

**Retaining the experienced GP workforce in
Direct Patient Care (ReGROUP):
Final Report**

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26 April 2015

Overview

This report presents findings of research undertaken between November 2014 and April 2015. The research was commissioned by the Southwest Academic Health Science Network and jointly funded by that organization and the University of Exeter Medical School. The subject of the research is the present challenges facing the NHS in light of potential GP workforce shortages. A mixed-methods project is reported.

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Acknowledgements

We are grateful to Greg Allan, Grant Fitzner, Dr Andrew Woodward and Dr Barbara Tomai **The Centre for Workforce Intelligence**, 209 – 215 Blackfriars Road, London, SE1 8NL for their collaboration and support with the research reported in chapter 5 of this report.

We are grateful to all our **research participants** who willingly contributed to the research.

The **Southwest Academic Health Science Network** commissioned this research. We are grateful for their support, and to Mr Richard Blackwell, Information Analysis Manager, for assistance in provision of some of the data used within the research. Dr Jo Roberts, Dr Alex Mayor, Louise Witts (Programme Manager), and Dr Renny Leach (Managing Director) all actively supported this research. The SW AHSN are collaborators in a bid to NIHR for further research building on the methods and findings presented here, and planned to refine and extend this present work.

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Executive Summary

Introduction

The departure of GPs from direct patient care, either on account of career breaks or retirement, presents a major potential problem. Substantial challenges face GP workforce planners on account of a critical imbalance in the demand for primary care and the capacity to deliver it. The situation is compounded in the context of an increasing ageing population and with increasing demands being presented to primary care, both in the volume and complexity of activity. Given the long trajectory to train a GP – a minimum of 10 years from entering undergraduate medical training - bolstering the workforce in the short term is essential.

Understanding the work-life challenges of GPs contemplating early retirement or a move away from direct patient contact will be of importance in informing strategies and interventions which might facilitate their retention within the clinically active workforce. Also, the RCGP believes there is a ‘substantial pool’ of GPs who might return into the workforce. Understanding the personal work-life issues for ‘returners’ in the current climate will be an important first step to supporting their reintegration with the workforce.

Aims and Objectives

The overall aim of this project was to facilitate the retention of GPs in direct patient care. There were three key objectives:

- To identify the reasons behind intentions to quit direct patient care amongst both experienced GPs (those aged 50-60 years old) and GPs who have taken or who are proposing taking a career break.
- To develop recommendations for the content and provision of an intervention package seeking to support the retention of these groups of GPs in direct clinical care.
- To develop preliminary methodology for profiling of local practices with a view to mapping current and future (next five years) supply and demand in the South West, and to identify ‘pinch points’ of imbalance between projected supply and demand.

To address these aims, we undertook a rapid literature review, conducted qualitative interviews with GPs, and developed a mapping model to describe the present situation in Somerset, Devon, and Cornwall.

Literature Review

The main aims of the literature review were to identify the factors that were affecting GPs' intentions to take early retirement, to identify the factors that were affecting GPs' decisions to take a career break, and to identify potential strategies for mitigating early retirement. A key objective was to use evidence from this review to inform the development of a topic guide for qualitative interviews with local GPs in the South West.

The rapid literature review identified 24 papers of interest: 18 were survey based, three used qualitative methods, and one was quasi-experimental. The remaining two papers were secondary review/discussion pieces that reported on independent primary research exploring factors affecting quitting decisions or initiatives supporting the retention of GPs.

Evidence from both survey and non-survey studies across countries consistently reported that a high workload, a desire for more family or leisure time, poorer health, and disillusionment with the health system affect GPs' intentions to quit general practice. The range of possible factors that affect GPs' decisions to take a career break are unclear due to the lack of existing evidence, although work pressure also seems to contribute here. Strategies and policies that promote or facilitate the reduction of workload or the improvement in flexible working arrangements are likely to be beneficial.

GP Work-Life Survey

We randomly sampled 142 (46%) of the 306 practices in the South West region. Practices were stratified by practice size, practice deprivation, and practice location. A questionnaire was posted to all GPs within the sample practices. The final sample consisted 48% of GPs (948/1981) from Somerset, Devon, and Cornwall.

The questionnaire asked GPs to report the likelihood that they would be quitting direct patient care within the next five years and the likelihood that they would be taking a career break within the next five years (providing they had not already quit or were not already on a career break). GPs rated the

likelihood of quitting or taking a career break from “none” to high” on a five point scale. The questionnaire also captured demographic data – GP gender, age, ethnicity, region graduated from, and current position (e.g., Partner, salaried). GPs were also asked whether they would be willing to participate in a short confidential interview to discuss work-life issues.

Of the 984 questionnaires sent directly to GPs from 142 practices, we had a response from 56% of GPs (529/984) representing 82% of the sample practices (117/142). Of the 529 GPs, 18 (3%) had already quit direct patient care. Of the remaining 511 GPs, 507 reported quitting intentions. Thirty-five percent of GPs (177/507) reported high risk of quitting direct patient care within the next five years. The proportion of GPs intending to quit increased as a function of age, $\chi^2(4)= 171.564$; $p < 0.01$. Whereas 13% (23/176) of GPs aged 40-49 were intending to quit direct patient care within the next five years, this rose to 64% (129/203) of GPs aged 50-59 years. Significantly more male than female GPs were intending to quit, $\chi^2(1)= 9.25$; $p < 0.01$, as were GP partners compared to GPs in other positions, $\chi^2(1)= 9.51$, $p < 0.01$. There were no significant differences in quitting intentions between different ethnic groups, the region GPs graduated from, or any of the stratification variables.

Of the 496 GPs who provided data about their intentions to take a career break, 107 (22%) reported an intention to take a career break within the next five years. Age was associated with intention to quit, with a general trend for younger GPs reporting a high risk of taking a career break, $\chi^2(4)= 12.53$; $p < 0.02$. Intention to take a career break was not associated with any of the other study or stratification variables.

In summary, more than one-third of all GPs across Somerset, Devon, and Cornwall were planning on quitting direct patient care within the next five years. Nearly two-thirds of senior GP respondents aged 50-59 reported intending to quit within the next five years.

Qualitative Interviews

The aim of the qualitative interviews was to explore reasons behind GPs’ intentions to quit direct patient care. The topic guide was developed from the literature review findings, piloted, and then used to conduct semi-structured telephone interviews.

We sought to interview GPs aged 50-60 years, who were intending to retire within the next five years or who had already retired, and who agreed to be contacted about being interviewed. We also sought to interview GPs of any age who were currently on a career break and who agreed to be

contacted about being interviewed. GPs eligible for interview were identified from the returned survey questionnaires, and via practice managers.

Interviews were conducted with 14 GPs who intended to retire within the next five years, and with three GPs who had already retired. Interviews lasted on average 33 minutes. We were unable to recruit GPs currently on a career break and this is an issue to be addressed in future research.

Interviews with GPs focussing on their retirement decisions identified four main themes of importance: early retirement is a viable option for many GPs; there are other options available to GPs; GPs are doing an (almost) undoable job; and we identified practical proposals which might help to retain GPs. In each of these areas, subthemes of importance were identified, with findings which largely concur with previously published evidence, but which highlighted the changing context and professional environment within which GPs operate. Identified issues relating to a high workload, a desire for more family or leisure time, poorer health, fear of deteriorating health and competence, change, and disillusionment with the health system, all supported the evidence from the literature. In addition, we identified concerns about the future of general practice, and morale. These factors were all seen as part of the bigger picture of 'managing the business of being a GP' and influenced decisions about when and how to retire from direct patient care.

Interviewees described a range of pragmatic and practical solutions to the problems they encountered, as well as describing hypothetical solutions which they believed might be of relevance. Although 'hypothetical', these proposals addressed key areas of concern and practice, relating to providing emotional support, practical support, and organisational support.

Mapping Supply and Demand

Our research also involved the development of a novel modelling tool, derived following joint working in collaboration with colleagues from the Centre for Workforce Intelligence. Where previous reports have identified issues at national, regional, and sub-regional level, we were able to exploit the findings of our work-life survey of GPs to undertake a preliminary risk assessment of increased granularity when compared with existing models of workforce. Our preliminary model identified 19 out of 142 practices with potential 'Red' ratings based on an assessment of projected demand for GP services over the next five years. As a beta-instrument, this methodological work has proved of interest and appears to offer potential if refined, and if based on validated and robust data. We

believe this present work offers real potential for further rapid development and refinement in planned future research.

Discussion

This work has addressed an important area of national concern, appears timely, and relevant to the wider health economy of the South West. The rapid literature review highlighted several key factors that appear to influence GPs' decisions about quitting direct patient care. These were used to inform the development of the topic guide for the qualitative interviews. The qualitative interviews gave additional insight into the current concerns and experiences of senior GPs in the South West, and suggested some routes to explore to address these. The survey and modelling gave a snapshot of the current situation in the South West: an estimate of the percentage of GPs likely to quit direct patient care within the next five years, and a mapping tool to help identify those practices and areas most at risk.

This present work has also formed the basis of a major submission for research funding via NIHR Health Services Delivery Research funding stream. In addition to mirroring and extending the current work, the proposed work will benefit from policy development and prioritisation using an expert panel and a Rand Appropriateness Methodology (online Delphi) and detailed stakeholder consultation to ascertain the acceptability and likely uptake of emergent policy targeting the retention of experienced GPs in direct patient care.

1. Introduction

1.1 Challenges facing GP workforce planners

England faces a major and imminent problem in respect of GP workforce capacity. A recent work-life survey identified that 54.1% of GPs aged 50 years and older reported a 'considerable' or 'high' likelihood of quitting direct patient care within 5 years¹. This group of GPs constitute over one fifth of the GP workforce¹. In addition to experienced GPs leaving there are considerably fewer newly qualified doctors (around 20%) choosing a career in general practice than the Department of Health's target of 50%². There are also decreasing numbers in applications for GP training: there was a 15% fall from 2013 to 2014 across the UK³ with the GMC arguing that burnout experienced within the existing workforce may be contributing to the fall in number of applications⁴. Overall, there is slower growth of the GP workforce (on a FTE basis) in relation to population growth – the number of FTE GPs in England has fallen from its 2009 peak of 61.5 to 59.6 per 100,000 population⁵.

In addition, the workforce demographic is changing: The increase in the number of women choosing a medical career and entering general practice has been associated with a significant shift in the gender balance in what was once a male-dominated specialty. In 2012 41.5% of the GP workforce was female⁶. This is set to rise, with 65% of the GPs currently in training being female⁷.

In 2012-13, 1221 female GPs left the workforce, of whom 40% were under the age of 40⁶, the number of this group who subsequently return to direct patient care is unknown⁷. A better understanding of what can be done to help retain these GPs in the workforce is required⁸.

At the same time, as the demographic profile of GPs is changing, a major restructuring of NHS primary care has taken place resulting from implementation of the Health and Social Care Act 2012⁹. This legislation, which heralded the creation of GP-led Clinical Commissioning Groups (CCGs), has had the potential to increase managerial and administrative workloads, particularly for (senior) established GPs. These changes may be resulting in new or additional factors influencing decisions made regarding intentions to quit direct patient care.

The departure of GPs from direct patient care, either on account of career breaks or retirement, presents a major potential problem. Substantial challenges face GP workforce planners on account of a critical imbalance in the demand for primary care and the capacity to deliver it. The situation is compounded in the context of an increasing ageing population and with increasing demands being presented to primary care, both in the context of volume and complexity of activity⁷. Given the long trajectory to train a GP – a minimum of 10 years from entering undergraduate medical training - bolstering the workforce in the short term is essential.

The RCGP believes there is a ‘substantial pool’ of GPs who might return into the workforce¹⁰. Many of these individuals may be women or men who have taken career breaks to have families or who have been working abroad¹¹. Given the cost of training these doctors, it is in the interests of the NHS to facilitate their return to UK practice, but the current mechanism for doing so, and of funding such interventions, is unclear. Induction and refresher schemes already exist to support GPs returning to work, but these vary locally in respect of their form, content, and accessibility. The RCGP have secured an incentives agreement to reduce the training and professional barriers to return to work (e.g., introducing a ‘keeping in touch scheme’ to help those working abroad to keep up with developments in UK primary care; and refreshing the induction and returners scheme which may be viewed as having an inappropriate or disproportionate appraisal process)¹⁰. In addition, the Prime Minister announced a £10million initiative in January 2015¹² to support non-clinically active GPs in returning to direct clinical care.

Understanding the personal work-life issues for ‘returners’ in the current climate will be an important first step to supporting their reintegration with the workforce. Similarly, understanding the work-life challenges of GPs contemplating early retirement or a move away from direct patient contact will be of importance in informing strategies and interventions which might facilitate their retention within the clinically active workforce. Although we anticipate that there may be some commonalities in the factors underlying GPs taking career breaks and/or those taking early retirement, it is important to gain a more sophisticated insight into the differences between these groups. Such data will assist with the provision of appropriately targeted support, and will inform healthcare workforce planners interested in addressing the challenges of retaining GP capacity.

Various solutions have been proposed in responding to these workforce challenges but it is important to look forward and consider what the primary care of the future might look like before adopting any new approach. NHS England¹³ and the Centre for Workforce Intelligence (CfWI), expects to see a significant change in future models of general practice with more collaboration between primary care services and new approaches to developing and exploiting skill mix in multidisciplinary teams (p.82)⁵: GP’s roles may become more complex¹⁴, having to accommodate multiple agendas and manage more complex clinical presentations. Practices are becoming federated in the hope of improving patient services and care. We will consider these possible realities. Our intention is to inform the design and development of a multi-faceted intervention package aimed at supporting the retention of experienced GPs in direct patient care, targeting GPs who may be considering retirement and those who are considering not returning to active patient care following a career break.

1.2. Research Aim and Objectives

The overall project aim is to facilitate the retention of GPs in direct patient care. There are three key objectives:

- a) To identify the reasons behind intentions to quit direct patient care amongst both experienced GPs (those aged 50-60 years old) and GPs who have taken or who are proposing taking a career break.
- b) To develop recommendations for the content and provision of an intervention package seeking to support the retention of these groups of GPs in direct clinical care.
- c) To develop preliminary methodology for profiling of local practices with a view to mapping current and future (next five years) supply and demand in the South West, and to identify 'pinch points' of imbalance between projected supply and demand.

To address these aims, we propose to undertake a rapid literature review, qualitative research and, in due course, to describe the present situation in Somerset, Devon, and Cornwall using quantitative data obtained from a survey of doctors.

2. Literature Review

2.1 Introduction

Preliminary scoping work identified key factors that have been associated with GPs' intentions to quit direct patient care or take early retirement. Existing strategies used in the retention of this group of GPs were also identified. We conducted a rapid review of the literature with the aim of evaluating the existing evidence, and to determine the relevance and suitability of studies in informing the topic guide for subsequent qualitative interviews with local GPs.

2.2 Methods

2.2.1 Criteria for considering studies

Recognising the potential heterogeneity across studies from the initial scoping work, an inclusive strategy was adopted. Studies including any methodological approach were considered as were studies exploring any sample of doctors, as long as GPs were represented within the group. Studies that focussed on intentions to quit general practice before retirement age or quitting direct patient care before retirement age were eligible for consideration. Studies were included if they reported on any factors that affected or were believed to be associated with GPs' work life decisions or reported any potential strategies or policies that might facilitate the retention of GPs in the workforce.

2.2.2 Search methods for identification of studies

The review considered only English language publications and was restricted to papers published between 1st Jan 2000 and 30th November 2014. Published studies were searched using the Medline (OVID), PsychInfo, SCOPUS, and ISI web of science databases with the keywords "GP/general practitioner retirement" "GP/general practitioner intention to retire" "factors predicting intentions to retire", "GP/general practitioner retention" and "GP/general practitioner career break". Ancestry searches on retrieved studies were conducted to identify other potentially relevant articles. The grey literature (conference abstracts, unpublished manuscripts), government or stakeholder reports were not searched.

2.2.3 Data analysis

Owing to the heterogeneity of study outcomes, study design, and samples it was not appropriate to conduct any pooled statistical analyses to estimate size of effects. A definitive report detailing the

most influential factors affecting intentions to quit or take a career break was not tenable. Instead a narrative summary of findings is presented and, where possible, an assessment of quality is provided. Where appropriate, studies are grouped based on methodological design (survey studies vs. non-survey studies).

2.3 Results

2.3.1 Papers identified

Twenty-four papers were identified, 18 of these were survey based (Table 2.1), three used qualitative methods, and one study was quasi-experimental (Table 2.2). Two papers were secondary review/discussion pieces that reported on independent primary research exploring factors affecting quitting decisions (Kmietowicz)²⁶ or initiatives supporting the retention of GPs (Rachootin)²⁷ (Table 2.2). Eighteen papers reported reasons for intending to retire early, two of these (Hann¹⁷; Leese²⁸) included a sample of GPs who had recently retired. Eleven papers reported factors that might support the retention of the GP workforce. Only one study (Evans)²⁹ reported reasons for taking a career break. We did not identify any randomised-controlled trials, systematic or narrative reviews.

2.3.2 Factors affecting intentions to take a career break

Evans²⁹ reported findings from a survey examining career choices of a cohort of doctors. No information about the study sample or detailed method was provided. The survey appeared to contain open-ended questions for doctors to provide comments. Doctors' comments were content analysed. It was unclear whether the results reflected views from a proportion of the sample or were responses from an individual GP. Child rearing and a desire to pursue interests outside medicine were reported as reasons for seeking a career break as was a desire to reduce pressure of work.

No other studies explored factors affecting decisions to take a career break. The limited number of identified papers might reflect a wider problem of engaging with this group of GPs (see Section 4.3). Owing to the limited evidence base, the findings need to be interpreted cautiously and should at best only serve to illustrate a range of concerns that need to be understood in those intending to take a career break.

2.3.3 Factors affecting decisions to take early retirement

2.3.3.1 Research surveys

A summary of each of the surveys included in this review is presented in Table 2.1. Of the surveys exploring factors affecting intentions to take early retirement or quit direct patient care, nine were conducted in the UK, three in Australia, three in North America and two in Europe.

Five of the UK surveys^{15 16 28 30-32} published between 2001 and 2008 reported common factors that influenced intentions to quit general practice. Leese²⁸ surveyed GP principals who were in practice in 1996 but not in 1997 (i.e., had quit or retired). They divided their analysis of leavers into those aged less than 46 years and those aged over 46 years. They found that high levels of administration and clinical workload, and high patient expectations were responsible for those aged over 46 years quitting general practice. Lack of flexible hours and GP partnership problems were motivating factors for those aged less than 46 years.

High workload or associated work pressures (e.g., long working hours) were also reported as important factors affecting work life decisions in GPs who were considering quitting care^{16 30-32}. The survey by Evans²⁹ also reported work pressure as a reason for quitting practice. In addition, some of these UK studies reported that a desire for more family or leisure time¹⁵, disillusionment with the NHS^{16 31}, and the maintenance of good health^{16 32} were all key associates of intentions to quit.

Davidson¹⁶ rank-ordered the reasons for intending to quit general practice (Table 2.1). The most frequently reported issues, already reported above, were workload pressures and the desire to spend more time with the family/more leisure time. In addition to these, and less frequently reported, were the fear of deteriorating health and competence, and insufficient financial incentives to stay in work.

Other UK surveys considered the influence of job satisfaction and explored its contribution to quitting decisions^{17 18 33}. Hann¹⁷ and Sibbald¹⁸ reported that job satisfaction was directly associated with quitting intentions – greater dissatisfaction was associated with an increased risk of quitting general practice. Scott's³³ structural model illustrated that the relationship between intentions to quit and job satisfaction was complex. GPs' job characteristics (the working environment) and personal characteristics (position, gender, salary) were directly associated with a range of corresponding job satisfaction domains and were indirectly associated with overall job satisfaction. Job satisfaction domains had a direct effect on intentions to quit in addition to their effect via overall

job satisfaction. This work illustrated that while job satisfaction was key, the individual components that make up the satisfaction domains are also important drivers of intentions to quit.

One of the Australian surveys²³ employed a similar survey methodology to that adopted by Davidson¹⁶, and ranked the frequency of reasons reported for quitting general practice. Consistent with the UK survey, Brett reported that pressure of work was the most commonly cited reason for intending to quit. Poor job satisfaction and the desire to spend more family/leisure time were the second and third most commonly reported factors. Like the UK survey, although it was less commonly reported, a key factor affecting quitting intentions was the GP's fear of deteriorating skills and competence.

The other Australian studies were surveys of GPs working in rural areas^{22 34}. Both studies examined the degree to which occupational and individual health factors were associated with intentions to take early retirement. Gardiner²² explored the importance of these factors for GPs who had seriously considered leaving practice within the last two years (n=96) and for GPs who had not considered leaving (n=86). Those who had considered leaving reported higher work-related distress, lower quality of work life and a poorer social support network – they had fewer colleagues to discuss professional issues with – than those who had not considered leaving. In a separate survey of 92 GPs, Pit³⁴ found that GPs with medium and higher burnout levels had higher odds of intending to retire compared to those with low burnout. Increased physical and mental work ability were associated with an increase in retirement intentions as was higher psychological distress, worsening general health, lower job satisfaction and longer working hours.

Surveys in the Netherlands²⁰ and Canada²⁴, have illustrated respectively that a high workload and dissatisfaction with family matters were associated with intentions to leave general practice. A study by Heponiemi²¹ in Finland focussed on health, psychosocial factors and retirement intentions. Poor health, low job control and perceptions of organisational injustice (e.g. whether the GP's outcome reflects the effort they put into their work) were all associated with intentions to leave general practice.

Table 2.1 Summary of included survey studies

Article	Country	Methods	Participants + intention to quit	Reasons for quitting	Solutions for retaining workforce
Brett et al (2009)²³	Australia	Survey to 478 GP members of four Western Australia Divisions of General Practice (used similar survey to Davis et al 2001/2002). Survey completed between Nov 2007 and Jan 2008. Qs included: intention to work to age 65. GP Background, work situation. Prospective retirees asked to provide reasons for early retirement and incentives that might keep them in practice.	281/478 responded (RR 59%). 178/478 GPs aged 45-65 (37% RR) 63% of all doctors would work until the age of 65 years; 6% unsure.	Rank order of reasons for considering leaving before usual retirement age (n=63): 1. Pressure of work (medical & admin), exhaustion, burnout. 2. Poor job satisfaction, disillusionment with medical system or medicare 3. Family reasons, improved lifestyle 4. Career change, reducing hours 5. Financial reasons 6. Maintaining good health 7. Fear of deteriorating skills and competence, medicolegal issues 8. Other 9. Had enough	Rank order of what might encourage them to stay working until normal retirement age (n=61): 1. Better remuneration, better staffing, more general support 2. More flexible working hours, part-time work, reduced workload 3. Less bureaucracy, greater prof freedom, more respect 4. Nothing 5. Financial necessity 6. Career change 7. Ongoing health, competence
Davidson et al (2001)¹⁶, & Davidson et al (2002)¹⁵	UK	Postal Questionnaire – survey of cohort of doctors who qualified in 1974. Survey completed in 1998 Both articles present data from the same survey. The latter (2002) focuses more on differences in job satisfaction as a function of occupational groups. Qs included normal retirement age for post; intentions to practice until normal retirement age; age might leave practice; job satisfaction. Prospective retirees asked to provide incentives that might keep them in practice.	Survey of 2217 NHS doctors – 1717/2217 (77% RR) 1460 /1717 (85% RR) still working at end of Sept 1998 Not clear how many are GPs - BMJ paper reports 713 GPs in UK NHS. Age of doctors unclear 51% (731/1427) of all doctors planning on not working to normal retirement age (i.e., thinking about quitting earlier).	1022 doctors gave reasons for considering <i>early retirement</i> including (Ranked in descending order based upon % reporting reason; no 1 = most reported): 1. Pressure of work/exhaustion/burnout 2. Family reasons/time for leisure/other interests 3. Reduced job satisfaction/disillusionment with the NHS 4. Maintaining good health/life expectancy/healthy retirement 5. Insufficient financial incentive to stay/financial security 6. Career change/reduced hours 7. 'Had Enough!' 8. Fear of deteriorating skill/competence	Ps reported factors that might encourage staying until normal retirement age: 1. Flexible working hours/workload reduction/ sabbatical/salaried posts 2. 'Nothing!' 3. Improved working conditions other than hours 4. Financial necessity 5. Fewer NHS changes/less bureaucracy/more emphasis on patient care 6. Counting good health/competence/job satisfaction 7. Career change/development

Evans et al (2002) ²⁹	UK	Unclear – simply states survey with open-ended questions.	Unclear who participants are other than that they are GPs	Work pressure cited as reason for early retirement and career breaks	n/a
Gardiner et al (2005) ²²	Australia	Postal survey w/ questions around professional support, psychological health and social support; psych health measures; intentions to leave over last 2 years. Context is the development of psychological support systems in Australia (Dr DOC), a rural health and wellbeing program. There is lack of data on rural GP psych wellbeing. This was motivation for the survey. Date of survey unclear/unknown.	187/336 (RR 56%) GPs working in rural Australia identified by Rural Doctors Workforce Agency 53% (96/87) intending to quit within last two years (all GPs).	Key analysis = Comparisons of psych wellbeing between GPs considering leaving (n=96) vs. not considering leaving (n=86) Qualitative analysis of open-ended questions GP considering quitting indicated significantly higher rural doctor distress, work-related distress, significantly lower work-related morale, quality of life and fewer GPs to discuss professional issues with (social support). Qualitative analysis of open-ended questions indicated that main stresses/pressures included (implying reasons for quitting): Lack of support services Workload Finding time to balance work-life Need for more doctors Children's education Practice management Issues related to being an overseas trained doctor.	n/a
Hann et al (2011) ¹⁷	England	Secondary analysis of survey of family physicians (GPs) in NHS in England in 2001. Examining link between job satisfaction and intentions to quit and actually quitting.	1174 family physicians aged 50 years and under. 194/1174 (16.5%) had left direct patient care within 5 years.	Job dissatisfaction was linked with intention to quit. Intention to quit predicted actually quitting. Interestingly, job satisfaction partially predicted actually quitting. Higher levels of dissatisfaction were associated with increased risk in actually quitting but higher levels of satisfaction did not prevent leaving.	n/a
Heponimi et al (2008) ²¹	Finland	Cross-sectional survey of Finnish Health Care Professionals. Qs included: Intentions to retire, organisational injustice, job control, self-rated health, work ability and sickness absence	5000 physicians sent postal Q. 1383 aged 45-65 (RR = 28%) returned Q (number of GPs not reported) Sample represented population. 64% had some or many retirement intentions.	Poor health, low work ability, low job control, organisational injustice, and sickness absence all increased the likelihood of retirement intentions.	n/a
Jones et al (2004) ³⁵	Australia	Survey of GPs' views of six candidate interventions	1050 GP respondents who were principal, partner or associate in their		Rankings of intervention initiatives:

		designed to improve recruitment and retention of GPs in rural and remote areas.	practice. 85% of these provided data for retention ranking.		<ol style="list-style-type: none"> 1. Better remuneration per Medicare consultation 2. Improved after-hours and on-call arrangements 3. Better locum availability 4. Capital funding to improve practice infrastructure/enable GPs to set-up practice 5. Better education and professional support 6. Improved availability of allied health professional services <p>In sum – more money and better workforce supply ranked highly.</p>
Kelley et al (2008)²⁴	Canada	<p>Survey of Physicians who practise in rural and underserviced areas in North-Western Ontario.</p> <p>Survey in 2004</p> <p>Qs included professional, personal/family and community satisfaction and future practice intentions (intention to leave in 5 years)</p>	<p>201/328 (RR= 61%) physicians returned Q</p> <p>Most respondents from Thunder Bay (urban area). 70% reported intention to stay in practice within next 5 years (i.e., 30% intent to take early retirement).</p>	<p>Family/community satisfaction was negatively associated with intentions to quit. Family factors predicted quitting intentions when controlling for professional support and efficacy.</p> <p>In sum: Family matters were important predictors.</p>	n/a
Kmietowz (2001)³⁰	UK	UK survey of 23,521 GPs. Source and year of survey not clear.	<p>GPs (little more info on sample)</p> <p>46% GPs reporting intention take early retirement.</p>	GPs reported feeling undervalued, over-burdened. Long hours, work-related stress, thoughts that patient care is suffering were all contributing to dissatisfaction (and implication that they contributed to intentions to quit).	n/a
Landon et al (2006)³⁶	America	Survey of Physicians who spent at least 20 hrs a week in direct patient care.	<p>16, 681 physicians who completed the Community Tracking Study Physician Survey (combined GPs from rounds 1 and 2 of the survey).</p> <p>% intending to quit unclear. Only 3% (462/16681) had quit medicine.</p> <p>Unclear of the % who are GPs and the age of physicians.</p>	Dissatisfaction with careers.	n/a
Leese et al (2002)²⁸	UK	Postal survey to 1083 GP principles who had left practice between October 1996 and October 1997.	<p>621/1083 returned Q (RR = 63%).</p> <p>Ages ranged < 46 - > 46</p>	<p>High administration and clinical workload and high patient expectations.</p> <p>In younger leavers (< 46) lack of flexible hours and GP</p>	Of those that had left practice (196) 32% females reported that better opportunities to accommodate family (flexible daytime working hours, not working school holidays, better

		Qs included job-related and personal reasons for leaving practise		partnership problems were important factors.	childcare) would encourage re-entry into general practice. Small percentage of males also reported these factors as relevant for them. But should note the overall mean scores were only around or below mid-point of scale suggesting that these factors are not that important (improving these factors may not encourage return to workforce).
Luce et al (2002)³¹	UK	Postal survey to all Principal GPs over 45 in the Northern Deanery in Oct 2000.	714 Principal GPs aged 45 and over in Northern Deanery surveyed. N replied 518 (RR = 72.5%)	Undesirable changes in the NHS and workload (admin and clinical) were main factors (seen at greatest influence) for quitting.	For GPs aged < 60 (n=120) reduction in hours, protection of earnings and pension rights, phased retirement through part time work and reduced admin role were factors that might influence later retirement. For those over 60 (n=57) increased pensions for later retirement, reduction in hours, protection of earnings and pension rights, and phased retirement through part time work were factors that might delay retirement.
		Questionnaire of factors influencing retirement: 1) factors affecting early retirement, 2) factors influencing later retirement	Retirement plans made by 69% GP principals – average retirement age 59 years. Of this group, early retirement intended by 35% (120/349).		
Pit & Hansen (2014)³⁴	Australia	Cross-sectional survey of GPs in rural Australia. Occupational and individual health factors were calculated	92/165 GPs returned Q (RR=56%) of which 47% intending to retire before age 65.	Work-related sleep problems, higher psychological distress, worsening general health and longer working hours predicted intentions to quit.	n/a
			Age of GPs unknown		
Scott et al (2006)³³	UK	Random sampled survey (in 2001) of English and Scottish principal GP and salaried GPs.	England: Random sample of 2000 GP principals & 600 salaried from GMS database. + 400 GP locums.	Model illustrated that satisfaction was composed of many individual and personal characteristics. Working conditions, choice of method of working, colleagues, recognition for good work, amount of responsibility, remuneration, opportunity to use abilities, variety in job, hours of work, primary care organisation workload associated with job satisfaction. Job satisfaction predicted intention to quit (lower satisfaction → higher likelihood).	n/a
		Qs included quitting intentions within 5 years, satisfaction with aspects of work environment	Scotland: 1,000 GP principals + 359 non-principals + 62 Person Medical Services.		
Sibbald et al (2003)¹⁸	UK	National postal surveys conducted in 1998 & 2001.	Random sample of 2000 GPs principals in England. 1332 returned Q (RR = 67%).	Older age and ethnic minority status predicted intentions to quit as did low job satisfaction.	n/a
		Measures of job satisfaction and intentions to quit in the next 5 years	Data compared with 2064 GP principals in 1998 survey (RR 47%).		
			790 GPs in analysis from 1998 and 1159 from 2001.		
			Intention to quit in next 5 years by GP under 65 years of age rose from 14% in 1998 to 22% in 2001.		

Taylor et al (2008) ³²	UK	Postal Questionnaire	All doctors who qualified in 1977 from all UK medical schools. Unclear how many GPs 37% reported that they would not work until normal retirement age; 13% undecided.	Main factors for considering early retirement were family reasons and wanting more time for leisure, a desire to maintain good health, excessive pressure of work and lower satisfaction in working with patients.	A reduction in workload.
Van Greuningen et al (2012) ²⁰	Netherlands	Retrospective survey sent in 2003 and 2008 to retired GPs	520 self-employed GPs who retired between 1998 and 2002 (2003 survey); 405 GPs retired between 2003-2007 (2008 survey). RRs 60% and 54% respectively.	Workload Burden of control (Male GPs) Demand from patients (Female GPs) Family reasons/time for leisure (both) Health Career change	n/a
Williams et al (2001) ³⁷	USA	Survey of doctors on American Medical Association master file Qs included: stress, job satisfaction, mental health, physical health & intention to quit	From 5704 Qs 1735 useable responses (30% RR). Clinically active physicians. Family physicians constituted around 23% of sample.	Tested a model that job stresses was associated with job satisfaction. Model supported. Also showed that poor job satisfaction and poor mental health were associated with intentions to quit.	n/a

2.3.3.2 Intentions to take early retirement

Ten of the surveys reported the proportion of GPs intending to take early retirement^{15 16 18 22 23 24 30 31 32 34} (see Table 2.1). Proportions ranged from 30% to 60%. UK surveys showed an increase in the proportion of doctors intending to quit; Sibbald reported 14% of GP principals were intending to take early retirement in 1998 and this figure rose to 22% in 2001. Subsequent UK surveys of GPs reported in 2002³¹ and 2008³² showed an increase to 35% and 37% respectively. Comparisons between the surveys are difficult as the measures of intention to quit were not the same. Quitting intentions for those aged 50-60 was also unknown, previous studies only reported intentions for the overall sample of GPs. However, these figures are consistent with the more recent work life survey by Hann¹, a representative survey of all UK GPs, that reported 31% of GPs were intending to quit direct patient care within five years.

2.3.3.3 Non-survey studies

All non-survey studies are summarised in Table 2.2. Qualitative work by Newton³⁸ reported the results of 16 interviews with GPs in the Northern Deanery of the UK. Key factors affecting quitting decisions overlapped with those reported in survey studies: increasing workload and greater leisure time motivated intentions to take early retirement. Commenting on the 2011 BMA survey of 18,000 GPs, Kmietowicz²⁶ noted that NHS reforms, revalidation, and changes to the pension scheme were all influencers of quitting decisions.

Table 2.2 Summary of included papers (non-surveys)

Article	Country	Methods	Participants	Reasons for quitting - results	Solutions for retaining workforce - results
Gardiner et al (2006)²⁵	Australia	<p>Quasi-experimental Survey to evaluate the impact of the Dr DOC social and psychological support program for rural Australian GPs.</p> <p>Pre-post program intro measures: Wave 1 August 2001 – Wave 2 September 2003</p> <p>Outcome = Qs assessing levels of support, intention to leave, use of Dr Doc, psychological health.</p>	RR @ Time 2 = 55% (221/404 rural GPs in Australia)	n/a	<p>Dr Doc program: improving professional and social support networks for rural GPs.</p> <p>Improvements in support networks and physical and emotional health of rural GPs from T1 – T2. Also a reduction in numbers intending to leave practice in the short to medium term (reduction from 30% – 25%).</p>
Hansen et al (2013)³⁹	Australia	<p>Qualitative semi-structured interviews with rural GPs in Northern Rivers region of New South Wales, Australia.</p> <p>Thematic analysis to identify retention factors for rural GPs</p>	<p>16 GPs aged over 45 years of age. Age known for 14 GPs (average age was 58 years – median 55.5 years)</p>		<p>Solutions proposed to sustain and prolong working lives of older rural GPs:</p> <ul style="list-style-type: none"> • Encouragement and support for GPs • Control over work life with healthy work-life balance • Support those wishing to sell practice but remain in rural practice in a contracting capacity • Have a gradual retirement plan • Have a professional specialist interest • Become involved in teaching and mentoring • Reduce bureaucratic burden • Improve status of GPs in local and medical community • Build on and improve locum database
Kmietowicz (2011)²⁶	UK	News letter reported in BMJ presents results/comments on BMA survey of 10, 000 respondents (National Survey of GP Opinion).	<p>GPs (little info on sample). Age of GPs unknown.</p> <p>1413/10000 (14%) planned to retire in next two years.</p>	NHS reforms (cited by 56%) given as reason for retiring in the next two years. Revalidation (38%) and changes to pension (27%) also reasons for early retirement	n/a
Lorant et al (2011)¹⁹	Belgium	102 face-to-face stakeholder	102 policymakers, professional	n/a	Practice organisation policies and training

		surveys with policymakers, professional groups, academia, GP leaders, and the media (Delphi Study).	groups, academia, GP leaders, and the media		<p>policies received highest scores. These include policies: encouraging group practices, reinforcing the GP's role in the multidisciplinary team, integration of GP and speciality courses, compulsive clerkship for all medical trainees, sharing a common infrastructure, and delegation of administrative tasks.</p> <p>Attraction and retention of GPs was one criteria. Difficult to know whether policies would exclusively improve retention.</p>
Newton et al (2004)³⁸	UK	Semi-structured interviews looking at reasons and plans for early retirement	21 GPs in the Northern Deanery	<p>The study categorised GPs based upon whether they were 'happy' or 'unhappy' GPs and whether they wanted to retire.</p> <p>Unhappy + wanting to retire GPs reported <i>change</i> as a key factor (this related to change in role of the GP over course of career as well as change in workload).</p> <p>Happy + wanting to retire reported high demand of role – encroaching on life outside of work. They wanted to enjoy hobbies and interests while they were still young.</p>	<p>All GPs who had or were planning on taking early retirement were asked whether there was anything that would delay retirement.</p> <p>Some comments revolved around yearnings for the NHS to revert back to way it was. Others suggested initiatives that would relieve workload pressures.</p> <p>Financial incentives ('golden handcuffs') to GPs working over 60 was met with almost universal disapproval.</p>
Rachootin (2010)²⁷	Australia	Discussion paper/letter reporting on a new approach in New South Wales, Australia to improving retention. Article implies that job satisfaction is crucial and that this can be improved through creative pursuits.			<p>See Method. No evaluation of the 'intervention(s)' reported but suggestions that they have positive impact on GP well-being/satisfaction.</p>

2.3.4 Possible solutions for retaining the GP workforce (or for delaying early retirement)

Eleven papers reported factors that might support the retention of GPs in the workforce, six survey based^{23 16 28 31 32 35} (Table 2.1) and five non-surveys^{19 25 27 38 39} (Table 2.2). UK studies unanimously reported that more flexible working arrangements, with reduced hours or flexible daytime working would support the retention of GPs^{16 28 31 32}. Luce³¹ reported additional strategies to support workforce retention cited by GPs under the age of 60. This group recommended the protection of earnings and pension rights, phased retirement through part time work, and a reduced administration role.

All of the studies reporting factors affecting retention were low quality. Studies reported suggestions or recommendations from GPs and most were based upon small sample sizes. Recommendations lacked specificity, with no guidance on the content of a support package, providing instead only suggestions of areas for improvement.

However, a recent Delphi study in Belgium involving 102 stakeholders assessed the likely effectiveness of 23 policies for attracting and retaining GPs¹⁹. There was a prioritisation of policies that moved GPs toward team-working, improving their role as care-coordinator, and helping them offload administrative tasks to administrative staff.

2.4 Discussion

Evidence from both survey and non-survey studies across countries have consistently reported that a high workload, a desire for more family or leisure time, poorer health, and disillusionment with the health system affect GPs' intentions to quit general practice. The situation among UK GPs reflects this and appears to be an ongoing problem – these issues have been present in survey findings from 2001 to 2008. The range of possible factors that affect GPs' decisions to take a career break are unclear due to the lack of existing evidence, although work pressure also seems to contribute here²⁹. Strategies and policies that promote or facilitate the reduction of workload or the improvement in flexible working arrangements are likely to be beneficial.

The main aims of this review were to identify the factors that were affecting GPs' intentions to take early retirement, to identify the factors that were affecting GPs' decisions to take a career break, and to identify potential strategies for mitigating early retirement. A key objective was to use evidence from this review to inform the development of a topic guide for qualitative interviews with local GPs in the South West. Although there was general consensus across all studies in reported factors affecting quitting intentions, the UK studies, taking account of the local political and health

service context, are likely to have greater external validity in this regard^{16 28 30-32}. An estimate of the magnitude of the importance of each of the factors identified cannot be calculated but we can be confident, owing to the large, representative samples, that all factors reported are relevant for a significant proportion of the senior workforce. Consequently, workload pressures, wanting to spend more time with the family, health issues, and the state of the NHS will be explored further in the qualitative work.

Less is known about the factors that might promote the retention of the senior GP workforce. The presented data at best represents suggestions from concerned GPs; there is no evidence of the effectiveness of any intervention package. No controlled trials exist. However, the literature points to policies and strategies focussing on the reduction of workload. Although the content of these policies is not made explicit the recommendations for more flexible working and the redistribution of administrative tasks¹⁹ might be useful start points for the development of support packages. These ideas will be explored through our subsequent qualitative interviews with local GPs. It is of note that the RCGP have petitioned government to create new medical assistant roles to help alleviate administrative burdens⁴⁰. The findings from the literature therefore resonate with current mood and will usefully inform the qualitative topic guide.

There are a number of methodological issues that could have important bearing on the validity of these results. Publication and other selection biases are a potential threat to validity in all systematic reviews. All of the studies were non-randomised. Survey response rates were around 50%. It is unknown whether the GPs who did not complete surveys, or who were not interviewed, were qualitatively different from those that were included in study samples. There is a risk that additional factors influencing quitting decisions or promoting the retention of GPs have been missed.

More recent evidence is required to understand whether the factors affecting quitting decisions remain constant. The last survey in the UK was conducted in 2011¹⁷ and the last qualitative piece of work in 2004³⁸. The recent changing structure of the NHS may influence quitting decisions. Our subsequent qualitative work will explore this possibility. However, while it is important to acknowledge the differing health care systems across different countries, and at different times, any intervention is unlikely to be able to modify the administration within the health care context and any impact on quitting intentions is likely to be immutable. Future research may better focus strategies and policies at individual and practice level factors that are amenable to change.

Overall, our rapid literature review identified key factors affecting quitting decisions and delineated some basic suggestions for how to mitigate early retirement. The proposed qualitative work is essential in order to explore these issues more fully in a local South West context.

3. GP Work life Survey

A brief work life survey questionnaire was developed with the aim of capturing a snapshot of quitting intentions and career break intentions in GPs in the South West of England. Quitting intentions of GPs aged 50-60 years of age were of primary interest. The survey was also designed to facilitate the identification of individuals who had already quit direct patient care within the last five years and who were already on a career break, with a view to targeting these individuals for qualitative interview to discuss the reasons behind their work-life decisions. The principle aim of the survey was to establish an estimate of the proportion of GPs in the South West who were considering taking early retirement in the next five years.

3.1 Method

3.1.1 Sample frame

The South West AHSN provided data for 306 practices and 1981 GPs across Somerset, Devon and Cornwall. Practice and patient profile data was provided including: the number of full-time equivalent GPs within the practice (workforce supply), and the number of patients within specific age ranges registered with the practice (e.g., < 4 years; > 65 years; patient demand). Individual GP ages were not available. As a result it was not possible to target the survey to specific age groups. Instead, all GPs in the practice were surveyed with the expectation of capturing sufficient responses from those aged 50-59 years, recognising that approximately 30% of the GP workforce fall within this age category¹.

Practices were categorised according to list size: small or medium sized (list size <3500-8000 patients) vs. large practices (list size > 8000 patients); deprivation level: practices with scores in decile 1-5 were classified as 'deprived', while practices with scores in decile 6-10 were 'not deprived'; and location: practices were considered 'urban' if they fell within the postcode boundaries of the main cities within the South West (Plymouth: PL1, PL2, PL3, PL4; Exeter: EX1, EX2, EX3, EX4; and Taunton: TA1). Practices outside of these boundaries were categorised as 'non-urban'.

We randomly sampled 142 (46%) of the 306 practices in the South West region. Practices were stratified by practice size, practice deprivation, and practice location. A questionnaire was posted to all GPs within the sample practices. There was a minor administrative error in the mail-out with some questionnaires sent to inactive GPs (GPs who had left the practice or who were deceased). After removal of these GPs, our final sample consisted 48% of GPs (948/1981) from Somerset, Devon, and Cornwall.

3.1.2 Questionnaire

The questionnaire and accompanying letter (Appendices 1&2) were brief, the former consisting of only 11 items. Questions asked GPs to report the likelihood that they would be quitting direct patient care within the next five years and the likelihood that they would be taking a career break within the next five years (providing they had not already quit or were not already on a career break). GPs rated the likelihood of quitting or taking a career break from “none” to high” on a five point scale (see Appendix 2). The questionnaire also captured demographic data – GP gender, age, ethnicity, region graduated from, and current position (e.g., Partner, salaried). GPs were also asked whether they would be willing to participate in a short confidential interview to discuss work-life issues (see section 4.2.1).

Questionnaires were sent to GPs in early December 2014 with a reminder questionnaire sent two weeks following the initial mail-out. Questionnaire return was incentivised by entry into a prize draw to win an e-reader.

We recognised that those on a career break and those who have already quit direct patient care were unlikely to be active in the practice and therefore unlikely to receive the survey (and were also unlikely to be part of the SW AHSN dataset). In an attempt to engage with these groups, a separate letter was sent to practice managers asking them to return details of these GPs to the research team (Appendix 3). Initial and reminder letters were sent to practice managers at the same time as the mail-outs to GPs. GPs identified by practice managers were sent a questionnaire via the practice manager (see section 4.2.1).

3.1.3 Statistical Methods

Analyses were mainly descriptive. Both intentions to quit and intentions to take a career break were categorised as ‘yes, high risk’ or ‘no, low risk’. GPs reporting a ‘considerable’ or ‘high’ likelihood were classified as ‘high risk’ whereas those providing any other responses were classified as low risk. Risk of quitting and risk of taking a career break were cross-tabulated against all other study variables: GP age, gender, ethnicity, region of graduation, and position held within the practice. They were also cross-tabulated against the stratification variables (practice size, location and deprivation). The Pearson chi-square test was used to determine how likely it was that any observed difference between the sets arose by chance. We conducted multi-level modelling on both the intentions to quit direct patient care measure and the intentions to take a career break measure. Measures were

linearised on a scale of 0-100 to facilitate interpretation⁴¹. Each model explored the unique contribution of GP age, gender, ethnicity, region of graduation, and position held within the practice to the dependent variable. To account for potential confounding we adjusted each exploratory model using practice size, practice location, and practice deprivation. There was a random effect on practice. A p -value of ≤ 0.05 was deemed statistically significant. All analyses were conducted using Stata MP 12.1.

3.2 Results

Of the 984 questionnaires sent directly to GPs from 142 practices, we had a response from 56% of GPs (529/984) representing 82% of the sample practices (117/142). Missing data ranged from 0% to 3% across all study variables. No adjustments were made to account for missing data.

Replies were received from 24% of the practice managers (34/142). These identified 12 GPs who had already retired and six who were currently on a career break. Each of these GPs was sent a survey questionnaire: four were returned by retired GPs and two were returned by career break GPs. The data from these six additional questionnaires are not included in the Work-life Survey results below, however, they were used in the qualitative study (see section 4).

3.2.1 Intentions to quit general practice within the next five years

The number and proportions of GPs intending to quit direct patient care (i.e., who reported a considerable or high likelihood of quitting) as a function of each of the other study variables can be seen in Table 3.1

Of 529 GPs, 18 (3%) had already quit direct patient care. Of the remaining 511 GPs, 507 reported quitting intentions. Thirty-five percent of GPs (177/507) reported high risk of quitting direct patient care within the next five years. The proportion of GPs intending to quit increased as a function of age, $\chi^2(4) = 171.564$; $p < 0.01$. Whereas 13% (23/176) of GPs aged 40-49 were intending to quit direct patient care within the next five years, this rose to 64% (129/203) of GPs aged 50-59 years. Significantly more male than female GPs were intending to quit, $\chi^2(1) = 9.25$; $p < 0.01$, as were GP partners compared to GPs in other positions, $\chi^2(1) = 9.51$, $p < 0.01$. There were no significant differences in quitting intentions between different ethnic groups, the region GPs graduated from, or any of the stratification variables.

Table 3.1 The number and proportion of GPs intending to quit direct patient care

Variable	Intention to quit direct patient care				Total N
	Yes, High Risk		No, Low Risk		
	N	%	N	%	
Overall Sample	177	35	330	65	507
Age*					
<30 years	0	0	3	100	3
31-39 Years	8	8	98	92	106
40-49 years	23	13	153	87	176
50-59 years	129	64	74	36	203
60+ years	17	89	2	11	19
Total	177	35	330	65	507
Gender*					
Male	110	41	159	59	269
Female	66	28	170	72	336
Total	176	35	329	65	505
Ethnic Group					
White	169	35	308	65	477
Other	8	29	20	71	28
Total	177	35	328	65	505
Region Graduated					
UK/Ireland	167	35	305	65	472
Other	10	30	23	70	33
Total	177	35	328	65	505
Position*					
GP Partner	162	38	268	62	430
Other	15	19	62	81	77
Total	177	35	330	65	507
Practice Deprivation					
Deprived	65	34	129	66	194
Not deprived	112	36	201	64	313
Total	177	35	330	65	507
Practice Size					
Small/medium	52	34	102	66	154
Large	125	35	228	65	353
Total	177	35	330	65	507
Practice Location					
Urban	49	31	108	69	157
Not urban	128	37	222	63	350
Total	177	35	330	65	507

*p<0.05 otherwise not significant

The multi-level model testing the independent contribution of each of the study variables on intentions to quit can be seen in Table 3.2. Only GP age was positively associated with intention to quit. Compared to GPs under the age of 30, those 50-59 years old and those aged 60 and above were significantly more likely to quit direct patient care within the next five years.

Table 3.2 The independent contribution of each of the questionnaire variables and the stratification variables to quitting intentions.

Variables	Multilevel model: main effects (N practices = 116; N GPs= 501) Overall difference		
	Difference	(95% CI)	p-value
Gender (ref male)	-4.37	(-9.71; 0.98)	0.11
Ethnic Group (ref White)	4.70	(-7.79; 17.20)	0.46
Age (ref < 30 years)			
31-39 Years	2.75	(-31.49; 36.98)	0.88
40-49 years	8.49	(-25.73; 42.72)	0.49
50-59 years	52.42	(18.19; 86.66)	< 0.01
60+ years	2.98	(1.53; 4.43)	<0.01
Region graduated (ref UK/Ireland)	-0.48	(-11.50; 10.55)	0.93
Position (ref GP Partner)	1.40	(-6.48; 9.29)	0.73
Practice deprivation (ref deprived)	2.54	(-3.14;8.22)	0.38
Practice size (ref small/medium)	-0.50	(-6.56; 5.55)	0.87
Practice location (ref urban)	5.75	(-0.26; 11.75)	0.06
Constant	13.66	(-21.48; 48.81)	0.45

3.2.2 Intentions to take a career break

The number and proportions of GPs intending to take a career break (i.e., who reported a considerable or high likelihood of intending of taking a career break) as a function of each of the other study variables can be seen in Table 3.3.

Four-hundred and ninety six GPs provided data about their intentions to take a career break. Of the 496 GPs 107 (22%) reported an intention to take a career break within the next five years. Age was

associated with intention to quit, with a general trend for younger GPs reporting a high risk of taking a career break, $\chi^2(4) = 12.53$; $p < 0.02$. Intention to take a career break was not associated with any of the other study or stratification variables.

Table 3.3 The number and proportion of GPs intending to take a career break within 5 years

Variable	Intention to take a career break				Total N
	Yes, High Risk		No, Low Risk		
	N	%	N	%	
Overall Sample	107	22	389	78	496
Age*					
<30 years	2	67	1	33	3
31-39 Years	31	30	72	65	103
40-49 years	29	16	147	84	176
50-59 years	39	20	157	80	196
60+ years	6	33	12	67	18
Total	107	22	389	78	496
Gender					
Male	54	21	207	79	261
Female	52	22	181	78	233
Total	106	21	388	79	494
Ethnic Group					
White	101	22	368	78	469
Other	5	20	20	80	25
Total	106	21	388	79	494
Region Graduated					
UK/Ireland	101	22	361	78	462
Other	6	19	26	81	32
Total	107	22	387	78	494
Position					
GP Partner	88	21	331	79	419
Other	19	25	58	75	77
Total	107	22	389	78	496
Practice Deprivation					
Deprived	33	17	156	83	189
Not deprived	74	24	233	76	307
Total	107	22	389	78	496
Practice Size					
Small/medium	30	20	119	80	149
Large	77	22	270	78	347
Total	107	22	389	78	496
Practice Location					
Urban	25	16	127	84	152
Not urban	82	24	262	76	344
Total	107	22	389	78	496

* $p < 0.05$ otherwise not significant

The multi-level model testing the independent contribution of each of the study variables on intentions to take a career break can be seen in Table 3.4. Only practice deprivation was independently associated with career break intention. GPs in non-deprived practices were more likely to take a career break.

Table 3.4 The independent contribution of each of the questionnaire variables and the stratification variables to intentions to take a career break.

Variables	Multilevel model: main effects (N practices = 114; N GPs= 490) Overall difference		
	Difference	(95% CI)	p-value
Gender (ref male)	-1.36	(-7.54;4.82)	0.67
Ethnic Group (ref White)	-4.91	(-20.18; 10.35)	0.53
Age (ref < 30 years)			
31-39 Years	-15.68	(-54.81; 23.44)	0.17
40-49 years	-27.11	(-66.18; 11.90)	0.17
50-59 years	26.76	(-65.85; 12.34)	0.18
60+ years	-20.30	(-61.98; 21.40)	0.34
Region graduated (ref UK/Ireland)	0.28	(-12.61; 13.17)	0.97
Position (ref GP Partner)	2.42	(-6.46; 11.29)	0.59
Practice deprivation (ref deprived)	10.23	(4.00; 16.46)	<0.01
Practice size (ref small/medium)	-4.25	(-10.97; 2.47)	0.22
Practice location (ref urban)	3.66	(-2.91; 10.23)	0.28
Constant	49.20	(9.14; 89.26)	<0.02

3.3 Discussion

More than one-third of all GPs across Somerset, Devon, and Cornwall were planning on quitting direct patient care within the next five years. Nearly two-thirds of senior GP respondents aged 50-59 reported intending to quit within the next five years. These figures might legitimately promote alarm. With increasing patient demand and the reduction in the number of new GPs, the local picture of the GP workforce mirrors the challenges being faced across the UK⁵. There is now urgency in the need to identify the practices most at risk of supply-demand imbalance as a result of pending early retirements and to target appropriately designed policies and strategies for the retention of the GP workforce.

It is possible that the proportion of GPs intending to quit was overestimated. The GPs who did not return a questionnaire might be at low risk of quitting direct patient care. We do not know the work life intentions of this group and because we do not know the characteristics of those who have not responded we are unable to impute the data.

The overall proportion of GPs reporting they intended to quit within 5 years was larger than in previous surveys^{18 32} but was consistent with the more recent survey by Hann¹. Our figures were lower than the figures reported in the BMA Quarter 1 Tracker survey of 2015 – where 58% of the GPs (n=138) in that sample intended to take early retirement.

4. Qualitative Interviews

4.1 Introduction

The aim of the qualitative interviews was to explore reasons behind GPs' intentions to quit direct patient care.

Three discrete groups of GPs were intended as subjects for interview:

- 1) Experienced GPs aged 50 – 60 years who may be intending to retire/withdraw from direct patient care within the next five years (proposed 10 – 12 interviews).
- 2) GPs who took early retirement within the last five years (i.e., retired before the age of 60; proposed 6 – 8 interviews)
- 3) GPs (all ages) on a career break who are not intending on returning to work or who are intending on reducing direct patient contact upon their return (proposed 4-5 interviews).

4.2 Methods

4.2.1 Recruitment

There were two main routes to identifying GPs for interview: 1) from the returned questionnaires from the survey, and 2) via practice managers - who helped to identify GPs who had retired or were on a career break (see GP work life survey methods in Section 3.1 for more detail).

All returned questionnaires from the original survey (n=529) were reviewed in January 2015 and we identified 69 GPs aged 50-60 years, who reported intending to quit direct patient care within the next five years, and who had given consent to be contacted regarding interview. We initially aimed for 10-12 interviews within this group, so we randomly selected which of the 69 GPs were to be contacted first. These GPs were from different settings (urban vs. non-urban), practice sizes (small/medium vs. large) and different areas of deprivation.

A maximum of three attempts were made to contact and schedule an interview with each GP before moving on to the next one on the randomised list.

Questionnaires were sent to all of the survey sample practice managers (n=142) to help identify further retired GPs, and those who were currently on a career break. Returned practice manager questionnaires were reviewed in February 2015. Replies from 34 practice managers identified 12 retired GPs and six GPs on a career break, and each of these GPs were then sent the survey questionnaire.

4.2.2 Ethics

Since this study involved interviews with qualified medical doctors, formal ethical approval was not required. The qualitative researcher (AS) had a current Research Passport (providing evidence of the pre-engagement checks undertaken on the researcher in line with NHS Employment Check Standards). There were no visits to NHS premises so letters of access were not required. GPs gave written, informed consent prior to the interviews being conducted (Appendix 4).

4.2.3 Interviews

Emergent themes from the literature review were used to develop a semi-structured interview schedule. This was piloted, face-to-face, with three GPs (recruited opportunistically) and revised.

The interviews with the survey-recruited and practice manager-recruited GPs were conducted by telephone at a mutually agreed time (see Appendix 5 for the interview schedule). All interviews were audio recorded, transcribed verbatim, and anonymised.

4.2.4 Analysis

Transcripts from 'intending to retire' and 'retired' GPs were analysed together.

The transcribed interviews were entered into NVivo10 and analysed using thematic content analysis. An initial coding frame was independently constructed by two experienced qualitative researchers (AS and MC), based on the first five interviews. Following discussions, a consensus about the coding frame was reached and it was further developed to reflect this. The new coding frame was then independently tested by AS and MC with a sixth interview transcript, and final modifications were made to reflect the outcome of this.

All transcripts were then coded using this agreed coding frame, and detailed project notes were kept regarding the further refinement of any existing nodes/codes and also the addition of any more nodes/codes.

Key themes were identified from the codes, and cases and themes compared within and between one another using constant comparison techniques. Descriptive accounts were prepared to identify key dimensions and map the range and diversity of each phenomenon, followed by explanatory accounts to inform the findings and recommendations.

4.3 Results

Attempted contact with 25 GPs who were intending to retire (identified from the original survey) yielded 14 interviews.

The original survey identified six further GPs who indicated that they had already retired (before the age of 60 and within the last five years). Contact with these six retired GPs, plus the 12 from the practice manager survey, resulted in interviews with three retired GPs (n=3/18). Of the non-interviewed, 'retired' GPs (n=15), eight did not respond to the survey questionnaire, four – when contacted by telephone – stated they still had direct patient contact and therefore were not eligible for interview, two did not respond within three telephone contact attempts, and one declined interview.

Two of the 'career break' GPs replied to the survey questionnaire (n=2/6) however both stated that they were not currently on a career break. Consequently no career break GPs were interviewed.

Thus interviews were conducted with 14 GPs intending to retire and three GPs who had already retired, giving a total interview sample of n=17. Interviews lasted from 16 to 53 minutes (mean interview time = 33 minutes). Three of the interviewed GPs were female and the mean age of interviewed GPs was 55.5 years (range: 51-60).

Two of the GPs were currently working in a locum capacity. All of the other 12 who were still currently working were GP partners. The remaining three GPs had also been working as partners prior to retirement.

The three retired GPs had all retired due to ill health at age 55-56. Of those still working (n=14), intended retirement age ranged from 55 to 63, with nine clearly stating that they aimed to retire by the age of 60 or earlier, and two stating that they aimed to retire aged 62-63. Two GPs did not have a specific retirement age in mind: one was already working as a locum, and the other planned to become a salaried GP as an intermediate step before deciding on a retirement age.

Table 4.1 shows the characteristics of those interviewed.

Table 4.1 Personal and practice-related characteristics of interviewed GPs (n=17)

GP study ID	Age	Gender	List size group	Urban or non-urban area	Deprived or not deprived area	Current role	Retired or intending to retire
1	60	F	Large	Non-urban	Deprived	Partner	Intending (age 62-63)
2	55	M	Large	Non-urban	Deprived	Locum	Intending (age not known)
3	57	M	Large	Non-urban	Deprived	Partner	Intending (age 59)
4	56	M	Large	Non-urban	Deprived	Partner	Intending (within 2-3 years if financially able)
5	55	F	Large	Non-urban	Not deprived	Partner	Intending (by age 60 or sooner)
6	53	F	Large	Non-urban	Not deprived	Partner	Intending (by age 60)
7	56	M	Large	Non-urban	Not deprived	Partner	Intending (by age 60)
8	57	M	Large	Non-urban	Not deprived	Partner	Intending (at age 60)
9	51	M	Small-medium	Non-urban	Not deprived	Partner	Intending (age 57)
10	58	M	Small-medium	Non-urban	Not deprived	Partner	Intending (age 62)
11	54	M	Small-medium	Non-urban	Not deprived	Partner	Intending (age 55)
12	58	F	Small-medium	Urban	Deprived	Partner	Retired (age 55)
13	59	M	Small-medium	Urban	Deprived	Partner	Retired (age 56)
14	57	M	Small-medium	Urban	Deprived	Partner	Intending (age not known: plans to become a salaried GP as intermediate step)
15	58	M	Small-medium	Urban	Not deprived	Partner	Retired (age 56)
16	58	M	Large	Urban	Not deprived	Locum	Intending (age 60)
17	59	M	Small-medium	Urban	Not deprived	Partner	Intending (age 62)

4.4 Key findings from the qualitative interviews

Interviews with the GPs focused on three main topics:

- What factors impact on individual decisions about when to retire/quit direct patient care?
- What do interviewees perceive as the difficulties of retaining experienced GPs in direct patient care?
- What solutions might be offered to encourage experienced GPs to stay in direct patient care?

Four main findings emerged from the GPs' answers to these questions:

1. *Early retirement is a viable option for many GPs.*
2. *There are other options available to GPs.*
3. *GPs are doing an (almost) undoable job.*
4. *Helping to retain GPs.*

Each of these findings is expanded below.

4.4.1 Early retirement is a viable option for many GPs

There are several factors that make early retirement/quitting direct patient care a viable option for many GPs aged 50-60:

The 1995 section of the NHS Pension Scheme and 24 hour retirement were cited by GPs as a way to trade-off ongoing, continuous working and full pension, with early retirement (and/or reducing hours) whilst still receiving an adequate income. Some had received financial advice to this effect and many felt that it made sense to take advantage of this option.

There appears to be a cultural norm (it is common amongst their peer group) that makes it acceptable for GPs to consider (and take) early retirement. With this in mind, GPs may have instated long-term financial plans to enable this to happen.

There is also an awareness of what is happening in their peer group: if others of the same age (or younger) are retiring, then why shouldn't they? Plus, if others in their peer group are experiencing poor health (regardless of retirement status), GPs may relate this to their own mortality. Two of the GPs referenced a published study (source unknown) that looked at GP mortality and retirement age:

the older a GP was when they retired, the less years they lived post-retirement [GP3; GP9]. Although both said this hadn't directly influenced their retirement decision-making, it had impacted sufficiently for them to note its relevance to the overall topic.

4.4.2 There are other options available to GPs

Four of the GPs interviewed stated that they were relatively happy with their current work situation and did not feel a need to change it at this time/to retire early: "There's enough that's good at the moment" [GP6]; "I'm very fortunate to be able to enjoy my work and also want to retire when I can afford to" [GP7]; "I enjoy my work so retiring...is actually just a tad daunting" [GP8]; "At the moment I'm sort of ticking along, quite like doing general practice, and it's nice to be paid for it" [GP17].

However, the remaining GPs who were still working were considering what other options were available to them. Options discussed included:

Reduce hours: It was noted that reducing hours also requires the GP's list size to be reduced (otherwise the GP has to do as much work/look after as many patients in fewer hours). If one GP reduces their list size, other GPs will need to take on those patients. For the practice, this means redistributing lists, or taking on another GP (partner, salaried or locum), or increasing the workload for existing GPs. Three GPs had already reduced their working hours [GP1; GP5; GP16], and one planned to go from full time to half time hours once they were 60 [GP10].

Change to being a locum GP: Becoming a locum may offer freedom from the burden of responsibility that many of the GPs associated with being a GP partner, however, there was also an awareness that existing partners would still be shouldering the burden. Issues to consider as a locum included doing enough sessions to stay on the Performer List, and (depending on the practice set-up) possibly having to pay their own MDU and GMC fees. Becoming a locum was seen to offer far less involvement with the practice and potentially more time (and personal resources) to spend on the GP's own areas of interest (professional and personal). Two GPs had already become locums [GP2; GP16].

Continue as they are and continue to manage as best as they can in "almost undoable at times" situations: GPs don't see the situation getting any better. Practice level changes may have been implemented and may have improved the working situation somewhat, but there are still difficulties around workload, change, stamina etc. (further details follow). Some GPs felt their work situation was okay/manageable; others felt they were just about surviving. In order to continue working in their current situation, one GP cited an adopted survival strategy of telling himself to "man up"

[GP3], three GPs had reduced their hours [GP1; GP5; GP16], and five GPs planned to retire/quit direct patient care as soon as they could financially afford it (e.g. once they were no longer supporting dependent children or paying off their mortgage) [GP4; GP7; GP8; GP10; GP17].

Make changes at practice level: Examples given (and that have helped) included recruiting more effective and efficient administrative staff, giving GPs extra administrative time, GP buddies to help manage leave/absence, and personalised lists. Practice level changes cited by the GPs had helped but they had not removed the external pressures of things such as QOF targets and CQC inspections, i.e. they had limited effectiveness. [This is discussed further below.]

Retire early: There was awareness amongst the GPs that any GP partner leaving the practice needed to be replaced and there were concerns about (and actual experiences of) the difficulties of recruiting new partners. Younger GPs may be reluctant to take on partnerships (with all of the added responsibilities involved). However, within the current model of general practice as an independent business, partners are needed. If a senior partner retires they may be concerned about shifting the burden onto their colleagues. There may also be a sense of wanting to get out before the other partners do i.e. not being the one left with all the responsibility.

Alternative professional roles: A further alternative option identified by two of the GPs was to continue patient care but in a different professional role. Both of these GPs had recently completed further training to enable them to offer complementary therapies. One intended to stop being a GP and become a full time holistic therapist instead, the other aimed to leave general practice and work part time as a complementary therapist.

Transferring skills: Other non-direct patient care work options were also described. One GP noted that GPs have a lot of transferable skills that can be highly sought after and well rewarded both in terms of financial reward and also status. Alternative job options cited included appraiser, clinical commission lead, advisory committee member, pharmaceutical consultancy work, and working for a medical school.

“A medical degree is one of the most wide-ranging degrees there is: it’s about science, research, communication, empathy, organisation, management - we’re pretty skilled people... Other people want me to do other stuff now; they’ll pay me good money and treat me very differently to what is currently happening to GPs.” [GP16, Locum, male, age 58]

4.4.3 GPs are doing an (almost) undoable job

“It’s a good job, a well-paid job, I don’t moan about that, but it’s becoming at times almost undoable” [GP2, Locum, male, age 55]

“I’ve seen my colleagues completely overwhelmed by the day ahead and the amount they’ve got to do” [GP5, Partner, female, age 55]

By and large, the GPs reported that seeing patients is the part of the job they enjoy the most, however, there are several factors that make the job “on the cusp of undoable at times” [GP5] and these factors were all cited as influencing decisions about when to retire/quit direct patient care.

Key issues identified by the GPs were:

- Workload
- Change
- NHS structures and systems
- Concerns about the future of general practice
- Politics
- The impact of ageing
- GP ill health
- Morale and emotional resilience
- ‘Pull’ factors

4.4.3.1 Workload

“It’s not the patients or the diseases or management of hypertension or new insulins, it’s the sheer pace of what’s going on, and the idea that you’ll improve it just by regulating more and more is patent nonsense... the pace is seriously getting intolerable” [GP16, Locum, male, age 58]

The most frequently mentioned challenge was managing the GP workload. It was not uncommon for GPs to work 12 hour days (or longer), for there to be no break during the day, and for them to work on their unpaid days/during their time off. The pace of work was felt to be very difficult to maintain and there was a general feeling that the work had also become more complex in recent years.

Increased complexity was attributed to a range of factors including: working in areas of higher deprivation with populations with multiple health and social problems [GP2]; and working with elderly populations with multiple comorbidities and social care needs [GP16].

The demand for patient care was felt to outstrip supply. One GP identified that the number of patient contacts per year had increased (from 4-5 ten years ago, to 6-7 now) and, although the demand had risen, the number of GPs and available appointments had not [GP8]. Another GP suggested that the supply and demand model of the 20th century no longer works in the 21st century: “demand is outstripping supply but also outstripping the financial framework that is supplied” [GP4, Partner, male, age 56]

In addition to the complexity and demand of patients, there were additional workload pressures related to meeting targets (QOF), staying up-to-date with new guidelines, and preparing for CQC visits.

“Looking after patients is okay. It’s the rest of the massive amount of stuff that’s piled upon us that’s driving me out, like it’s driven everybody else out... lifestyle is zilch” [GP14, Partner, male, age 57]

How well GPs were able to manage the workload and demands varied:

“I think I’m reasonably robust at that because what you have is an enormous amount of experience and, if you’ve got the right type of personality where you can focus on the job in hand and not worry about the enormity of what you’ve got to do, that helps. But not everybody has got that.” [GP5, Partner, female, age 55]

4.4.3.2 Change

“You never feel that you’ve quite got your feet on solid ground and it’s always constantly changing” [GP9, Partner, male, age 51]

The GPs described the “drip, drip” of accumulative change as being another factor that wore them down and made them consider leaving general practice [GP11]. Specific (negative) changes cited included loss of finance following the benchmarking process [GP13], and also the loss of the PCTs [GP13; GP14]: “We’ve lost our umbrella, our shield, with the PCT” [GP14, Partner, male, age 57]. Additional reference was made to QOF [GP3; GP11; GP15], CCGs [GP14], and the CQC [GP1; GP10; GP17] (further details below).

Particular difficulties were experienced with perceiving the value of changes [GP3; GP12; GP14], feeling a lack of control/influence regarding changes [GP7; GP13], and feeling that there was no continuity [GP17].

One GP felt that change is harder to deal with for older (vs. younger) GPs, and for those who are more conscientious [GP3]. Whilst another felt that tolerance for change decreases the longer a GP has been in practice: “another reorganisation was one reorganisation too many” [GP12, Retired partner, female, age 58].

4.4.3.3 NHS structures and systems

“The creeping frustration over the years was central government interference” [GP13, retired Partner, male, age 59]

Quality Outcomes Framework

Comments related to QOF were largely disparaging. There was a sense that getting QOF points was all about ‘playing the game’ and ‘ticking the boxes’. It was felt that: GPs are chasing targets all the time; the system is not as profitable as some (younger) GPs may believe; micromanagement feels like a lack of trust by the government; and pursuing QOF points can distract from patient care:

“You’ve come to me with a bad cough and a bad chest...I’m seeing you thinking: I need to listen to your chest, do you need antibiotics? And then I’m thinking: I’m going to lose my targets - do I know your weight...height...blood pressure...have you had your blood sugar done? Rather than dealing with you as a person, I’m thinking: heck we’ve missed a target on this one and it’s going to cost the practice” [GP15, Partner, male, age 58]

The Somerset Practice Quality Scheme (SPQS) was cited as a preferable alternative to QOF [GP8].

[Reference: <https://www.somersetlmc.co.uk/somersetpracticequalityscheme>]

Care Quality Commission

“I have just been CQC checked and that involved an enormous amount of work for the management team and a lot of stress for the staff...I don’t think it’s improved our practice or the way patients are treated...it’s just a heap of work to prove that you are doing well” [GP10, Partner, male, age 58].

CQC checks were viewed as a burden of additional paperwork, bureaucracy, and stress [GP1; GP10; GP17].

Clinical Commissioning Groups

There was little reference to CCGs, however one GP did express concerns that they were being used to scapegoat GPs:

“I feel that primary care is going rapidly towards the precipice and the setting up of CCGs is to try and make damn sure that the politicians don’t get the blame but we do... If they could get the GPs to be the cause of the crash of the NHS then that would be perfect because they could take the blame and not the political party in government so why not have a clinical commissioning group and say it is run by GPs... Could be you think I'm being paranoid and that’s a conspiracy theory but I'm definitely not the only GP who thinks that way.” [GP14, Partner, male, age 57]

Emails

One GP felt very strongly that email systems were being used inappropriately as a “blunderbuss” and that patient-related and non-patient related emails should be sent to separate accounts to make them easier to manage [GP14]. Another GP also described receiving too many emails (primarily from CCG colleagues and the health authority) and how “seeing an inbox with 100 new emails ...is enough for me to switch it off again and concentrate on patient care for a while” [GP11, Partner, male, age 54]. Several of the GPs noted that they look at their work emails from home/in non-work time in order to try and stay up-to-date.

Referral pathways and working in a vacuum of information

Some GPs felt that the referral pathways had become more complex and time-consuming [GP2; GP10]. Others noted that GPs were receiving more referrals and were required to do more follow-ups due to unrealistic expectations of patients (created in part by the media and services such as NHS 111) and hospital doctors lacking resources [GP14; GP15]. There was also a complaint that GPs are “working in a vacuum of information” [GP14] due to delays in communication from hospitals.

Appraisals and revalidation

The GPs expressed mixed views about the appraisal and revalidation system. While one GP noted “I don’t go overboard preparing for it; it’s quite a useful outlet once a year” [GP10, Partner, male, age 58], others felt appraisals were unnecessarily time consuming [GP1] and were not confident in their value (such that they may decide to time leaving general practice to avoid another revalidation) [GP11; GP17].

4.4.3.4 Politics

There was a request from one GP to “take medicine out of politics” [GP1, Partner, female, age 60]. Politicians were felt to use the NHS for their own gain, GPs felt threatened by government proposals and changes (e.g. the Prime Minister’s Challenge Fund), and this was also experienced as stressful and demoralising [GP1; GP3; GP7; GP12; GP14].

In addition, one GP noted: “I don’t like them having a say in how my business and professional practice is done” [GP17, Partner, male, age 59].

4.4.3.5 Concerns about the future of general practice

There was a clear awareness (and often direct experience) of current issues related to difficulties in recruiting and retaining GPs [GP2; GP6; GP7; GP11]. This was a concern of all the GPs: many anticipating that the situation would continue to worsen. Concerns about there being no one to replace them once they left general practice were noted as potentially impacting on decision-making by both the individual GP and the practice team [GP8; GP15].

In addition, one GP described the NHS as a ‘failing brand’ and highlighted how this could lead to his choosing to retire early:

“I don’t like being caught at present in a rather uncomfortable situation with patient demand as it is and a shortage of GPs and if I’m honest I think that, if I felt more uncomfortable in the coming months, I might just retire early. I’m not prepared to try to flag up a failing NHS ...it’s just the brand seems to be failing in the eyes of the public. It is just a shortage of doctors and so those of us that do work, do work very, very hard and I think that something has got to be done about increasing the number of people out there seeing patients, because otherwise I think the whole, I think it’s a very worrying trend: general practice will collapse and some practices have closed already.” [GP8, Partner, male, age 57]

Practise-based models were felt to be the most responsive to local demand but the current funding model made it difficult for practices to keep up with the increasing patient demand [GP4]. Also, GP concern about the future of general practice meant they may be less likely to invest in buildings and make long-term commitments:

“People are genuinely worried about the future of general practice...they seem to be getting very twitchy about buying into property, making long-term commitments to the service, which is a great sadness” [GP11, Partner, male, age 58].

4.4.3.6 The impact of ageing

“There seems to be something that happens when you reach about 55: you start to get feelings of struggling with the work and 60 feels an awful long way away.” [GP3, Partner, male, age 57]

Eight of the interviewed GPs identified ageing as having an impact on their confidence and ability and, consequently, their perceived capacity to continue working in direct patient care [GP3; GP5; GP6; GP8; GP11; GP12; GP13; GP16]. Ageing was considered to have cognitive, physical and emotional consequences. One GP described the vicious circle of poorer memory and recall leading to decreased confidence [GP3]. His solution was to take more detailed notes however this added to the time pressure during the consultation and, in turn, led to further self-doubts about whether he was still able to do the job. Another GP experienced nominal dysphasia post-menopause [GP6].

The length of the working day (often 12 hour days) was felt to be exhausting by most of the GPs, stamina was felt to decrease with age, and this was compounded for one GP who experienced sleep disturbance during the menopause [GP12].

“It’s a really punishing regime to work in if you are not in tip-top condition” [GP12, retired Partner, female, age 58]

“If the days were more doable there would be more likelihood that you would be able to cope because, certainly, as you get older, that length of day is very, very exhausting” [GP5, Partner, female, age 55]

Deteriorating eyesight was noted by three of the GPs [GP3; GP6; GP16], however, computer systems seemed unable to accommodate accessibility issues such as the need for a larger font or fewer icons on the screen.

Cognitive and physical limitations led to experience of emotional states such as fear, anxiety, loss of confidence, and stress. One GP described the fear of “unconscious incompetence” [GP8], and another two noted concerns about how well they were functioning and being clinically safe [GP3; GP6]. This was summed up by a GP who described how she had become more anxious about managing risk (which she perceived as being a necessary part of general practice) as she had got older: “the constant feeling that you are driving at top speed and something’s going to go wrong is unnerving” [GP12, retired Partner, female, age 58].

4.4.3.7 GP ill health

All of the retired GPs (n=3) had retired earlier than they originally intended to, on account of continuing ill health. One of the intending to retire GPs had also had severe health problems that had resulted in a year out of practice. Returning to work after illness had been very physically and emotionally demanding and she noted that, should she become unwell again, she would retire immediately.

One GP described the vicious circle of doctors getting sick, this placing increased pressure on the remaining doctors, who then themselves get sick. He felt that sickness absence amongst GPs had increased during his GP career and that the intensity of the workload was a clear cause [GP2].

Despite this, attending to their own health was not necessarily an easy priority for the GPs. Looking after their own wellbeing was perceived as “just one more thing to fit in” and a GP may be reluctant to visit their own doctor due to not wanting to be a “nuisance patient” and an awareness that “they’re going through the same suffering as you are” [GP12, retired Partner, female, age 58]

4.4.3.8 Morale and emotional resilience

Morale was described as being very low amongst GPs and key identified reasons for this included ‘media bashing’ and medicine/doctors being used for political gain:

“It doesn’t do much for morale when your politicians and your press...are putting the boot in on people [whose] main motivation for going to work is to help patients” [GP3, Partner, male, age 57]

Other cited factors that contributed to feelings of low morale were: feeling worn down by change [GP3; GP7], and feeling undervalued by patients and politicians [GP10; GP12].

Two GPs referred to experiencing “burnout” as a result of the job [GP9; GP13]. Another referred to “the attrition of your own resilience to keep going” [GP11, Partner, male, age 54]. Feelings of being overwhelmed, stress, and losing confidence were also mentioned [GP3; GP4]. One GP hypothesised that GPs experience stress due to the “overcoat of responsibility” (for their patients) that they wear whether at work or not, and that this doesn’t diminish if, for example, the GP reduces their hours [GP15].

4.4.3.9 'Pull' factors

In addition to the above factors that GPs recognise as 'pushing' them out of practice, there were also several factors identified that are seen to be 'pulling' GPs away. These include:

- Wanting to retire while still relatively young and healthy [GP7; GP9].
- Having other things they want to do with their time and energy (including more time for social life and for other vocational roles) [GP7; GP9; GP11; GP16; GP17].

4.4.4 Helping to retain GPs

The GPs were asked to describe anything that they had already identified and/or implemented to address any of the difficulties they experienced in remaining in the GP workforce ('actual solutions'). They were also invited to discuss any other 'hypothetical solutions' to retaining experienced GPs in the workforce.

4.4.4.1 'Actual solutions' - Practice level

One of the key factors that seemed to make a positive difference was having support from colleagues at a practice level:

"It is certainly busy and I think the important thing is that we do have a good group here and that I work in a good partnership and a good practice. People are aware of other people's needs and we work together as a group and I think it is a very supportive practice... I don't think I'd still be in the NHS if I was working in another practice, I probably would have left years ago actually." [GP8, Partner, male, age 57]

Working in partnership, being aware of each other's needs, and being able to negotiate with partners to make it easier for any GP who was struggling, were all cited as positive outcomes from having good and supportive partners to work with [GP3; GP5; GP8].

Conversely, where practice level support isn't evident, or the GP doesn't feel supported, it can make for an 'everyone for themselves' culture where the decisions about when to leave are based more on self-survival than what is best for the practice. Also, in an unsupportive environment, having to take on the responsibility for a partner's absence, ill health, or early retirement can add to feelings of burden and stress [GP9; GP15]. Whereas, in the more supportive practice, such scenarios are better managed by the team.

Other staff also made a difference to the GPs: it was noted that a good practice manager “shoulders the vast majority of the burden of the day to day administrative work” [GP3, Partner, male, age 57]. Good secretarial support, and a good reception team who know the population, are able to liaise and communicate, and handle results and consequences, can also be very helpful (as long as you get “the right person”)[GP5; GP6].

Other examples of practice level changes that had been successful in supporting the GPs included:

- Giving GPs one hour of post-holiday admin time so they could begin to catch up with work backlog [GP5].
- Introducing a buddy system: when a GP wasn’t available (e.g. on annual leave/day off/off sick) their designated buddy could answer some of the incoming queries (but was also given permission not to look at their buddy’s results during that time if their own workload did not permit) [GP5].
- Setting up a same day illness clinic. The GP described this as preferable to his previous role: “mostly quick and easy, straightforward stuff...you're free of the regulatory nonsense and, at the end of the clinic, you can go home ...I don’t drive home with a list of worrying about Mr so and so... I think I used to bring [that] home and just mull it over” [GP16, Locum, male, age 58].
- Discussions between small practices about things they can share to reduce workload [GP4].
- Moving to personalised lists - so the GP can get to know their own patients better [GP5].
- Working out rotas and timetables for seeing patients [GP3].

4.4.4.2 ‘Actual solutions’ - Individual level

Effective individual level changes included:

- Changing from being a GP partner to being a locum [GP2; GP16]. This reduced some of the burden of responsibility and lessened the required involvement in general practice matters.
- Reducing or restructuring working hours e.g. working the equivalent of three days over a four day period [GP3].
- Use of mindfulness techniques to better manage stress related to the workload [GP2].
- Keeping knowledge up-to-date and accessing current information through e.g. courses such as GP Update, educational meetings, and local education Trust website and guidelines [GP8].

4.4.4.3 'Actual solutions' - Organisational level

The GPs were also able to identify a few organisational level factors that they felt supported GPs to remain in practice:

- Safe House (“like Samaritans for GPs”) [GP7].
- Somerset Success Scheme run by the Somerset Local Medical Committee – clinical support service, supporting counselling service [GP8].
- Doctors’ mentoring / GP mentor/counselling run by the LMC (the GP wasn’t sure where he’d heard about this or how widely known about it was) [GP15]

4.4.4.4 'Hypothetical solutions'

The ‘hypothetical solutions’ proposed by the GPs fell into three main categories: emotional support, practical support, and organisational support.

Emotional support

- One GP emphasised how important it could be to acknowledge how GPs are currently feeling regarding low morale. He felt that acknowledgement of the situation could help to counteract the ‘bashing’ received from the media and politicians [GP16].
- The same GP suggested that something that is pre-green card could help further support GPs who were struggling with their work [GP16].
- It was felt that there could be greater peer support amongst GPs, potentially introducing a buddy or mentor system whereby GPs could share effective strategies for managing work and provide mutual support [GP2].
- Encourage GPs to prioritise their own health and wellbeing through the use of mandatory study days that all GPs had to attend (to avoid singling out struggling GPs/attaching any stigma to seeking support) [GP15].

Practical support

- Make the GP’s workload easier through reducing their hours, and/or enabling them to become a locum or a salaried GP [GP1; GP12]. (Reducing hours would also mean reducing list size – which requires someone else to take on those patients. Also, GPs may need additional support with the change in status that a role change could bring.)
- Give GPs easier access to up-to-date information. (Knowledge gaps occur the further away a GP is from their medical school training – feeling up-to-date would help with the fear of unconscious incompetence.) [GP8]

- Simplify the information on the NICE website [GP8].
- Better integrate health and social care so that e.g. it is easier for GPs to access community beds/get community care packages for their patients [GP9].
- Provide opportunities for GPs to have a more flexible end to their career (hours, remuneration, pension) [GP11].
- Give GPs two email accounts: one solely for patient matters and the other for non-patient matters [GP14].

Organisational support

- Take the NHS out of government control - so that government changes do not result in additional changes and inconsistencies for GPs to manage [GP12].
- Raise basic income tax to 30% to meet the expectations and demands placed on the NHS [GP14].
- Change the current model of general practice so that all GPs are salaried. Although this would mean losing practice independence and autonomy, it would remove the extra burdens and stresses the partners may experience due to running the practice as a business [GP15].

4.5 Discussion

The evidence from the survey and non-survey studies outlined in the literature review (see Section 2) identified a high workload, a desire for more family or leisure time, poorer health, fear of deteriorating health and competence, change, and disillusionment with the health system affecting GPs' intentions to quit general practice. Our interview findings broadly support this evidence, offer further insight into these factors, and also highlight additional factors, namely: concerns about the future of general practice and morale. The collection of all of these factors is discussed below under the overarching theme: 'managing the business of being a GP'.

4.5.1 Context

It is important to contextualise these findings within the current working and political environment, and within the cultural norms for this age group of GPs.

The interviews were conducted in February and March 2015, with a general election due to take place in May 2015. It may be speculated that the proximity to the election could be one reason why

politics featured in several of the GPs' responses, however this cannot be substantiated. It is helpful, however, to consider the GPs' responses within the broader cultural context of both political and media representation of GPs at this time. The GPs described feeling 'bashed' by the media's representations, and also that GPs (and the NHS) were being used for political gain. A thorough review of media outputs and political statements leading up to and during the interview period is beyond the scope of this current study, however, the significance of the GPs' impressions of this should not be overlooked. The negative impact on morale was cited repeatedly by the GPs: feeling unvalued at a time when they are working as best they can in "almost undoable" situations. For those already feeling stressed and overwhelmed by the demands of the job, the further dent to morale could be a significant factor in them reaching the tipping point of deciding to quit general practice. Providing a counterbalance to negative GP representations could be helpful in improving morale.

Also of contextual significance are the identified cultural norm of, and pension options for, early retirement for this age group of GPs. All of them were eligible for voluntary early retirement from age 50 under the 1995 section (or from age 55 under the 2008 section) of the NHS Pension Scheme. Nine of the 14 GPs who were still currently working intended to retire before or by the age of 60, and action had been taken to enable this, e.g. getting financial planning advice, undergoing additional vocational training. Although GPs were aware that their individual plans also impacted on their practice and remaining colleagues, there did not appear to be any stigma attached to early retirement. Thus, it is possible that early retirement plans and intentions that have been made in advance are likely to be followed through and be less amenable to change/influence. Exceptions to this were GPs whose ill health had meant retiring earlier than anticipated, those who still had financial responsibility for dependents, and those who had a more open-ended view of when they might want to retire.

When looking at the option of early retirement and the other, alternative options available to them (reduce hours, become a locum or salaried GP, change vocation, and/or transfer skills) the main motivation that the GPs cited was to improve their work-life balance due to the current workload being "almost undoable". Although the need to provide financially for dependents was highlighted, most of the GPs felt that retirement was financially viable and concerns about income were rarely cited as a factor that would influence retirement decisions. Far more important to the GPs were addressing the workload, reducing/removing the burden of responsibility, improving their work-life balance, and enjoying a healthful retirement. Thus, financial incentives are unlikely to be effective in retaining experienced GPs (unless they are part of a greater strategy to address work-life balance).

4.5.2 Managing the business of being a GP

Overall, managing the business of being a GP is about managing all the competing demands of the job and the GP's own needs, and deciding when and how to retire from this.

The GPs expressed clear concerns about the future of general practice. They were broadly pessimistic about: the future workforce crisis in general practice; being able to do their work without the 'interference' of central government; being able to manage increasing patient demands; and the ongoing addition of new and unwelcome changes.

There was a sense of what one GP called "being emasculated" within a system that demands they are responsible for the practice business as well as the health of their patients: described as "the overcoat of responsibility". The GPs perceived the demands of both of these aspects as having increased in recent years – with a high emphasis on bureaucracy, paperwork, and reviews (both of the individual via appraisal and revalidation, and of the practice in the form of CQC inspections). The accumulation of all of these factors made the workload very difficult to manage for some of the GPs.

Alongside this, there were individual experiences of ill health and ageing. Although it may be difficult to untangle the symptoms of ill health with those of ageing, it is useful to consider the primary cause of symptoms and how they could be managed. For example, changing working patterns and equipment to accommodate changes to stamina and deteriorating eyesight. Of key significance in experiences of health and ageing is the awareness that some symptoms can result in loss of confidence and a desire to withdraw from practice before an error is made or further difficulties are encountered. That is, GPs may choose to leave direct patient care in advance of being identified as needing, and receiving, support. Pre-emptive measures (without the attachment of stigma or threat of failing) could perhaps make a difference to such GPs' decisions and enable them to remain and be effective in general practice for longer.

The additional pressure on GP partners to ensure the practice is successful as a 'business', is unlikely to be experienced in the same way by salaried and locum GPs. There were no salaried GPs in our interview sample so we are unable to comment on their experiences and decision-making about retirement. However, the two existing locums did note that their workload was more manageable as a locum than it had been as a GP partner. One GP proposed that all GPs could become salaried – to help remove some of the extra burdens they experience in running a business. However, others noted that the autonomy and independence of the current practice model was something they appreciated. This did, however, reveal a tension between autonomy and practice level decisions, and

having to function within national frameworks and procedures that there was little control or choice around. The Somerset Practice Quality Scheme (SPQS), cited as an alternative to QOF, was one example of welcomed local influence rather than national.

There were different options available to the GPs about how and when to retire from general practice/direct patient care. Understanding the context in which these decisions are made, along with the range of different factors that may influence decisions, helps to explore further strategies and policies that may help to reduce the number of GPs who feel 'pushed' into taking early retirement.

4.5.3 Implications and recommendations

The GPs highlighted several useful 'actual solutions' they had experienced that could be shared and applied at local, individual and organisational levels (see sections 4.4.4.1, 4.4.4.2 and 4.4.4.3).

Further, the 'hypothetical solutions' proposed by the GPs could be reviewed and considered for recommendation/implementation (see section 4.4.4.4).

4.5.4 Strengths

One of the key strengths of this study was that we were able to recruit GPs directly from the large survey sample. We were able to identify 69 GPs aged 50-60, who reported intending to quit direct patient care within the next five years, and who had given consent to be contacted regarding interview. Given the expressed time pressures and constraints of many of the respondents, it is gratifying that this many GPs were willing to engage beyond the brief survey stage of this study, and were willing to give their time without expectation of recompense. It is also notable that the GPs who were interviewed were all forthcoming with their views and experiences, and were willing to answer the questions both from a personal perspective, and to consider the wider context of the experiences of their colleagues and peers. Conducting the interviews by telephone allowed for flexibility in the timing and duration of the interviews (which may have been more difficult to achieve if all the interviews had to be conducted in person/face-to-face).

All of the interviewed GPs requested a copy of the executive summary of this study: indicating their ongoing interest in the study, the outcomes, and the implications for potential application of these.

4.5.5 Limitations

The main limitation of this qualitative study was that the interviewed GPs were self-selecting: they first of all responded to the original survey, then agreed to be contacted about possible interview, and then also consented to interview. It is possible that those GPs who did not make themselves available for interview may have had different experiences to report. However, given the similarities between our findings and those identified within the literature review, it is likely that our interview sample was not particularly unusual in their views or experiences.

There were difficulties in recruiting GPs who had already retired and those who were on a career break. All of those 'retired' GPs who participated in the interviews had been forced to retire due to ill health. Thus we are unable to comment on the views and experiences of GPs who took early retirement without the pressure of ill health. Similarly, the lack of 'career break' GPs in this study means that we cannot comment on this group.

Also, the GP interview sample consisted of mainly GP partners, with only two locum GPs, and no salaried GPs. Consequently we are unable to comment on the experiences and views of salaried GPs in comparison to GP partners.

4.5.6 Suggestions for future research

Conventionally in qualitative research it is desirable to continue collecting data until the data set has reached 'theoretical saturation', that is, new data do not add to the developing theory. Due to the variety of emerging findings from the 'intending to retire' GP group, and in line with the time that was available for this study, we decided to increase the current sample from 10-12 proposed interviews to 14 completed interviews with 'intending to retire' GPs (plus 3 'retired' GPs). Increasing this current sample further would help to ensure theoretical saturation, allow us to capture more of the diversity of responses, and further explore the emerging themes. It could also allow us to purposively sample more female GPs (current 'intending to retire' sample: 11 male, 3 female) and more of those aged under 55 (current 'intending to retire' sample: 11 aged 55-60; 3 aged 50-54).

An extension of the current study has already been approved by AHSN to strengthen the study findings, and also make the findings more attractive to potential academic publications. In lieu of the learning taken from this current study's methodology, the extension time permitted, and the additional purposive sampling as outlined above, we aim to interview a further 4-8 'intending to retire' GPs and to merge these findings into this study. If it is possible to identify and interview an additional 2-4 'retired' GPs, these will also be merged with the findings. Reporting on the extended qualitative study is due by the end of August 2015, and we aim to also have a joint South West AHSN

and University of Exeter Medical School academic paper ready to submit within this timeframe. We suggest that recruitment of 'career break' GPs will require further exploration/an additional study beyond the capacity of this extension.

Other suggestions for future research include:

- Explore views and experiences of GPs pre and post-election, or in election and non-election years.
- Compare retirement intentions and influences for those GPs on the 1995 and 2008 sections of the NHS Pension Scheme with those in the 2015 Scheme.
- Explore alternative methods to recruit retired and career break GPs.
- Include interviews with salaried GPs and more locum GPs.

5. Mapping Supply and Demand

5.1 Background

The University of Exeter Medical School has collaborated with the South West Academic Health Science Network (SW AHSN) on a project to help retain general practitioners (GPs) in the South West of England (specifically Cornwall, Devon and Somerset).

The project has been initiated because there is a notable challenge of GPs leaving the workforce in these counties, either from early retirement, taking a career break or leaving the profession. This needs to be addressed in order to prepare for the future and to make informed decisions to secure service delivery. Bringing GPs into the workforce is a very lengthy process – currently taking a minimum of 10 years – which highlights the importance of retaining the current workforce.

The SW AHSN collated data on the socio-demographic profile for all GP practices in the South West including: GP ages and gender profiles; deprivation measures; patient ages and gender profiles; and the sizes of patient lists per practice. The University of Exeter conducted a GP work-life survey (see section 3) of GPs from a sample of 142 GP practices to obtain information regarding GPs' intentions to quit or taking an early retirement within the next five years. Of the 984 GPs invited to take the survey, 529 (a response rate of 56%) was obtained. Of these 529 GPs, 18 (3%) had already quit direct patient care and, of the remaining 511 GPs, 507 reported quitting intentions. Thirty-five percent of GPs (177/507) reported high risk of quitting direct patient care within the next five years.

The Centre for Workforce Intelligence have provided analysis and modelling skills to directly support the University of Exeter to begin to identify the principle procedure for mapping GP supply against patient demand. The Centre for Workforce Intelligence (CfWI) is a key contributor to the planning of future workforce requirements for health, public health and social care in England. They are commissioned by the Department of Health (DH), as well as Health Education England (HEE) and Public Health England.

In this project, the CfWI has analysed the socio-demographic data provided along with the results from the university survey. We have then used methodology (see 5.2) to assess which general practices are more at risk of a supply and demand imbalance over the next five years. Time and data

limitations mean that we have only been able to provide a preliminary analysis as a proof of principle which we believe will set the foundation for a more robust analysis in the future.

5.2 Method

5.2.1 Objective

Our objective was to identify and classify the risk of suffering from a future supply and demand imbalance for the 142 practices that were profiled. These practice represented just under half of all of the practices in the South West of England (Somerset, Devon, and Cornwall). In order to do so we assigned a RAG (Red, Amber, Green) rating to each general practice, where 'red' represents a high risk of imbalance, 'amber' a medium risk and 'green' a low risk.

5.2.2 Measures

In order to assign the RAG rating the CfWI used the following types of measure:

Current load on practice as an indication of current GP staffing per patient population. This was calculated as a weighted combination of the ratio of demand per full time equivalent (FTE) GP and deprivation ratings for the area in question.

- The ratio of demand per FTE GP is calculated by assessing demand using the number of patients within each age and gender bracket⁴² ¹, then weighting this using age and gender coefficients of demand⁴³. For example, ages below 4-years-old and above 85 years are more heavily weighted as they are likely to request GP services more often.
- For deprivation ratings, we assumed that a more deprived area will add to the load of demand since people are more likely to fall ill due to poor conditions⁴⁴.

Impact of staff leaving which is calculated as a weighted combination of percentage of GPs leaving, practice size and deprivation.

¹ Age and gender of registered patients per practice was sourced from Health and Social Care Information Centre publications (HSCIC, 2015). Equivalent data was provided by the SW AHSN. Comparison of the datasets showed a small number of practices had a mismatch of over 10 per cent. For those practices we used the most recent HSCIC published data (practices: 58, 69, 115, 90, 35). Two practices were not included in the HSCIC data (practice codes: 91, 10). For these cases the SW AHSN list size was used and distributed across the age-gender brackets using the average distribution exhibited by the other practices in the HSCIC dataset.

- Percentage of GPs leaving is calculated using the number of GPs that expressed an intention to leave in the questionnaire that was distributed by University of Exeter.
- Practice size is based on the assumption that the impact of losing a GP would be relatively greater on a small practice compared to a larger practice as the loss would be a larger fraction of the total workforce.
- For deprivation we assumed that it would be more difficult to replace staff who leave a post in a deprived area than a non-deprived area.⁴⁵⁻⁴⁷

In order to carry out analysis a number of assumptions were made (see Table 5. 1).

Table 5.1 List of assumptions

List of assumptions
The survey was distributed to a representative sample of GPs (see Section 3)
All intentions to quit were captured by the survey.
The questionnaire was focused on intentions to quit clinical practice, therefore it is likely to have resonated better with GPs who have considered leaving or taking time away from the profession. We assume that the majority of GPs likely to leave the profession were identified by the questionnaire.
Only GPs that identified themselves as planning to quit were counted as future leavers.
None of the 45 per cent that did not respond were assumed to be leaving the workforce in the next five years. This assumption is within the expected range because approximately 19 per cent of all GPs were assumed to quitting over a five year period. Five years is approximately 15 per cent of a GP career and we would expect approximately that proportion of GPs to leave practice in a five year period.
The questionnaire did not collect data on part time working. We assume all GPs indicating an intention to quit currently work full time.
The impact on service delivery of a GP leaving is independent of GP age.
Trainees are supernumerary to service delivery and therefore do not impact workforce supply in this analysis.
The demand on primary care services is proportional to the deprivation of an area. A more deprived area demands more from primary care services than a less deprived area ⁴⁴ . The analysis uses the “Index of Multiple Deprivation 2010” measure of deprivation ⁴⁸ and linearly relates deprivation, so that the least deprived area had a measure of 9.3, and the most had measure of 53.75. Practice postcode was used as the basis for deriving the index of multiple deprivation.
It is more difficult to retain and recruit GPs to a deprived area than a non-deprived area ⁴⁵ .

5.2.3 Analysis

5.2.3.1 Overall Analysis

We calculated a RAG rating for each of the measures described in the methodology section ('current load on practice' and 'impact of staff leaving') and then assigned an overall RAG rating to the weighted combination of both measures. Therefore each GP practice has a RAG rating associated with each measure, as well as a final RAG rating.

5.2.3.2 RAG procedure

In order to assign a RAG rating we took the following procedures for each measure:

1. All variables involved in the calculations were brought standardised to allow for uniform comparison. For example, in measuring 'current load on practice', deprivation values are much smaller than those used for ratio of demand per FTE GP. The deprivation values were proportionally adjusted to bring them to the same magnitude.
2. A weight was assigned to each variable: for example, for 'current load on practice' we placed 80 per cent weight on demand per FTE GP and 20 per cent weight on deprivation. This weighting puts greater bias towards the availability of GP time to provide service, and lower bias toward the complexity of each case due to factors relating to deprivation.
3. For each GP practice a 'score' was calculated. We calculated it as a linear combination of the weighted variables.
4. The scores are used to calculate three different thresholds, within which the RAG score falls. For example, a GP practice that has a high risk of demand imbalance will have a score that falls within the established 'red' boundaries.
5. The overall RAG rating was calculated using the same approach. However, for the cases in which one of the variables is red, then the overall RAG rating automatically becomes red.

5.2.3.3 Weighting of Variables

Variables were weighted at our own discretion; our model allows for user-manipulation to input different weights to produce 'what-if' scenarios (not provided here). Tables 5.2 and 5.3 show a breakdown of the weights we used for all steps in our analysis as well as their overall impact towards the final RAG rating.

Table 5.2: Weight of variables towards each measure

	Current load on practice	Impact of GPs leaving
Ratio of demand per FTE GP	80%	-
Deprivation	20%	10%
Percent of GPs leaving	-	80%
Practice size	-	10%

Table 5.3: Weight of measures towards the overall RAG rating

	Overall RAG rating
Current load on practice	60%
Impact of GPs leaving	40%

As a result of the weights specified above, each variable contributes to the overall RAG rating as defined in Table 5.4.

Table 5.4: Overall weight of variables

	Overall RAG Rating
Ratio of demand per FTE GP	48%
Deprivation	16%
Percent of GPs leaving	32%
Practice size	4%

5.2.3.4 Finding a Threshold

The threshold for which a given practice falls within a given RAG rating was created using a score. As mentioned in section

5.2.3.3 Weighting of Variables, the score is calculated by a weighted linear combination of all the variables affecting the RAG rating. Due to a lack of quantitative evidence relating deprivation and other factors to demand on GP services, the thresholds are based on relative risk within the local GP practice population and do not relate to absolute boundaries of assessed risk. The threshold was established using score percentiles as shown in Table 5.5.

Table 5.5: Lower and upper bounds

	Green	Amber	Red
Lower Bound	0	60 th percentile	90 th percentile
Upper Bound	59 th percentile	89 th percentile	Max score

For each measure, a red rating represents the ten per cent of practices assessed to be at greatest risk of a supply demand imbalance.

5.3 Results

Nineteen practices from the sample have a ‘red’ RAG rating. On the basis of our analyses, if data is assumed to be robust, these practices are potentially in need of intervention in order to tackle the anticipated supply and demand imbalance over the next five years. The initial questionnaire did not identify when during the next five years each GP was expecting to leave, therefore the immediacy of the risk needs to be assessed and planned for locally.

5.4 Discussion

5.4.1 Limitations

Our analysis was carried out using the basic methodology outlined in section 5.2 and only using the data available. There are limitations to this approach which are outlined below. Future analysis would benefit from a greater evidence base and a more robust methodology:

- **Improve the response rate of the GPs that were surveyed**

The sample covered many GP practices but the questionnaire response rate of 56% means the coverage of GPs was not necessarily fully representative. Future work would benefit from a greater response rate.

- **Extent of workforce data collected**

The only data available for the 44% of non-respondents was an indication of their headcount. Many clinicians choose to reduce their contracted hours in the lead up to retirement, which spreads the impact of their leaving over a greater time period. Data should be collected for the

part time working of each GP intending to quit practice. It would also be beneficial to ask those below retirement age whether they expect to return to practice after a career break.

Part time working is more common among women GPs than men⁵. The last decade has seen an increase in women GPs from approximately a third of the workforce to nearly half of all GPs{HSCIC, 2014 #333}. Part time working can have a major impact on the availability of the GP workforce, therefore future analysis would also benefit from collecting intentions to change participation rates (the ratio of contracted hours compared to a full time contract, for example, working four days a week equates to a participation rate of 0.8).

The timescale of the current risk is also not well understood because GP intention to quit was recorded for a five year period. The analysis would benefit from collection of data on the year that GPs are most likely to quit practice, focusing on the next five years. The accuracy of intention to quit is likely to be greatest in the short term.

– **Service delivery models and non-medical staff**

This current load on practice analysis did not consider non-medical staff, notably practice nurses, who increasingly provide services within practices. The GP FTE per patient measure may not be representative of the service provided to the local population because it does not account for the non-medical workforce. The use of pharmacists could also be considered.

– **Future service delivery models**

The supply and demand balance must consider the nature of the service that is required from GPs. Future analysis could also collect data on the planned future service delivery models in order to understand whether practices intend to, for example, expand their commitment to out of hours services, and whether they plan to change the GP workforce. This could also take account of possible housing developments in the practice list area.

– **Research on how deprivation impacts supply and demand**

This analysis ranked the practices and practice populations in order to identify those at greatest risk on the basis of the factors identified. A more robust analysis would include a greater literature review or research to find quantified measures to link demands on the primary care system and level of deprivation in the patient population. A better understanding of this link would allow an absolute measure of need due to deprivation, rather than a linear scaling using only the English indices of deprivation.

- **Assign more robust weights to the variables**

The weightings used for each factor in this analysis were not evidence based. This is another factor where research into each measure could give a more accurate analysis of demand, and therefore allow a more robust assessment of the gap between supply and demand.

- **Apply logistic regression to find the probability of a GP leaving given the GP and practice characteristics**

Logistic regression relating GP age and gender to working status – primarily likelihood of retirement by age – could be used to forecast the year in which a GP will retire. This requires a dataset of historical headcount, by age and gender, for a large sample of English GPs. The analysis could be strengthened by taking account practice characteristics, such as urban or rural, large or small practice, level of deprivation in the area. To apply the results of the logistic regression to the current workforce and make projections of retirements by practice, the current and historic employer data would be required, i.e. practice code.

A statistical approach to forecasting leavers is more accurate for larger samples sizes. The approach could be applied at the county level to assess the expected number of GPs likely to retire in the area. It could be used to provide an estimate of the number of new recruits required, by year, to replace leavers.

- **Patient population size**

The load on GPs was calculated using 2015 patient populations⁴². Further analysis could project the future patient population size in order to assess where the demand could change significantly due to change in patient population demographics or total size. Young and old patients place the heaviest demand on GP practices, therefore an unforeseen change in these population groups could cause significant change in service demand.

- **Interventions to reduce GP leavers**

This work has identified GP practices at risk from GPs leaving practice. In order to utilise the results of this analysis, clinicians and workforce planners require better understanding and tools to reduce the leaving rate of GPs prior to retirement. Successful implementation of these tools would probably have the potential to increase satisfaction within the workforce, provide greater stability to the workforce, and may result in improved patient care.

6. Discussion

This research was undertaken as preliminary work seeking to identify the reasons behind GPs from southwest England stated intentions to quit direct patient care. A preliminary review of the literature identified 24 research investigations from recent years, mostly survey based, which had explored this topic. A wide range of relevant factors were identified including issues relating to workload and working arrangements, personal ambitions centring on domestic and family issues, health issues, and professional disillusionment.

Our survey of nearly a thousand GPs identified that, overall, around one third expressed an intention to quit patient care within five years, this figure rising to two thirds amongst older GPs aged 50-59 years. Substantial proportions of the sample anticipated taking a career break, with evidence of this trend being more evident amongst younger GPs, and with similar proportions amongst men and women.

Interviews with GPs focussing on their retirement decisions identified four main themes of importance: early retirement is a viable option for many GPs; there are other options available to GPs; GPs are doing an (almost) undoable job; and we identified practical proposals which might help to retain GPs. In each of these areas, subthemes of importance have been identified, with findings which largely concur with previously published evidence, but which highlighted the changing context and professional environment within which GPs operate. Issues relating to workload, family and domestic life, career aspirations and ambitions were all predictable – but interviewees expressed considerable strength of feeling when reporting the sense of being part of a political football match, standing on unsecure and uncertain professional ground, and with major issues of governance and accountability dominating the narrative. For example, in respect of concerns expressed regarding the adverse effects on retention of the GP workforce of professional revalidation and Care Quality Commission practice inspection, and in the face of perceived sustained negative portrayal of their role and contribution in the media. Interviewees described a range of pragmatic and practical solutions to the problems they encountered, as well as describing hypothetical solutions which they believed might be of relevance. Although ‘hypothetical’, these proposals addressed key areas of concern and practice, relating to providing emotional support, practical support, and organisational support.

Our research involved the development of a novel modelling tool, derived following joint working in collaboration with colleagues from the Centre for Workforce Intelligence. Where previous reports have identified issues at national, regional, and sub-regional level, we were able to exploit the

findings of our survey of GPs to undertake a preliminary risk assessment of increased granularity when compared with existing models of workforce. Our preliminary model identified 19 out of 142 practices with potential 'Red' ratings based on an assessment of projected demand for GP services over the next five years (using data on the deprivation and demographic profile of practices) compared with the projected supply of GPs (based on reported retirement intentions). As a beta-instrument, this methodological work has proved of interest and appears to offer potential if refined, and if based on validated and robust data. This present work, being limited in timing and resource, is inevitably preliminary in nature, but, we believe, offers real potential for further rapid development and refinement in planned future research.

6.1 Strengths and limitations

The work benefited from addressing an important area of national concern. It appears timely, and relevant to the wider health economy of the southwest. An expert multidisciplinary team planned and undertook the research and, despite limitations on available resource and time, the research was completed on time and within the available budget. The research presented here addresses limitations of other larger scale research and, we believe, provides granularity of information at GP practice level which would be of potential interest to patients, members of practice, and local, regional, and national healthcare planners. Our sampling frame involved a randomly selected half of the practices in Devon, Cornwall and Somerset drawn from a range of practice settings. The techniques applied appeared acceptable to participants, as evidenced by acceptable overall survey response rates, relative ease of recruitment and interest in the study of GPs aged 50-59, and the development of a risk model at practice level based on demand for, and supply of, GP services. The research was undertaken as part of a collaboration involving University based health service research academics, clinicians, methodological experts, and Academic Health Science Network and nationally authenticated workforce experts and modellers. In particular, the qualitative phase of the work, involving interviews undertaken with GPs considering, or having recently quit patient care on account of retirement, carries particular strength and relevance.

Limitations do, however, exist, and some of these are important and limit the immediate relevance of the research. Our literature review was scoping and preliminary in nature, and did not draw on the wide range and volume of 'grey' literature which we know is available and of potential relevance. In addition, we were not able to incorporate a thorough quality assessment of identified research. Our survey of GPs was limited by the lack of data regarding GP personal information (date of birth) in available regional datasets, which resulted in our survey being paper based and with sampling via letters posted to GPs at practice addresses. We were therefore, for example, unable to

determine a response rate for GPs of a known, specific age-group. Whilst overall, we achieved a good response rate in our survey (56%, suggesting broad acceptability of the approach adopted), we are unable to determine the response rate for key age-groups. We also encountered major difficulty in accessing doctors taking a career break, despite a direct approach to practice managers as the vehicle for conveying the survey to such doctors.

Finally, we have become alert to the ethical implications and sensitive nature of some of the information obtained. Information regarding retirement intention and work availability is, of course, of a sensitive and personal nature. Our findings are therefore fully anonymised, both at the level of the GP and the practice with which they are associated. Geographical mapping of the findings runs the risk of disclosure of workforce intent, and this is a matter for further discussion with the GPs involved in the first instance, especially given the known limitations and uncertainties associated with the data. Discussion of this matter regarding the sensitivity and commercial interest of this data will take place at a strategy meeting /dissemination event scheduled for 21 May 2015.

6.2 Implications for future research

In addition to completion of the present work, we have secured a short extension to funding to allow us to increase the sample of available of GPs aged 50-60 who we propose to interview shortly.

Importantly however, the present work has formed the basis of a major submission for research funding via NIHR HSDR. That work – originally submitted in outline in December 2014 and shortlisted for full proposal submission in February 2015 (final submission due 29 April 2015) mirrors and extends the present work, with refinements to sampling, extension of sampling to include a wider and more diverse sample of GPs and practices across the southwest. In addition, the proposed work will benefit from policy development and prioritisation using an expert panel and a Rand Appropriateness Methodology (online Delphi) and detailed stakeholder consultation to ascertain the acceptability and likely uptake of emergent policy targeting the retention of experienced GPs in direct patient care.

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8. Appendices

Appendix 1 Covering letter to GPs



Primary Care Research
Smeall Building
St Lukes Campus
Magdalen Road
Exeter
EX1 2LU

<NAME>
<ADDRESS1>
<ADDRESS2>
<ADDRESS3>
<POSTCODE>

DATE

Re: Retaining the Experienced GP Workforce in Direct Patient Care (ReGROUP) Study

Dear Dr <NAME>

Why do GPs leave the workforce?

The University of Exeter Medical School, in collaboration with the South West Academic Health Science Network (SWAHSN), are keen to find out what factors contribute to GPs' decisions to leave direct patient care (factors that lead to career breaks or early retirement/retirement before the age of 60).

England faces a major and imminent problem in respect of GP workforce capacity. In a recent work-life survey, 54% of GPs aged 50 years and older report a 'considerable' or 'high' likelihood of quitting direct patient care within 5 years. In 2012-13, 1221 female GPs left the workforce, of whom 40% were under the age of 40 (the number who subsequently return to direct patient care is currently unknown). In addition to experienced GPs leaving, there are considerably fewer newly qualified doctors choosing a career in general practice. We face a critical imbalance in the demand for primary care and the capacity to deliver it.

The ReGROUP study aims to explore GPs' decision-making about taking a break from or leaving direct patient care, and possible ways to facilitate GP retention.

Please can you answer the brief questionnaire overleaf to indicate your likelihood of leaving or taking a break from direct patient care within the next 5 years? The survey is being sent to registered GPs in the South West region and all replies will be confidential. To encourage participation we are offering all participants entry into a prize draw where the winner will receive a Kindle.

A sub-sample of those who are considering taking a break from or leaving direct patient care will be invited to be interviewed (you can return the questionnaire without consenting to interview). Interviews will take place face-to-face at your practice (or by telephone) on a mutually agreed day and time. Interviews will last no more than 30 minutes and will be completely confidential.

If you have any questions about this study, please contact:

Study Manager, Dr Raff Calitri: r.calitri@exeter.ac.uk 01392 722 762
Researcher, Dr Anna Sansom: a.sansom@exeter.ac.uk 01392 726 189

Please return your completed questionnaire within 2 weeks of the date of this letter in the prepaid envelope provided. Your participation in this study is much appreciated.

Kind regards,

Professor John Campbell, Professor of General Practice and Primary Care

Appendix 2 Workforce Questionnaire

Workforce Questionnaire

Q1. Have you quit direct patient care within the last 5 years?

- No (got to Q2) Yes (got to Q5)

Q2. What is the likelihood that you will quit direct patient care within the next 5 years?

- None Slight Moderate Considerable High

Q3. Are you currently on a career break? (e.g. a break lasting for 6 months or more for maternity/paternity leave, personal or professional development, or working abroad)

- No (got to Q4) Yes (got to Q5)

Q4. What is the likelihood that you will take a career break within the next 5 years? (e.g. a break lasting for 6 months or more for maternity/paternity leave, personal or professional development, or working abroad)

- None Slight Moderate Considerable High

SOME QUESTIONS ABOUT YOU

Q5. Are you male or female? Male Female Prefer not to say

Q6. What is your ethnic group? White Asian Black
 Chinese Other ethnic group
 Mixed (e.g. Asian British, Black British)
 Prefer not to say

Q7. How old are you? _____ years

Q8. What year did you qualify in medicine? _____

Q9. What region did you graduate from?
 UK/Ireland Europe (not UK/Ireland) South Asia Other

Q10. What is your current / last held position?
 GP Partner Salaried GP Registrar Locum

CONSENT TO INTERVIEW

Q11. Would you be willing to take part in a brief, confidential interview (up to 30 minutes) to discuss your work-life issues?

- No
 Yes *If yes, please provide contact telephone number* _____

THANK YOU

please return this questionnaire in the prepaid envelope

for research use only: ID

Appendix 3 Practice Manager Letter and Questionnaire



Primary Care Research
Smeall Building
St Lukes Campus
Magdalen Road
Exeter
EX1 2LU

<Address>
<Address>
<Address>
<Address>

21 April 2015

Re: Retaining the Experienced GP Workforce in Direct Patient Care (ReGROUP) Study

Dear Practice Manager

Why do GPs leave the workforce?

The University of Exeter Medical School, in collaboration with the South West Academic Health Science Network (SWAHSN), are keen to find out what factors contribute to GPs' decisions to leave direct patient care (factors that lead to career breaks or early retirement/retirement before the age of 60).

England faces a major and imminent problem in respect of GP workforce capacity. In a recent work-life survey, 54% of GPs aged 50 years and older report a 'considerable' or 'high' likelihood of quitting direct patient care within 5 years. In 2012-13, 1221 female GPs left the workforce, of whom 40% were under the age of 40 (the number who subsequently return to direct patient care is currently unknown). In addition to experienced GPs leaving, there are considerably fewer newly qualified doctors choosing a career in general practice. We face a critical imbalance in the demand for primary care and the capacity to deliver it.

The ReGROUP study aims to explore GPs' decision-making about taking a break from or leaving direct patient care, and possible ways to facilitate GP retention. We will write to GPs in your practice individually, asking them to complete a short questionnaire and inviting them to take part in a brief interview, and wanted to alert you to this. We hope you might encourage participation.

We are also keen to reach GPs who are already on a career break or who have recently taken early retirement (retired before the age of 60). **If anyone from your practice meets either of those descriptions, we would be most grateful if you could complete the form overleaf and return it in the prepaid envelope.** (A copy of the information sheet and questionnaire that we will then send to you to forward to the GP is included for your information).

If you have any questions about this study, please contact:

Study Manager, Dr Raff Calitri: r.calitri@exeter.ac.uk 01392 722 762

Researcher, Dr Anna Sansom: a.sansom@exeter.ac.uk 01392 726 189

Your support is very much appreciated.

Kind regards,

Professor John Campbell, Professor of General Practice and Primary Care

For research use only: ID

PRACTICE MANAGER QUESTIONNAIRE

We would be grateful if you would complete the following tables (as applicable) and return in the prepaid envelope provided. The appropriate number of research packs will then be sent to you to forward to the listed GPs (all postage paid).

Q1. GPs in your practice who have taken early retirement (before the age of 60) within the last 2 years:

GP NAME	Approx age at retirement	Gender		Do you have a current postal address and would you be willing to forward a research questionnaire to them?	
		Male	Female	Yes	No

Q2. GPs in your practice who have taken a career break/break from direct patient care within the last 2 years (e.g. maternity/paternity leave; personal or professional development; work abroad):

GP NAME	Approx age when break started	Gender		Do you have a current postal address and would you be willing to forward a research questionnaire to them?	
		Male	Female	Yes	No

For research use only: ID

REGROUP STUDY INFORMATION AND CONSENT

Retaining the Experienced GP Workforce in Direct Patient Care (ReGROUP) Study

You have been invited to be interviewed about factors relating to decision-making regarding early retirement and/or taking a career break from direct patient care.

Please read the following information and ask the Researcher if there is anything that is not clear, or if you would like further information.

What is the purpose of the study?

England faces a major and imminent problem in respect of GP workforce capacity. In addition to experienced GPs leaving the workforce, there are considerably fewer newly qualified doctors choosing a career in general practice. We face a critical imbalance in the demand for primary care and the capacity to deliver it.

The University of Exeter Medical School, in collaboration with the South West Academic Health Science Network (SWAHSN), are keen to find out what factors contribute to GPs' decisions to leave direct patient care (factors that lead to career breaks or early retirement).

The ReGROUP study aims to explore GPs' decision-making and possible ways to facilitate GP retention.

What does taking part involve?

You will be asked to take part in one interview, by telephone (at a time and date convenient to you), lasting up to 30 minutes. The interview will be audio-recorded, transcribed verbatim, and anonymised. The study is funded locally only, and we are therefore sorry not to be in a position to reimburse you for your participation.

Will my taking part in the study be kept confidential?

Information will be collected and stored in accordance with the Data Protection Act 1998.

Paper-based information will be stored in locked offices, in locked filing cabinets, and information kept on computers will be stored securely on a system maintained by the University of Exeter. The audio files from any recordings will also be stored on secure servers at the University of Exeter. Access will be password protected and limited to the ReGROUP study team.

Who can I contact for more information?

Study Manager: Dr Raff Calitri, r.calitri@exeter.ac.uk 01392 722 762

Researcher: Dr Anna Sansom, a.sansom@exeter.ac.uk 01392 726189

INFORMED CONSENT FORM

*Please initial
the boxes*

1. I confirm that I have read the ReGROUP Study Information Sheet, have had the opportunity to ask questions and I have had my questions answered satisfactorily.

2. I agree to being interviewed by a member of the research team.

3. I agree to an audio recording of this interview being taken.

Print Name (Participant)

Date

Signature

Print Name (Person taking consent)

Date

Signature

Please complete and return this form either:

electronically – return to a.sansom@exeter.ac.uk

or

by post – please print and return to:

Dr Anna Sansom
University of Exeter Medical School
St Luke's Campus
Smeall Building
Magdalen Road
Exeter
EX1 2LU

Thank you

Appendix 5 Interview Schedule

- 1) Can you tell me about your current working situation?
 - How many hours do you currently work per week?
 - What is your role in the practice?
 - What type of area do you work in: rural, semi-rural, suburban, town/city, inner city?
 - What type of population does your practice cover: deprived, mixed-poor, average, mixed-well off, affluent?

- 2) What year did you qualify as a GP?

- 3) Do you know when you are likely to retire? Approximately how old will you be then?
 - *During the next 12 months*
 - *Within the next 5 years*
 - *Within the next 10 years*
 - *Has it always been your intention to retire at this age?*

- 4) What factors would you say have an influence on your decisions about when to retire?
These might be work related things or things outside of work. Have there been any 'critical' or key events that have influenced your decisions or plans? If so, can you tell me a bit about this/these?

Prompts:

- *Job satisfaction/dissatisfaction*
 - *Stress*
 - *Workload*
 - *Bureaucracy*
 - *Financial security*
 - *Change*
 - *Work-related sleep issues*
 - *Health and wellbeing (physical and psychological)*
 - *Outside interests such as wanting to spend more time with family or leisure pursuits*
 - *Wanting to enjoy good health while they can*
 - *Are current employment conditions fit for purpose?*
 - *Appraisals/revalidation*
 - *IT systems and referral systems*
-
- 5) What, if anything, might persuade you to change your plans?

Prompts:

- Reduced workload/working hours
- Increased financial reward
- Support with managing your own physical and emotional health status and wellbeing e.g. mindfulness course
- “Twenty Plus” groups providing tailored educational and support activities, and facilitating opportunities for portfolio careers and balancing clinical with non-clinical commitments.
- A flexible model of employment to help retain doctors at the end of their careers e.g. the re-introduction of the Flexible Careers Scheme (salary contribution and professional support for doctors working less than full time in General Practice). [P.42 Taskforce Report).
- Additional para-clinical support (e.g. senior nurses or pharmacists supporting the management and co-ordination of structured care for patients with long-standing health conditions)
- Additional administrative support (e.g. a ‘medical assistant’ to relieve admin pressures)
- Additional locum GP support (e.g. a ‘locum-chambers’)

6) Is there anything else you would like to tell me about your retirement intentions or specific issues that we’ve not yet discussed?

7) Do you have any other questions?

Appendix 6 (RAG rating for each sample practice)

Table A1. RAG Ratings for all practices in the study sample (anonymised)

Practice Name	Current load on practice	Impact of GPs leaving	Overall RAG
1	GREEN	GREEN	GREEN
2	GREEN	GREEN	GREEN
3	GREEN	GREEN	GREEN
4	GREEN	GREEN	GREEN
5	GREEN	GREEN	GREEN
6	GREEN	AMBER	GREEN
7	GREEN	GREEN	GREEN
8	GREEN	AMBER	GREEN
9	GREEN	GREEN	GREEN
10	RED	GREEN	RED
11	AMBER	GREEN	GREEN
12	GREEN	GREEN	GREEN
13	GREEN	GREEN	GREEN
14	AMBER	RED	RED
15	GREEN	GREEN	GREEN
16	AMBER	AMBER	AMBER
17	GREEN	AMBER	GREEN
18	GREEN	GREEN	GREEN
19	GREEN	GREEN	GREEN
20	GREEN	GREEN	GREEN
21	GREEN	GREEN	GREEN
22	GREEN	GREEN	GREEN
23	AMBER	GREEN	GREEN
24	GREEN	AMBER	GREEN
25	RED	GREEN	RED
26	GREEN	GREEN	GREEN
27	RED	AMBER	RED
28	GREEN	GREEN	GREEN
29	GREEN	GREEN	GREEN
30	GREEN	GREEN	GREEN
31	GREEN	AMBER	AMBER
32	AMBER	GREEN	GREEN
33	GREEN	AMBER	AMBER
34	GREEN	RED	RED
35	GREEN	GREEN	GREEN
36	GREEN	GREEN	GREEN
37	GREEN	RED	RED
38	AMBER	GREEN	GREEN
39	GREEN	GREEN	GREEN

40	AMBER	GREEN	GREEN
41	GREEN	GREEN	GREEN
42	AMBER	GREEN	GREEN
43	RED	GREEN	RED
44	AMBER	AMBER	AMBER
45	GREEN	AMBER	AMBER
46	GREEN	AMBER	GREEN
47	GREEN	GREEN	GREEN
48	AMBER	GREEN	GREEN
49	RED	RED	RED
50	GREEN	GREEN	GREEN
51	GREEN	AMBER	GREEN
52	AMBER	GREEN	GREEN
53	GREEN	GREEN	GREEN
54	GREEN	GREEN	GREEN
55	GREEN	GREEN	GREEN
56	GREEN	AMBER	AMBER
57	AMBER	RED	RED
58	RED	GREEN	RED
59	GREEN	GREEN	GREEN
60	GREEN	GREEN	GREEN
61	GREEN	GREEN	GREEN
62	AMBER	GREEN	AMBER
63	GREEN	GREEN	GREEN
64	GREEN	GREEN	GREEN
65	GREEN	GREEN	GREEN
66	AMBER	AMBER	AMBER
67	AMBER	GREEN	GREEN
68	AMBER	AMBER	AMBER
69	RED	GREEN	RED
70	RED	GREEN	RED
71	GREEN	GREEN	GREEN
72	GREEN	RED	RED
73	GREEN	GREEN	GREEN
74	GREEN	GREEN	GREEN
75	GREEN	GREEN	GREEN
76	AMBER	GREEN	GREEN
77	GREEN	GREEN	GREEN
78	GREEN	GREEN	GREEN
79	GREEN	GREEN	GREEN
80	GREEN	GREEN	GREEN
81	AMBER	GREEN	GREEN
82	AMBER	GREEN	GREEN
83	AMBER	GREEN	GREEN
84	GREEN	GREEN	GREEN

85	GREEN	AMBER	AMBER
86	AMBER	GREEN	GREEN
87	GREEN	GREEN	GREEN
88	GREEN	GREEN	GREEN
89	AMBER	RED	RED
90	GREEN	GREEN	GREEN
91	RED	GREEN	RED
92	AMBER	AMBER	AMBER
93	GREEN	GREEN	GREEN
94	GREEN	AMBER	GREEN
95	AMBER	AMBER	AMBER
96	GREEN	AMBER	AMBER
67	AMBER	GREEN	GREEN
68	AMBER	AMBER	AMBER
99	GREEN	GREEN	GREEN
100	GREEN	GREEN	GREEN
101	GREEN	GREEN	GREEN
102	RED	RED	RED
103	GREEN	GREEN	GREEN
104	GREEN	GREEN	GREEN
105	AMBER	GREEN	GREEN
106	GREEN	AMBER	AMBER
107	GREEN	GREEN	GREEN
108	AMBER	GREEN	AMBER
109	GREEN	GREEN	GREEN
110	GREEN	GREEN	GREEN
111	AMBER	RED	RED
112	GREEN	GREEN	GREEN
113	GREEN	AMBER	GREEN
114	AMBER	AMBER	AMBER
115	RED	RED	RED
116	GREEN	GREEN	GREEN
117	GREEN	GREEN	GREEN
118	GREEN	RED	RED
119	GREEN	AMBER	AMBER
120	AMBER	GREEN	AMBER
121	GREEN	AMBER	GREEN
122	GREEN	GREEN	GREEN
123	GREEN	AMBER	GREEN
124	GREEN	RED	RED
125	GREEN	AMBER	GREEN
126	AMBER	GREEN	GREEN
127	AMBER	AMBER	AMBER
128	AMBER	AMBER	AMBER
129	GREEN	AMBER	AMBER

130	GREEN	GREEN	GREEN
131	GREEN	GREEN	GREEN
132	AMBER	GREEN	GREEN
133	AMBER	GREEN	AMBER
134	AMBER	AMBER	AMBER
135	GREEN	AMBER	GREEN
136	GREEN	AMBER	GREEN
137	GREEN	GREEN	GREEN
138	GREEN	GREEN	GREEN
139	GREEN	GREEN	GREEN
140	GREEN	GREEN	GREEN
141	GREEN	GREEN	GREEN
142	GREEN	AMBER	GREEN

* Practices with inconsistent or limited patient population data, see footnote 1.