19 June 2017
Participant consent form [Consent_Form_Pat_FocusGrp]	V4	05 June 2017
Participant consent form [Consent_Form_PS_FocusGrp]	V4	05 June 2017
Participant consent form [Consent_Form_Rec_Interview]	V5	05 June 2017
Participant information sheet (PIS) [PiS_Pat_FG]	V3	05 June 2017
Participant information sheet (PIS) [PiS_PS_FG]	V3	05 June 2017
Participant information sheet (PIS) [PiS_Rec_Int_5_6_17_V3]	V3	05 June 2017
Research protocol or project proposal [PhD_Protocol_V13_20_6_17]	V13	20 June 2017
Summary CV for Chief Investigator (CI) [Michael Burrows CV]	V1	06 February 2017
Summary CV for student [MBurrows_CV_V1_6_2_17]	V1	06 February 2017
Summary CV for supervisor (student research) [SGreenfiled_CV_V1_6_2_17]	V1	06 February 2017
Summary CV for supervisor (student research) [Ian Litchfield Research CV_V1_6_02_17]	V1	06 February 2017
Summary CV for supervisor (student research) [NGale_IRAS_CV_02_17_V2]	VC	02 February 2017

Appendix B - Summary of HRA Assessment

This appendix provides assurance to you, the sponsor and the NHS in England that the study, as reviewed for HRA Approval, is compliant with relevant standards. It also provides information and clarification, where appropriate, to participating NHS organisations in England to assist in assessing and arranging capacity and capability.

For information on how the sponsor should be working with participating NHS organisations in England, please refer to the, *participating NHS organisations, capacity and capability and Allocation of responsibilities and rights are agreed and documented (4.1 of HRA assessment criteria) sections in this appendix.*

The following person is the sponsor contact for the purpose of addressing participating organisation questions relating to the study:

Name: Mr Michael Burrows
 Tel: 07528528868
 Email: mjb538@bham.ac.uk

HRA assessment criteria

Section	HRA Assessment Criteria	Compliant with Standards	Comments
1.1	IRAS application completed correctly	Yes	The study will only involve research sites in England.
2.1	Participant information/consent documents and consent process	Yes	No comments
3.1	Protocol assessment	Yes	No comments
4.1	Allocation of responsibilities and rights are agreed and documented	Yes	The sponsor intends that the Statement of Activities will act as agreement of an NHS organisation to participate. Confirmation of capacity and capability to host the research should be sought from individual GP practices. No additional agreement is expected.
4.2	Insurance/indemnity	Yes	Where applicable, independent contractors (e.g. General Practitioners)

Section	HRA Assessment Criteria	Compliant with Standards	Comments
	arrangements assessed		should ensure that the professional indemnity provided by their medical defence organisation covers the activities expected of them for this research study
4.3	Financial arrangements assessed	Yes	Funding to support the study has been granted by The Health Foundation. As per the Statement of Activities, no funding will be available to sites to support the study. A cost attribution has not been assigned to research activities on the Schedule of Events.
5.1	Compliance with the Data Protection Act and data security issues assessed	Yes	No comments
5.2	CTIMPS – Arrangements for compliance with the Clinical Trials Regulations assessed	Not Applicable	No comments
5.3	Compliance with any applicable laws or regulations	Yes	No comments
6.1	NHS Research Ethics Committee favourable opinion received for applicable studies	Yes	No comments
6.2	CTIMPS – Clinical Trials Authorisation (CTA) letter received	Not Applicable	No comments
6.3	Devices – MHRA notice of no objection received	Not Applicable	No comments
6.4	Other regulatory approvals and authorisations received	Not Applicable	No comments

Participating NHS Organisations in England

This provides detail on the types of participating NHS organisations in the study and a statement as to whether the activities at all organisations are the same or different.

There will be one study site type. Sites will host all research activities as per the study protocol and supporting documents.

The Chief Investigator or sponsor should share relevant study documents with participating NHS organisations in England in order to put arrangements in place to deliver the study. The documents should be sent to both the local study team, where applicable, and the office providing the research management function at the participating organisation. For NIHR CRN Portfolio studies, the Local LCRN contact should also be copied into this correspondence. For further guidance on working with participating NHS organisations please see the HRA website.

If chief investigators, sponsors or principal investigators are asked to complete site level forms for participating NHS organisations in England which are not provided in IRAS or on the HRA website, the chief investigator, sponsor or principal investigator should notify the HRA immediately at hra.approval@nhs.net. The HRA will work with these organisations to achieve a consistent approach to information provision.

Confirmation of Capacity and Capability

This describes whether formal confirmation of capacity and capability is expected from participating NHS organisations in England.

Participating NHS organisations in England **will be expected to formally confirm their capacity and capability to host this research.**

- Following issue of this letter, participating NHS organisations in England may now confirm to the sponsor their capacity and capability to host this research, when ready to do so. How capacity and capability will be confirmed is detailed in the *Allocation of responsibilities and rights are agreed and documented (4.1 of HRA assessment criteria)* section of this appendix.
- The [Assessing, Arranging, and Confirming](#) document on the HRA website provides further information for the sponsor and NHS organisations on assessing, arranging and confirming capacity and capability.

Principal Investigator Suitability

This confirms whether the sponsor position on whether a PI, LC or neither should be in place is correct for each type of participating NHS organisation in England and the minimum expectations for education, training and experience that PIs should meet (where applicable).

It is detailed on the Statement of Activities that the Chief Investigator will be responsible for research activities at site. As external researchers will access site to carry out research activities and as per the guidance, it is suggested that it would be more appropriate to have a local collaborator at site.

The sponsor has not detailed any training expectations.

IRAS project ID	223066
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GCP training is not a generic training expectation, in line with the [HRA statement on training expectations](#).

HR Good Practice Resource Pack Expectations

This confirms the HR Good Practice Resource Pack expectations for the study and the pre-engagement checks that should and should not be undertaken

Where arrangements are not already in place, externally employed researchers requiring access to site to undertake the research would be expected to obtain a Letter of Access based on standard DBS checks and occupational health clearance.

Other Information to Aid Study Set-up

This details any other information that may be helpful to sponsors and participating NHS organisations in England to aid study set-up.

The applicant has indicated that they do not intend to apply for inclusion on the NIHR CRN Portfolio.

Appendix 7: Receptionists' information sheet



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The use of process improvement methodologies to equip receptionists for their clinical roles in General Practice.

PhD Researcher: Michael Burrows

Academic Supervision: Prof Sheila Greenfield, Dr Ian Litchfield and Dr Nicola Gale

Dear Participant

We would like to invite you to take part in our research study. Taking part is completely your decision, however before you decide we would like to present you with information about the research, what the research is exploring, why we are conducting the research and what it would involve for you. Please take your time to read this information sheet and ask any questions you might have. If you would like to, please feel free to discuss your participation with others.

What is the purpose of the research?

The purpose of the research project is to explore the roles and duties of the GP receptionist; specifically we are aiming to explore those clinical orientated roles that the receptionists undertake within the practice. From existing research we are aware that the receptionist performs a number of clinically oriented tasks, however this research is likely out-of-date and does not explore the extent of these activities with the receptionist. This research will explore the extent to which the receptionist undertakes these tasks and will use the completed analysis to highlight areas where further support is needed and to inform the development and format of that support.

Who is eligible to take part?

All receptionists within the practice are eligible to take part. You are not obliged to take part and should you choose to participate you can withdraw from the research at any time without consequence.

What does the research entail if I agree to participate?

If you agree to participate you will be asked to participate in a face-to-face interview with the researcher. This interview will cover the role and functions that you undertake and is a chance for you and the researcher to explore in depth your clinically orientated roles. The interview will last for approximately 45 mins and will be conducted at a time and place of your choosing. You will be asked to consent prior to the interview beginning and the interview will be audio recorded for later transcription by the researcher. Transcription will be undertaken by the researcher and when that is not feasible, by a reputable transcription service.

What are the potential benefits of taking part?

A benefit of participating in the research will be to provide you with a chance to make your opinions, feeling or beliefs known about the work that you do, in a confidential and safe environment. Your participation will highlight and discuss aspects of the role important to you as well as contributing to the discussion of how we support the receptionist in the future.

What are the potential risks of taking part?

It is unlikely that participation, in the interviews will present any physical risks to you; however during the course of the interview, as we are discussing the work you have done and currently do within the practice, you may worry about this information becoming known by your practice. To prevent this confidentiality will be ensured. No data will be presented which identifies a specific practice or member of staff, practices and staff members will each be given a code by the research. These codes will be used when presenting the results of the study for publication, furthermore any quotes used in the publication will not have any identifying information, such as names, these will either be removed or when that is not possible changed. In addition practices will not receive an overview of data collected from their practice, only data pooled from all research sites will be available.

Will my participation be confidential and information secure?

Yes all information gathered will be completely confidential. No names will be recorded and instead each participant and practice will be given a code and this will be used to present the information. Only the researcher will be able to link back to the code to a specific participant. All data collected will be kept securely, hard copies in locked and secure facilities and digital data will be stored and encrypted on secure data storage devices. This data will be only accessible to the researcher and the research team; data will be stored for a period of 10 years.

Will confidentiality be broken at any point?

No, it is highly unlikely that the researcher will break the confidentiality of the process. However it is important to note that there are scenarios where confidentiality will be broken, for example in the case of the researcher being witness to potentially harmful practice or care. If the researcher suspects this they will seek guidance from their research team, who are highly experienced researchers within the field, before taking any further steps or breaking confidentiality.

What happens if I don't want to carry on with the study?

You will have the right to withdraw your participation and your data at any time during the interview, and for a month after the process has concluded. After this time your data will have undergone analysis and it will not be possible to fully remove these data.

What if there is a problem?

Should a problem arise or if you have any complaints about your treatment during the course of the study or harm you feel has been caused to you, this can be addressed by contacting either the researcher directly to discuss these concerns if this is not appropriate then you are asked to contact Sheila Greenfiled, the researcher's supervisor or to follow the university complaints procedure

Furthermore this research is being undertaken with the support of the University of Birmingham and as such the university has provided insurance to cover compensation that this research may incur.

Additionally, independent advice can be obtained from and complaints can be made to NHS Choices, information and details of the complaints process can be accessed at the following website.

Who has reviewed this study?

This study has been reviewed in the first instance by the Health Foundation who is the funders of this research. The research has also been reviewed and approved by a research ethics committee. All NHS research is review by an independent group of people, the research ethics committee, this study has undergone review and been given favorable opinion by Black Country NRES Committee.

If you have any questions or issues that you would like to raise you are encouraged to discuss them with the researcher, either face-to-face or via the e-mail address provided.

Michael Burrows can be contacted in the following ways:

By Telephone: 07528528868

By Email: mjb538@bham.ac.uk

The lead academic supervisor, **Sheila Greenfield** can be contacted in the following ways

By Telephone: 0121 414 6493

By Email: S.M.GREENFIELD@bham.ac.uk

Appendix 8: Receptionist consent form



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The use of process improvement methodologies to equip receptionists for their clinical roles in General Practice.

PhD Researcher: Michael Burrows

Academic Supervision: Prof Sheila Greenfield, Dr Ian Litchfield and Dr Nicola Gale

Thank you for agreeing to take part in the research, please ensure that you have read the information sheet that you have been given (PiS _Rec_Int_5_6_17_V3) and asked any and all questions you might have. If you are satisfied with the information you have received, please read each sentence below and initial the box next to the sentence if you agree. Finally please sign your name and date the bottom of the form:

<i>I confirm that I have read the information form (PiS _Rec_Int_5_6_17_V3) provided and I have been given the opportunity to ask any questions that I have and that these questions have been answered to my satisfaction.</i>	
<i>I am aware that my information will be anonymous and securely stored and that my name will not be used, instead an alias or code will be employed.</i>	
<i>I understand that my participation is voluntary and that I may opt out of the project at any time without reason or consequence for my legal rights.</i>	
<i>I am happy that information <u>and verbatim quotes</u> gathered may be used in publications reporting on the research, conference presentations or for teaching purposes.</i>	
<i>I understand that members of the researcher's supervisory team may access data collected during this study. I consent to these individuals having access to the data.</i>	
<i><u>I agree to allow the interview to be audio-recorded by the researcher.</u></i>	
<i>I agree to take part in the study as described.</i>	

Participant Name

Researcher Name

Signature

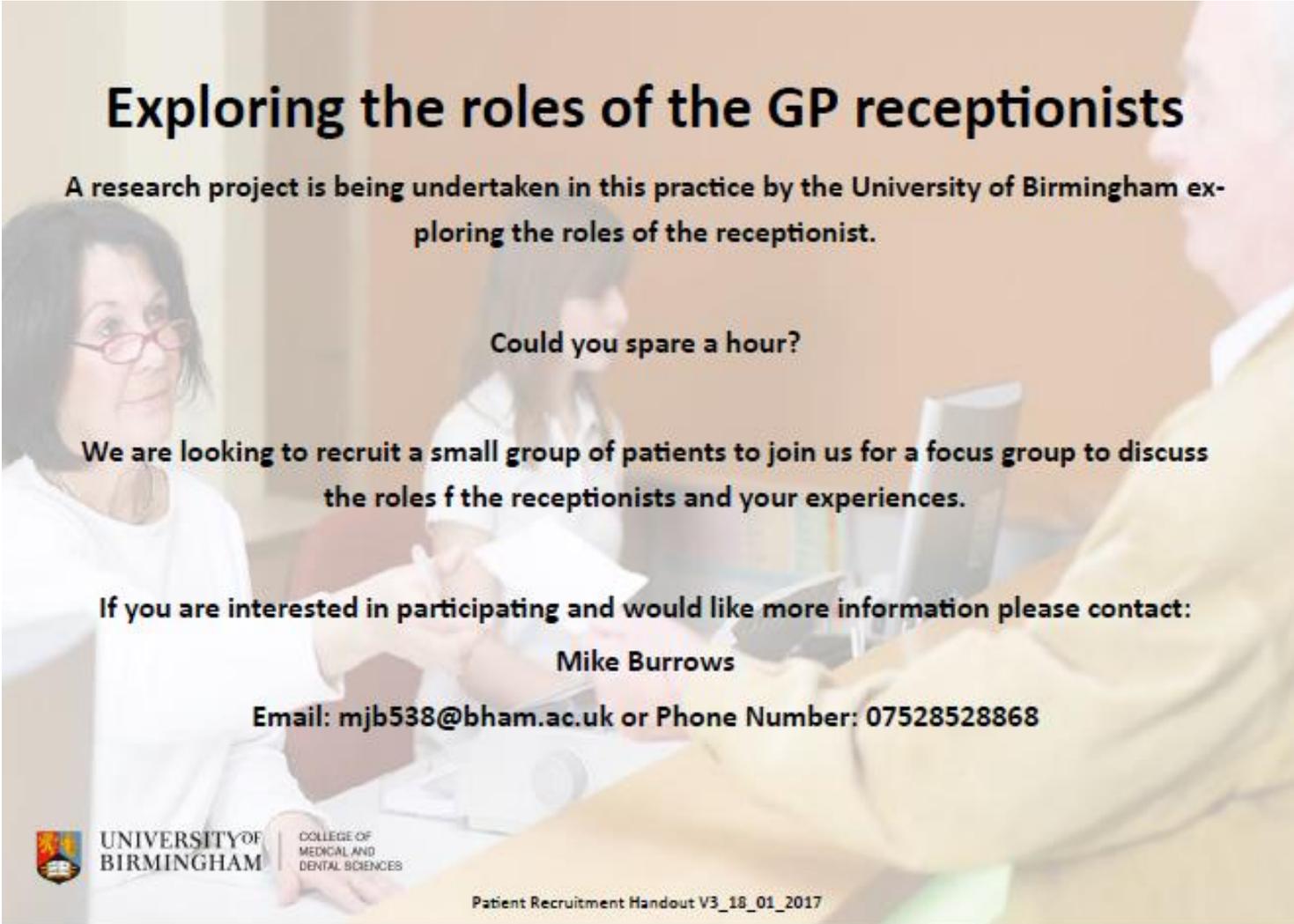
Signature

Date

Date

Appendix 9: Patient recruitment materials

Handout



Exploring the roles of the GP receptionists

A research project is being undertaken in this practice by the University of Birmingham exploring the roles of the receptionist.

Could you spare a hour?

We are looking to recruit a small group of patients to join us for a focus group to discuss the roles of the receptionists and your experiences.

If you are interested in participating and would like more information please contact:

Mike Burrows

Email: mjb538@bham.ac.uk or Phone Number: 07528528868

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Patient Recruitment Handout V3_18_01_2017



Exploring the roles of the GP receptionist

A research project is being undertaken in this practice by the University of Birmingham exploring the roles of the GP receptionist.



Could you spare an hour?

We are looking to recruit a small group of patients to join us for a focus group. The group will discuss the roles of the receptionists and your experiences with them.

**If you are interested in participating and would like more information please contact:
Michael Burrows**

**Email: mjb538@bham.ac.uk
Phone Number: 07528528868**

Appendix 10: Interview Schedule

Interview Schedule

Interviews will be carried out as discussed in the protocol at the end of the observation period, lasting between 30/60 minutes. Detail as to the exact content of these interviews were purposely vague as they are to be based on the data collected during the observations so as not to prejudge the observations results and bias the process.

The interview will likely to cover the following topics:

1. What are their roles within their surgery?
2. Their undertaking of clinically orientated activities
 - a. What constitutes clinically orientated tasks?
 - b. What are the processes involved in undertaking those tasks?
 - i. Timings, procedures,
 - c. Opinions/issues/difficulties with undertaking these roles
3. Support or Training offered to help them with these roles
4. The perception of their role, and their place within the practice structure/hierarchy.
5. The future of the GP receptionist

Appendix 11: Practice staff information sheet



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The use of process improvement methodologies to equip receptionists for their clinical roles in General Practice.

PhD Researcher: Michael Burrows

Academic Supervision: Prof Sheila Greenfield, Dr Ian Litchfield and Dr Nicola Gale

Dear Participant

We would like to invite you to take part in our research study. Taking part is completely your decision, however before you decide we would like to present you with information about the research, what the research is exploring, why we are conducting the research and what it would involve for you. Please take your time to read this information sheet and ask any questions you might have. If you would like to, please feel free to discuss your participation with others.

What is the purpose of the research?

The purpose of the research project is to explore the roles and duties of the GP receptionist; specifically we are aiming to explore those clinical orientated roles that the receptionists undertake within the practice. From existing research we are aware that the receptionist performs a number of clinically oriented tasks, however this research is likely out-of-date and does not explore the extent of these activities with the receptionist. This research will explore the extent to which the receptionist undertakes these tasks and will use the completed analysis to highlight areas where further support is needed and to inform the development and format of that support.

Who is eligible to take part?

All practice staff are eligible to take part. You are not obliged to take part and should you chose to participate you can withdraw from the research at any time without consequence.

What does the research entail if I agree to participate?

If you agree to take part you will be asked to participate in a focus group with a number of your colleagues, which will be arranged at time and location to suit the group.

The focus group will take between 45 minutes to 1 hour and will consist of the researcher posing an initial question or statement, for discussion by the group. The researcher may also follow up with additional questions or prompts. The focus group will be digitally audio recorded for later transcription. Transcription will be undertaken by the researcher and when that is not feasible, by a reputable transcription service.

Before the focus groups begins, each participant will be asked to complete and return a consent form, after this the researcher will discuss the ground rules will all present.

Ground rules will include:

- The need for each of the participants to accommodate and to respect the views and opinions of the other members of the group,
- That differences in opinions are normal and the research is looking to gather all of these opinions,
- To discuss any differences between participants politely and without judgements,
- To respect the confidential nature of the group discussion, 'what is said in the room stays in the room',
- To be willing to engage in the process and interaction with the group.

The rules will ensure the safeguarding of all of the participants involved in the discussion.

What are the potential benefits of taking part?

A benefit of participating in the research will be to provide you with a chance to make your opinions, feeling or beliefs known about the work that the receptionist does, in a confidential and safe environment. This study represents a chance to highlight and discuss aspects of the role important to you as well as contributing to the discussion of how we support the receptionist in the future.

What are the potential risks of taking part?

It is unlikely that participation, will present any physical risks to you; however it is possible that information may be discussed, which is sensitive. As a result you might be concerned that this information may become known by your practice and this in turn will have an effect on the care you receive. However, this is unlikely as the confidentiality of the discussion will be ensured. The ground rules establish the confidentiality of the group, what is discussed stays in the room. Furthermore no data will be presented which identifies a specific practice or patient of that practice; instead each participant will be given a code by the researcher. These codes will be used when presenting the results of the study for publication, furthermore any quotes used in the publication will not have any identifying information, such as names, these will be removed or when that is not possible changed. In addition practices will not receive an overview of data collected from their practice, only data pooled from all research sites will be available.

Will my participation be confidential and information secure?

Yes all information gathered will be completely confidential. No names will be recorded and instead each participant and practice will be given a code and this will be used to present the information. Only the researcher will be able to link back to the code to a specific participant. All data collected will be kept securely, hard copies in locked and secure facilities and digital data will be stored and encrypted on secure data storage devices. This data will be only accessible to the researcher and the research team; data will be stored for a period of 10 years.

Will confidentiality be broken at any point?

No, it is highly unlikely that the researcher will break the confidentiality of the process. However it is important to note that there are scenarios where confidentiality will be broken, for example in the case of the researcher being witness to potentially harmful practice or care. If the researcher suspects this they will seek guidance from their research team, who are highly experienced researchers within the field before taking any further steps or breaking confidentiality.

What happens if I don't want to carry on with the study?

You will have the right to withdraw your participation and your data at any time during the focus group, and for a month after the process has concluded. After this time your data will have undergone analysis and it will not be possible to fully remove these data.

What if there is a problem?

Should a problem arise or if you have any complaints about your treatment during the course of the study or harm you feel has been caused to you, this can be addressed by contacting either the researcher directly to discuss these concerns or if this is not appropriate then you are asked to contact Sheila Greenfield, the researcher's supervisor or to follow the university complaints procedure.

Furthermore this research is being undertaken with the support of the University of Birmingham and as such the university has provided insurance to cover compensation that this research may incur.

Additionally, independent advice can be obtained from and complaints can be made to NHS Choices, information and details of the complaints process can be accessed at the following website.

<http://www.nhs.uk/NHSEngland/complaints-and-feedback/Pages/nhs-complaints.aspx>

Who has reviewed this study?

This study has been reviewed in the first instance by the Health Foundation who is the funders of this research. The research has also been reviewed and approved by a research ethics committee. All NHS research is review by an independent group of people, the research ethics committee, this study has undergone review and been given favorable opinion by Black Country NRES Committee.

If you have any questions or issues that you would like to raise you are encouraged to discuss them with the researcher, either face-to-face or via the e-mail address provided.

Michael Burrows can be contacted in the following ways:

By Telephone: 07528528868

By Email: mjb538@bham.ac.uk

The lead academic supervisor, **Sheila Greenfield** can be contacted in the following ways

By Telephone: 0121 414 6493

By Email: S.M.GREENFIELD@bham.ac.uk

Appendix 12: Practice staff consent form



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The use of process improvement methodologies to equip receptionists for their clinical roles in General Practice.

PhD Researcher: Michael Burrows

Academic Supervision: Prof Sheila Greenfield, Dr Ian Litchfield and Dr Nicola Gale

Thank you for agreeing to take part in the research, please ensure that you have read the information sheet that you have been given PiS_PS_FG_5_6_17_V3 and asked any and all questions you might have. If you are satisfied with the information you have received, please read each sentence below and initial the box next to the sentence if you agree. Finally please sign and date the bottom of the form:

<i>I confirm that I have read the information form (PiS_PS_FG_5_6_17_V3) provided and I have been given the opportunity to ask any questions that I have and that these questions have been answered to my satisfaction.</i>	
<i>I am aware that my information will be anonymous and securely stored and that my name will not be used, instead an alias or code will be employed.</i>	
<i>I understand that my participation is voluntary and that I may opt out of the project at any time without reason or consequence for my legal rights.</i>	
<i>I am happy that information <u>and verbatim quotes</u> gathered may be used in publications reporting on the research, conference presentations or for teaching purposes.</i>	
<i>I understand that members of the researcher's supervisory team may access data collected during this study. I consent to these individuals having access to the data.</i>	
<i><u>I agree to allow the focus group to be audio-recorded by the researcher.</u></i>	
<i>I agree to take part in the study as described.</i>	

Participant Name

Researcher Name

Signature

Signature

Date

Date

Appendix 13: Patient information sheet



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The use of process improvement methodologies to equip receptionists for their clinical roles in General Practice.

PhD Researcher: Michael Burrows

Academic Supervision: Prof Sheila Greenfield, Dr Ian Litchfield and Dr Nicola Gale

Dear Participant

We would like to invite you to take part in our research study. Taking part is completely your decision, however before you decide we would like to present you with information about the research, what the research is exploring, why we are conducting the research and what it would involve for you. Please take your time to read this information sheet and ask any questions you might have. If you would like to, please feel free to discuss your participation with others.

What is the purpose of the research?

The purpose of the research project is to explore the roles and duties of the GP receptionist; specifically we are aiming to explore those clinical orientated roles that the receptionists undertake within the practice. From existing research we are aware that the receptionist performs a number of clinically oriented tasks, however this research is likely out-of-date and does not explore the extent of these activities with the receptionist. This research will explore the extent to which the receptionist undertakes these tasks and will use the completed analysis to highlight areas where further support is needed and to inform the development and format of that support.

Who is eligible to take part?

All receptionists within the practice are eligible to take part. You are not obliged to take part and should you chose to participate you can withdraw from the research at any time without consequence.

What does the research entail if I agree to participate?

If you agree to participate you will be asked to participate in a face-to-face interview with the researcher. This interview will cover the role and functions that you undertake and is a chance for you and the researcher to explore in depth your clinically orientated roles. The interview will last for approximately 45 mins and will be conducted at a time and place of your choosing. You will be asked to consent prior to the interview beginning and the interview will be audio recorded for later transcription by the researcher. Transcription will be undertaken by the researcher and when that is not feasible, by a reputable transcription service.

What are the potential benefits of taking part?

A benefit of participating in the research will be to provide you with a chance to make your opinions, feeling or beliefs known about the work that you do, in a confidential and safe environment. Your participation will highlight and discuss aspects of the role important to you as well as contributing to the discussion of how we support the receptionist in the future.

What are the potential risks of taking part?

It is unlikely that participation, in the interviews will present any physical risks to you; however during the course of the interview, as we are discussing the work you have done and currently do within the practice, you may worry about this information becoming known by your practice. To prevent this confidentiality will be ensured. No data will be presented which identifies a specific practice or member of staff, practices and staff members will each be given a code by the research. These codes will be used when presenting the results of the study for publication, furthermore any quotes used in the publication will not have any identifying information, such as names, these will either be

removed or when that is not possible changed. In addition practices will not receive an overview of data collected from their practice, only data pooled from all research sites will be available.

Will my participation be confidential and information secure?

Yes all information gathered will be completely confidential. No names will be recorded and instead each participant and practice will be given a code and this will be used to present the information. Only the researcher will be able to link back to the code to a specific participant. All data collected will be kept securely, hard copies in locked and secure facilities and digital data will be stored and encrypted on secure data storage devices. This data will be only accessible to the researcher and the research team; data will be stored for a period of 10 years.

Will confidentiality be broken at any point?

No, it is highly unlikely that the researcher will break the confidentiality of the process. However it is important to note that there are scenarios where confidentiality will be broken, for example in the case of the researcher being witness to potentially harmful practice or care. If the researcher suspects this they will seek guidance from their research team, who are highly experienced researchers within the field, before taking any further steps or breaking confidentiality.

What happens if I don't want to carry on with the study?

You will have the right to withdraw your participation and your data at any time during the interview, and for a month after the process has concluded. After this time your data will have undergone analysis and it will not be possible to fully remove these data.

What if there is a problem?

Should a problem arise or if you have any complaints about your treatment during the course of the study or harm you feel has been caused to you, this can be addressed by contacting either the researcher directly to discuss these concerns if this is not appropriate then you are asked to contact Sheila Greenfield, the researcher's supervisor or to follow the university complaints procedure

Furthermore this research is being undertaken with the support of the University of Birmingham and as such the university has provided insurance to cover compensation that this research may incur.

Additionally, independent advice can be obtained from and complaints can be made to NHS Choices, information and details of the complaints process can be accessed at the following website.

Who has reviewed this study?

This study has been reviewed in the first instance by the Health Foundation who is the funders of this research. The research has also been reviewed and approved by a research ethics committee. All NHS research is review by an independent group of people, the research ethics committee, this study has undergone review and been given favorable opinion by Black Country NRES Committee.

If you have any questions or issues that you would like to raise you are encouraged to discuss them with the researcher, either face-to-face or via the e-mail address provided.

Michael Burrows can be contacted in the following ways:

By Telephone: 07528528868

By Email: mjb538@bham.ac.uk

The lead academic supervisor, **Sheila Greenfield** can be contacted in the following ways

By Telephone: 0121 414 6493

By Email: S.M.GREENFIELD@bham.ac.uk

Appendix 14: Patient consent form



UNIVERSITY OF
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COLLEGE OF
MEDICAL AND
DENTAL SCIENCES

The use of process improvement methodologies to equip receptionists for their clinical roles in General Practice.

PhD Researcher: Michael Burrows

Academic Supervision: Prof Sheila Greenfield, Dr Ian Litchfield and Dr Nicola Gale

Thank you for agreeing to take part in the research, please ensure that you have read the information sheet that you have been given (PiS _Pat_FG_5_6_17_V3) and asked any and all questions you might have. If you are satisfied with the information you have received, please read each sentence below and initial the box next to the sentence if you agree. Finally please sign and date the bottom of the form:

<i>I confirm that I have read the information form PiS _Pat_FG_5_6_17_V3 provided and I have been given the opportunity to ask any questions that I have and that these questions have been answered to my satisfaction.</i>	
<i>I am aware that my information will be anonymous and securely stored and that my name will not be used, instead an alias or code will be employed.</i>	
<i>I understand that my participation is voluntary and that I may opt out of the project at any time without reason or consequence for my future health care or my legal rights.</i>	
<i>I am happy that information <u>and verbatim quotes</u> gathered may be used in publications reporting on the research, conference presentations or for teaching purposes.</i>	
<i>I understand that members of the researcher's supervisory team may access data collected during this study. I consent to these individuals having access to the data.</i>	
<i><u>I agree to allow the focus group to be audio-recorded by the researcher.</u></i>	
<i>I agree to take part in the study as described.</i>	

Participant Name

Researcher Name

Signature

Signature

Date

Date

Appendix 15: Protocol for using mixed methods and process improvement methodologies to explore primary care receptionist's work

Open Access

Protocol

BMJ Open Protocol for using mixed methods and process improvement methodologies to explore primary care receptionist work

Ian Litchfield,¹ Nicola Gale,² Michael Burrows,¹ Sheila Greenfield¹

To cite: Litchfield I, Gale N, Burrows M, *et al.* Protocol for using mixed methods and process improvement methodologies to explore primary care receptionist work. *BMJ Open* 2016;**6**: e013240. doi:10.1136/bmjopen-2016-013240

► Prepublication history for this paper is available online. To view these files please visit the journal online (<http://dx.doi.org/10.1136/bmjopen-2016-013240>).

Received 28 June 2016
Revised 10 October 2016
Accepted 21 October 2016



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ABSTRACT

Introduction: The need to cope with an increasingly ageing and multimorbid population has seen a shift towards preventive health and effective management of chronic disease. This places general practice at the forefront of health service provision with an increased demand that impacts on all members of the practice team. As these pressures grow, systems become more complex and tasks delegated across a broader range of staff groups. These include receptionists who play an essential role in the successful functioning of the surgery and are a major influence on patient satisfaction. However, they do so without formal recognition of the clinical implications of their work or with any requirements for training and qualifications.

Methods and analysis: Our work consists of three phases. The first will survey receptionists using the validated Work Design Questionnaire to help us understand more precisely the parameters of their role; the second involves the use of iterative focus groups to help define the systems and processes within which they work. The third and final phase will produce recommendations to increase the efficiency and safety of the key practice processes involving receptionists and identify the areas and where receptionists require targeted support. In doing so, we aim to increase job satisfaction of receptionists, improve practice efficiency and produce better outcomes for patients.

Ethics and dissemination: Our work will be disseminated using conferences, workshops, trade journals, electronic media and through a series of publications in the peer reviewed literature. At the very least, our work will serve to prompt discussion on the clinical role of receptionists and assess the advantages of using value streams in conjunction with related tools for process improvement.

INTRODUCTION

The pressure on primary care in the UK is growing, consultation rates are on the increase and the workload on general practitioners (GPs) is mounting.¹ This increased demand impacts on all members of the practice team as time pressures grow, systems become more complex and tasks are increasingly likely to be delegated across a broader

Strengths and limitations of this study

- First study of its type to undertake an assessment of the parameters of receptionist work using the validated Work Design Questionnaire.
- We will gain an understanding of the tasks completed, the knowledge needed, the social support received and the context of their work.
- This will be the first work to have constructed value stream maps (VSMs) and service blueprints that identify areas of weakness and strength in the clinical processes in which receptionists are involved.
- We will make recommendations that aim to improve processes and directly support receptionists.
- The integration of rigorous research with state of the art tools of service improvement will itself draw attention to the findings and contribute to the methodology of improvement techniques.

range of staff groups.² These include receptionists who play an essential role in the successful functioning of the surgery and are a major influence on patient satisfaction.³

As well as undertaking administrative and clerical duties to ensure the various office systems continue to support the delivery of care, such as filing, maintaining medical records and making appointments,^{4 5} they also undertake functions more directly related to patient health, in particular booking appointments, communicating test results and managing repeat prescriptions. These responsibilities are placed on staff that are not required to undertake any related training, from data protection and information governance to styles of communication.⁶ The gap between training and the implication of the role has clinical consequences for patients and medicolegal concerns for practices where legal responsibility for errors involving receptionists is vague and where previous litigation has led to an assessment of how that task was designated and the competency of the receptionist involved.^{7 8}

BMJ

Litchfield I, *et al.* *BMJ Open* 2016;**6**:e013240. doi:10.1136/bmjopen-2016-013240

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Previous work has described how in satisfying these various functions, receptionists experience competing pressures from patients and GPs and feel isolated fulfilling a role with clear responsibility for patient health, often without appropriate support.^{6,9,10} In attempting to gain a greater understanding of the role of receptionists, previous research has focussed on their position at the practice front desk and the extent to which they are understood and valued by patients.^{10,11} Fewer studies have examined the relationship with other members of the practice team and how they interact.⁵

In Australia, guidance for supporting receptionists has begun to emerge,^{12,13} yet currently there is no UK national guidance for the key functions of receptionists, and existing training requirements are minimal.⁶ The attitude of receptionists toward their current role has not been fully explored and systematic consultation with all stakeholders to develop and implement policies and processes to support receptionists is absent. However, the increasing pressure on primary care resources indicates a need to improve the efficiency of the processes they are involved in and for this a more thorough understanding of the parameters of their role and experiences is required as well as an understanding of the site and nature of their interaction with the other elements of primary care delivery including staff, patients, materials and information.¹⁴ One tool frequently used by lean methodologies to identify these elements is the value stream map (VSM).¹⁵ This is a graphic representation of a set of activities and values involved in creating a product or providing a service previously used in manufacturing.^{16–19} These maps can be used to inform and complement service blueprints, a related tool originally used in the service industry to diagnose problems with operational inefficiency and highlight areas of potential error, delay and failure.^{20,21}

Here we describe a multiphase study that aims to help receptionists deliver robust, consistent and safe care, responsive to the needs of their employers and patients. To do this, we will first define the parameters of the roles and responsibilities of receptionists, use iterative discussions with receptionists, clinical and non-clinical general practice staff and patients to create VSMs and service blueprints²¹ to understand and contextualise the various roles and functions they perform. Then we will target our recommendations for increasing the efficiency of the support they might need and in what form.

Knowledge review

Here we summarise the findings of our scoping review²² that describes existing knowledge of the key areas of receptionist work that possess direct clinical implications for patients. From this review, we identified areas which included managing appointments, reporting test results and repeat prescriptions. In addition, we looked at the discourse styles typically used by receptionists in dealing with patients and their implications for efficiency and patient satisfaction.

Managing appointments

Appointment making is a key role in general practice and can impact on patient satisfaction and outcomes.^{23,24} While a contentious concept, in prioritising allocation of appointments non-medically trained staff are regularly making 'triage' decisions in general practice which can affect patient outcome.^{7,25–27} Poor experiences of appointment making/contact with the practice can lead to costly or dangerous health outcomes including the patient visiting A&E.^{28,29}

Primary care organisations are 'professional bureaucracies' and administrative staff perform a key role in creating the boundary of the organisation, are able to exercise considerable discretion and so gain indirect and subtle power and able to exercise considerable discretion.^{30–32} This may go some way as to explaining why receptionists are often presented as powerful characters that make important judgements in uncertain conditions.^{33–35} However, booking appointments is a complex social process, often dependent on negotiation and factors such as patients' expectations and appointment availability.⁹ Reconciling demands and expectations of patients with availability of healthcare providers can expose them to social friction.¹⁰ There is a pay-off between access and continuity of care.³⁶ Continuity is getting hard to achieve as demand increases and practice size and staff number do the same.³⁷ In most cases, the process is not formalised and can be difficult to document, define and assess.⁷ Receptionists are exposed to social pressure from anxious patients and patients vulnerable to receptionists making potentially key decisions without the necessary and appropriate support. This may go some way to explain the considerable variability between general practices as to how the appointment making process is perceived by patients.³⁸

In trying to improve consistency in booking appointments, previous research has indicated how appropriate guidelines can positively impact on negotiations of urgency and receptionists' relationships with patients and make it easier to prioritise patient appointments. Appealing to defined rules in negotiations with patients can be a useful source of legitimacy and support for receptionists.¹⁰ In Australia, standards have been produced that offer such guidance³⁹ and there are recommendations for the roles and responsibilities for all staff managing patient appointments.¹³ It has been recommended that practices in the UK should also be more explicit in how they book appointments,⁹ and establish boundaries for reception staff in responding to telephone requests.¹²

Reporting results

In a recent UK survey of result communication in primary care, 98% reported that the default option of communicating normal results was for patients to call reception staff. A further 18% of practices required receptionists call patients with abnormal results.⁴⁰ Feedback on result data should include information on

the implications of the result, options for further care and emotional support offered.⁴¹ Yet receptionists are not required to undertake any training to fulfil this role and lack clinical expertise. Patients have previously expressed dissatisfaction with the level of information they receive on their laboratory test results.^{42–43} The ensuing uncertainty about the meaning, or accuracy, of normal results can lead to additional costly and unnecessary medical visits and diagnostic procedures.^{44–47} If, however, receptionists were equipped to communicate more detailed and consistent information it may help reassure patients and encourage positive health behaviours.^{48–51}

Repeat prescriptions

Repeat prescriptions are defined as those issued without a consultation between clinician and patient.⁵² The process of repeat prescribing is typically a complex, technology-supported social practice requiring the input of clinical and administrative staff.⁵³ In the UK, repeat prescriptions account for three quarters of all drugs prescribed with half of all patients receiving treatment via repeat prescriptions.^{52–54–56}

Repeat prescribing has been recognised as a core element of the receptionist role,^{11–57} one where they make extensive use of tacit knowledge and situated judgements to bridge the gap between the formal organisational routine and the actual routine as it plays out in practice.⁵⁸ They make important hidden contributions to quality and safety in repeat prescribing and there is evidence they judge themselves accountable to patients for those contributions.⁵³ Yet 4.9% of repeat prescription contain an error⁵⁹ and considering the volume ordered this can have considerable impact on patients and resource.

Front of house communication

In all of the above, the receptionist is required to interact with patients. The receptionist is the key buffer between practice and patients and a recent survey of complaints in primary care found those concerning receptionists continued to grow and in 2014/2015 administrative staff were responsible for some 43% of upheld complaints, the largest number of any staff group.⁶⁰ Patients can assume that receptionists find their enquiries disruptive and report feeling intimidated.^{32–61–62} Patients have cited their poor relationship with practice staff and receptionists as a reason for non-attendance.^{63–64} This can be attributed to the 'task-centred' style of discourse receptionists frequently employ which can be perceived as overly direct, paying little attention to the voice of the patient ref. 11 pp. 571–7 and also seen as being less effective at meeting patients' needs than those with more patient-centred orientations.

Receptionists rely on objective information where available and subjective interpretations to judge the way that they interact with patients. Previous research has found that receptionists can undertake a 'moral'

judgement on patients founded on a variety of factors including appearance, accent and ethnicity^{65–66} and these can influence decisions about their suitability or acceptability for treatment and the access granted.^{34–67}

In trying to improve this interaction, evidence is beginning to emerge that suggests receptionists' communication is more effective and better received when patients are clear as to where the conversation is heading.⁶⁸

Using process improvement tools

Value added maps

In the UK and elsewhere, healthcare providers are increasingly relying on process improvement methodologies such as lean or six sigma, first used in the manufacturing industry to streamline production, increase efficiency and minimise waste.^{16–19} These methodologies require that existing systems of service provision are thoroughly understood.¹⁴ One key tool used to achieve this is the VSM. First used in manufacturing by Rother and Shook⁶⁹ they comprise material and information flows necessary to transform a raw material into a final product; analogous in healthcare to transforming an unhealthy patient into a healthy one.⁷⁰ These maps created in conjunction with multidisciplinary teams help identify which inputs and processes have the greatest impact on the desired output and so allow team members to design action plans, and generate and implement revised solutions.⁷¹

Many of the VSMs used in healthcare relate either to patient flow^{72–74} or information streams.^{75–76} They are not designed to show both at the same time meaning exploring the interaction between various elements that combine to provide a service is problematic.⁷⁷ We are therefore proposing that we use value maps in conjunction with service blueprints. These are a related service improvement tool that can grant an understanding of how 'visible' elements of the receptionists' work, for example, the communication of results from receptionists to patients can combine with 'backstage' elements, that is, the process that leads to the information on the result reaching the receptionist.²¹

Summary

Within UK general practice, a number of administrative and clinical roles are fulfilled by the receptionist. In the process of fulfilling these critical functions they often bear the brunt of patient frustration, anxious for timely appointments, results or prescriptions. Guidance for receptionists as they undertake these activities is lacking as is an understanding of how we can streamline these processes to make them more efficient. We will therefore work closely with receptionists, practice staff and patients to understand the role of receptionists, offer them appropriate support and make recommendations for improving the key processes of which they are part.

METHODS AND ANALYSIS

Our work consists of three key phrases that will, first, help us understand the parameters of the role of receptionists, second, the systems and processes they work within, third, identify areas of support for receptionists and recommendations with the potential to increase the efficiency. In doing so, we aim to increase job satisfaction of receptionists, improve practice efficiency and produce better outcomes for patients. We will work closely with receptionists, other practice staff and patients to produce recommendations for improving extant practice systems and produce guidance specifically for receptionists to support their clinical roles. Receptionists will have the opportunity to provide valued feedback about their current role, the design of improved practice systems and how more harmonious interactions with patients might be realised.

Research questions

The study aims to answer two main research questions; first, can using work design questionnaires (WDQs), VSMs and service blueprints provide a greater understanding of the processes and influences on receptionists in their clinically relevant roles? Second, how can these questionnaires, maps and blueprints be used to inform recommendations for measurable process improvement and appropriate support for receptionists?

Research design

We will conduct our work in three phases using a standard mixed-methods approach.⁷⁸

Phase I: Establish the parameters of the current role of receptionists.

To do this we will use the validated WDQ to measure job and work characteristics of receptionists.⁷⁹ The questionnaire has been validated by 540 incumbents holding 243 distinct jobs and has demonstrated excellent reliability and convergent and discriminant validity.⁷⁹ The focus of the questionnaire is work design (as opposed to the narrower term job design) and it acknowledges the job and the link between this and the broader environment.⁸⁰ The questionnaire seeks information on four key characteristics of the job. The first is task characteristics which concerns how the task is accomplished, and the range and nature of tasks of a particular job. Factors explored include autonomy, and the significance and variety each task entails. The second is knowledge characteristics reflecting the kinds of knowledge, skill and ability demands placed on an individual as a function of what is done on the job. This includes factors such as complexity, information processing and problem solving and the training provided. The third is social characteristics which relate to social support, interdependence, and external interaction with individuals not belonging to the organisation. The fourth and final set is contextual characteristics which look at elements of the interaction with the individual's environment including ergonomics, physical demands, work

conditions and the equipment used including familiarity with electronic clinical support systems.

As part of this process, we will also gather data on receptionists' age, ethnicity, gender, and other personal characteristics protected by UK law as well as their years in post, and characteristics of the practice they work. The latter will include the number of GPs, patients and the identity of their commissioning group. The information we gather will provide the most detailed exploration of the characteristics of receptionists' work yet conducted in the UK and inform the topic guides to be used in Phase II. The output of these focus groups will help us evaluate the applicability of such WDQs in similar studies in the future.

Phase II: Creation of VSMs and Service Blueprints.

Using the output of focus groups with receptionists and other stakeholders (eg, patients, practice managers and GPs), we will create VSMs and service blueprints to determine practice systems and processes. This will allow us to make recommendations as to how practices might reduce delay and increase efficiency as well as identify which aspects of the role of receptionists require increased support.

Focus groups

We will use focus groups of between six and eight participants⁸¹ to explore the issues that emerge from the WDQ and in particular the role of receptionists in the three key tasks of communicating results, booking appointments and providing repeat prescriptions. Focus groups will be audio recorded and outputs, such as maps or graphical representation, from participants retained by the research group. The focus groups will consist singly of receptionists, a range of other practice staff and patients. We will retain the flexibility to carry out additional focus groups until saturation is reached. We will employ a team-based approach to analysing the discussions and use them to inform the VSMs and service blueprint.⁸² We will evaluate the validity of the VSMs and blueprints by presenting iterative drafts of both to subsequent focus groups.

Value stream maps

The maps will graphically represent each task as a series of steps using various shapes, symbols and colours to provide information on the type of action, the individual involved and any associated values. For clarity, we will populate the maps with a series of conventional symbols used in process maps introduced and refined by Gilbreth and Graham^{83–85} and follow the recommendations for using specific colours and icons to denote the identity of the various care providers.¹⁴

Where possible we will capture metrics such as cycle times, defect rates and wait times. Each map will provide the opportunity to understand the roles of various individuals, and the flow of materials and information required to support the receptionist's role.^{18 86 87} A systematic analysis of these maps will then

help us identify areas that are wasteful or otherwise fail to provide 'value' to provide evidence of how work processes may be streamlined, reducing costs and increasing quality.^{88 89}

We are unsure as to how similar or different these processes may be across practices. If similar, then our intention is to produce maps that reflect the key elements of these and recommendations that once evaluated are transferable across sites. If the processes are markedly different between practices, then we will produce bespoke maps for each.

Service blueprints

Service blueprints clarify the interactions between service users, and service employees, including digital contact, the front-of-house activities that involve direct contact with patients, and the backstage activities that the customer does not see, that is, the processes and systems that underpin the delivery of each aspect of the service. They will be used to contextualise the corresponding viewpoints of practice staff, patients and external groups for the various receptionist workstreams identified in Phases I and II.^{82 90}

To ensure the maps and service blueprints serve the purpose of guiding process improvement, they will be analysed as consistently and systematically as possible by the members of the study team and objective decisions made as to any unnecessary steps, duplications/redundancies, variability, bottlenecks, delays and role ambiguity.⁹¹

Phase III: Recommendations for process improvement and support for receptionists.

We will use those areas identified in Phase II where current processes are either failing or introducing unnecessary delay to produce a series of recommendations to promote reshaping of current work processes. In addition, we will identify and recommend appropriate support for administrative staff. Taken together this will allow receptionists to offer a more efficient, robust and consistent service for patients.

Settings and participants

Given the cultural variation that exists across UK practices as independent businesses,⁵⁸ it is important to understand how these contextual differences impact on the work of receptionists.

Phase I: Primary care practices across England.

The WDQ will be made available online to receptionists at practices across England. To ensure sufficient power we will collect a minimum of 500 questionnaires. We will use survey software⁹² to manage the collection and collation of data.

Phase II: Primary care practices from the West Midlands.

We will conduct a series of focus groups at a minimum of four practices across the West Midlands to reflect maximum variance in size and location of practice including rural and urban settings and a variety of

deprivation scores.⁹³ At each of the four practice sites in the West Midlands, we will conduct a minimum of three focus groups consisting singly of receptionists, other practice staff and patients. All staff are eligible to participate with no restriction, except consent. Participants in patient groups will be drawn from the same practice to gain their perspectives on the role of receptionists, again with no restriction except ability and willingness to consent.

Recruitment

Phase I: We will promote the study and the need for receptionists to complete the questionnaire using a mailshot and articles in generic trade journals, through the various Clinical Commissioning Groups (CCGs) and national primary care bodies such as the Royal College of General Practitioners (RCGP) as well as the Association of Medical Secretaries, Practice Managers, Administrators and Receptionists (AMSPAR) and The British Society of Medical Secretaries and Administrators (BSMSA). There are a number of ways of facilitating a questionnaire based survey each with their own benefits and limitations. Though self-selecting bias can play a role in postal surveys,⁹⁴ self-administration of questionnaires can increase respondents' willingness to disclose sensitive information, compared with face-to-face or telephone interviews.⁹⁵⁻⁹⁷

Phase II: We will use the local Primary Care Research Network (PCRN) to identify suitable practices; these will be visited in person by a member of the study team and the broader aims of the study and the role and implications of involvement of the individual practices will be discussed with the practice staff. Patients will be recruited through existing patient groups at each practice and via posters in the practice and where possible other means of communication such as text messages from the practice to patients or mail-outs.

Data management and analysis

Data management

Data collected from the focus groups will consist of an audio recording. These will be downloaded to and stored on an encrypted flash drive prior to leaving the data collection site. Following this, the recording will be transcribed either by a member of the research team or by a reputable transcription service. Data storage will be kept secure as per data protection guidelines.⁹⁸ Hard copies of data will be stored in a secure and locked location and digital/electronic files will be securely stored and encrypted, with passwords. All data will also be backed-up; these too will also be stored securely. Other data collected may include maps created by the participants; these will be stored in accordance with the description of stored hard copies of data given.

Analysis of focus groups

We will analyse the focus groups in two ways; first, we will use a conventional framework based approach to analyse



the focus group data.⁹⁹ The data will be sifted, charted and sorted in accordance with key issues and themes. Framework analysis is typically used for applied or policy relevant qualitative research based on relatively structured data generation based on preset aims.⁹⁹ Second, we will use the data from the focus groups to create VSMs of the three key clinically related processes outlined above.

Analysis of value stream maps

We will use group based deductive analysis of the VSMs to produce service blueprints and otherwise determine areas of strengths and weakness and highlight areas in the process where either delay or failure can be introduced. These will be used to inform our recommendations for improving current processes.

Study outcomes

There are a number of key study outcomes related to each of the three phases. First, we will gain a greater understanding of the role of receptionists including the key parameters of the job as described by the results from the WDQ. Second, the VSMs and service blueprints will allow us to make recommendations to improve the three clinically related processes that receptionists contribute to. They will also allow us to target the areas where receptionists need support. In particular, we will make recommendations for the development of structured guidance for prioritising the booking of appointments, the management of repeat prescriptions and the content of result communication. As a result of these recommendations, we will raise awareness of patient confidentiality and improve information governance by receptionists. At an organisation level our work will increase awareness of the role of receptionists as a key member of the primary care team, it will increase efficiency and reduce the number of errors.

DISCUSSION

A key strategy of future healthcare is preventive health and effective management of chronic disease placing general practice at the forefront of health service provision in the UK and abroad. To meet this need, traditional models of primary healthcare delivery are changing with greater responsibility assumed by a broader range of practice staff. Long seen as fulfilling an important yet predominantly administrative role, receptionists are being increasingly relied on to fulfil clinically related tasks. Here we will produce guidance for receptionists and recommendations for how the processes they are involved in might be improved.

The application of rules, guidelines, regulations and protocols for these key tasks will never fully eradicate the imperfect and contingent nature of everyday work practices. Therefore, practices will be encouraged to customise or adapt our recommendations to meet the specific needs of their organisation and its patients. As such,

they will also raise awareness among colleagues and policymakers of the responsibilities placed on receptionists in modern primary care.

ETHICS AND DISSEMINATION

Ethics

The protocol has been independently reviewed by external reviewers at the Health Foundation.¹⁰⁰

Dissemination

Our work will be disseminated using conferences, workshops, trade journals, electronic media and through a series of publications in the peer reviewed literature. The conferences will be carefully selected and used to present our work in terms of the results and the lessons learnt for future service improvement. We will arrange a series of workshops inviting stakeholders from across the primary care community to discuss our findings and the content and implementation of our recommendations. We will further raise awareness of our work among primary care staff using trade journals such as Practice Manager and electronic media such as Pulse. We will use a dedicated web page hosted by the University to serve as a central point of contact and as a repository of our findings. Finally, the study will produce a minimum of three articles for the international scientific literature and we hope will provide the basis for a comparison with similar roles elsewhere. The integration of rigorous research with state of the art tools of service improvement will itself draw attention to the findings and contribute to the methodology of improvement techniques.

Contributors IL and SG were responsible for the concept of the study and MB and NG made significant contributions to the subsequent study design. IL wrote an initial draft of the manuscript and SG, NG and MB each made a critical contribution to the content. All subsequent submissions were drafted by IL and critically appraised by SG, NG and MB. Where applicable their comments or suggestions were incorporated into the text. The final version has been seen and approved by IL, SG, MB, and NG.

Funding This work is supported by The Health Foundation grant number 7452.

Competing interests None declared.

Ethics approval University of Birmingham Science, Technology, Engineering and Mathematics Ethical Review Committee has granted full ethical approval for the study.¹⁰¹

Provenance and peer review Not commissioned; externally peer reviewed.

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Appendix 16: Search Strategy

Topic 1

- GP receptionist*
- General practice receptionist*
- Practice receptionist*
- Receptionist*

Topic 2

- Roles
- Clinical role*
- Clinical work
- Clinical function*
- Medical role*
- Medical function*
- Job satisfaction
- Attitudes

Topic 3

- Patient outcome*
- Patient satisfaction*
- Patient participation
- Patient effects
- Patient view*
- Patient attitude*

Topic 4:

- Primary care
- Primary healthcare
- GP practice
- General practice
- GP Surger*
- General practice management
- General practice staff

Topic 5:

- Role*
- Work
- Function

Recommended Databases:

HMIC, Medline, Embase, Cinahl, Social Science Citation Index.

Searches:

- Topic 1 and Topic 2 and Topic 3
- Topic 1 and Topic 2 and Topic 3 + Topic 4
- Topic 1 and Topic 2
- (Gp receptionist* or practice receptionist* or general practice receptionist* or receptionist*) adj2 (outcome* or participation or attitude* or view* or satisfaction or effects)
- (Gp receptionist* or practice receptionist* or general receptionist*) adj2 (role* or work* or function)

Appendix 17: PRISMA-P checklist

Section/topic	#	Checklist item	Reported on page #
TITLE			
Title	1	Identify the report as a systematic review, meta-analysis, or both.	1
ABSTRACT			
Structured summary	2	Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number.	2
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known.	4-5
Objectives	4	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).	6
METHODS			
Protocol and registration	5	Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number.	6
Eligibility criteria	6	Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.	7
Information sources	7	Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched.	6/7
Search	8	Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated.	7
Study selection	9	State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).	7/8
Data collection process	10	Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.	8

Data items	11	List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made.	8
Risk of bias in individual studies	12	Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis.	7/8
Summary measures	13	State the principal summary measures (e.g., risk ratio, difference in means).	-
Synthesis of results	14	Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., I ₂) for each meta-analysis.	8

Page 1 of 2

Section/topic	#	Checklist item	Reported on page #
Risk of bias across studies	15	Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies).	-
Additional analyses	16	Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified.	-
RESULTS			
Study selection	17	Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram.	9/10
Study characteristics	18	For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations.	10/11
Risk of bias within studies	19	Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12).	-
Results of individual studies	20	For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence intervals, ideally with a forest plot.	12
Synthesis of results	21	Present results of each meta-analysis done, including confidence intervals and measures of consistency.	12/22
Risk of bias across studies	22	Present results of any assessment of risk of bias across studies (see Item 15).	-
Additional analysis	23	Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16]).	-
DISCUSSION			

Summary of evidence	24	Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers).	22
Limitations	25	Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias).	25
Conclusions	26	Provide a general interpretation of the results in the context of other evidence, and implications for future research.	25/26
FUNDING			
Funding	27	Describe sources of funding for the systematic review and other support (e.g., supply of data); role of funders for the systematic review.	28

From: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. PLoS Med 6(6): e1000097. doi:10.1371/journal.pmed1000097

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