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Proactive frailty identification – a good idea? A sequential mixed-methods study of GP views

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Abstract

Background

In England, general practitioners (GPs) are independent contractors working to a national contract. Since 2017 the contract requires GPs to use electronic tools to proactively identify moderate and severe frailty in people aged 65 and over and offer interventions to help those identified to stay well and maintain independent living. Little is currently known about GPs' views of this contractual requirement.

Aim

To explore GPs' views of identifying frailty and offering interventions for those living with moderate or severe frailty.

Design and setting

Sequential mixed-methods study of GPs in the East Midlands region of England (Derbyshire, Leicestershire, Lincolnshire, Nottinghamshire, Northamptonshire) between January and May 2019.

Methods

Survey of GPs by online questionnaire, followed by semi-structured interview. Based on survey responses GPs with a range of views on identifying frailty, GP and practice characteristics, were selected for interview. Questionnaires were analysed using descriptive statistics. Interview transcripts were analysed using framework analysis.

Results

188 (6.1%) GPs responded to the survey and 18 GPs were interviewed. GPs were broadly supportive of identifying frailty, but felt risk-stratification tools lacked sensitivity and specificity and wanted evidence showing clinical benefit. Frailty identification increased workload and was under-resourced, with limited time for, and access to necessary interventions. GPs felt they lacked knowledge about frailty and more education was required.

Conclusion

Proactively identifying and responding to frailty in primary care requires GP education, highly sensitive and specific risk-stratification tools, access to interventions to lessen the impact of frailty and adequate resourcing to achieve its potential clinical impact.

Keywords

General Practitioners, Primary care, Qualitative research, Frailty

How this fits in

The GP contract requires GPs to routinely identify frail older people and offer interventions to help them stay well and maintain independence. Little is known about GPs' views of this requirement. Our study found most GPs are supportive of this, but wanted more education on frailty, improved tools to identify frailty and evidence that identifying and responding to frailty makes a clinical difference. There was a lack of resources and time for frailty identification and a lack of access to interventions for older people living with frailty.

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Introduction

With an ageing population, living longer with more comorbidities, frailty is a major concern to the English National Health Service. Frailty can be defined as a state of increased vulnerability to adverse outcomes following stressor events.(1) Identifying frailty can help predict who is likely to have a fall,(2) experience an unplanned admission to hospital or a care home, or die within the next year.(3) Proactive identification of frailty in primary care offers an opportunity to delay or avert these negative outcomes.(4)

Historically, health systems have responded to people living with frailty in a reactive manner, usually following an acute presentation. Proactively identifying older people with frailty provides an opportunity to intervene and alter the frailty trajectory, supported by the re-configuration of single-disease-focused healthcare services into person-centered integrated healthcare systems. (5-7)

General Practitioners (GPs) in England are independent contractors providing holistic primary care services to a registered population. The services provided by GPs are specified in a nationally agreed General Medical Services contract. An addition to this contract in 2017/18 (8) required general practices to use an evidence-based electronic frailty identification tool, such as the electronic Frailty Index, to risk-stratify patients aged 65 years and over.(9) Clinical assessment is required for those stratified as moderately or severely frail to confirm frailty status. Those confirmed as severely frail, require a clinical review. The clinical review should include reviewing medications, a falls history where clinically appropriate and provision of relevant interventions.(8)

There is little published information on GPs' views of proactively identifying and responding to frailty amongst older people. The aims of this study were to (i) identify GPs' characteristics and views on frailty identification in order to interview GPs with a diverse range of characteristics and views and (ii) explore GPs' views of identifying frailty and offering interventions for those living with moderate or severe frailty.

Methods

This sequential mixed-methods study included a survey of GPs to address aim (i) and semi-structured interviews to address aim (ii).

Questionnaire Survey

All currently practising GPs working within the East Midlands region (Derbyshire, Leicestershire, Lincolnshire, Nottinghamshire and Northamptonshire) were eligible to take part in the survey. A brief online questionnaire was developed (available from authors on request), informed by a review of the literature and peer-review by an expert advisory group from NHS England's Older People and Person Centred Integrated Care team. The questionnaire comprised 5 questions on GP views on frailty identification with responses on a 5-point Likert scale ranging from strongly agree to strongly disagree. There were further questions about GP (gender, age, stage of career) and practice characteristics (electronic healthcare record system, Clinical Commissioning Group (CCG), practice size, teaching practice, research practice). Respondents were asked to indicate if they were interested in being interviewed following the survey.

The questionnaire was piloted with 8 GPs, with minor amendments made subsequently. A written invitation to participate in the survey was circulated electronically through CCG e-newsletters, regional GP email lists, Royal College of General Practitioners (RCGP) faculty e-bulletins, NHS newsletters and social media networks covering the East Midlands region. The survey was open for 8 weeks between January and March 2019 and up to 3 reminders were made.

Semi-structured qualitative interviews

This study adopted a pragmatic worldview,⁽¹⁰⁾ combining qualitative and quantitative methods sequentially to derive knowledge about the research questions,⁽¹¹⁾ which in this case are related to the implementation of systems to identify frailty. GPs who expressed interest in being interviewed were selected using maximum variation sampling. The aim of the sampling was to purposely select GPs who differed from each other in terms of views on frailty identification reported in the survey and GP (age, sex, years as a GP, job role) and practice characteristics (electronic health record system, practice size, teaching practice, research practice) (see Table 1).⁽¹²⁾ Interviews were conducted by EM, a pre-PhD researcher and trainee GP, who did not know the interviewees. DK is a Professor and practising GP and EO is an Associate Professor and Consultant in Public Health. DK and EO have previously researched falls prevention and are aware that this may have influenced their view of the importance of frailty identification and referral for falls prevention interventions. EM and DK also acknowledge that their professional backgrounds will have

likely engendered empathy with GPs interviewed which may have influenced their coding of interviews.

Interviewees were provided information about the study aims in a participant information sheet.

Semi-structured telephone interviews (13) were conducted using an interview schedule formulated from research team discussion, reviewed by the NHS England expert advisory group and pilot-tested with 3 GPs. The interview questions are shown in Supplementary Box 1.

Interviews were conducted between March and May 2019. Informed consent was obtained verbally prior to the interview. There was no financial inducement to take part in the interview. Interviews lasted 30-80 minutes and were audiotaped, anonymised and transcribed verbatim by the first author and a university-approved transcription service. Data collection and thematic analysis were conducted in parallel and interviews continued until data saturation was reached, that is when no new themes emerged from the data.(14)

Data Analysis

Survey responses were described using frequencies and percentages calculated using an Excel database. Transcripts were imported to Nvivo (version 11) to support coding and data organisation. Framework analysis was used to analyse interview transcripts.(15-17) The analysis followed the stages described by Gale et al, using an inductive approach. (18) This involved familiarisation with the interview by reading and re-reading the transcript, followed by reading the transcript line by line and applying a label (or code) to describe what the researcher has interpreted as important or anything they thought might be relevant (open coding). The first two transcripts were independently coded by all three researchers who then met to discuss codes, to agree the codes to use for further transcripts to ensure consistent coding and to group codes into categories or themes. These themes formed the initial analytical framework. The initial framework was applied to the remaining transcripts, indexing transcripts with codes and themes from the framework. The framework was refined in an iterative process as further transcripts were analysed and additional codes were added. Codes were compared within and across interviews and themes and sub-themes were agreed through meetings between the three authors. The analysis also involved searching for disconfirming cases which did not fit emerging themes.(12) Once all transcripts had been coded, data were entered into a matrix (charted), summarising the data from each interview by themes and sub-themes and including illustrative quotes. Data interpretation

occurred through meetings between all three authors where themes and sub-themes were discussed, as well as similarities, differences and connections between themes and sub-themes.

Results

Survey results

188 GPs participated from 19 CCGs. NHS England workforce data reported 3,058 GPs registered on the performers list in these CCGs at the time of the survey,(19) giving a response rate of 6.1%. Characteristics of respondents are described in Tables 1 and 2.

Interview results

35 GPs expressed interest in participating in an interview and 18 were interviewed. Supplementary Table 1 shows interviewee characteristics and their survey responses. Diversity was achieved in terms of GP characteristics and most practice characteristics and four of the five questions on views about frailty, with the exception that all GPs interviewed agreed that the advantages of identifying frailty outweighed the disadvantages. Four main themes emerged from the interviews [Box 1]:

1) Beliefs about stratification and pro-active identification of frailty

Universal stratification to risk profile patients.

GPs were positive about the idea of pro-actively identifying frailty with a view to intervening at an early stage to avert adverse outcomes:

'In principle, it is a really good idea... What I think it does and the reason I think it does have value is that it helps us identify cohorts of patients who are potentially at risk and who will benefit' [GP13 Male Partner Mid-career]

'Prevention is better than cure, so if you identify somebody that would be a good place to start' [GP3 Female Salaried Mid-career]

'There is some worth grading them on a traffic light system' [GP2 Male Locum Early career]

Lack of supporting evidence.

Despite being supportive of the stratification approach, GPs had reservations, feeling little could be done to influence frailty. Many were keen to see evidence that proactive identification leads to improved patient care. Many were concerned this would become a tick box or data capture exercise:

'It would be really good to present to the GP workforce the evidence that this makes a difference' [GP12 Female Partner Late career]

'It would be interesting to see if this changed stuff- is it just going to be tick box exercise?' [GP10 Female Locum Early career]

'We can identify and label people with diseases, but actually if there is not much you can do about it... I am not sure who is happier, or if anybody is' [GP3 Female Salaried Mid-career]

Overreach.

There were concerns by one GP that pro-actively identifying these patients was an overreach of the role of primary care:

'It is a bit nanny state isn't it? Most patients know when they need to see me. I don't know whether it is right or not to impose ourselves on people who are getting along quite happily.' [GP17 Male Partner Late career]

Narratives.

Another GP voiced concerns over the difficulty of stratifying the multifaceted concept of frailty using a number, proposing a narrative approach instead:

'I do wonder whether a narrative explanation would be better than fairly binary outcomes' [GP2 Male Locum Early career]

2) Stratification tools

Uncertainty about application of electronic tools.

Several GPs were unaware of how electronic frailty stratification tools worked, which tool was being used by their practice and how it was being applied:

'How is it being done? I'm not sure... I can't tell you what algorithm they are applying. Our IT manager is applying it' [GP4 Female Partner Late career]

'I thought it was just something that appeared on SystemOne... I don't know what the search criteria are' [GP7 Female Salaried Late career]

Mixed impression of electronic tools.

There were mixed views on the overall helpfulness of the stratification tools:

'It is probably a bit of a blunt instrument' [GP4 Female Partner Late career]

'The frailty thing needs to be a lot more finely tuned than it currently is' [GP7 Female Salaried Late career]

'The algorithm is pretty kind of accurate' [GP11 Female Salaried Early career]

One GP felt stratification tools were inherently flawed as they were based on multimorbidity, which is not the same as frailty:

'It is highly unlikely that a computerised calculation of all of the co-morbidities of the patients has could accurately sum up their frailty' [GP17 Male Partner Late career]

Lack of sensitivity.

Many GPs reported a mismatch between frailty scores and their perceptions of who was frail. Some people did not score highly on the stratification tool and were stratified into mild or not frail categories, despite GPs' clinical judgement that the patient was living with moderate or severe frailty. This particularly affected those without many long-term conditions and those living in care or nursing homes:

'There is definitely under identification of people who are frail but don't necessarily have lots of long-term conditions.' [GP4 Female Partner Late career]

'It was something like 50% of our care home and nursing home patients were not picked up by the electronic frailty index, which is obviously really significant because almost 95% or more of that population is going to be frail' [GP13 Male Partner Mid-career]

Lack of specificity.

Conversely, GPs felt that some people scored highly on the stratification tool but were living with mild frailty or were not frail. This particularly affected patients living with many long-term conditions:

'Having undertaken quite a lot of reviews of patients who are tagged by the electronic frailty index as being severely frail, we found out that actually they are either not frail at all or moderately frail' [GP14 Male Partner Early career]

'It would throw up surprising people as having high frailty index... we looked at the top 100 patients and I would think at least 20 that we saw, there is no way they should be on this index.' [GP4 Female Partner Late career]

Clinical confirmation of frailty.

Clinical correlation to confirm frailty was performed by GPs through a variety of approaches including a rapid, intuitive and informal diagnostic approach akin to 'eye-balling the patient', a review of the patient record and GPs previous knowledge of the patient:

'Obviously eye-balling the patient and reviewing their notes properly and what is happening, no substitute for that really.' [GP11 Female Salaried Early career]

Some GPs described using electronic frailty scores in isolation to diagnose frailty, unaware of the need for clinical correlation:

'(The electronic tool) probably has more of an idea than I have of (who is moderately or severely frail)... how else am I supposed to assess it, from a gut feeling?' [GP4 Female Partner Late career]

3) Managing complexity, resources and models of care

Managing complexity well increases workload.

Many GPs felt a proactive approach to managing frailty increased workload, through conducting clinical reviews which uncovered unmet need requiring further action:

'We're generating more work for ourselves, because we are uncovering unmet need.'
[GP13 Male Partner Mid-career]

Insufficient time.

GPs unanimously found this extra workload required extra GP time:

'When I do house visits for the severe frail elderly, I go over all of the activities of daily living. When I went to do a routine review last week, I was there for an hour.'
[GP4 Female Partner Late career]

'10 minutes is not enough for even annual check-up... you should have at least 20 to 30 minutes' [GP15 Female Partner Early career]

Trade-off between time and care.

Without this time, GPs felt they could not provide a high standard of care as there was a direct trade-off between the two:

They need to be aware that what they are asking takes a lot of time, especially if you want to do it well.... If you were not particularly assiduous or committed to the whole process, you could tick a few boxes in five minutes and say 'done it.' [GP12 Female Partner Late career]

Models of primary care.

GPs described a variety of approaches for increasing time to deliver care to older people living with frailty. These included double appointments, follow-up appointments or developing bespoke frailty clinics. However, they all reported difficulty in sustainably resourcing the extra time for this:

'We actually dedicated a clinic, so we actually saw 12 patients in a morning. They were all half an hour appointments. You felt like you were giving really good care, but the problem was it wasn't sustainable because we just couldn't keep on giving that amount of time to that activity.' [GP4 Female Partner Late career]

'I suggest that people try and have double appointments, but it is often not practical, because we are just trying to meet the base level of needs.' [GP9 Male Salaried Early career]

'You can't expect to do a whole frailty review all in one setting and sort everything, so the first review might be a data collection exercise. Then it might be a case of having to signpost them to social prescribing, other clinics and services or bring them back for a second review to look at things' [GP13 Male Partner Mid-career]

Lack of resources in the community.

GPs felt community services were not able to meet the needs of older people living with frailty, as they were under-resourced. Many GPs felt that to be useful, these services also needed to be responsive to urgent need:

'what is available is an under-resourced physio and OT team. If we are going to kick people out into the community, we need the resources to do that and get them in quickly.' [GP4 Female Partner Late career]

'what is frustrating is that you identify all sorts of needs, but know the service is not going to be able to deal with them' [GP5 Female Locum Late career]

'the key is to have reactive services that are able to adapt to the unpredictable needs of the day quickly' [GP14 Male Partner Early career]

4) Drivers of GP behaviour

Financial incentives.

Many GPs felt financial considerations were important and it was imperative to receive appropriate funding to carry out the additional work. This included funding the time of GPs, time of other healthcare staff and contributing to overhead costs:

'It is important to get paid for the time' [GP1 Male Locum Early career]

'How it is funded in the contract doesn't really adequately take into consideration the time you put in with these patients.' [GP13 Male Partner Mid-career]

'If you are running a business, you have to make ends meet. If you have a contract that says that you get paid X number of pounds per patient to deliver this service, you are going to do that because general practice can't run without the funding.' [GP14 Male Partner Early career]

Some GPs viewed funded work as compulsory and non-funded work as lower priority even if clinically beneficial:

'Because we are not paid to do moderate frailty assessments, I am much more inclined to not do them if I haven't got time' [GP4 Female Partner Late career]

Non-financial incentives.

One GP queried whether there was a more sophisticated way to incentivise good clinical care apart from funding:

'You get the impression [the health secretary] and NHS England know no other rules in incentivising individuals who are professionals other than QOF (Quality and

Outcomes Framework; a financially incentivised part of the General Medical Services contract) and funding.’ [GP2 Male Locum Early career]

Other GPs felt that managing frailty has been standard professional practice for GPs. The difficulty in directly measuring this, however, means it has not been recognised by the wider health service nor directly funded by commissioners:

‘(Frailty) is one of the many things that I think GPs do quite well, but isn’t really acknowledged by the NHS or secondary care’ [GP2 Male Locum Early career]

‘What happens is that in hospitals you do activity and you get paid and measured on the activity. What we do is actually preventing activity and so it is harder to measure, although you can measure the number of care plans and admissions, but those are really blunt tools, because the reality is that what we do is make differences to lives and that is a harder thing to measure.’ [GP18 Male Partner Late career]

Incomplete understanding of frailty.

GPs recognised that, although widely used, frailty was poorly understood by many GPs and this hampered their ability to identify and manage older people living with frailty. Many GPs felt their knowledge about frailty was incomplete and remarked they did not know how to differentiate between the different grades of frailty:

‘(Frailty) is a term that is often used, but not really understood’ [GP1 Male Locum Early career]

‘I have been a GP 35 years plus and these are new terms to us for our understanding... who is severely frail and who is moderately frail’ [GP4 Female Partner Late career]

‘I don’t really know what the difference is. I would say that severe frailty is quite evident, but I wouldn’t know how to go about grading it.’ [GP9 Male Salaried Early career]

GPs suggested methods to improve knowledge through structured education in undergraduate and postgraduate curricula, postgraduate qualifications and protected learning time for GPs, whilst also appreciating the value of experiential learning:

‘We have to re-educate everybody about it.’ [GP15 Female Partner Early career]

'GP's pick it up and they get quite good at it, but they are not necessarily trained, it is more experiential learning on the job rather than addressed at the front end of their career... it is something that needs to be a bit more structured in the undergraduate and postgraduate curriculums... there are postgraduate qualifications.' [GP2 Male Locum Early career]

'PLT's (protected learning time) would be quite good, teaching on it would be nice' [GP16 Male Salaried Early career]

Discussion

Summary

Our study found that GPs were broadly supportive of identifying frailty, but felt risk-stratification tools lacked sensitivity and specificity. Clinical correlation to confirm frailty was not universally performed with some GPs diagnosing frailty solely on the electronic score. Some GPs were sceptical of the clinical impact of identifying frailty and the subsequent patient reviews for those living with severe frailty.

Frailty identification increased workload and identified unmet need. It was perceived to be under-resourced, with limited time to undertake clinical and medication reviews and a lack of access to necessary interventions in the community. Many GPs felt managing older people living with frailty is a core part of the GP job, but they lacked knowledge about frailty and more education was required.

Strengths and limitations

There has been little research to date exploring GP perceptions of the impact of the 2017/18 General Medical Services frailty contractual requirement in England.(20) A qualitative approach allowed in-depth exploration of GPs' views and using the telephone to undertake the interviews was sympathetic to the schedules of the time-pressed GPs, allowing more flexibility, and may have enabled GPs to feel less inhibited in disclosing their views.(21) The authors recognised that, as practising clinicians, data collection and analysis might be influenced by their opinions and clinical experience and reflected on this during data analysis and interpretation. The interview schedule was informed by expert opinion from an NHS England advisory group. A sample of transcripts were coded by all three authors, who also agreed emerging themes in an iterative process.

The purpose of the survey was to identify GPs for interviews. We have presented the survey results to show the range of characteristics and views amongst respondents from which we chose our interview sample. We have not interpreted the survey findings further as due to the low response rate the views may not be representative of those of the wider population of GPs. Diversity of interviewees was achieved in terms of GP and most practice characteristics and for four of the five survey questions on views about frailty. However, all interviewees agreed that the advantages of identifying frailty outweighed the disadvantages. Only 7% of survey respondents disagreed with this statement, limiting our ability to select GPs with these views. Despite using multiple methods to invite GPs to complete the survey, our low response rate raises the possibility that respondents held differing views to non-respondents. As with all survey and interview studies, social desirability bias may have occurred with respondents replying in a way which they considered would be viewed favourably. Although interviewees did express negative views about various aspects of identifying and responding to frailty, it is possible that our findings may represent more positive views about frailty identification than those of the wider GP community.

Comparison with the existing literature

We found that GPs are open and keen to think about and address frailty, supporting the findings of previous studies.(20, 22) Our findings echo past concerns that population frailty stratification is unsupported by evidence and could turn into a 'bureaucratic exercise',(22) and frailty itself is over-simplification of complexity.(23) The added-value of the additional work needs justifying, as it is happening against a backdrop of increasing workload, a falling number of GPs and recognition of the need to increase GP consultation time.(24)

Electronic frailty stratification tools are quick and simple to use and their construct validity for frailty identification has been previously demonstrated.(25) However, similar to previous studies (20) our study found that GPs perceive that the tools lack sensitivity and specificity, impacting on their real-world utility. Many GPs felt they knew which patients were frail without the need for a formal identification test, reflecting previous study findings that GPs commonly employ their intuition to identify older people living with frailty.(26) Previous findings that GPs lack knowledge about frailty (27) are supported by our findings with GPs in our study suggesting ways to ameliorate this.

The National Institute for Health and Care Excellence has previously suggested the proactive approach is cost-neutral, with associated expenses (training, treatment optimisation, longer appointments etc.) offset by other factors (fewer unnecessary appointments, prescriptions, and unplanned admissions etc.). (28) Our findings, which are consistent with

previous research (20) suggest this is not reflected in the experiences of GPs implementing proactive frailty identification, as they reported additional primary care resource requirements, increased demand for community services (which may or may not exist) and scepticism about the clinical benefit required to make the process cost-neutral.

Implications for research and practice

Although a stratification and identification approach to frailty is largely supported by GPs, research is needed to demonstrate the clinical benefit before more universal acceptance of frailty identification by primary care professionals. Further research is also required into the accuracy of stratification tools, with a focus on characterising and reducing the number of older people being misidentified to ensure utility of the tools for clinical practice.

Whilst the contractual requirement for identifying and assessing people living with frailty has raised awareness and increased activity in this area, it has added to primary care workload without being adequately resourced. This is unlikely to be a sustainable model in the long term. Providing payment only for intervening with patients living with severe frailty acts as a disincentive for addressing moderate frailty, despite evidence of at least some effective interventions across the frailty spectrum.(29) There are always competing demands on the time of primary care professionals, nevertheless, our findings indicate that more education and training is required for clinicians to identify and respond to frailty. (30) Inadequate access to community based services e.g. falls prevention programmes or comprehensive geriatric assessments, means that needs identified during frailty reviews cannot always be met. Unless these issues are addressed, it is likely that any clinical benefit arising from the contractual requirement will be limited.

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Provenance and peer review

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Competing interests

The authors have declared no competing interests

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Table 1. Descriptive statistics of survey respondents and interview participants

Variable (n=188)	Survey respondents Frequency, n(%)
The advantages of identifying and reviewing older people living with frailty in primary care outweigh the disadvantages	Strongly agree, n=56 [29.8%] Agree, n=90 [47.9%] Neither agree nor disagree, n=28 [14.9%] Disagree, n=12 [6.4%] Strongly disagree, n=2 [1.1%]
It has been easy to identify older people living with frailty in my practice	Strongly agree, n=12 [6.4%] Agree, n=92 [48.9%] Neither agree nor disagree, n=45 [23.9%] Disagree, n=34 [18.1%] Strongly disagree, n=5 [2.7%]
It has been easy to review older people living with frailty in my practice	Strongly agree, n=3 [1.6%] Agree, n=34 [18.1%] Neither agree nor disagree, n=55 [29.3%] Disagree, n=72 [38.3%] Strongly disagree, n=24 [12.8%]
Identifying and reviewing older people living with frailty in my practice has led to improvements in their care	Strongly agree, n=12 [6.4%] Agree, n=71 [37.8%] Neither agree nor disagree, n=73 [38.8%] Disagree, n=21 [11.2%] Strongly disagree, n=11 [5.9%]
Identifying and reviewing older people living with frailty is a good use of primary care resources	Strongly agree, n=29 [15.4%] Agree, n=92 [48.9%] Neither agree nor disagree, n=41 [21.8%] Disagree, n=17 [9.0%] Strongly disagree, n=9 [4.8%]
Sex [6]	Male, n=78 [42.9%], female, n=104 [57.1%]
Age range [1]	21-29 years, n=7 [3.7%] 30-39 years, n=69 [36.9%] 40-49 years, n=48 [25.7%] 50-59 years, n=50 [26.7%]

	Over 60 years, <i>n</i> =13 [7.0%]
Years in practice [3]	0-4 years, <i>n</i> =50 [27.0%] 5-9 years, <i>n</i> =32 [17.3%] 10-14 years, <i>n</i> =26 [14.1%] 14-19 years, <i>n</i> =16 [8.6%] 20-24 years, <i>n</i> =27 [14.6%] 25-29 years, <i>n</i> =20 [10.8%] Over 30 years, <i>n</i> =14 [7.6%]
Job role [4]	GP partner, <i>n</i> =105 [57.1%] Salaried GP, <i>n</i> =41 [22.3%] Locum GP, <i>n</i> =17 [9.2%] Retainer GP, <i>n</i> =3 [1.6%] Other, <i>n</i> =18 [9.8%]
Electronic healthcare record system [1]	SystemOne, <i>n</i> =150 [80.2%] EMIS, <i>n</i> =36 [19.3%] Vision, <i>n</i> =0 [0%] Other, <i>n</i> =1 [0.5%]
Number of patients registered at the general practice [6]	<3000, <i>n</i> =3 [1.6%] 3000-5999, <i>n</i> =31 [17.0%] 6000-8999, <i>n</i> =40 [22.0%] 9000-11999, <i>n</i> =24 [13.2%] Over 12000, <i>n</i> =84 [46.2%]
Teaching practice* [31]	155 (98.7%)
Research practice** [31]	60 (38.2%)

[missing values]

* A practice that teaches undergraduate medical students or GPs in training

** A practice that takes part in research activities

Table 2. Survey Respondents and Interview Participants by Area

Area	CCG	No. of responses	GP Headcount ^a	By Area
Northamptonshire	Nene CCG	14 (7.7%)	389	18
	Corby CCG	4 (2.2%)	56	
Leicestershire	East Leicestershire and Rutland CCG	10 (5.5%)	234	54
	West Leicestershire CCG	24 (13.2%)	260	
	Leicester City CCG	20 (11.0%)	242	
Nottinghamshire	Nottingham City CCG	24 (13.2%)	287	67
	Rushcliffe CCG	10 (5.5%)	92	
	Nottingham North and East CCG	16 (8.8%)	91	
	Nottingham West CCG	8 (4.4%)	82	
	Newark and Sherwood CCG	6 (3.3%)	83	
	Mansfield and Ashfield CCG	3 (1.6%)	98	
Derbyshire	Southern Derbyshire	15 (8.2%)	737 ^b	25
	Erewash CCG	8 (4.4%)		
	North Derbyshire CCG	1 (0.5%)		
	Hardwick CCG	1 (0.5%)		
Lincolnshire	Lincolnshire West CCG	11 (6.0%)	122	18
	Lincolnshire East CCG	2 (1.1%)	127	
	South Lincolnshire CCG	1 (0.5%)	87	
	South West Lincolnshire CCG	4 (2.2%)	71	
Total		182	3058	182

Six GPs did not provide data on their CCG

^aFigures taken from NHS workforce data <https://digital.nhs.uk/data-and-information/publications/statistical/general-and-personal-medical-services/final-31-march-2020>. Includes GP partners, Salaried GPs, GP retainers and GP Locums and excludes GP Registrars

^b Figures for GP headcount by CCG for Derbyshire area were not available

Box 1. Participant themes and subthemes

Theme	Sub themes
Beliefs about stratification and pro-active identification of frailty	Universal stratification to risk profile patients
	Lack of supporting evidence
	Overreach
	Narratives
Stratification tools	Uncertainty about application of electronic tools
	Mixed impression of electronic tools
	Lack of sensitivity
	Lack of specificity
	Clinical confirmation of frailty
Managing complexity, resources and models of care	Managing complexity well increases workload
	Insufficient time
	Trade-off between time and care
	Models of primary care
	Lack of resources in the community
Drivers of GP behaviour	Financial Incentives
	Non-financial incentives
	Incomplete understanding of frailty