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POLICY RESEARCH UNIT IN
COMMISSIONING AND THE
HEALTHCARE SYSTEM

General practitioner recruitment and retention: An evidence synthesis

Final Report

February 2016

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Executive Summary

In order to support a review of the *10 Point Plan* in 2016, NHS England and the Department of Health commissioned the Policy Research Unit in Commissioning and the Healthcare System (PRUComm) to undertake an evidence synthesis on GP recruitment, retention and re-employment. The review work was undertaken alongside analysis of the Work/Life survey commissioned in January 2015 (Gibson et al 2015) and a further study commissioned by NHS England from IPSOS MORI. This report summarises the findings of an evidence synthesis of published reviews and UK relevant primary studies. The review focuses on recruitment and retention as less evidence was identified on re-employment.

We conducted a synthesis of the research evidence and wider literature on the key objectives of the *10 Point Plan* and the use of incentives to identify:

- Evidence to support the specific actions set out in the plan.
- Evidence on other approaches to retention and recruitment of GPs

Our search of the literature identified 1702 possible papers. The titles and abstracts were reviewed by the research team and relevant papers identified. We reviewed original research papers, reviews and empirical studies both from the UK and internationally (USA, Canada, Australia etc.). This report summarises the key findings from these papers related to the elements of the *10 Point Plan*.

Overall, the published evidence in relation to GP recruitment and retention is limited and most focused on attracting GPs to underserved rural areas. However, this literature does suggest that there are some potential factors that may support the development of specific strategies for the recruitment and retention of GPs. There are also clear overlaps between strategies for supporting increased recruitment and retention.

Key factors that are relevant to the recruitment of GPs are primarily related to providing students with appropriate opportunities for contact with and positive exposure to general practice and general practitioners. Good role models and early exposure in pre-clinical training may be particularly important. The training environment and location of training may also play important roles in achieving recruitment to areas where there are shortages of trainees. Financial factors seem less important for choosing general practice – particularly in the current UK context. It is also important to recognise other determinant factors in junior doctors' specialisation choices. More attention could be paid to the fit between skills and attributes with intellectual content and demands of the specialisation, a stimulating and interesting specialisation, lifestyle (flexibility, work-life balance, quality of life), social orientation and desire for a varied scope of practice and significant experience in the primary care setting. Strategies that emphasise what are seen as the most important and rewarding aspects of the GPs job - facilities, autonomy of work, diversity of cases, education and employment opportunities for physician's spouses in the practice location - would have a positive influence on recruitment.

Many of the factors relating to retention are similar to those related to recruitment. Positive factors as viewed by students and GPs about general practice as a profession – such as patient contact,

variety, continuity of care – are intrinsic to what it means for them to be a GP. Recruitment factors highlighted positive role models, engagement with practices and socialisation into general practice while retention factors are similar in terms of supporting the ability of GPs to practice being a GP. Feeley (2003) has however highlighted the importance of expectation versus reality. What junior doctors expected when they became a GP and the real life of a GP is likely to impact on retention. The evidence does suggest that tackling key aspects of job stress are important but supporting the key factors of how GPs view the essential nature of general practice in terms of patient contact may be critical alongside developing new opportunities for diversity of practice through sub-specialities and broader portfolio careers. As for the new ways of working, it is likely that the inclusion of nurses, pharmacists, and even social workers might help reduce the strain of the workload and burnout symptoms of GPs. GPs leave both for reasons of job dissatisfaction – possibly reflecting a frustration or a disappointment toward the changing roles in their practice - and also to retire before 60 years old, even if not discontent. Reasons may include lack of resilience to deal with stress but also a simple view that they have undertaken sufficient lifetime service.

Key conclusions for recruitment

Based on our analysis of the evidence, the elements that are most likely to increase and influence recruitment in general practice include:

- exposure of medical students to successful GP role models
- early exposure to general practice
- supporting intrinsic motivational factors and career determinants

There is little evidence that financial targeted support would increase recruitment.

Key conclusions for retention

While we found no clear evidence of the effect of investment in retainer schemes and incentives to remain in practice on retention. However, based on our analysis of the evidence, the elements that most likely to increase and influence retention in general practice include:

- supporting intrinsic factors of the job
- strategies to improve job satisfaction
- reducing job stressors such as work overload, lack of support and high demands increases the likelihood of quitting the practice and/or profession.

These findings are consistent with the wider literature on organisational behaviour and human resource management.

Glossary

British Medical Association	BMA
Centre for Workforce Intelligence	CFWI
Department of health	DH
General Medical Council	GMC
General practitioner	GP
BMA General Practitioners Committee	GPC
Health Education England	HEE
Health and Social Care Information Centre	HSCIC
NHS England	NHSE
Policy Research Unit in Commissioning and the Healthcare System	PRUComm
Royal College of General Practitioners	RCGP

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1. Introduction

Increasingly, national policy makers and professional bodies have become concerned about declining numbers of GPs with a low uptake of GP training places and problems in maintaining levels of GPs in practice. The reasons for this are thought to be related to problems in training, lowered GP morale, pressures on practices, the challenge of changing roles and reductions in pay (Gillam 2014, Harding et al 2015, Jones et al 2015). In January 2015 NHS England published the *10 Point Plan* to support the recruitment, retention and re-employment of GPs. NHS England worked with Health Education England, the Royal College of General Practitioners and the BMA GPs committee (GPC) to develop an action plan to ensure that there is a skilled, trained and motivated workforce in general practice. The *10 Point Plan* action plan addresses immediate issues, and was designed to take the initial steps in building the workforce for the future and new models of care. It forms part of the implementation of the Five Year Forward View (NHS England 2014) and the new deal for primary care, which set out a specific commitment to tackle workforce issues, alongside a range of other proposals. The action plan was designed to complement local initiatives already underway including those being put in place with the development of co-commissioning of primary care by Clinical Commissioning Groups (CCGs) and NHS England.

The Health Education GP Taskforce Report (HEE 2014) recommended increasing GP ST1 training places to 3250 and that consideration should be “... given in the short-term to prioritising expansion in under-doctored areas, or incentivising trainees to train in under-doctored areas” (p.10) .Since this report, a number of further studies have been undertaken to examine GP workload, stress and morale as well as recruitment and retention, including a project on primary care workforce mix being undertaken by Health Education England (Roland et al 2015), the West Midlands GP STARS - Satisfaction Training and Retention Study (Dale et al 2015) and the Eighth GP Work/Life survey (Gibson et al 2015). In order to support a review of the *10 Point Plan* in 2016, NHS England and the Department of Health commissioned the Policy Research Unit in Commissioning and the Healthcare System (PRUComm) to undertake an evidence synthesis on GP recruitment, retention and re-employment. The review work was undertaken alongside analysis of the Work/Life survey commissioned in January 2015 (Gibson et al 2015) and a further study commissioned by NHS England from IPSOS MORI. This report summarises the findings of our review of the evidence. The review focuses on recruitment and retention as less evidence was identified on re-employment.

2. Background

Key concerns relate to a decrease in GP specialist trainees – especially in northern regions, problems in attracting GPs into practice with many practices reporting GP shortages and an inability to attract new partners or salaried GPs and an increase in applications from practising GPs to enable them to work abroad. The Eighth Work/Life survey of GPs (Gibson et al 2015) found the numbers of GPs expressing an intention to leave practice continued to rise. (See Table 1).

Table 1: Trends in Intentions to Quit Considerable/high intention to leave direct patient care within five years

Survey year	All GPs	GPs aged <50	GPs aged ≥50
1998	15.3%	5.6%	n/a
2001	23.8%	11.4%	n/a
2004	23.7%	13.1%	n/a
2005	19.4%	6.1%	41.2%
2008	21.9%	7.1%	43.2%
2010	21.9%	6.4%	41.7%
2012	31.2%	8.9%	54.1%
2015	35.3%	13.1%	60.9%

(Gibson et al 2015: table 20)

Additional pressure arises from the increase in numbers of GPs considering practising abroad. In 2014 822 GPs applied for Certificates of Current Professional Status from the General Medical Council (GMC) which allows them to practise overseas. This is a 44% increase since 2008 when records were started (Davis 2015). In addition, there has been a gradual aging of the UK GP workforce with some areas facing potential shortfalls of 25%+ of GPs aged over 55 and closer to retirement. Despite Department of Health policy to increase GP training numbers in England to 3,250 per annum, GP recruitment has remained stubbornly below this target, at around 2,700 per annum. The Centre for Workforce Intelligence (CFWI) noted that: “... *the available evidence on the demand for GP services points to a workforce under considerable strain. The existing GP workforce has insufficient capacity to meet current and expected patient needs.*” (CFWI 2014). While the number of GPs per 100,000 head of population across England increased from 54 in 1995 to 62 in 2009, it had declined to 59.5 by 2012 (HSCIC 2012). This reduction is set against an increasing GP workload due to changing health needs and policies designed to develop more primary and community- based health care (DH 1996, 1997, 2000, 2006). Over the last 20 years, only 20-30% of UK graduates have indicated General Practice as their unreserved first career choice, with disproportionate numbers indicating their preference for oversubscribed hospital-based specialties (Lambert and Goldacre 2011). In fact, rather than an increase in numbers, there has been a gradual decline (Svirko, Goldacre & Lambert 2013) with the percentage of students choosing general practice as a first choice declining from 33.5% to 32.0% between 2005 and 2009.

3. 10 Point Plan

Together, the under-recruitment and increased propensity to leave are key factors leading to the current GP shortage. It was these two factors that were instrumental in the development of the *10 Point Plan* as a national response to the “*crisis in general practice*” (Addicott and Ham 2014, Dayan et al 2014, Rosen 2015). The plan was developed as a collaboration between NHS England, Health Education England and key professional bodies (RCGP, BMA) and focuses on the recruitment, retention and return of GPs. (Table 2).

Table 2: 10 Point Plan

	10 Point Plan Actions	
Recruitment	1. Promoting general practice	The four organisations will collaborate on a marketing campaign, including a letter to all newly qualified doctors, setting out the positive aspects and future careers in general practice.
	2. Improving the breadth of training	HEE will work with partners to resource an additional year of post CCT training to candidates seeking to work in geographies where it is hard to recruit trainees. The aim is to encourage new GP training applicants to those areas. The additional year would be flexible and could be: <ul style="list-style-type: none"> a. in a related clinical specialty of interest such as paediatrics, psychiatry, dermatology, emergency medicine and public health; b. in leadership development, including the acquisition of business skills through undertaking a MBA; c. on an academic programme of activity; or d. an aspect of medical education and training related to the primary and community care agenda.
	3. Training hubs	NHS England will invest in the development of pilot training hubs, where groups of GP practices can offer inter-professional training to primary care staff, extending the skill-base within general practice and developing a workforce that can meet the challenge of new ways of working.
	4. Targeted support	NHS England will work with the BMA GP Committee and the RCGP to explore a time-limited incentive scheme to offer additional financial support to GP trainees committed to working in specific areas for 3 years.
Retention	5. Investment in retainer schemes	NHS England will review the use of current retainer schemes and invest in a new national scheme, making sure it meets the needs of both GPs and practices.
	6. Improving the training capacity in general practice	The Government's recent announcement that there will be an extra £1 billion for investment in new primary care infrastructure will enable increased training capacity and a more positive experience for medical students and foundation year doctors within general practice. More broadly, NHS England will work with the BMA's GPs committee and the RCGP on the strategic direction of the primary care estate, including supporting the transfer of care into community settings.
	7. Incentives to remain in practice	NHS England and partners will conduct a detailed review to identify the most effective measures to encourage experienced GPs to remain within practice. Options may include a funded mentorship scheme, opportunities to develop a portfolio career towards the end of a GP's working life, and a clearer range of career pathways.
	8. New ways of working	NHS England, HEE and others will work together to identify key workforce initiatives that are known to support general practice - including e.g. physician associates, medical assistants, clinical pharmacists, advanced practitioners (including nursing staff), healthcare assistants and care navigators. We will agree a shared programme of key pilots at scale in primary care, to invest in and trial new ways of working for these roles, demonstrating how they work across community, hospitals and within GP surgeries to support safe and effective clinical services for patients. This will support current GPs in managing their workload, as well as piloting new ways of working for the future.
Return	9. Easy return to practice	HEE and NHS England will publish a new induction and returner scheme, recognising the different needs of those returning from work overseas or from a career break, and work with the RCGP will take place to agree safe and proportionate standards. This will be done in close collaboration with the BMA GPs committee.
	10. Targeted investment in returners	NHS England will make available additional investment to attract GPs back into practice, increasing over time. Targeted at the areas of greatest need, the scheme will offer resources to help with both the costs of returning and the cost of employing these staff. A review of the performers list in its current state and its value will be undertaken. This scheme will be developed in collaboration with the BMA GP committee and the RCGP.

4. Structure of the report

4.1. Methods

We conducted a synthesis of the research evidence and wider literature on the key objectives of the *10Point Plan* and the use of incentives to identify:

- Evidence to support the specific actions set out in the plan.
- Evidence on other approaches to retention and recruitment of GPs

Specific review topics include:

1. Identifying the efficacy of marketing campaigns on GP recruitment
2. Examining the impact of training programmes and structures on recruitment and retention
3. The impact of financial incentive schemes on recruitment and retention
4. Identifying non-financial incentives for recruitment and retention
5. Changes in workforce structures within general practice and how these impact on recruitment and retention

In this report we focus on summarising the findings from the first stage of the work which focuses on evidence related to the *10 Point Plan*. In order to identify relevant evidence, we developed a structured search strategy (See table 3 for search terms) that initially focused on reviews of evidence and was then expanded to retrieve other articles. This work is ongoing informed by our initial searches.

Table 3: Search terms

Key terms	Combined with :
General practitioner	Recruitment
GPs	Recruitment strateg*
General practice	Personnel recruitment
Family practitioner* ¹	Employment
Family practice	Career choice
Family physician*	Personnel turnover
Family doctor*	Motivation
Primary care physician*	Retention
Primary care doctor*	GP retention
Primary care practitioner*	GP recruitment
	Retirement
	Early retirement

4.2. Initial search

Our initial search focused on systematic reviews/meta-analyses/review articles published in English or French from 1990 onwards and limited (where possible) to OECD countries. In addition, key reports were located using the HMIC database.

¹ * = truncation symbol

Following an initial review of the elements of the *10 Point Plan* and a number of key policy documents and review papers, the terms were searched as keywords (appearing in title, abstract, subject and keyword heading fields) and also mapped against MESH subject headings where applicable to ensure comprehensive coverage. The databases searched for the initial stage were Medline, Embase, Cochrane Library and HMIC. The rationale for conducting an initial search looking at reviews and key reports was to get a feel for the types of references generated, manage the results and see which search terms resulted in the most relevant references.

4.3. Second stage

In the second stage, the literature search was expanded to include all journal articles, reports and grey literature. The following additional databases were used: Cinahl, Psych Info and the TRIP database (Internet-based source of evidence-based research). We have also expanded our data collection to undertake more in- depth searching of the grey literature and conduct hand searches of key journals to provide a more comprehensive analysis and evidence base for policy development.

4.4. Search Results

From results, duplicates were deleted and a basic initial weeding process was undertaken to exclude obviously irrelevant papers. The results below were then passed on to the researchers for selection.

Medline, Embase & Cochrane Library (reviews, meta-analyses):	129 refs
HMIC (reports, policy documents and grey literature):	270 refs
Medline, Embase & Cochrane Library (journal articles):	879 refs
Psych Info:	351 refs
Cinahl:	43 refs
TRIP:	30 refs

The titles and abstracts were reviewed by the research team and relevant papers identified. In the first stage we selected only review papers and UK focused empirical studies. In the second stage, we reviewed original research papers and empirical studies both from the UK and internationally (USA, Canada, Australia etc.). This report summarises the key findings from these papers related to the elements of the *10 Point Plan*.

5. Evidence on recruitment and retention

5.1. Types of studies

The evidence presented here is predominantly from review articles supplemented with findings from primary studies. The inclusion of primary study articles widens the scope of the evidence from literature focusing mainly on problems of recruiting and retaining family doctors in rural areas to more general and diverse evidence related to intrinsic motivational factors and work-related variables influencing both recruitment and retention in general practice. However, we found few examples of studies that examined the issue of re-employment. Data extraction was informed by using the key elements of the *10 Point Plan* as a framework and the evidence is discussed against

each of the 10 key areas of the Plan. However, analysis of the reviews and primary research identified a number of additional potential strategies that are not included in the 10 Point Plan.

This report does not examine the third objective of the *10 Point Plan* - *supporting those who wish to return to general practice* (also labelled return or reemployment) - since in our initial analysis of reviews we did not identify relevant papers on individuals returning to practice. This might be due to the fact that the wider literature (both in the general practice literature and in the management, organisational behaviour and human resource management literature) generally looked at return after sick leave such as burnout, depression, or physical injury (see Blank et al 2008, Høgelund 2001) and dismissed employees (Vinokur & Schul 2002) and were therefore less relevant in terms of our original research brief.

There was some overlap between studies that examined retention and which also studied recruitment. However, in order to set the evidence against the *10 Point Plan* relevant elements of each paper are discussed in relation to the individual elements of the plan. Inevitably there is some overlap in the discussion and many of the issues highlighted in the first section here on recruitment remain pertinent to elements related to retention.

5.2. Recruitment

The *10 Point Plan* contains four specific recruitment strategies:

- 1) Promoting general practice
- 2) Improving the breadth of training
- 3) Training hubs
- 4) Targeted support.

While studies that examine specific recruitment strategies for the GP workforce are scarce, we identified a number of studies that examine how to improve recruitment in rural areas. Evidence from these studies, both in rural areas and specifically in general practice, provide useful insights in each of these four areas that influence the key factors that are more likely to attract students to choose general practice. The evidence presented here is predominantly related to GP recruitment in practices and career choice motivations and determinants.

5.2.1. *Promoting general practice*

Positive marketing of general practice and GP careers is based on the assumption that promoting the positive aspects and future career opportunities in general practice to newly qualified doctors will increase the number of applications by medical students to general practice. Our review of the literature did not identify any reviews testing the effect of such practices on the recruitment of family physicians/GPs. Therefore, it is not possible to provide evidence that specifically demonstrates the impact of marketing campaigns for GPs trainees.

However, there is some evidence that positive role models (for example highlighting GPs in leadership roles could provide positive role models), a stronger emphasis on general practice in medical school, and enhancing the status of general practice among the general population as

compared with other specialisations were predictors of career choice (Campos-Outcalt et al 1995; Shadbolt & Bunker 2009; Schwartz et al 2005; Williamson et al 1993).

Studies suggest that it is important to pay more attention to the determinants and factors that influence medical students' career choices, medical school recruitment and more specifically recruitment in general practice. Studies by Chellappah and Garnham (2014) and Petchey et al (1997) and a review by Shadbolt and Bunker (2009) identify a number of key factors influencing career choice.

Shadbolt and Bunker (2009) present determinants that are mainly intrinsic and idiosyncratic. They identified various career choice determinants such as factors intrinsic to the individual and factors related to the home and work environment. Intrinsic factors include self-awareness of skills and attributes. For example, they suggest that medical graduates primarily look for a career that is stimulating and interesting. Since there is a negative view of the general practice field, as it is not perceived as intellectually stimulating, it is possible that medical graduates may reject general practice as a result. Gender is also important. Traditionally, women may have exercised different choices from men when choosing their medical career but now, it appears that both men and women value a more balanced lifestyle.

Petchey et al (1997) identified three key themes that influenced career choice: 1) clinical content of practice 2) lifestyle 3) the organisational context of practice. They explored doctors' perceptions of general practice as a career determinant. In their study, the sample was deliberately heterogeneous. As mentioned above, they found three distinct themes. The first determinant, the clinical content, is the most important determinant and refers to an intrinsic source of satisfaction (or motivation). They found that the interviewees had a strong preference for 'traditional' or 'biomedical' forms of medical practice. Most of them identified general practice as intellectually less challenging and less intrinsically satisfying. A minority of interviewees, however, referred to general practice as the 'real' medicine but acknowledged that their views were different from those of the average junior doctor. The second determinant is lifestyle and the authors refer to it as an extrinsic factor. In fact, in this study general practice was envied for its lifestyle when compare to hospital medicine. More precisely, while some saw general practice as a 'nice career life' they perceived that this lifestyle was achieved at a cost of clinical content and self-fulfilment. Lastly, the third determinant is the organisational context, seen by the authors as intermediate between intrinsic and extrinsic satisfaction factors. Team, team support and teamwork as opposed to isolation and professional autonomy were presented as important factors when considering the organisational context.

Chellappah and Garnham (2014) studied perceptions and attitudes towards general practice and factors influencing career choice. They examined attitudes of 66 students from Imperial College London to careers in general practice. The study explored five different domains: demographics, characteristics of general practice, GPs vs hospital specialties, influences on perception of GP and influences on future specialties and current choice. While only a small scale study with some methodological limitations (use of single item, small sample, context specific), the factors and determinants identified are similar to those identified in the review by Shadbolt and Bunker (2009) and with other study results presented in this report.

Of particular interest and importance are the responses to students' perceptions of general practice. There was broad agreement that general practice emphasised continuity of care and had an important role in health promotion. They disagreed with the statements that general practice is not intellectually stimulating and only related to simple acute health issues. Chellappah and Garnham (2009) conclude that students generally have a positive image of general practice but few in their early years of medical school choose it as a career but this changes as students reach their final year.

Roos et al (2014) looked at the motivation for career choice of GP trainees and newly qualified GPs across seven different European countries: the Czech Republic, Denmark, Germany, Italy, Norway, Portugal, and United Kingdom. They found that the top five reasons to choose general practice across these seven European countries are *compatibility with family* (UK); *challenging medically broad discipline* (Norway, Portugal, Germany); *individual approach to the patient*; *holistic approach to the patient* (Italy) and *autonomy and independence* (Denmark, Czech Republic). They found a significant difference between women and men for compatibility with family life, holistic approach to the patient and autonomy and independence. Interestingly, about 6% of GP trainees and newly qualified GPs identified the following four reasons to choose general practice: "*it remained after I ruled out other options*"; "*not influenced by role models*"; "*non-availability of another specialty training*"; and "*did not get specialty training because of my grade*". One very interesting aspect of this study is that 83.7% of GP trainees and newly qualified GPs would choose to be a physician again and of those, 78.4% would choose GP as a specialisation again.

While specifically looking at remote rural areas as choices for clinical placements, Crampton et al (2013) found that some of the reasons why students choose such placements were the teaching reputation, to gain experience of remote and rural medicine, various lifestyle factors and the breadth of opportunity for learning and educational development. But students were also concerned about negative aspects of rural placement such as the possibility of meeting their patients in the street, lack of placement structure, learning objectives not being met, the limited opportunity to consult with patients alone, logistical accommodation issues and anxiety from social isolation. It is possible that similar factors affect student choice of general practice more generally compared to hospital based specialities.

Few studies examine recruitment of GPs to practices. However, Landry et al (2011) examined why doctors choose their practices and suggested three main reasons: the influence of family or partner (50%), liking the region (18%) and availability of medical resources (10%). The dominance of factors external to general practice itself is perhaps key. It is possible that already qualified doctors are also affected by similar concerns as medical students about some aspects of practice including isolation, opportunities etc.

Hemphill and Kulik (2011) looked at both rural and urban GPs preference attributes towards family, job and practice. Their findings showed the following: that family-focused GPs were more likely to choose general practice in a rural area and were concerned with family attributes such as the flexibility of the hours and the quality of children's' education in the local area. Moreover, the family- focused GPs were less concerned by practice attributes but identified two particular job attributes that could have a direct effect on their family - the support and friendliness of co-workers at the practice and the amount of disposable income the job would offer. The Job-focused GPs were

“intrinsically motivated by the content of the job (e.g. challenging work) and are willing to trade-off extrinsic factors (e.g. income)” (p.121). An example of a job attribute they identified is the opportunity offered to further practice skills. The practice-focused GPs were highly interested in the practice attributes such as the practice’s billing philosophy and the requirement or opportunity to buy into the practice. More significantly, this group showed less interest in job and family attributes.

The study by Hemphill and Kulik (2011) is particularly interesting because they looked at both rural and urban GPs and integrating marketing to human resource management theory. This allowed them to suggest two strategies for future recruitment to rural and urban practices. Indeed, the authors emphasized the importance of recognising the different preference attributes in general practice and suggested that recruitment activities and publicities should be aligned with the type of GP a practice wants. They identified two options. The first option is to aim recruitment at one specific group of criteria (either family- focused, job-focused or practice-focused) and to direct all recruitment strategies towards this goal. The second option would be *“to diversify their recruitment strategies to target all three cohorts”* (p.122). To do so, would mean developing various recruitment strategies such as multiple advertisements highlighting specific elements of the family, job and practice- focused GPs alongside more general cross category recruitment campaigns.

5.2.2. Improving the breadth of training.

Improving the breadth of training for candidates seeking to work in areas where it is hard to recruit trainees by including an additional flexible year aims to provide opportunities for trainees to either specialise in a second related speciality of interest, develop skills and competencies in management, spend a year in an academic programme or to study an aspect of medical education and training related to the primary and community care agenda. We found some evidence for candidates seeking to work both in regions where recruitment of GPs is difficult and also for those who want to work in any location. The evidence is divided into three themes: 1) exposure to general practice 2) curricula modifications 3) recruitment and admission criteria.

Early exposure (Chelleppah and Garnham, 2014; Illing et al 2003; Young & Leese 1999), the workplace experience and interaction with members of the profession (Shadbolt & Bunker 2009), the length of time spent in general practice rotation (Halaas et al 2008) and the quality of the practice (surgery) based on the dedication of the generalist faculty for example (Schwartz et al 2005). All had an impact on whether students chose general practice - with positive experiences linked to an increased likelihood to choose general practice. In particular, Chelleppah and Garnham (2014) showed that students’ perceptions were strongly related to how they encountered GPs and doctors from other specialities in medical school – especially at the pre-clinical stage. Similarly, Campos-Outcalt et al (1995) found that the best strategies to increase the proportion of medical students choosing generalist careers include institutional reform to emphasize generalist training, increasing the size of the generalist faculty, and requiring clinical training in family practice.

Landry et al (2001) examined the effect of exposure to the same location as the student’s place of origin in New Brunswick, a rural province of Canada. They analysed the effects of length, timing and frequency of exposure to a student’s region of origin during medical training on the likelihood that the junior doctor or the newly graduate doctor will return and practise medicine in that region. They

differentiated between exposures during undergraduate and graduate training and identified two main results regarding exposure during undergraduate training. The first is that an additional month of clinical rotation increases the odds of practicing in the province by 30%. The second is that cumulative exposure to the region during undergraduate training is an important determinant influencing whether or not the graduate will return to the area to work as a family doctor. As for graduate training, they were more likely to practice in the Province if they had undertaken a residency programme in the region. In fact, family and speciality doctors who undertake residency in the province were respectively five and four times more likely to subsequently work in the Province.

Implementing effective medical school curricula in primary care and establishing primary care “honours” or “scholars” tracks (Campos-Outcalt et al 1995, Schwartz et al 2005), developing or expanding primary care fast-track programmes, and curricula proposing sub-specialisation, portfolio careers and profile of new skills (Shadbolt & Bunker 2009, Williamson et al 1993) appear to influence trainee doctors career choices. Harding et al (2015) noted that “Very few medical schools [in the UK] had integrated departments of general practice prior to 1968. By 2012, 100% of schools had integrated departments. Since this time the number has fallen to less than 50%.” (p. e411). They conclude that there is a very important difference between the proportion of curriculum delivered in general practice and the proportion of medical school budget made available for this teaching. This is an important issue that has implications for the success of the recruitment targets proposed by the Department of Health.

A third area that appears to be important is the modification of recruitment and admission criteria to recruit students who are more likely to choose primary care specialisation (Schwartz et al 2005). Shadbolt and Bunker (2009) suggest that there may be specific individual determinants that influence students applying to medical school that may lead them to choose a more patient-orientated specialisation. Identification of such traits as part of student selection for medical schools may encourage those students to choose general practice specialisation or primary care in general. Similarly, Geyman et al (2000) and Rosenthal (1994, 2000) proposed basic criteria to increase applications to general practice and rural practice career choice. Some of these criteria are also relevant to the admission and recruitment theme. For example, the profile of applicants which include grades and admission tests, should also take account of their community of origin, service work and their speciality intent. In addition, at the admission stage, applicants should be assessed to ensure that their career paths or choices are in line with the medical school mission. They also highlight the need for students to have a rural immersion experiences in the curriculum (p.63).

5.2.3. Training hubs

The development of training hubs - where groups of GP practices could offer inter-professional training in primary care – are aimed at extending the skills base and developing a workforce able to meet challenges of new way of working. While we did not find specific evidence of the effect of training hubs on the recruitment of GPs, it is possible that the evidence on rural training is relevant here.

Training hubs have been found to have a positive effect on attraction of practitioners to rural areas. Barnett et al (2012) noted that in Australia, the General Practice Training program involves “multiple

small training sites across a wide geographical area“(p.88). Factors that support recruitment are a familiarity with community health resources, a sociocultural awareness in patient care, community participation and assimilation, and the capacity to intervene in the communities’ health problems. However, they found that junior doctors felt isolated from their peers, friends and family and developed a virtual community to reduce the effects of isolation.

Similarly to countries facing problems in recruiting physicians to practice in rural areas, the UK also has problems attracting junior doctors to particular specialities or training in some regions. Lee and Nichols (2014) suggest that the decentralisation of medical schools to rural areas and curricula with a rural focus would provide exposure to a rural learning experience and could be most successful to attract doctors to practice in rural areas. They also suggest that students with a rural background and a year practising primary care as a freshman for example, are more likely to choose to practice in a rural area. In other words, medical school staff should develop strategies to increase rural applicants who wish to practice family medicine, general practice or any primary care specialties. While Lee and Nichols paper is about attraction and retention in rural practice, some of the ideas presented are also relevant to general practice. Early linking of students to general practice may increase students’ propensity to choose general practice training but also their propensity to return to the geographic location that they trained in. Recruiting students from these specific under-doctored areas may also influence them to return back to the community especially if local training was also available. From this perspective, it is clear that training hubs and breadth of training are closely related.

5.2.4. Targeted support

The *10 Point Plan* advocates financial targeted support and time-limited incentive schemes that would offer additional financial support to GP trainees committed to working in specific areas. We found some evidence in the literature on rural training but we found no clear evidence of the efficacy or the usefulness of targeted schemes and support in the general practice literature.

In non-UK settings there is evidence that choice of career in primary care is positively linked to loan forgiveness, funding in primary care research, increased and guaranteed funding for fellowship training in primary care, and direct training funds to schools with track records of producing graduates in primary care (Schwartz et al 2005). Shadbolt and Bunker (2009) suggest that remuneration seems less important for younger doctors than for more senior doctors but while the level of remuneration is less important, school debt remains a major concern for many junior doctors (Lee & Nichols 2014). Campos-Outcalt et al (1995) showed evidence that higher levels of national health research funding reduces the proportion of students choosing to become family physicians and generalist physicians.

Bustinza et al (2009) studied the impact of a decentralised training programme to recruit and retain GPs in a rural setting in Quebec. One element they looked at was the impact on recruitment of practitioners through two different financial incentive schemes. The first was a grant (a fixed sum) from the *Régie de l’assurance maladie du Québec* (RAMQ, Health Department) and the second was a relocation allowance. They found that the probability of remaining in the region was no different whether GPs received an initial grant or an allowance than if they did not receive any financial

incentives. In fact, they found a negative relationship between receiving a grant from the RAMQ and the retention of GPs. In other words, the individuals receiving grants were more likely to leave the region than those who did not receive a grant from the RAMQ. It is possible that the grant only attracted physicians for a short period but was insufficient reason to make them stay.

Targeted support could also be given to support GP teaching. Harding et al (2015) highlighted that the financial support for undergraduate general practice teaching seems low, given its importance. They identified a significant disparity between teaching delivery and payment received, while these measures are inadequate to provide enough education (in term of quantity) or to improve its quality. Funding is important since the quality of the teaching and the reputation of the school are two important elements and determinants of specialisation choice. Furthermore, insufficient financial support can have a negative effect on GPs motivation to teach and result in a reduction of time committed to teach. Finally, the authors strongly suggested that the payment mechanisms be simplified in line, for example, with payments made to hospitals.

5.2.5. Summary

In summary, the key factors that are relevant to the recruitment of GPs are primarily related to providing students with appropriate opportunities for contact with and positive exposure to general practice and general practitioners. Good role models and early exposure in pre-clinical training may be particularly important. The training environment and location of training may also play important roles in achieving recruitment to areas where there are shortages of trainees. Financial factors seem less important for choosing general practice – particularly in the current UK context. More precisely, it is also important to recognise other determinant factors in junior doctors' specialisation choices. Shadbolt and Bunker (2009) have suggested that more attention could be paid to the fit between skills and attributes with intellectual content and demands of the specialisation; a stimulating and interesting specialisation; lifestyle (flexibility, work-life balance, quality of life); social orientation and desire for a varied scope of practice and significant experience in the primary care setting. Hemphill and Kulik (2011) suggested developing marketing strategies that will be show the different attributes of general practice. In addition, Hemphill et al (2007) argued that the most important aspects of the job of a GP are facilities, autonomy of work, and diversity of cases, education, and employment opportunities for physicians' spouses in the practice location.

5.3. Retention

The NHS England *10 Point Plan* identified four strategies to increase retention in general practice:

- 1) Investment in retainer schemes
- 2) Improving the training capacity in general practice
- 3) Incentives to remain in practice
- 4) New ways of working

5.3.1. *Investment in retainer schemes*

The first retention strategy proposed in the 10 Point Plan is to invest further in retainer schemes. The current national retainer scheme is delivered locally through the NHS postgraduate programmes provided by Regional Health Education England bodies. In 2015 NHS England announced plans to review current retainer schemes and invest in a new retainer scheme that will meet the needs of both GPs and practices. While our literature review did not identify any evidence of the relationship between the investment in retainer schemes and retention, the literature suggests that widening the scope of remuneration and contract conditions could have an effect. Young and Leese (1999) suggested that reducing the income differential between general practice and hospital work could increase retention. More precisely, appropriate remuneration schemes could have a key role in GP recruitment and retention but the current arrangements are inadequate to compensate for the increasing workload. In fact, while low pay might be a source of dissatisfaction toward the job, the evidence suggests that increases in income or salary would not compensate for other sources of job dissatisfaction such as workload (Sibbald et al 2000).

Newton et al (2004) also studied the relationship between job dissatisfaction and early retirement. While their final sample size was small (only 16 usable interviews), some of the results provide useful insights into GP views. The interviewees' characteristics are worth noting since **seven** of them were unhappy and firmly resolved to retire at or before 60, **three** were happy but still wanted to retire at or before 60 and **six** were happy and did not want to retire before 60. The authors used the terms 'happy' or 'unhappy' to qualify each GP based on the level of satisfaction or dissatisfaction with their job. One of the questions was about the factors that might delay their retirement and it is clear from the data extracted that retainer schemes or as they called it the 'golden handcuffs' initiatives was viewed negatively by all the interviewees. Some respondents mentioned that such a scheme was an insult to their professional integrity; that the money was not an issue but workload was. Another interviewee mentioned that money was not the answer as more money could mean that some GPs would be able (and decide) to retire earlier. Finally, another interviewee thought that the money offered was "ridiculous" and suggested that based on "... actuarial figures show that GPs who retire at 65 die earlier than someone who retires at 60. The government is laughing because they get it all back in reduced pension payments" (GP143; p.2,1.31-35) (Newton et al 2004, p.74). This last quote could be seen as sarcastic or bitter but the reality is that in this article, the GPs interviewed seemed irritated and angry that they were not consulted during the development of the 1990 new GP contract.

5.3.2. *Improving the training capacity in general practice*

The second retention strategy is improving the training capacity in general practice. This strategy is closely related to both recruitment of junior doctors in general practice and retention of GPs but is also linked to the investment in primary care infrastructure. We found no clear evidence that improving the training capacity and learning and development infrastructure had a beneficial effect on GP retention. However, Landry et al (2011), Shadbolt and Bunker (2009) and Young and Leese (1999) suggest that there is a potential beneficial effect on retention by training doctors locally and providing opportunities for doctors at different career stages to have a sub-speciality or provide a broader career portfolio.

Landry et al (2011) suggested that training doctors locally increased the odds of their retention. They found that, family doctors who had undertaken clinical rotations in New Brunswick in at least 3 years of undergraduate medical training had 10 times greater odds of remaining in the Province. This suggests that the socialisation within specific areas is an important determinant of both recruitment and retention. From that we can infer that the socialisation of junior doctors to the primary care practice and more precisely to the general practice could have an important effect on retention since they would have a realistic view of the profession, its challenges and implications.

Humphreys et al's (2001) review of the rural medical workforce identified three main factors pertinent to retention and turnover: professional issues, social factors, and external contextual factors. Professional issues are related to the work content, vocational satisfaction, support and remuneration. The social factors are related to personal characteristics and family circumstances. Lastly, the external factors are related to the community and its geographical location. While these factors might be important for rural practices, they may also influence GPs retention of all contexts.

At a more micro level, GP accessibility to sub-specialisation and portfolio careers could have an effect on retention. In fact, both Shadbolt and Bunker (2009) and Young and Leese (1999) suggest that a wider choice of long-term career paths such as sub-specialisation and portfolio careers (including specialisation related to their practice such as dermatology, paediatrics etc.) are important for both the recruitment and retention of GPs. It is also suggested that increased learning (satisfaction of intellectual and altruistic needs) and functional flexibility (adaptable and transferable within their practice) could improve satisfaction, morale and fulfilment and, as a result, GP retention. For example, GPs could undertake learning and development activities such as research, teaching, developing management skills or further development of research and teaching skills. Further below, in the section 5.3.5 we present how job satisfaction is an important determinant of retention.

5.3.3. Incentives to remain in practice

The third strategy consists of incentives to remain in practice. The 10 Point Plan suggests a review to identify the most effective measures to encourage senior GPs (or more experienced GPs) to remain in practice. While our review of the literature did not find clear evidence of the beneficial effect of incentives to remain in practice on retention, there is evidence to suggest that mentorship schemes and opportunities to develop portfolio careers would be welcome at every stage of the GP career not just for senior doctors or towards the end of working lives. Indeed, this element is important because doctors' career choice of specialism is based, in part, on their assessment of the perceived intellectual challenge provided by just one speciality. If their work is less challenging, it is possible that adding a new specialism to their practice would give them more job satisfaction. Therefore, developing a clearer career path and portfolio structure could increase the perceived challenge of the profession by providing additional possibilities during each stage of their career.

5.3.4. New ways of working

There is little directly relevant literature related to this area. Current policy to develop larger practices and integrated care models (NHS England 2014) are creating different organisational models and it is not clear how this will affect general practice. Wordsworth et al (2004) suggest that

enhancing patient care aspects of GPs work is most likely to provide a positive view of practice and act as a key for retention. Flexibility and part-time working have always been seen as factors that make general practice a more attractive working environment although this is increasingly seen to be less relevant (CFWI 2014, Evans et al 2000, Wordsworth et al 2004).

Bellman (2001) evaluated the GP Assistant/Research Associate scheme during a nine-month period. Briefly, the scheme was developed in the Department of General Practice and Primary Care at Guys, Kings and St.Thomas' School of Medicine (GKT) with the primary objectives to attract, recruit and retain GP assistants to south-east London inner city practices. The scheme supported both young and established GPs in their professional development, and sat between research and teaching departments and local general practices. The tasks of the GP assistants involved working in more than two practices, undertaking either teaching or research projects, and participating in a peer support group in the academic department. They also provided support to practices with a known difficulty such as large list size or the death of a partner. The GP assistants noted that factors contributing to their professional development plans included cooperative and collaborative working and that the scheme provided a good introduction to a GP career or an opportunity for established GPs to develop their career portfolio. For most of the interviewees, the scheme was seen as a contribution to the general GPs career pathway. This scheme can also be seen as a means to improve GPs' portfolio and career pathways by adding a teaching or research stream to their career.

5.3.5. Job satisfaction

Job satisfaction and job dissatisfaction are significant predictors of GP retention and turnover (Sibbald et al 2003, Van Ham et al 2006), reflecting the findings of research in the wider literature in management and organisational behaviour (Griffeth et al 2000). Job satisfaction is an interesting concept since it can vary from time to time and within the career stages. Therefore, it is important to understand both the determinants influencing job satisfaction and dissatisfaction and also the factors that increase strain in the workplace and in general practice. Some of the reported studies use job satisfaction as a synonym for retention and job dissatisfaction as a synonym for turnover despite the fact that the wider literature shows that both job satisfaction and job dissatisfaction are variables that influence the retention – turnover process but are distinct from it.

Van Ham et al (2006) found evidence that job satisfaction is an important determinant for retention. In fact, they looked at the factors influencing job satisfaction and dissatisfaction. They suggest that job satisfaction is influenced by job autonomy (including work diversity and variety), social support (including relationship and collaborative partnerships with colleagues and patients), and the practice environment such as whether or not it is linked to academic hospitals or centres, and whether there is the opportunity to teach medical students and advanced students. The factors influencing dissatisfaction are: number of working hours, compensation and income, workload, high work demands, lack of support or colleagues, lack of professional recognition, and increased bureaucracy and practice administration.

Groenewegen & Hutten (1991) have highlighted some sources of stress that have an effect on satisfaction. These include the interruption of daily routine, emotional involvement, administrative workload, and routine work. While this article was written more than 20 years ago, these strain

factors are still relevant (eg. see survey results in Gibson et al 2015 discussed below). Their model suggests a relationship between the workload (consequences of the list size and practice composition) and job satisfaction which is also related to the practice organisation and the personal characteristics that would influence the style of work of the GP. Buciuniene et al (2005) looked at healthcare reform in Lithuania and job satisfaction of primary healthcare physicians. The authors found that autonomy at work, social status and workload were the main determinants of job dissatisfaction among primary healthcare physicians. Job satisfaction is also related to Humphreys et al's identification of the factors that lead doctors to remain in rural practice although professional satisfaction (variety of work, autonomy of practice, and a feeling of doing an important job) were identified as the main reasons.

Buchbinder et al (2001) looked at the relationship between primary care physicians (general/family practice, general internal medicine, and paediatrics) job satisfaction and turnover in the USA. In order to do so, they looked at two surveys (AMA Education and Research Foundation 1987 survey and Robert Wood Johnson Foundation 1991 survey) where they used variables from the first survey as predictive variables and the variables from the second survey were the outcomes variables. They used the likelihood of leaving as an overall job satisfaction measure and surveyed physicians five years apart. The overall job satisfaction was defined by the answer to the following question: "How likely are you to leave this practice within the next 2 years?" (p. 705). Primary care physicians who were very likely to leave were 2.38 times more likely to have quit between the two surveys. One element that may have influenced this result is that this sample seemed to be inclined to change jobs. Indeed, half of the sample left their job within the five year period and of those, one third changed practice twice during the same period. They noted in their discussion that expectation about future events can influence job satisfaction. Indeed, if physicians or GPs perceive that the workload will not be reduced and that demands will always increase, it is likely that they feel more overwhelmed and less satisfied with their job.

More recently, Gibson et al (2015) provided an overview of the main work-related strains encountered by GPs, the job attributes and the main factors that GPs were satisfied and dissatisfied with. The survey highlights some potential solutions to reduce the perceived strain by, for example, improving the interaction with colleagues and fellow workers. The results of this survey also provide useful insights in to what main changes are required to increase GP job satisfaction. The survey results highlight long-term trends of GP perception of job stressors, attributes and satisfaction (Gibson et al 2015) by comparing survey results over seventeen years. This provides an overview of GPs vision of their profession and how this vision has changed over the years.

The *job stressors* with the highest scores are: increased workload, changes to meet requirements of external bodies, having insufficient time to do the job justice, paperwork, increased demand from patients and long working hours. Key job stressors that increased between 2012 and 2015 are: adverse publicity by the media, finding a locum, changes imposed from the primary care organisation, and insufficient resources within the practice.

As for the *job attributes*, it seems that GPs find that they have to work very quickly and intensively. While the job provides a variety of interesting things, GPs report that they do not have time to carry out all work and are required to do unimportant tasks, preventing them from completing more important ones. These job attributes increased between 2012 and 2015 with GPs reporting that they

are increasingly required to do unimportant tasks which prevent them finishing more important ones and they do not have time to carry out all work, having to work very fast without any clear feedback about how well they are doing their job. The job attributes that decreased in the same period of time were: choice in deciding how to do job, choice in deciding what to do at work, involvement in deciding changes that affect work, flexibility of working time, interesting variety of the job, and being consulted about changes that affect work.

GPs completing the survey seemed to be satisfied with colleagues and fellow workers, physical working conditions, the amount of variety in the job, while they were dissatisfied with hours of work and remuneration. The only job satisfaction criteria that improved between the 2012 and 2015 surveys was relationships with colleagues and fellow workers while the satisfaction in hours of work, remuneration, amount of responsibility given decreased.

Dale and colleagues (2015) study shows that workplace influencing factors are important in retaining GPs in practice. They found that intensity and volume of workload had the greatest influence on intention to leave - rather than the time spent on important tasks, along with the introduction of seven-day and job satisfaction. As for the individual motivators, the changes to pension taxes and age had more influence on intention to leave the practice. They found that the work-related factors that are more likely to influence more intention to leave are the intensity of workload, volume of workload, the time spent on unimportant tasks, introduction of the seven-day working week and job satisfaction. As for the non-work-related factors, they are the work-life flexibility and personal development. Dale et al included a qualitative component where they asked their respondent to answer freely on factors contributing to work-related pressures. Responses included the growth in patient expectations and demand, recruitment and retention difficulties, burgeoning administration and bureaucracy, growth in additional roles, responsibilities and meetings, transfer of work from secondary care, increasing complexity and chronic ill health, and the introduction of seven-day working in general practice. They also found an unexpected theme: the emotional impact of working as a GP. In fact, respondents felt stressed, exhausted, disillusioned, frustrated, burnt out, and overwhelmed and mentioned that the constant negative portrayal of GPs in the media and by the government was affecting their spirit and professional identity.

In their study, Roos et al (2014) also looked at satisfaction with workload (defined as the hours worked per week), time spent at work or training, work-life balance and earnings. The earnings satisfaction was high for Denmark, Norway and United Kingdom and low for Czech Republic, Germany and Portugal. Italy was highly dissatisfied with earnings. The earnings difference was high, varying from less than 20,000€ to more than 100,000€. The results showed that low income and high job workload were related to a lower satisfaction toward income but also with work-life balance.

The studies discussed above examined the link between various factors and determinants of job satisfaction and dissatisfaction and retention. They did not assess how these factors affected the physical health of GPs. However, the preliminary study of O'Connor et al (2000) looked at the relationship between job strain and blood pressure (systolic and diastolic blood pressure) and heart rate both during the work day (and evening) and non-work day (and evening). The authors defined job strain as the ratio between psychological job demands and job control. Job strain was divided into two groups: high strain and low strain. They also included in their questionnaire the following

measurement scales: depression, anxiety, somatisation and job satisfaction as dependent variables. The authors found no significant differentiation between genders. While both low and high strain GPs reached a pre-high blood pressure (systolic higher than 120 and the diastolic higher than 80) during the working days and evenings, it seems, however, that the after- effect is still there for the high strain GPs during the non-working days and nights. This suggests that the results illustrate “... *a failure to relax following the termination of demands...*” (p.247). One very important element is that the differences between low strain and high strain GPs during the non-work day blood pressure and heart rate are as follow: systolic difference 11.66 mmHg, diastolic difference is 8.78 mmHg and the heart rate difference is 9.25 bpm (beats per minute). O’Conner et al also found that high strain GPs reported higher levels of anxiety, depression and dissatisfaction than low strain GPs.

There is one determinant of job satisfaction that little research focuses on and it is the effect of shortage of physicians on job atmosphere and job satisfaction of health centre staff. We identified one study by Saxén et al (2008) and while the article lacks information about the various health centre staff, the results of the study are quite interesting. Saxén et al (2008) defined job satisfaction as follows: the satisfaction with management of work unit, satisfaction with management of organisation, adequacy of services within one’s own operational unit, quality of services at the workplace, the functionality of the work community, the experience of work stress and strain and the desire to find a new job. In fact, Saxén et al (2008) showed that the shortage of physicians had very little negative effects on health care staff job satisfaction. Moreover, the shortage had no effect on job-seeking activity, feelings of stress, working under pressure nor with satisfaction with the work of community or work atmosphere. The authors suggested that under-shortage of physicians meant the health centre had to use their resources more effectively if they wanted to provide the same high quality services to the population. Saxén et al (2008) conclude their article by suggesting that shortage could increase solidarity and “... *force the staff to work together more closely to get the work done.*” (p. 250). This article is interesting in the sense that it highlights the importance of working together and of sharing responsibilities between health professionals.

We found one recent study that examined why GPs leave practice early in England. Doran et al (2016) conducted a mixed methods study to investigate the reason for GPs, under 50 years old, leaving their jobs (eg early retirement, changing jobs or relocation abroad). They found multiple factors were implicated but it is mostly due to the changing role of general practice. The authors called this multifactorial response by GPs the pressure to leave practice as a “Boiling frog syndrome” since at least two of the GPs interviewed describe the changes and the whole process as a slow building-up of pressure. While the analogy might seem overly dramatic for some, the description made by the two reported GPs verbatim is quite alarming. The first one describes the process of boiling slowly a frog in a pan full of water and concluded by saying that without knowing it, the frog is slowly dying while the water gets warmer and warmer since the frog has adapted to the water warming up. The second interviewee reported hearing about the boiling frog analogy in GP meetings where they were using the analogy to explain how the incessant increased workload while the GPs were adapting “to the point where they all crack” and leave the practice. Doran et al (2016) structured the multiple factors based on the interviews as follows: 1. organisational changes 2. clash of values 3. increased workload 4. negative media portrayal 5. workplace issues and lack of support 6. impact on wellbeing. If one element is important to look at, it is the organisational changes that are the source of all the subsequent factors.

5.3.6. *Summary*

Many of the factors relating to retention are similar to those related to recruitment. Positive factors as viewed by students and GPs about general practice as a profession – such as patient contact, variety, continuity of care – are intrinsic to what it means for them to be a GP. Recruitment factors highlighted positive role models, engagement with practices and socialisation into general practice while retention factors are similar in terms of supporting the ability of GPs to practice being a GP. Feeley (2003) has, however, highlighted the importance of expectation versus reality. What junior doctors expected when they became a GP and the real life of a GP is likely to impact on retention. The evidence does suggest that tackling key aspects of job stress are important but supporting the key factors of how GPs view the essential nature of general practice in terms of patient contact may be critical alongside developing new opportunities for diversity of practice through sub-specialities and broader portfolio careers. As for the new ways of working, it is likely that the inclusion of nurses, pharmacists, and even social workers might help reduce the strain of the workload and burn out symptoms of GPs.

While Sibbald et al (2003) mentioned that GP job dissatisfaction might reflect a frustration or a disappointment towards the changing roles in their practice and in society. Newton et al's (2004) interviews showed that some happy GPs want to retire at or before 60 years old in order to do other things or feel they have "done their bit" as well as those GPs who no longer have the resilience to cope with work stress.

Table 4: Summary of evidence

	10 Point Plan	Evidence in GP literature	
Recruitment	1. Promoting general practice	No clear evidence	<ul style="list-style-type: none"> - Enhancing the status, contribution, career advancement and rewards of primary practitioners - Role models - Medical environment important
	2. Improving the breadth of training <i>(for candidates seeking to work in locations where it is hard to recruit trainees)</i>	Some evidence for both candidates seeking to work in geographies where it is hard to recruit trainees and for GP trainees seeking to work everywhere.	<p><i>Exposure to general practice:</i></p> <ul style="list-style-type: none"> - Early exposure / pre-registration house officers scheme - Workplace experience and interaction with members of the profession - Length of time spent in general practice rotation - Ensuring that the rotations are of high quality with a dedicated generalists faculty <p><i>Curricula modifications:</i></p> <ul style="list-style-type: none"> - Effective medical school curricula in primary care - Establish primary care 'honours' or 'scholars' training tracks - Develop or expand primary care fast-track programs - Sub-specialisation, portfolio careers and profile of new skills <p><i>Recruitment / admission:</i></p> <ul style="list-style-type: none"> - Modification of selection criteria
	3. Training hubs	Some evidence in the rural training and in the broader medical education literature	<p><i>Rural training/ rural context literature:</i></p> <ul style="list-style-type: none"> - Familiarity with community health resources, sociocultural awareness in patient care, community participation and assimilation, and identifying and intervening in community health problems
	4. Targeted support	Some evidence in the rural training and broader medical education literature but no clear evidence in general practice	<ul style="list-style-type: none"> - Link choice of career in primary care to loan forgiveness - Funding in primary care research - Increase and assure funding for fellowship training in primary care - Direct training funds to schools with track records of producing graduates in primary care
	Other		<p><i>Determinant factors in specialisation choice:</i></p> <ul style="list-style-type: none"> - Fit between skills and attributes, intellectual content and demands of the specialisation - Stimulating and interesting - Lifestyle factors (flexibility, work-life balance, quality of life)

	10 Point Plan	Evidence in GP literature	
			<ul style="list-style-type: none"> - Social orientation and desire for a varied scope of practice - Significant experience in the primary care setting
Retention	5. Investment in retainer schemes	No clear evidence	<i>Widening the scope of remuneration and contract conditions:</i> <ul style="list-style-type: none"> - Reduce the income differential between general practice and hospital work - Remove the disincentives for less than full-time employment, widening of the employment mechanisms open to GPs such as authority-organised salaried schemes
	6. Improving the training capacity in general practice	No clear evidence	Sub-specialisation and portfolio careers where doctors might gain skills in a range of specialities and practices - some or all of them at any one time.
	7. Incentives to remain in practice	No clear evidence	
	8. New ways of working	No clear evidence	<i>Varying time commitment across the working day and week:</i> <ul style="list-style-type: none"> - Part-time, job share; temporary, and short-time available, whatever a GP's employment status and career stage. <i>Offering a wider choice of long-term career paths:</i> <ul style="list-style-type: none"> - Locum and associate positions equal to full-time principal posts - Activities such as research and training in management skills - A part-time educational post, or hospital attachment - Job mobility as a way to progress (a more positive vision of mobility).
	Other	Evidence	<i>Increased satisfaction (factors):</i> <ul style="list-style-type: none"> - Job autonomy / diversity / variety - Social support, relationship and collaboration with colleagues/patients - Academic hospital and centres / teaching medical students and advanced students <i>Decreased satisfaction (factors):</i> <ul style="list-style-type: none"> - Too many working hours, low income / compensation / workload / not enough time / high demands / lot of paperwork / little free time - Lack of support / lack of colleagues - Lack of recognition - Bureaucracy / practice administration

6. Conclusion

Humphreys et al (2001) suggested that while strategies for recruitment and retention overlap “... *the extent to which factors that contribute to retention are independent of those influencing initial recruitment to rural and remote practice remain unclear*”. It would seem that factors that affect job satisfaction are likely to create problems in developing suitable role models for attracting students to choose general practice. There are clear overlaps between strategies for supporting increased recruitment and retention.

An area not fully explored in the literature reviewed to date is that relating to the recruitment policy of medical schools, given that there are career choice determinants influencing the recruitment of GPs in medical school. These determinants are intrinsic and are factors idiosyncratic to the individual. Shadbolt and Bunker (2009) presented various career choice determinants such as factors intrinsic to the individual and factors related to the home and work environment. The intrinsic factors included self-awareness of individual skills and attributes. For example, they suggest that medical graduates primarily look for a career that is stimulating and interesting. Since there is a prevailing negative view of the general practice field (as it may not be perceived as intellectually stimulating), it is possible that medical graduates will reject general practice early during medical school training. However, having developed a greater awareness at a later date in their training period, students are more likely to have a positive view and might have opted to train as GPs (Chellappah and Garnham 2009).

Overall, the published evidence in relation to GP recruitment and retention is limited and most focuses on attracting GPs to rural areas – particularly in Australia. However, this literature does suggest that there are some potential factors highlighted in the literature that may support the development of specific strategies for supporting the recruitment and retention of GPs. These are summarised in table 4. Key conclusions for GP recruitment and retention are consistent with the wider literature on organisational behaviour and human resource management and include:

Key conclusions for recruitment

Based on our analysis of the evidence, the factors that are most likely to increase and influence recruitment in general practice include:

- Exposure of medical students to successful GP role models
- Early exposure to general practice
- Supporting intrinsic motivational factors and career determinants

There is little evidence that financial targeted support would increase recruitment.

Key conclusions for retention

While we found no clear evidence of the effect of investment in retainer schemes and incentives to remain in practice on retention, based on our analysis of the evidence the factors that are most likely to increase and influence retention in general practice include:

- Supporting intrinsic factors of the job
- Strategies to improve job satisfaction
- Reduction of job stressors such as work overload, lack of support and high job demands, all of which increase the likelihood of quitting the practice and/or profession.

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Appendix 1: Characteristics of included reviews on determinant of recruitment and retention of GPs

Authors	Year	Countries	Article type	Topic	Method	Relevance	Quality
Barnett, S., et al.	2012	Australia	Review of the literature	General practice training, isolation	Comprehensive literature search: Scopus, Psychlit, Pubmed	WEAK: look at virtual team to reduce the isolation for junior doctor in rural area.	GOOD: methods are well presented
Bellmann	2002	UK	System evaluation of a scheme		Data collection: review of documentation of the scheme, audio-taped steering group and GPA meetings, audio-taped semi-structured interviews with the stakeholders and the GPs, non-participant observations of GPs in the consulting room, and GPs' personal journals.	AVERAGE: Primary care, physician and the scheme might be a tool or programme for GP who want to widen their career pathway, but also for those who wants to return.	HIGH: the method was well done, the triangulation and variety of data collected allowed the authors to have a deep understanding.
Campos-Outcalt, D., et al.	1995	USA	Review / Quality assessment	Curricula, role models, research support career choice	Literature search : MEDLINE, PsychInfo, Current contents, Expanded academic Index	AVERAGE, since the article present three element influencing career choice but the article is quite old.	Average: The methods are very detailed. Very few articles were included in the results section due to the lack of quality articles fitting their 70 criteria.
Chellappah, M. and L. Garnham	2014	UK	Original research	Medical student attitude towards general practice	Questionnaire design	HIGH	WEAK: Not generalizable (specific to one college).Measurement scale not used.
Crampton, P. E. S., et al.	2013	AU, USA,	Systematic	Undergraduate	Databases searches,	WEAK	HIGH

Authors	Year	Countries	Article type	Topic	Method	Relevance	Quality
		CA, NZ, South Africa, Japan	literature review	clinical placements, underserved areas	inclusion and exclusion criteria, data extraction etc.		
Dale, Jeremy, et al.	2015	UK (West Midlands)	Cross-sectional study	Retention GP	Online questionnaire with free text section	HIGH	GOOD
Doran et al.	2016	UK	Mixed-methods research.	Why GPs leave the NHS	Online questionnaire with qualitative interviews	HIGH	GOOD
Feeley, T. H.	2003	N/A	Narrative literature review	Retention in rural primary care physicians	N/A	WEAK	WEAK
Geyman, J. P., et al.	2000	USA	Study	Educating GPs for rural practice	Comprehensive literature search: Medline, Health STAR databases	WEAK but the recommendations are interesting.	AVERAGE/WEAK: Little analysis, only look at programmes
Gibson et al.	draft	UK	Report, survey	GP Work/life survey	Questionnaire	GOOD	AVERAGE since it is a report.
Groenewegen et al.	1991	USA	Review of the literature	GP, effective workload, Job satisfaction	N/A	GOOD	AVERAGE: No method but definition and theorisation is interesting
Halaas et al.	2008	USA	Study	Recruitment and retention of rural physicians	Analysed data from a recruitment program	GOOD but the results are link to the rural context	AVERAGE: since no hypothesis, nor hypothesis testing but 37 years trend
Harding and al.	2015	UK	Cross-sectional study	Teaching and GP	Review of past national survey and questionnaire survey	GOOD	GOOD
Hemphill, E., et al.	2007	AU	Mixed design	GP rural recruitment	Three sources of data collection: GP survey, data collected from a convenient sample of student, and interviews	WEAK	AVERAGE

Authors	Year	Countries	Article type	Topic	Method	Relevance	Quality
					with recruiting agencies		
Humphreys, J., et al.	2001	AU	Critical review	Rural medical workforce retention	Australian and international database: ATSI Health, Consumer service, AusportMed, Family & Society, HIV, Health & Society, etc.	GOOD	AVERAGE: Issues w. method inclusion/exclusion criteria.
Illing, J., et al.	2003	UK	Review of evidence	Learning in practice (preregistration house officers) and general practice	Literature search: Embrase, Medline, ERIC, FirstSearch, PsycInfo, www.timelit.org.uk, www.educationgp.com.	GOOD	AVERAGE: methods inclusion and exclusion criteria not presented.
Landry, Michel, et al	2011	CA	Original study	Recruitment and retention of doctors and local training (Rural)	Short survey	GOOD but the results are link to the rural context	GOOD: Methods well presented, the analyses are adequate.
Lee, D. M. and T. Nichols	2014	USA, CA	Case study, review	Physician recruitment & retention rural and underserved areas	Literature review	WEAK: but suggestions for different factors influencing recruitment and retention	AVERAGE: The review method is described but the case study choice is not explained.
Petchey, R., et al.	1997	UK	Original study	Junior doctors' perceptions of general practice as a career	Qualitative study: Interviews, using an heterogeneous sample	HIGH	WEAK: Little theoretical development.
Rosenthal, T. C.	2000	USA	Review	Rural training tracts	N/A	WEAK: but interesting insight	WEAK
Schwartz, M. D., et al.	2005	USA	Reflexion	Student interest in Generalist career	N/A	HIGH	WEAK: Recommendations without original study nor based on evidence from various articles

Authors	Year	Countries	Article type	Topic	Method	Relevance	Quality
Shadbolt, N. and J. Bunker	2009	Australia	Review	Career choice determinants	N/A	HIGH	WEAK: No method
Stapleton, Greg, et al	2014	English speaking countries	Review, ethical criteria	Primary care physicians	Database: web of knowledge	WEAK	AVERAGE: presentation of methods
Van Ham, I., et al.	2006	UK, USA, AU	Systematic review	GPs and Job satisfaction	2 strategies: database + snowball methods	HIGH	HIGH
Williamson, Walter, & Cordes	1993	USA	Comparative studies	Primary care, Health systems change	N/A	WEAK	WEAK: No method
Young, R. and B. Leese	1999	UK	Discussion paper / review	Recruitment and retention of GP in the UK	Literature search: MEDLINE, BIDS-EMBASE, ISS, HELMIS, survey of articles in recent issues of relevant professional journals.	HIGH	AVERAGE: little theoretical development and evidence