Title:

General Practitioners' attitudes and decision making regarding admission for older adults with infection: a UK qualitative interview study.

Running head:

UK General Practitioners' attitudes towards admission for older adults with infection.

Article category:

Qualitative research

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Key messages:

- GPs make complex decisions regarding older adults with suspected infection.
- The decision to admit is influenced by multiple patient, GP and system factors.
- GP factors include managing risk and bearing an emotional burden following decisions.
- We should develop the evidence base to support GPs to make the right decision in this context.
- Future alternatives to admission should be accessible, have capacity and reduce GP workload.

Abstract

Background

The world has an aging population. Infection is common in older adults; serious infection has a high mortality rate and is associated with unplanned admissions. In the UK GPs must identify which older patients require admission to hospital and provide appropriate care and support for those staying at home.

Objectives

To explore UK GP attitudes towards referring older patients with suspected infection to hospital, how they weigh up the decision to admit against the alternatives and how alternatives to admission could be made more effective.

Methods

Qualitative study using semi-structured interviews. GPs were purposively sampled from across the UK to achieve maximum variation in terms of GP role, experience and practice population. Interview transcripts were coded and analysed using a modified framework approach.

Results

GPs' key influences on decision making were grouped into patient, GP and system factors. Patient factors included clinical factors, social factors and shared decision making. GP factors included gut instinct, risk management and acknowledging an associated personal emotional burden. System factors involved weighing up the pressure on secondary care beds against increasing GP workload. GPs described that finding an alternative to admission could be more time consuming, complex to arrange or were restricted by lack of capacity.

Conclusion

GPs need to be empowered to make safe decisions about place of care for older adults with suspected infection. This may mean developing strategies to support decision making as well as improving the ease of access to, and capacity of, any alternatives to admission.

MeSH keywords:

Aged; Aged, 80 and over; General Practitioners; Infection; Primary Health Care; Qualitative Research

Word count:

3100

Introduction

The world's population is getting older. [1] In the UK, for example, 18% of the population was aged 65 or over in 2016 and this is projected to increase to nearly 25% over the next 20 years.[2] As a result, recent reports have focussed on ways to make health services better for older people: identifying frailty, supporting independence, providing timely access to health care, developing ambulatory care infrastructure and delivering care closer to patients' homes.[3-6]

Infection in older adults is common[7] and serious infection in this age group is associated with high mortality.[8-10] Older adults with infection are at higher risk of unscheduled hospital admission.[11-13] However, hospital admission is associated with harms in this age group, such as physical deconditioning, delirium and hospital-acquired infection. [14] As a result there is currently a political and commissioning focus on reducing unscheduled admissions in the UK. These currently represent 65% of hospital bed days and are associated with higher costs compared with other forms of care.[15]

Clinicians working in primary care worldwide will be increasingly faced with the challenge of assessment of the older person with infection in the context of limited hospital inpatient capacity. In the UK, General Practitioners (GPs) play a pivotal role in identifying infection in older patients and deciding how and where they are best managed. GPs are responsible for assessing patients during working hours within the catchment area of their practice. Out of hours, patients can also access GPs, but these work within an urgent care service and do not necessarily know the patient or have access to their medical record. GPs must identify which patients require admission to hospital and which patients could be managed with enhanced support in the community, along with the best approach to providing this support. To do so they must engage with the available community resources including evolving ambulatory care services (care and treatments offered on an outpatient basis, eg. daily visits for IV antibiotics).[5,16]

GPs are aware of strong preferences for home-based care [17] yet often this is coupled with lack of access to timely diagnostic tests or optimised medical management. However, we currently do not know how GPs make decisions about place of care for older patients with infection, and therefore how they can be best supported to do this.

This paper uses a qualitative approach to explore UK GP attitudes towards referring older patients with suspected infection to hospital, how they weigh up the decision to admit against the alternatives, and how alternatives to admission could be made more effective.

Methods

This research forms part of a larger qualitative interview study with UK GPs that looked at both diagnosis and management of serious infection in older adults in primary care.

Recruitment

GPs working within the National Health Service were recruited by emails sent via Clinical Commissioning Groups, Royal College of General Practitioners and RuralGP.com mailing lists. A small reimbursement was offered for the time of those who participated. GPs responded from across the UK and were purposively sampled to achieve variation in their experience, role, practice location and practice size. Recruitment was ongoing until the study team agreed that data saturation had been reached – based on the fact that no amendments had been made to the topic guide, no new codes had been added and no new significant themes had emerged for several consecutive interviews.

Data collection

AM, a female academic clinical fellow and GP trainee and GH, a female clinical lecturer and salaried GP, both trained in qualitative methods, each conducted separate interviews. There was regular discussion between researchers and comparison between transcripts to ensure continuity. Four participants were known to the interviewers beforehand in a professional capacity. All participants were made aware of the aims of the research.

All participants gave written or recorded verbal informed consent prior to the interview. Participants were asked to think about recent or memorable cases where they either diagnosed or missed a diagnosis of infection in an older patient (aged >70) to discuss during the interview. The age cut-off was given to ensure that a predominantly older, frailer population was discussed.

Interviews were carried out face to face (4) or over the telephone (24), according to participant preference. Face to face interviews were carried out in the workplace (2), the primary care research building (1) and in the participant's home (1). There was no-one else present at the time of the interview, except for the researcher and participant. Interviews were carried out from April 2015 to February 2016.

Interviews were semi-structured following a flexible topic guide developed and pilot tested by the research team (Supplementary Box 1). The topic guide was informed by the previous literature on factors affecting GP decision making[18-21] and the expertise of the research team. The topic guide evolved further during the study period following team discussions of emerging themes.

Interviews lasted 30-40 minutes and began with a discussion of cases prepared by the GPs. Interviews were audio-recorded, transcribed verbatim by a transcription company and checked against the original recording.

The study was approved by the University of Oxford Medical Sciences Interdivisional Research Ethics Committee (Ref no: MS-IDREC-C1-2015-054).

Data analysis

A modified framework approach was taken using the key steps of transcription, familiarisation, coding, developing and applying an analytical framework and interpretation.[22] The coding framework was

derived from the topic guide and refined after initial double coding of transcripts by AM and GH and discussion amongst the whole research team. Subsequent coding and analyses were completed by AM and SM, with further group discussion to resolve differences and combine or remove codes where appropriate. NVivo (version 10) was used to facilitate the analysis.

Results

38 GPs responded initially to advertisements. After further communication, 28 consented to take part in the study and were interviewed to achieve a maximum variation sample (Supplementary Table 1).

Cases discussed were predominantly chest infection, urine infection, cellulitis or infection of unknown source. However, the case mix also included rarer diagnoses such as discitis, appendicitis, joint infection, gastrointestinal infection and candidiasis. Factors that influenced the decision to admit older people with a serious infection to hospital are described below (Table 1).

Patient factors

Participants described initial thought processes focussing on patient factors. Most talked about weighing up a combination of clinical factors, social factors and shared decision making. However, there was variation in the emphasis that different GPs gave these. Clinical or social circumstances could act as 'deal-breakers' if perceived to be incompatible with a patient staying at home.

Clinical factors. For the majority of participants, the most important thing was their assessment of clinical severity, including the deterioration of the patient over time, the perceived need for hospital treatments or diagnostic uncertainty. (Box 1)

Social factors. Many participants described how their assessment of the patient's social situation and resultant safety in the home swayed the decision. Those observed to be more vulnerable (living alone, no formal or informal care, evidence of self-neglect within this illness) were more likely to be admitted. (Box 1)

Shared decision making. Most GPs talked about taking into consideration the wishes of the patient and, where possible, their family. Less experienced GPs tended to describe this as a more formalised process, whereby all options were put to the patient and family members and a joint decision was reached. A strong opinion from the patient or family could be enough for a GP to change their mind about place of care. If patients were nearing end-of-life or receiving formal palliative care, knowing patient and family wishes were particularly important. (Box 1) Shared decision making was felt to remove some of the personal risk from the GP (see *Risk management*, Box 2).

GP factors

Gut instinct. Gut instinct was identified by many participants with a range of experience as playing a significant role in the decision to admit an older patient, but particularly in the more experienced GPs.

Some described gut feeling as a subconscious consideration of multiple objective factors, whereas others described a specific appearance or intuitive feeling. GPs trusted their instinct that patients were unwell even if the clinical signs did not back this up, but described the difficulty in conveying this to hospital doctors if trying to get them admitted. (Box 2)

Risk management. Participants discussed weighing up the risks associated with an admission versus the risks of an older patient staying at home. If admitted to hospital, most GPs identified risks including not mobilising, thromboembolic events, losing muscle mass, worsening confusion and hospital acquired infections. GPs from more rural practices also talked about isolation from family or friends. If left in their own home, GPs were worried about older patients deteriorating and dying, and many were specifically concerned about them having a fall. (Box 2)

Some participants were more concerned than others about the medicolegal implications of taking on risks. If risk of adverse event in the home was high, GPs were more likely to want to admit to hospital. (Box 2)

Emotional burden. Many participants acknowledged that managing risks could be associated with an emotional burden on GPs themselves. Some talked about worrying whether they had made the right decision for their patient and ruminating on the decision. They were especially concerned about being responsible for preventable harm, particularly if that harm happened in the patient's home. (Box 2)

System factors

Pressure on secondary care beds. Most participants were aware of the pressure on beds in hospitals both locally and nationally and most felt that there was a pressure on GPs not to use this limited resource. However, most GPs agreed that they did not allow this pressure to impact their clinical judgement, especially as they become more experienced. (Box 3)

One exception to this was a rural GP, who was personally responsible for looking after inpatients in the local community hospital out of hours, as well visiting unwell patients in their own homes. (Box 3)

GP workload. Some GPs described a built-in preference or '*instinct'* (GP10, male partner, 11-15 years experience, rural population) not to admit older patients and were dedicated to this ethos. However, caring for older patients with infections in their own homes added a considerable burden of work to GPs. (Box 3)

One GP described her own experience of using a different *'inreach'* (GP03, female partner, 11-15 years experience, mixed population) model of care that altered the balance of workload by involving specific community geriatric consultants. This meant that the same team was responsible for the patient no matter where they were being treated and allowed the GP to still feel ownership of the patient whilst they were in hospital.

Arranging alternative to admission

GPs described various alternatives to admission in their practice area. These included Hospital at Home (provision of treatment usually only available in hospital, such as IV antibiotics, in the patient's home) , community nurse visits (providing follow-up, reassessment and delivery of treatments eg. dressing changes), emergency packages of care (visits by carers providing social support eg. washing, dressing, cooking), community hospital beds (local hospitals with nursing care to provide continuation of treatment but not assessment, often with no on-site doctor) or intermediate/ambulatory care (care and treatments offered on an outpatient basis, eg. daily visits for IV antibiotics). The GP's decision to go with an alternative rather than admission was influenced by time/accessibility, its capacity and whether using the alternative reduced GP workload.

Use of time/accessibility. It was recognised by some participants that admitting an older person can be quick to arrange and does not use a lot of GP time. Therefore, for an alternative to be viable it needed to be available quickly. However, most GPs talked of their time being wasted by arranging an alternative. (Box 4)

Several participants commented that Single Point of Access (the concept of a central gateway to a range of health and social services usually accessed by telephone) has improved access to some alternatives to admission. However, other access pathways remained complex. (Box 4)

Capacity. Some participants found that alternatives to secondary care lacked capacity or had a long waiting list, meaning they were not a viable alternative for urgent assessment of an acutely unwell patient. Alternatives to admission were even more restricted for out of hours GPs. (Box 4)

Removal of tasks. Any alternative to admission that involved transfer of tasks away from the GP was seen as a positive, with GPs feeling personally grateful about any reduction in workload. (Box 4)

Several GPs had suggestions for future alternatives to admission that avoided the problems they had identified. Day units with immediate advice and good capacity were proposed, preferably local to patients. (Box 4)

Discussion

Summary

These data highlight the complexity of decisions made by UK GPs when managing an older patient with suspected infection. It is not just the patient's clinical findings, social circumstances and personal preferences that contribute to the decision about place of care. The GP's own response to the patient also plays an important role – whether through a gut feeling, confidence in managing risk or the ability to the bear the emotional burden or worry. This all takes place in the context of a pressurised health service, and GPs have to be mindful of the limit of their own workload. Any alternatives to admission

need to be considered in terms of time efficiency, accessibility and capacity, ideally involving tasks being transferred away from the GP.

Strengths and limitations

This is the first study to explore UK GP experience of decision making when faced with this clinical challenge. A range of different models of primary care working in practice were described by participants. Qualitative analysis has allowed in-depth exploration of the topic.

The response to the advertisement was sufficient such that a maximum variation sample of GPs from across the UK could be selected until data saturation was reached. However, GPs who responded to the advertisement may have self-selected due to a particular interest or experience in the health of older adults. That said, 50% rated themselves as having minimal or moderate experience in demographic questionnaires. Due to the variable availability of community services and alternatives to admission across different localities, the factors discussed by these participants may not be comprehensive.

Participants were asked to discuss cases of infection in older patients (aged >70) during the interview, but we recognise that age does not necessarily equal frailty. The age cut-off was used for pragmatic reasons to allow GPs to more easily identify recent/memorable cases (eg. by using a search of the electronic records) and was set high to ensure that a frailer population was more likely to be discussed. However, GPs tended to choose cases that they had found challenging and these patients were usually complex, multi-morbid and living with frailty.

This study only explores GP experience in the UK health service. However, it is likely that the themes raised will be transferrable to other primary care services, particularly those with a gatekeeper role.

Comparison with existing literature

Medical decision making is well established to be complex and subject to biases.[23] Non-clinical factors can influence clinical decisions.[24] GPs' use of gut feeling or sense of alarm in decision making is a well-described phenomenon.[25,26] GPs have previously described the importance of not ignoring a sense of unease in a qualitative study of diagnostic errors.[27] General appearance and gut feeling were identified as most important aspects of cases of severe infection referred to hospital in a recent GP survey in the Netherlands.[28]

Several previous qualitative studies have described the factors that influence GPs management referral decisions in different contexts. [18-21] Themes consistent with our findings include managing uncertainty and taking on risk, which in turn is influenced by GP knowledge and experience. GPs expressed that they would more likely admit a patient if they were personally 'worried'[21] and talked about the overall 'comfort' they felt in their decisions.[18]

A 2002 qualitative study explored the views of rural Scottish GPs who had the option of admitting and caring for patients locally in a community hospital, rather than sending them to a district general hospital.[18] GPs described 'comfort' around decision making which was influenced by their experience, perceived competence, as well as what support they might have. If a decision was 'uncomfortable' or borderline, GPs would be less likely to take responsibility locally for the patient; similar to the emotional burden described by the participants in this study.

A more recent 2012 qualitative study of GP views on the hospitalisation of nursing home residents drew out further comparable themes.[19] GPs were similarly aware of the pressure on secondary care beds but did not allow this to affect their decision making. They also recognised that not admitting the patient usually increased the GP workload. Like this study, less experienced GPs described a lower threshold for admission due to reduction in personal risk.

Implications for practice and research

GPs are motivated to make decisions in their patients' best interests. For older adults with suspected infection, this decision may be avoiding hospital admission with its associated harms[29] and moving healthcare closer to home. Developing these services has been encouraged. [3,6,13,30]

However, this push for reduced admissions is happening in the context of increasing GP workload, in part already influenced by the aging population and increasing complexity[31]. GPs in this study and others have identified that managing patients in the community increases their own workload.[18,19]

In order to provide effective community-based alternatives to hospital admission for older patients that are readily adopted by GPs, service providers will need to have one-step, simple access procedures that reduce rather than increase GP workload compared to admission. They will need to have capacity to cope with increasing community demands once they become established, so that they are a trusted referral location. They will need to offer rapid patient assessment and management and ideally hold responsibility for patient care until patients have returned to normal function, to remove burden for the GPs.

Finally, this study suggests that supporting GPs with the emotional burden of coping with uncertainty, particularly for less experienced clinicians, may be beneficial to decision making and to the protection of the workforce. [32-34]

Conclusion

GPs need to be empowered to make safe decisions about place of care for older adults with suspected infection. We should develop the evidence base to support GPs to make the right decision for their patients in this context including managing risk and helping GPs bear the emotional burden of their decisions. Finally, the outcome of the GP decision, whether an admission or an alternative, needs to be easy to action, time efficient and capacity should keep up with demand. Existing and new services could explore ways of improving these aspects.

Ethical approval: University of Oxford Medical Sciences Interdivisional Research Ethics Committee (Ref no: MS-IDREC-C1-2015-054)
Funding: This work was supported by an RCGP Scientific Foundation Board Grant 2014-14.
AM is funded by an NIHR Academic Clinical Fellowship.
GH is funded by an NIHR Academic Clinical Lectureship.
SM is funded by the National Institute for Health Research (NIHR) Collaboration for Leadership in Applied Health Research and Care Oxford at Oxford Health NHS Foundation Trust. The views expressed are those of the author(s) and not necessarily those of the NHS, the NIHR or the Department of Health and Social Care.
Conflict of interest: None declared
Acknowledgements: We thank all the GPs who took part in the study.

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Box 1. Patient factors in GP decision making – illustrative quotations from interviews with 28 GPs (April 2015 to February 2016)

Clinical factors

"So in 24 hours he'd become acutely, systemically unwell. So although he didn't, he wasn't walking very well, you could say, actually, with that rapid onset of systemic symptoms, is something I'd be seriously considering about, whether we need to do, particularly the high fever, whether we'd be thinking about intravenous antibiotics.'" (GP01, female partner, ≥ 21 years experience, mixed population)

Social factors

"*What I think about is, are they safe to be at home, so have they got somebody else there or a family member who could go in who can make sure they get their medication, if they've got an infection, they need some antibiotics, someone who can give that, and that they're not going to fall and be found on the floor.*" (GP11, Female salaried GP, 11-15 years experience, rural population)

Shared decision making

"I think I do recall broaching the question to him, you know, particularly when I went to the second, you know, when he went onto the second lot of antibiotics, 'you know, are you happy to stay here and try another antibiotic or do you want to go back into hospital?' Again, that's something that I commonly do is put the option to the patient." (GP05, female salaried GP, 1-5 years experience, suburban population)

"*I mean there are lots of patients we've got on our palliative care register, who I'd be treating with antibiotics, and I don't think it's just because they've got that sort of diagnosis means that you wouldn't treat them for certain infections, in fact I think they can feel quite a lot symptomatically better, treating, so I think that the, the treatment more, it would be at actual end of life, so you may be dealing with an end of life bronchopneumonia example, something like that, for instance, when I think that at that stage, you know, we'd be thinking about whether, with discussion with the family, and knowing patients' wishes, whether that would be a time when you'd be actually deciding that that wouldn't be in the patient's best interests."* (GP01, female partner, ≥ 21 years experience, mixed population)

Box 2. GP factors in GP decision making – illustrative quotations from interviews with 28 GPs (April 2015 to February 2016)

Gut instinct

"*I don't know. I haven't ever really been able to put my finger on it. I think the combination of, you know, the way they look and the way they behave, but yeah, it's difficult, because it is just a, it's just a very vague feeling. And, you know, you feel like a complete idiot when you phone the admissions line to the hospital and try and explain to somebody that, you know, this patient doesn't look too bad, but actually really don't think they're right."* (GP15, female salaried GP, 16-20 years experience, mixed population)

"*I think it's important that, you know, whatever decision you come to, you can justify it and you feel comfortable with it, and I think sometimes, particularly if you've been a GP for a while, sometimes you can just get a feeling that somebody isn't well, and I think it probably doesn't hurt to trust that sometimes*." (GP15, female salaried GP, 16-20 years experience, mixed population)

Risk management

"They're not coping, not eating and drinking properly, become dehydrated, there's complications from that, whether they fall over and break their leg or you know, end up in hospital with renal failure."" (GP07, female salaried/locum GP, 1-5 years experience, mixed population)

"*It's probably never completely out of your mind in the modern day, that somebody could complain, and I do remember my predecessor famously saying to me, nobody ever sued a doctor for sending them into hospital.*" (GP17, male partner, ≥21 years experience, suburban population)

Emotional burden

*"I think the thing for me was the, I would feel just dreadful if I missed something and somebody died unnecessarily." (*GP15*,* female salaried GP, 16-20 years experience, mixed population)

"*Well admission in a way is the risk free so, you know, if you've admitted someone you might, you're not going to go home worrying about them."* (GP04, male salaried GP, 1-5 years experience, mixed location)

Box 3. System factors in GP decision making – illustrative quotations from interviews with 28 GPs (April 2015 to February 2016)

Pressure on secondary care beds

"*I think as a registrar I started out, I suppose you just try and be a bit heroic that you're sort of going to save the NHS by not admitting people and actually I think just not, in a way you try not to admit people but if you have to you have to and then, you know, the system will cope with it somehow."* (GP04, male salaried/locum GP, 1-5 years experience, mixed population)

"You don't want it to, you want to be doing the best, you want the patient to be safe first, patient safety top of the list but if you've got fourteen patients in and on a Friday night, you know you can go up to sixteen and still be relatively safe with two trained nursing staff on plus auxiliaries and you're thinking, oh I've got two beds, empty beds, I'm looking after five thousand people, if three people come in sick one of those people will have to go to [another hospital some distance away] or we're going to have to call in more staff and that's kind of resource management at the beginning of the weekend. So you're going into the weekend thinking, I've only got two beds! That does play into your mind so if you see somebody at home that you know could be managed at home if you could just source the right amount of care…" (GP19, female partner, ≥21 years experience, rural population)

GP workload

"*I think everybody in the community does their damnedest to keep people in their homes and when it's necessary looking for the alternatives*." (GP17, male partner, ≥21 years experience, suburban population)

"*Well, it's about how much doctoring I'm gonna be able to give them, so I'll happily keep them at home and I'll go and visit them every day, I may even go and visit them twice a day if needs be, and it's about there'll be pressures on me that are unforeseen pressures which actually might drive me towards an admission because I don't have the time to be able to devote to them at home, so some of that will come into play as well.*" (GP13, female partner, ≥21 years experience, mixed population)

Box 4. Arranging alternatives to admission – illustrative quotations from interviews with 28 GPs (April 2015 to February 2016)

Use of time/accessibility

"*If you're confident that you can do things quickly, get antibiotics quickly, have all the support quickly then great, you can manage it at home. If you're not sure that that's going to happen then I guess you have to admit to hospital.*" (GP03, female partner, 11-15 years experience, mixed population)

"*I arranged one* [a community bed] *for someone that was likely to either end up back in hospital but it took about, it took two days and about two hours of phone calls which we don't have the time for really and there's no streamline pathway for it, it's a case of juggling them, juggling the bed ..."* (GP16, male partner, ≥21 years experience, suburban population)

"*They're not easy to access at all, there's always a hoop to jump through, there's always a bit of, a lot of faffy paperwork, there's always a sense that you're, 'ah', you know, 'it's gonna be a bit difficult getting them in' and 'oh, it's a bit late' and you know, 'oh, can you get them here for two hours' time', there's always a number of hoops that you appear to have to jump through before you can get someone into these places, it's* never *easy."* (GP13, female partner, ≥21 years experience, mixed population)

Capacity

"Well at one point it was good because they seemed to have capacity and to be keen to help and then the service seemed to become less available so I stopped using it." (GP28, female salaried GP, 6-10 years experience, urban population

"*I know we have this so called rapid access clinic for elderly people… but I must admit I haven't used it for ages, I think 'cos the waiting list got about two weeks for it.*" (GP08, male partner, ≥21 years experience, urban population)

"*So there are, you know, sort of, safe haven beds, which you can't access at night. There, the rapid response team, sometimes you can access it at night, most times you can't, and if you can usually they're so busy running around helping lots of people, they can't take on an extra person."* (GP26, male OOH GP, 6-10 years experience, mixed population)

Removal of tasks

"*Can I say the other thing that works really well is that they organise transport, that's fantastic. I know it sounds trivial but by the time you've sort of made the decision, you've done quite a lot of stuff yourself, it's wonderful when people can just take on simple, small things*." (GP24, male partner, 24 years experience, suburban population)

"You can almost feel your shoulders lifting as the weight comes off them, as they say, yeah, sure we'll go and see her at five or something." (GP17, male partner, ≥21 years experience, suburban population)".

"Somewhere where it's very easy to get through on the phone to speak to somebody who was knowledgeable, and could offer carers and probably IVs and testing…" (GP28, female salaried GP, 6-10 years experience, urban population)

Table 1. Factors impacting decision to admit: major themes and subthemes emerging from interviews with 28 GPs (April 2015 to February 2016)

Major theme	Subthemes
Patient factors	Clinical factors
	Social factors
	Shared decision making
GP factors	Gut instinct
	Risk management
	Emotional burden
System factors	Pressure on secondary care beds
	GP workload
Alternatives to admission	Use of time/accessibility
	Capacity
	Removal of tasks