Introduction

About the Essential Guide

The AMA is preparing an Essential Guide to using a shared electronic health record for medical practitioners. This work is being partially funded by NEHTA as part of their change and adoption program for the Personally Controlled Electronic Health Record (PCEHR).

This document will be a resource for medical practitioners that will help them make decisions about whether, when and how to use the PCEHR in their practice.

As one of several consultative activities designed to ensure that the Essential Guide is as useful and relevant to practising doctors as possible, the AMA conducted a survey of members. The drafting of the guide is also being informed by consultation with medical indemnity insurers and medical colleges, associations and societies.

About the survey

The survey was run as an online form on the AMA website from 13 January until 27 January 2012. Questions were predominantly in Likert scale format, with some opportunities for free text entry. The survey took approximately 5 minutes to complete. It was promoted to AMA members in an email from the AMA President to all AMA members for whom email addresses were on file, in the AMA GP Network News publication, and as a link on the AMA website.

AMA members were required to enter a login and password before they could access the web page where the form was located. This may have resulted in a lower response rate to the survey where members did have a login and password immediately available. However, the use of authentication in this way ensured that all participants were medical practitioners and AMA members.

Survey questions

Participants

The first part of the survey included some basic questions about the participant's position within the medical profession. These were selected to be short, easily answered, and helpful in analysing the results:

- Specialty: participants selected the single best option from a list of medical specialties.
- Career stage: participants indicated what stage they had reached in their medical career, from "intern" to "specialist – 20+ years".
- Practice settings: participants selected which of the five settings applied to them (note that participants could select more than one of the options).

Study questions

There were 37 statements and three free text response boxes divided into seven categories. The statements were assessed for agreement using a five point Likert scale of "strongly agree", "agree", "neutral", "disagree", and "strongly disagree".

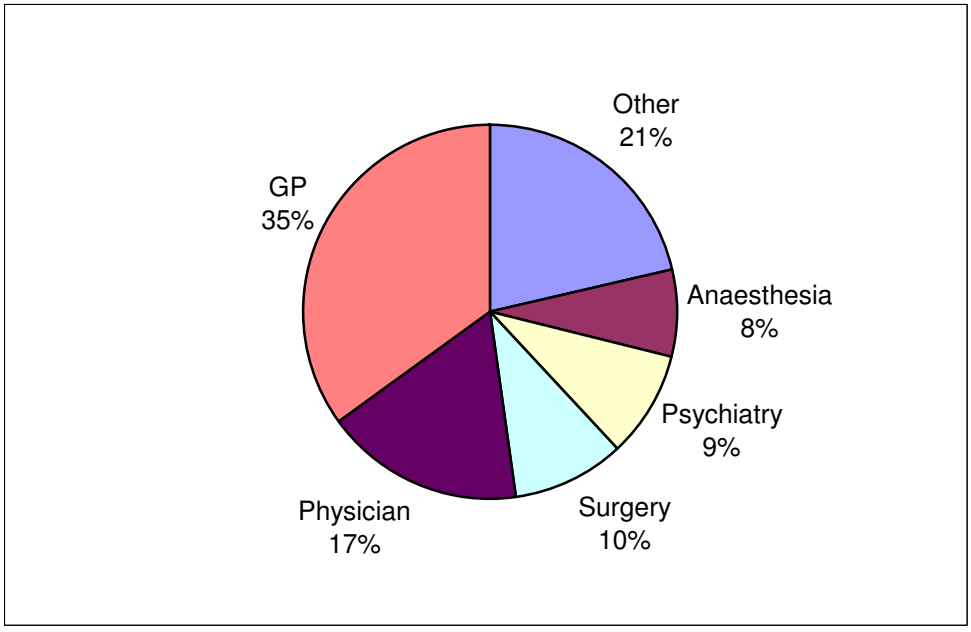
Knowledge of PCEHR	1. I know about the PCEHR. 2. I know about how to use a shared electronic health record. 3. I know about what the administrative requirements of the PCEHR will be for my practice. 4. I know about the privacy and access control provisions of the PCEHR. 5. Patients have asked me for information about the PCEHR.
Use of PCEHR	6. I intend to use the PCEHR when it is released on 1 July 2012. 7. I would use the PCEHR to look for patient information such as medical history during consultations. 8. I would use the PCEHR to upload patient information such as referral letters or discharge summaries. 9. I would use the PCEHR to access patient information in an emergency situation. 10. I would use the PCEHR for pathology information. 11. I would use the PCEHR for viewing current medications. 12. I would use the PCEHR for identifying patients' allergies and checking for past adverse events. 13. I would use the PCEHR for uploading and/or looking for discharge summaries. 14. I would agree to take on the role of Nominated Healthcare Provider if asked by my patients.
Advising patients about PCEHR	15. I intend to advise patients to have a PCEHR. 16. I intend to advise patients to set advanced access controls on information in the PCEHR. 17. I intend to advise patients to upload medication and allergy information to the PCEHR. 18. I intend to advise patients to use the consumer-only notes section of the PCEHR.
Opinion of PCEHR	19. The PCEHR will be a valuable addition to the healthcare system. 20. The PCEHR will be a valuable addition to my daily medical practice. 21. The PCEHR will make it easier for patients to manage their own health. 22. The PCEHR will help overcome the fragmentation of health information. 23. The PCEHR will reduce the occurrence of adverse medical events. 24. The PCEHR will reduce the duplication of treatment. 25. The PCEHR will improve the coordination and quality of healthcare provided to consumers by different healthcare providers.

Concerns about the PCEHR	26. I am concerned about the effect of administrative requirements of the PCEHR on practice staff. 27. I am concerned about the financial implications of preparing for and using the PCEHR. 28. I am concerned about the privacy and confidentiality of my patients if they opt-in to the PCEHR. 29. I am concerned about the medico-legal implications of using the PCEHR. Free text: if agree or strongly agree to any of the above.
Practice preparation	30. My practice will be ready to start using the PCEHR when it is launched on 1 July 2012. 31. My practice will prepare protocols to guide staff on implementing and using the PCEHR. Free text: what preparations have you already undertaken.
Contents of the Essential Guide	32. I would like the guide to include information about my duty of care when using the PCEHR. 33. I would like the guide to include information about how I can advise my patients about the PCEHR. 34. I would like the guide to include information about obtaining consent from patients to use the PCEHR. 35. I would like the guide to include information about working with patients and using the PCEHR in different situations, for example when working with a mature minor or with patients who have additional needs. 36. I would like the guide to include information about communicating with medical colleagues and other health professionals using the PCEHR. 37. I would like the guide to include advice about how to address errors in information on the PCEHR.
Other	Free text: do you have any other suggestions about what should be included in the guide?

Participants

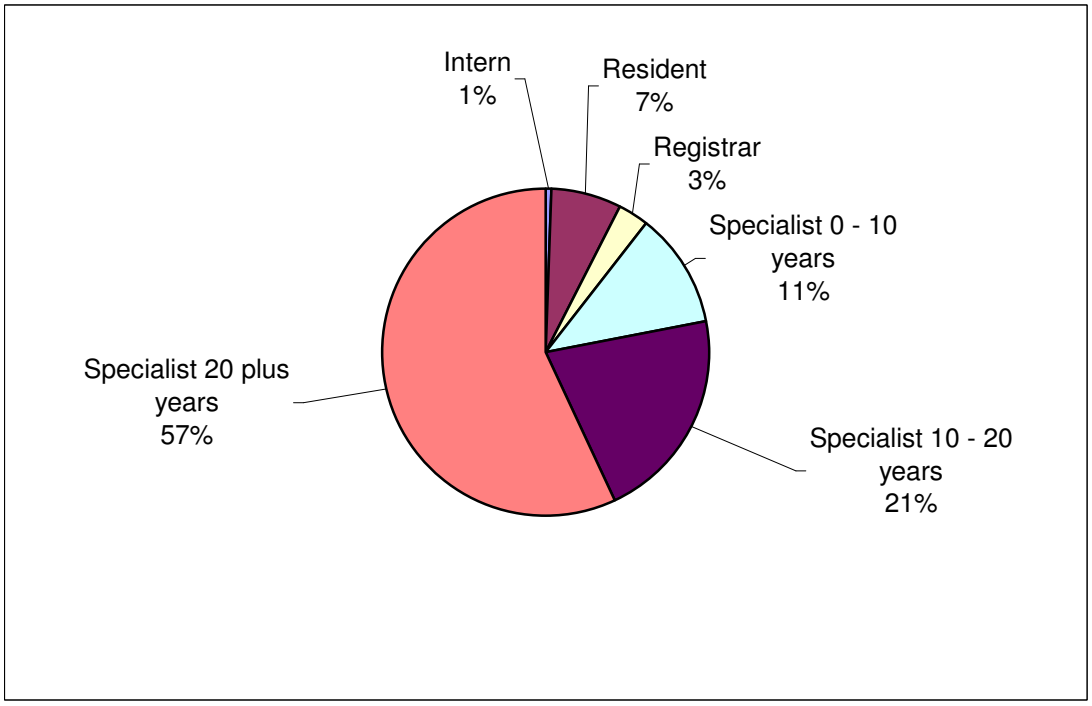
There were unique entries from 197 participants. These participants represented 18 specialties, ranged in career stage from intern to consultant for more than 20 years, and practiced in private, public, hospital, community and rural settings.

Specialty



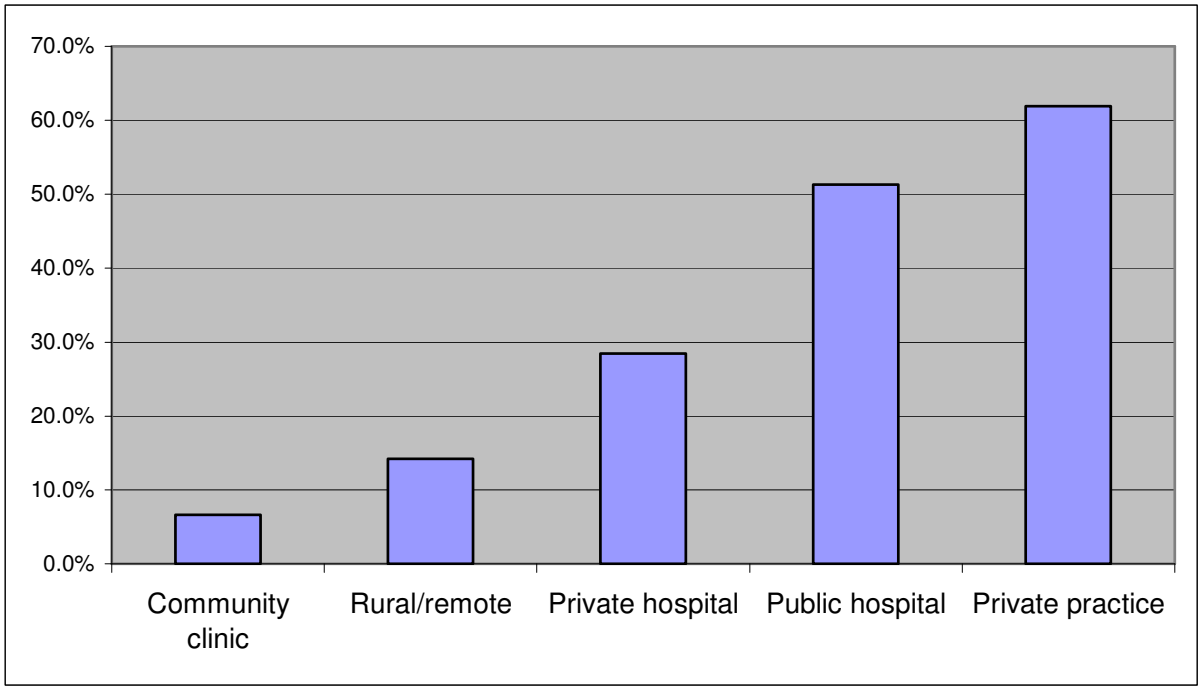
Over one third of participants, 69 in total, were general practitioners. Other specialties that contributed more than 10 participants were: physicians, 34; surgeons, 19; psychiatry, 18; anaesthesia, 15.

Career stage



Over half of participants had been practicing as a specialist medical practitioner for more then 20 years. 11% of participants were doctors-in-training.

Practice setting



Participants could choose as many options as applied to them. The most commonly reported practice setting was private rooms. 57% of participants worked in either a public or private hospital, and 14% worked in a rural or remote area.

Survey results and discussion

Methods

Likert scale data were interpreted as ordinal data in this analysis. Responses to each statement were aggregated to give a total in each Likert category. The five categories were then aggregated to a binomial agree/disagree result for each statement:

"Stongly agree" or "agree"	→	Agree
"Neutral", "disagree", "strongly disagree"	→	Disagree

The agree/disagree binomial response to each statement was then calculated for each specialty group and career stage group. Binomial results were not calculated for each practice setting because practice settings were mutually exclusive. Instead, we produced two mutually exclusive differentiators based on practice setting responses:

1. Work in a hospital setting at all OR not at all
2. Work in a rural/remote setting at all OR not at all

We also used this same method to compare responses from general practitioners with responses from all other participants:

3. GP specialty selected OR any other specialty

We selected differentiators anticipating that medical practitioners working in hospital, rural/remote and GP settings might have different responses to the PCEHR system than those working in rooms only, city only and non-GP environments.

Calculated "percent agree" figures for each statement were compared and charted for each study group.

Statements overall

Statements listed by agreement

Rank	*Qu #*	*Statement*	*% agree*
1	37	Contents: address errors	94.9%
2	32	Contents: duty of care	93.4%
3	36	Contents: communicating with colleagues	91.9%
4	33	Contents: how I can advise my patients	91.4%
5	34	Contents: obtaining consent from patients	90.9%
6	35	Contents: mature minor or patients who have additional needs	87.8%
7	26	Concerns: administrative requirements	77.2%
8	27	Concerns: financial implications	72.6%
9	11	Use: viewing current medications	67.5%
10	12	Use: allergies and past adverse events	65.5%
11	9	Use: emergency situation	65.0%
12	13	Use: send/receive discharge summaries	64.5%
13	29	Concerns: medico-legal implications	63.5%
14	10	Use: pathology information	61.4%
15	17	Advising patients: upload medication and allergy information	56.9%
16	1	Know: about the PCEHR	54.8%
17	7	Use: medical history during consultatations	54.3%
18	8	Use: upload patient information	52.3%
19	28	Concerns: privacy and confidentiality of my patients	51.8%
20	19	Opinion: valuable addition to the healthcare system	45.2%
21	22	Opinion: overcome fragmentation	45.2%
22	24	Opinion: reduce duplication of treatment	42.6%
23	25	Opinion: improve the coordination and quality of healthcare	42.1%
24	23	Opinion: reduce the occurrence of adverse medical events	35.0%
25	20	Opinion: valuable addition to my practice	33.0%
26	15	Advising patients: to have a PCEHR	32.0%
27	6	Use: when it is released on 1 July 2012	29.9%
28	21	Opinion: easier for patients to manage their own health	29.4%
29	16	Advising patients: set advanced access controls	28.4%
30	14	Use: agree to take on the role of NHP	22.8%
31	18	Advising patients: use the consumer-only notes section	19.8%
32	31	Preparation: practice will prepare protocols	18.3%
33	2	Know: how to use a shared electronic health record	17.3%
34	4	Know: about the privacy and access control provisions	14.7%
35	30	Preparation: my practice will be ready to start using on 1 July 2012	8.1%
36	3	Know: administrative requirements	5.6%
37	5	Know: patients have asked me for information	4.6%

This table shows all statements (referred to in short form), ranked by percentage of all participants that agreed with the statement.

The top six statements in this ranking were all about types of information that could be included in the Essential Guide, that is participants *agreed most* with statements about things that they would like the guide to include. At the bottom of this ranking were six statements about knowledge of the PCEHR and preparedness to use the PCEHR; participants *agreed least* with statements that they knew about the PCEHR and were prepared to use it.

These results indicate that participants lack detailed knowledge about the PCEHR system, and are enthusiastic for the guide to provide detailed information about the system.

Statements listed neutral response

Rank	*Qu #*	*Statement*	*SA*	*A*	*N*	*SD*	*D*
1	18	Advising patients: use the consumer-only notes section	4%	16%	61%	8%	11%
2	16	Advising patients: set advanced access controls	11%	17%	49%	11%	12%
3	31	Preparation: practice will prepare protocols	3%	15%	45%	15%	21%
4	21	Opinion: easier for patients to manage their own health	6%	23%	44%	15%	11%
5	15	Advising patients: to have a PCEHR	9%	23%	42%	16%	10%
6	20	Opinion: valuable addition to my practice	8%	25%	39%	14%	15%
7	23	Opinion: reduce the occurrence of adverse medical events	7%	28%	39%	14%	13%
8	25	Opinion: improve the coordination and quality of healthcare	8%	35%	38%	9%	11%
9	6	Use: when it is released on 1 July 2012	9%	21%	37%	18%	15%
10	19	Opinion: valuable addition to the healthcare system	13%	32%	37%	6%	12%

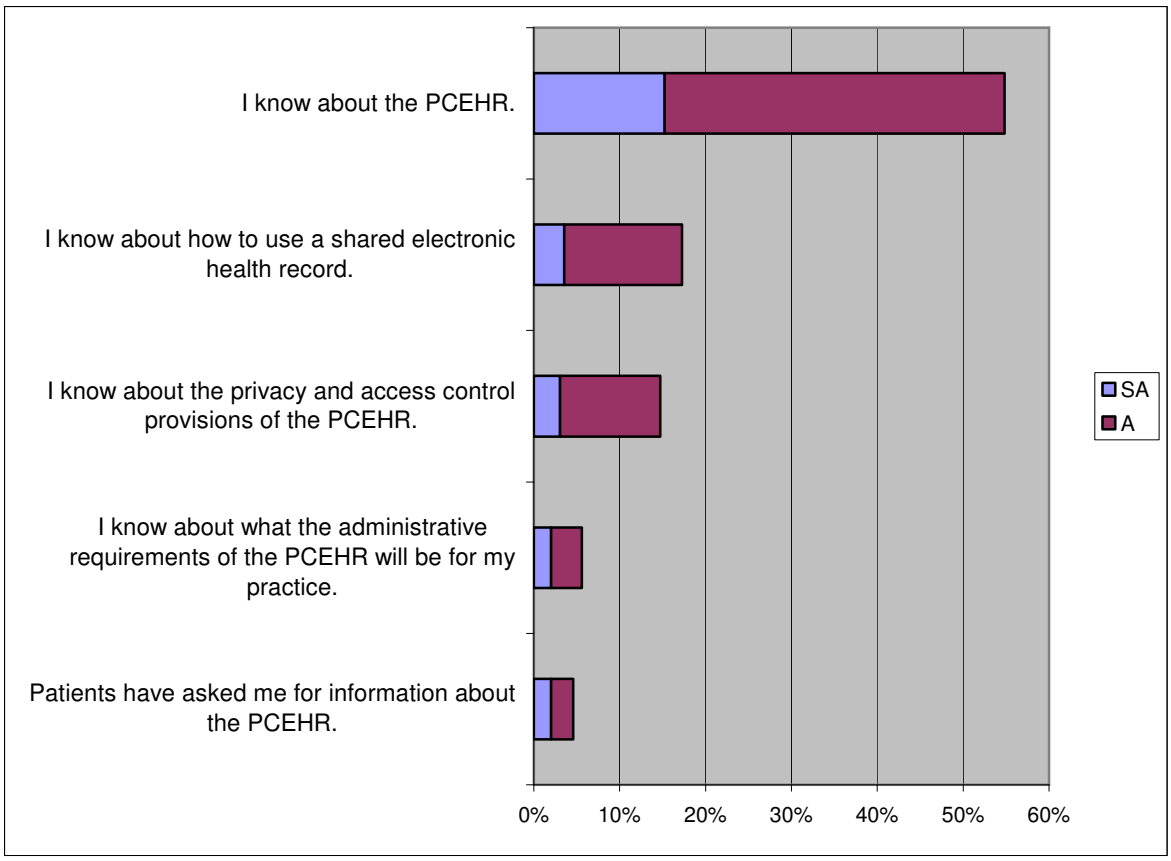
In this table, the top ten statements are excerpted from a ranking of all statements according to the percentage of participants who neither agreed or disagreed and so responded “neutral”. These were predominantly statements about how medical practitioners might advise patients about the PCHER and statements of opinion about the value and goals of the PCEHR system.

Our interpretation of these results is that medical practitioners are unsure of what the value and worth of the PCEHR system will be in practice. Noting that statements about “personally controlled” features of the PCEHR system appear at the top of the list, we surmise that participants had not yet had the opportunity to make an informed judgement about these features.

Agreement within each section

In following section, percent agreement to statements in each category is charted as a composite of “strongly agree” and “agree”. Note that the horizontal axis is not across these charts.

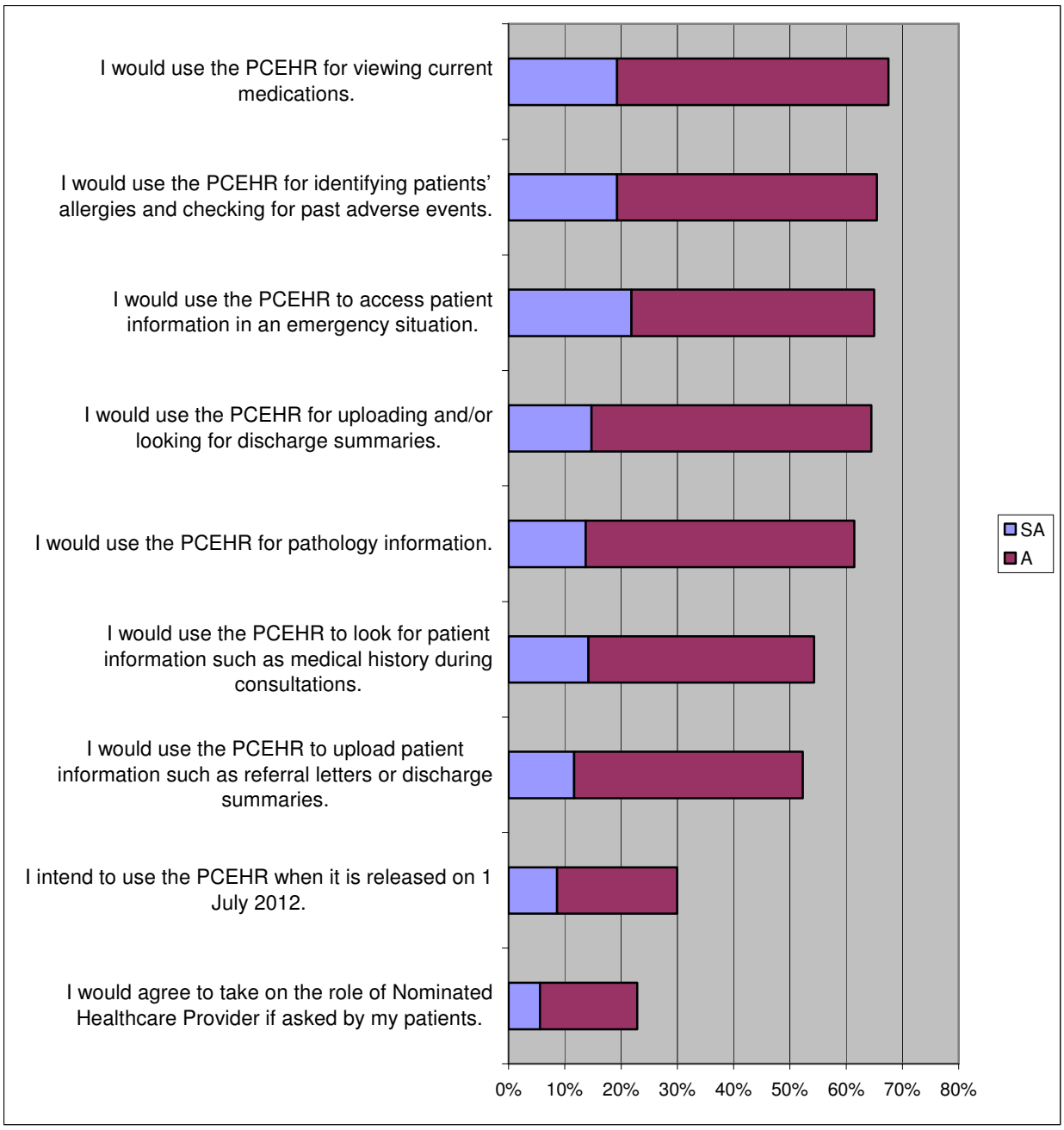
Knowledge



While a majority of participants agreed that they knew about the PCEHR, far fewer agreed with statements relating to the details of the system.

These results may reflect general coverage of work on the PCEHR system in mainstream and professional media, but that there is a gap in terms of engagement with and promotion of the details underpinning the system. The Essential Guide is intended to bridge this gap.

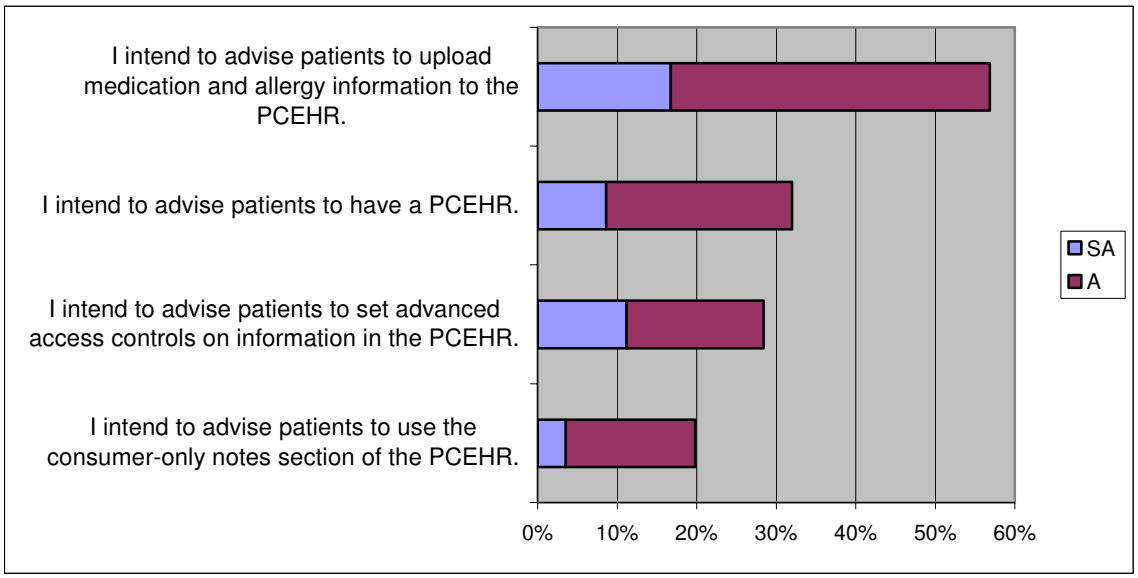
Use



A majority of participants agreed with statements about the clinical uses of the PCEHR, particularly with statements about viewing or accessing discrete clinical data such as current medications, allergies and adverse events, discharge summaries and pathology information. However, participants agreed less with statements about contributing information to the PCEHR and their willingness to use the system at launch in July 2012.

This reflects one of the fundamental challenges of the PCHER: while many health professionals are enthusiastic to use shared electronic health information and enjoy the benefits of this system, there is concern about the costs in time and efficiency that will be incurred while entering, reviewing and curating shared patient information.

Advising patients

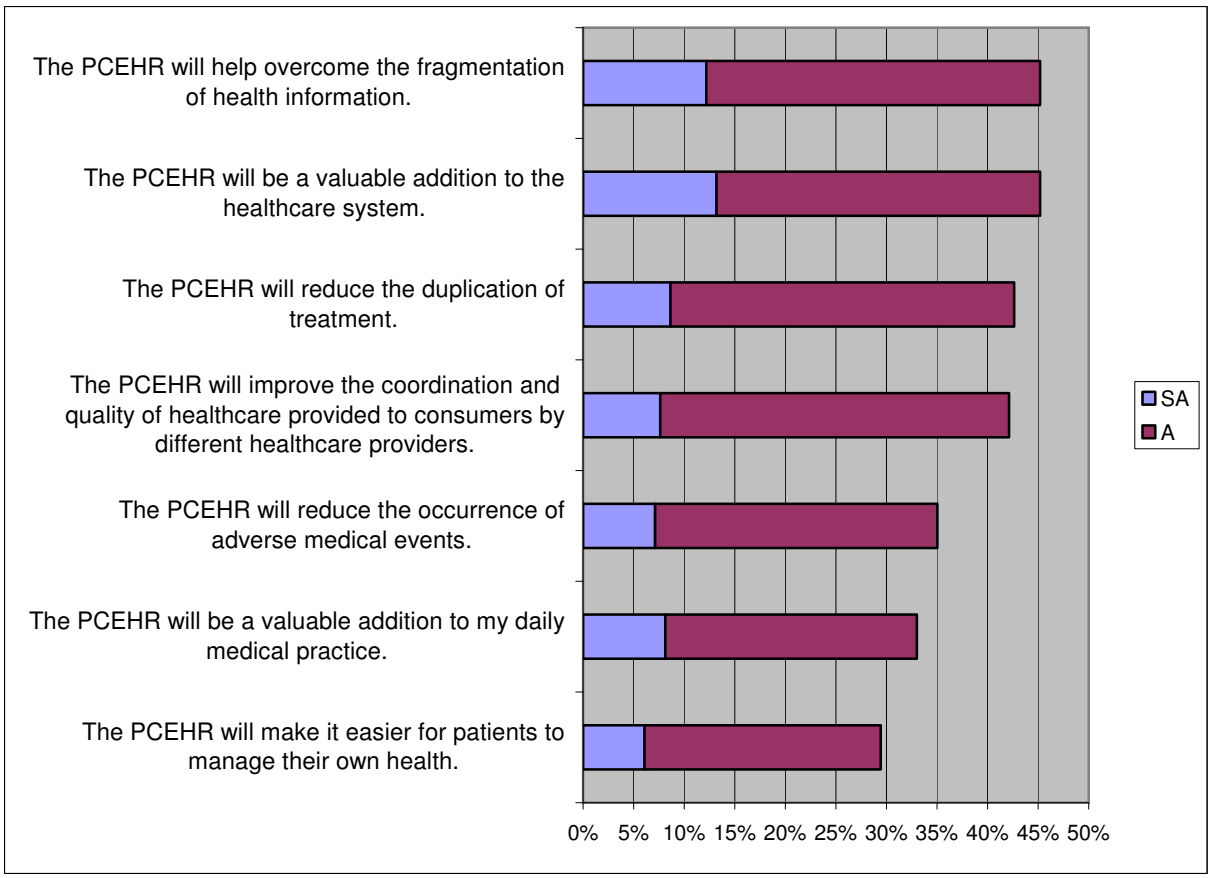


Looking at how medical practitioners will advise their patients, a majority of participants agreed that they would advise patients to upload medication and allergy information to the PCEHR. This is consistent with responses in the previous section relating to use of the PCEHR by participants themselves.

Although a lower percentage of participants agreed that they would advise their patients to use the PCEHR, these statements attracted the greatest percentage of "neutral" responses, as indicated previously.

This is consistent with feedback from medical practitioners that they are most interested in sharing information about medications, allergies and adverse events. The "personally controlled" features of the PCEHR are relatively new to medical practice, and so it is understandable that medical practitioners might be unsure of how they while advise their patients about these features.

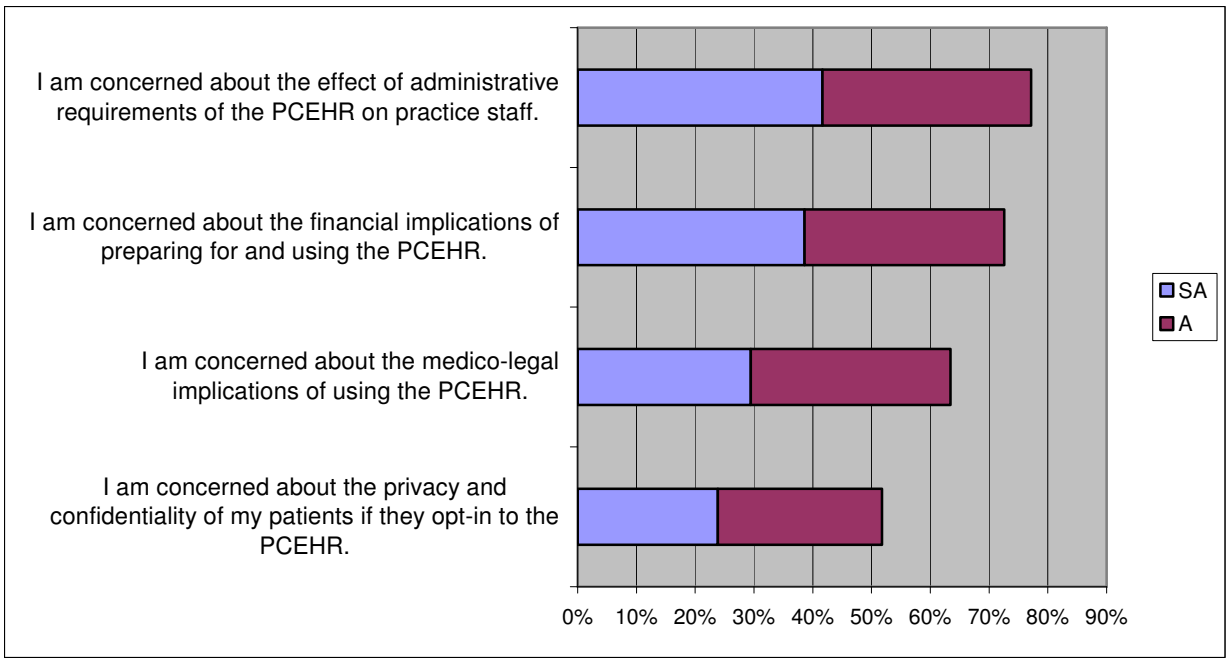
Opinion of the PCEHR



Note that in this chart, the horizontal axis only extends to 50% agreement. Participants did not generally endorse these opinion statements. Neither did they clearly reject them.

These results do not give clear picture of a strongly felt consensus opinion amongst survey participants on the goals and outcomes of the PCEHR system.

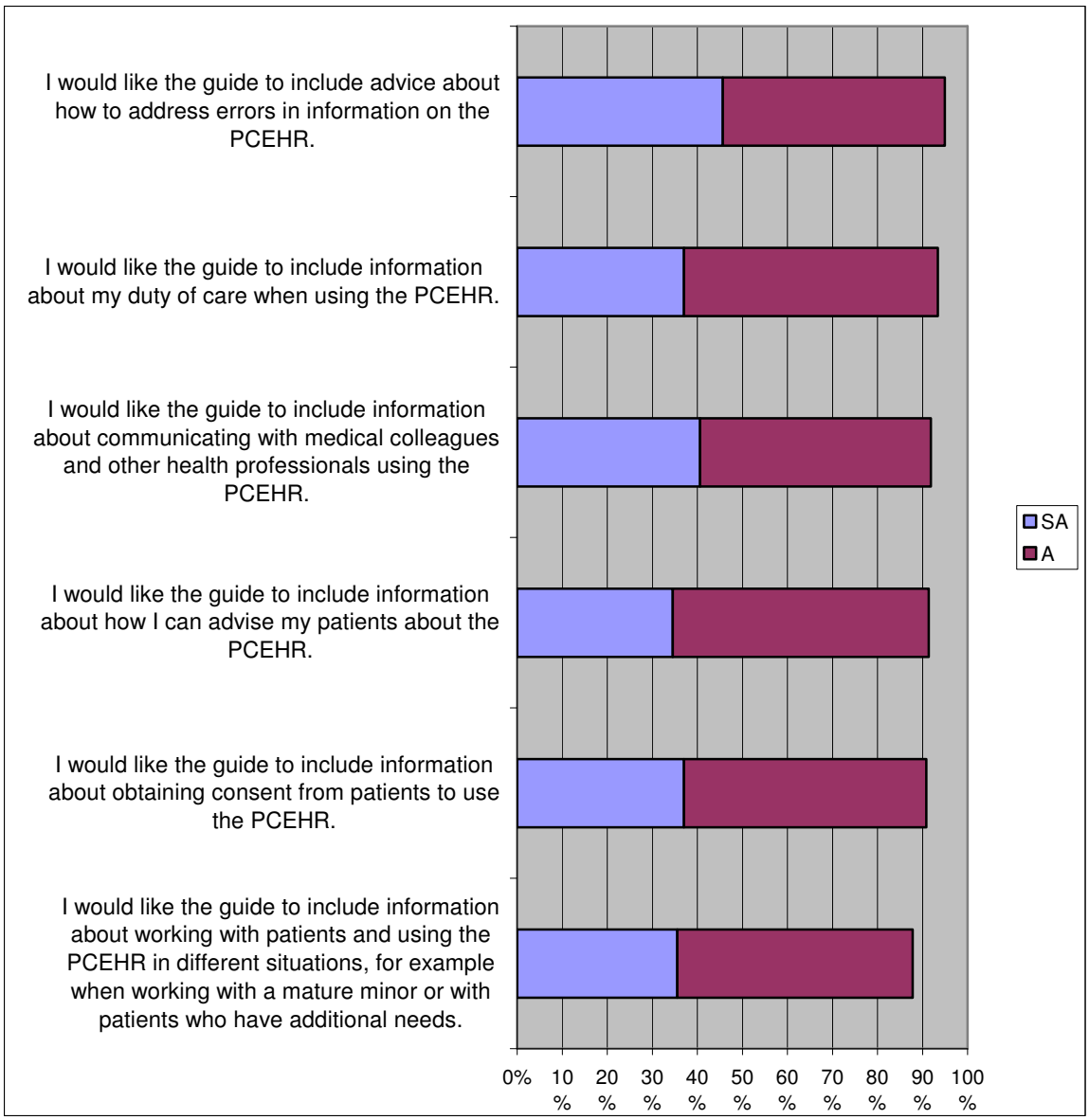
Concerns



Participants expressed strong agreement with statements of concern about the PCEHR. The percentage of participants who responded "strongly agree" was particularly high in this category compared to others.

Almost 80% of participants agreed that they were concerned about the administrative requirements of the PCEHR system, and over 70% were concerned about the financial implications. This clearly illustrates some of the barriers that face successful adoption of the PCEHR system amongst medical practitioners. If they are not able to efficiently introduce the PCEHR to their existing workflows and business models, it will be difficult to allay the concerns that are agreed to here.

Contents



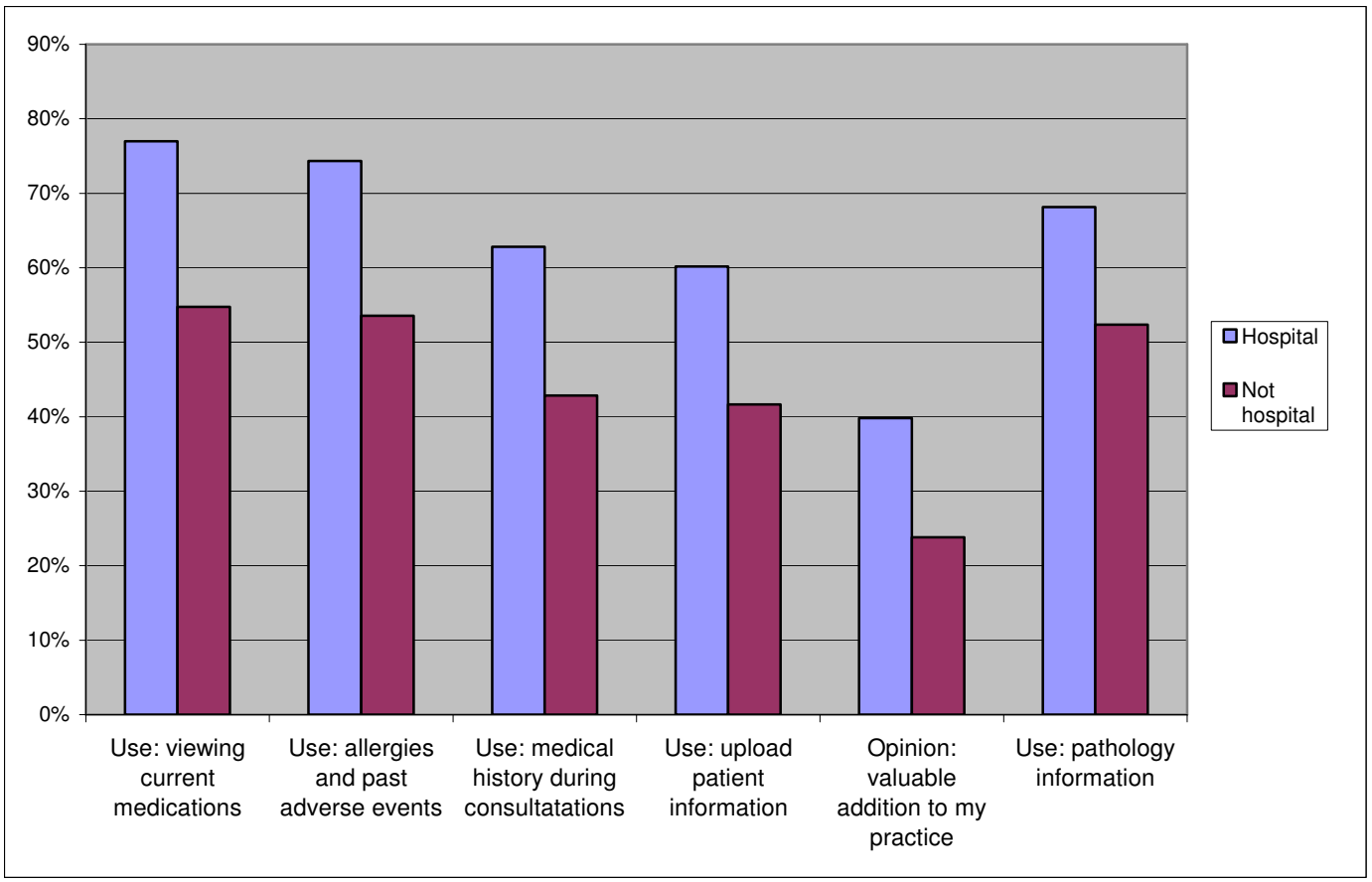
Participants expressed very strong agreement with statements about information that they would like to be included in the guide. Fewer than five participants disagreed with each statement.

These results are indicative of consensus support for wider distribution of detailed guidance to doctors about the implications of the PCEHR for medical practice.

Where study groups disagreed

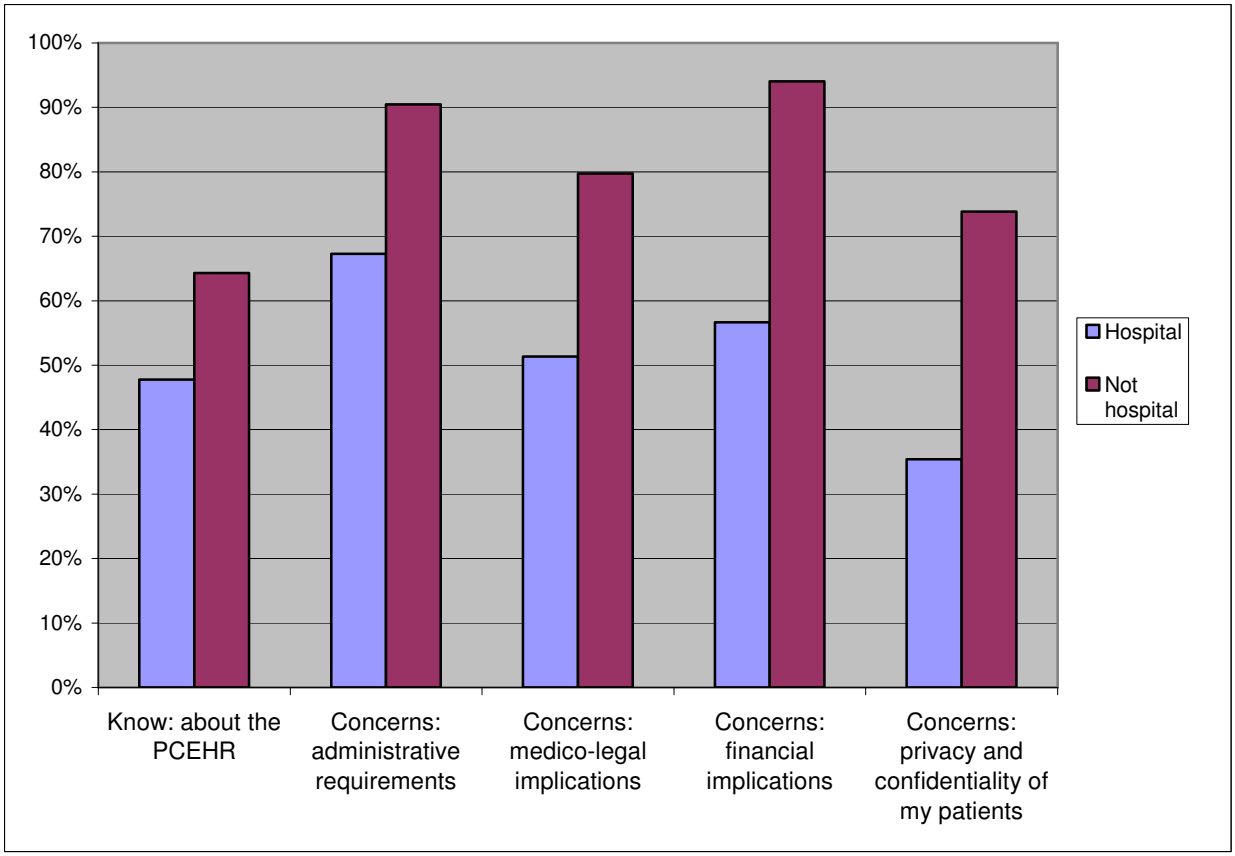
In this section we will describe how the study groups described in ‘methods’ above responded differently to different questions. Here we present statements that created the largest difference in percent agreement between the two groups.

Hospital setting: yes/no



Of the 84 participants who did not work in hospitals at all, 62 were GPs and 10 were psychiatrists.

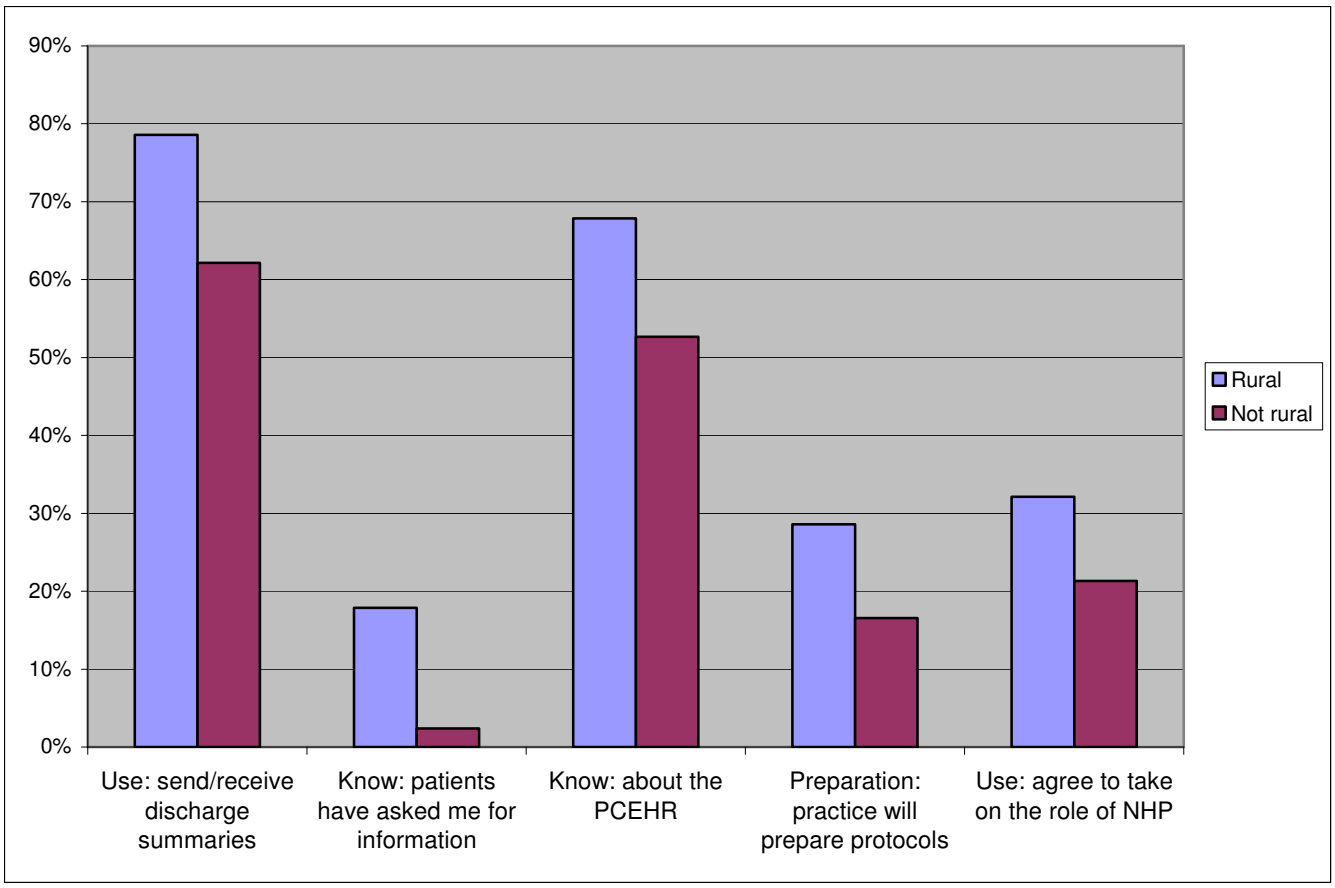
In this chart, the top six statements are excerpted from a ranking of statements that drew the highest agreement from hospitalist clinicians in comparison to participants who did not work in hospitals at all. More participants who worked in hospitals agreed that they would use information from the PCEHR in the course of caring for their patients.



This chart excerpts the bottom five results from the ranking: it shows where participants who do not work in hospitals agree with statements much more than participants who do. Participants who do not work in hospitals agreed much more with statements of concern about the PCEHR.

Comparing these data with the previous chart illustrates that medical practitioners who work in hospitals are enthusiastic to use information shared on the PCEHR, but that those who do not work in hospitals and may be contributing that information are more concerned. Note that most of the non-hospitalist participants were GPs.

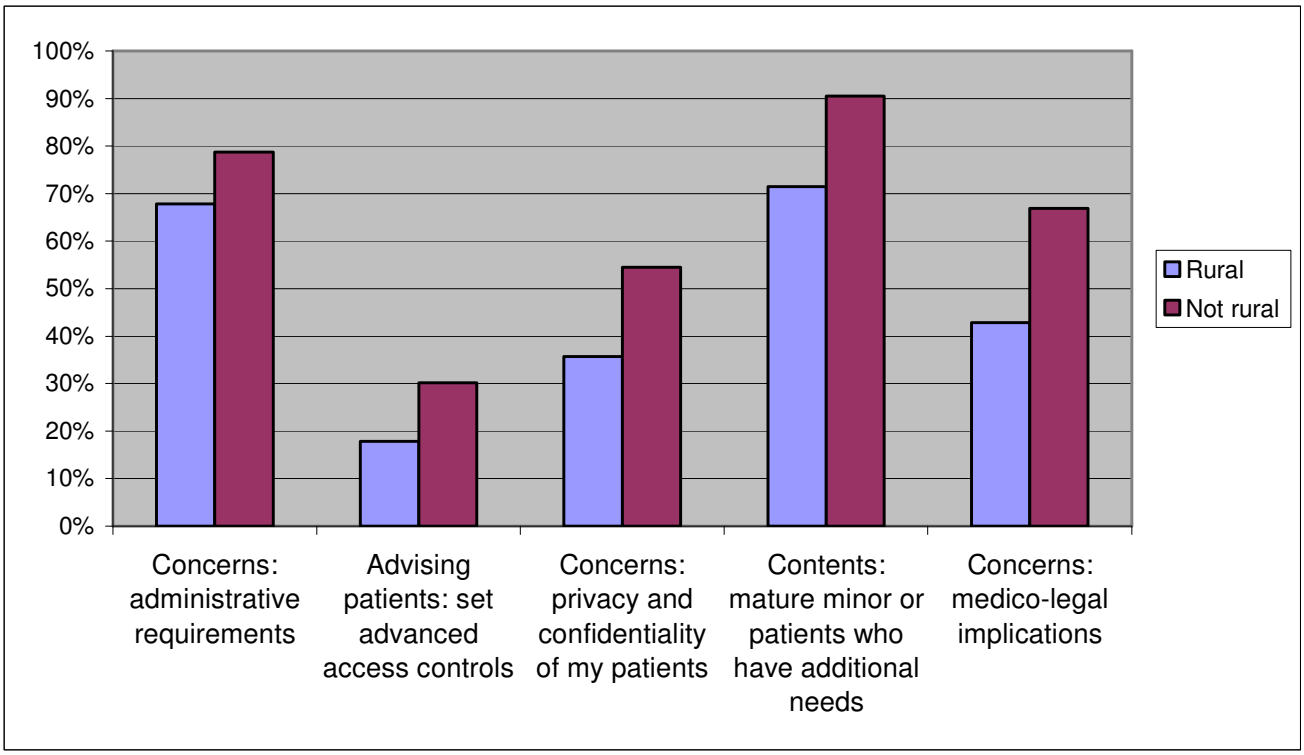
Rural setting: yes/no



Alike to the previous section, the two charts in this section present the top and bottom statements from a ranking of the difference in percent agreement between participants did work rural/remote settings and those who didn't.

These five statements are about use and knowledge of the PCEHR system and preparation to use it. Participants from rural/remote settings agreed more with these statements than the rest.

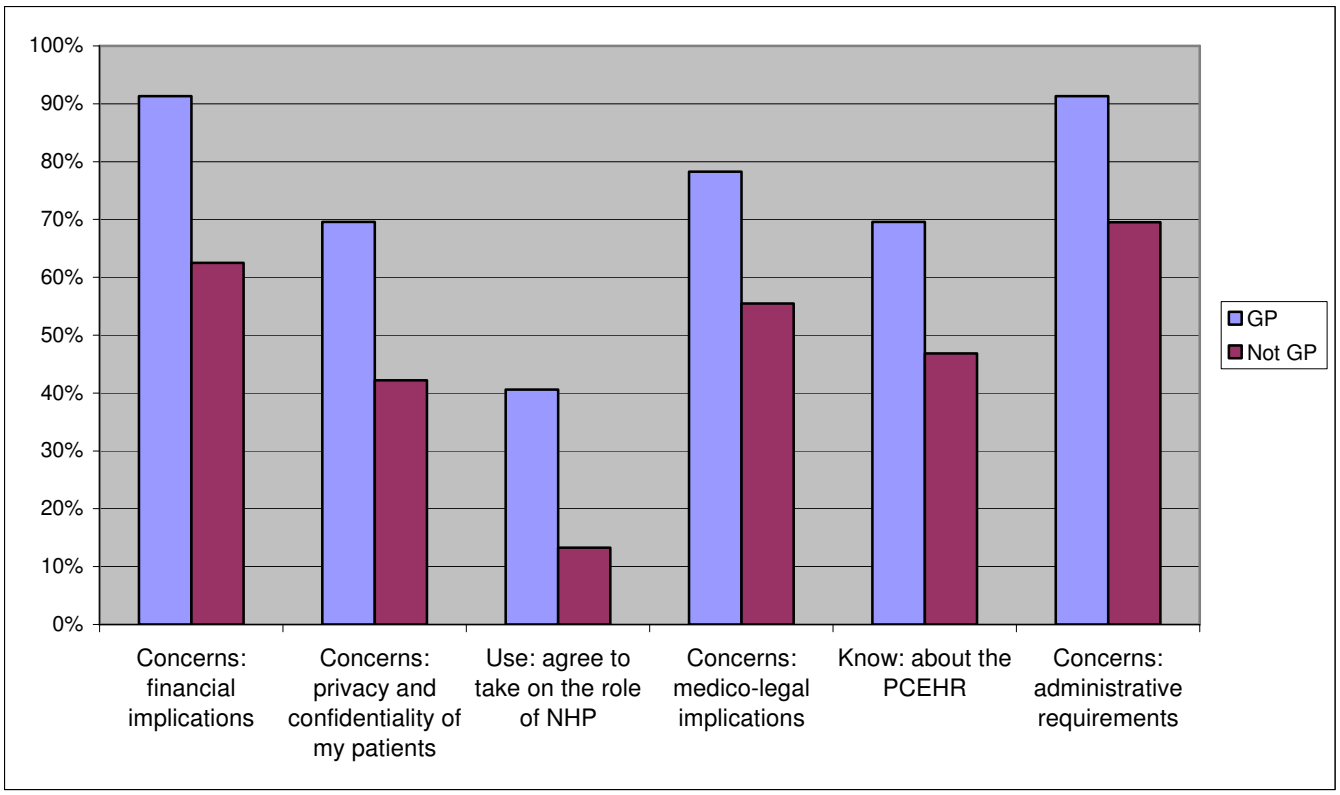
One important result is the substantially greater percentage of participants from rural and remote settings who had had a patient ask for information about the PCEHR.



In this chart, the statements that participants from rural/remote settings least agreed with in comparison to others are clearly statements of concern about the PCEHR.

Taken together, these results support unstructured feedback that medical practitioners in rural and remote settings know more about the PCEHR, are concerned less about its implications and are better prepared to adopt the system. This could indicate that healthcare organisations in rural and remote areas, could be a target for early adoption strategies and support.

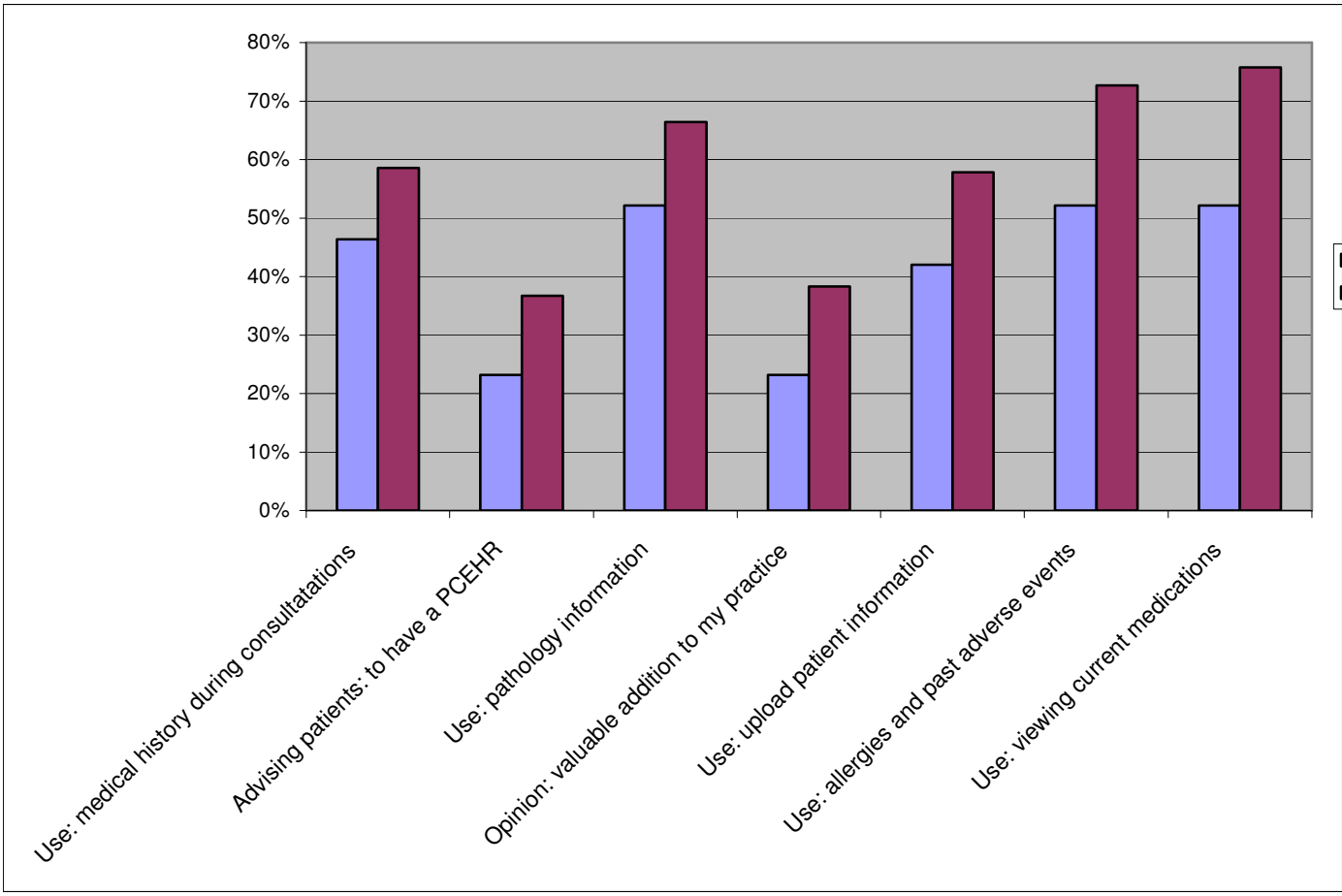
General practitioners / others



The charts in this section illustrate which statements general practitioners agreed with most and least, in comparison to other participants.

91% of GPs were concerned about the financial implications of the PCEHR system, in comparison to 62% of all other survey participants. Similar divisions were apparent in the other statements of concern shown in this chart.

GPs also agreed more that they would be willing to take on the role of "nominated healthcare provider" for their patients; this accords intended scope of this role.



This chart shows statements that GPs least agreed with in comparison to other participants. Five of these seven statements relate to the use of the PCEHR, that is, GPs agreed far less than others that they would use the PCEHR for different types of information.

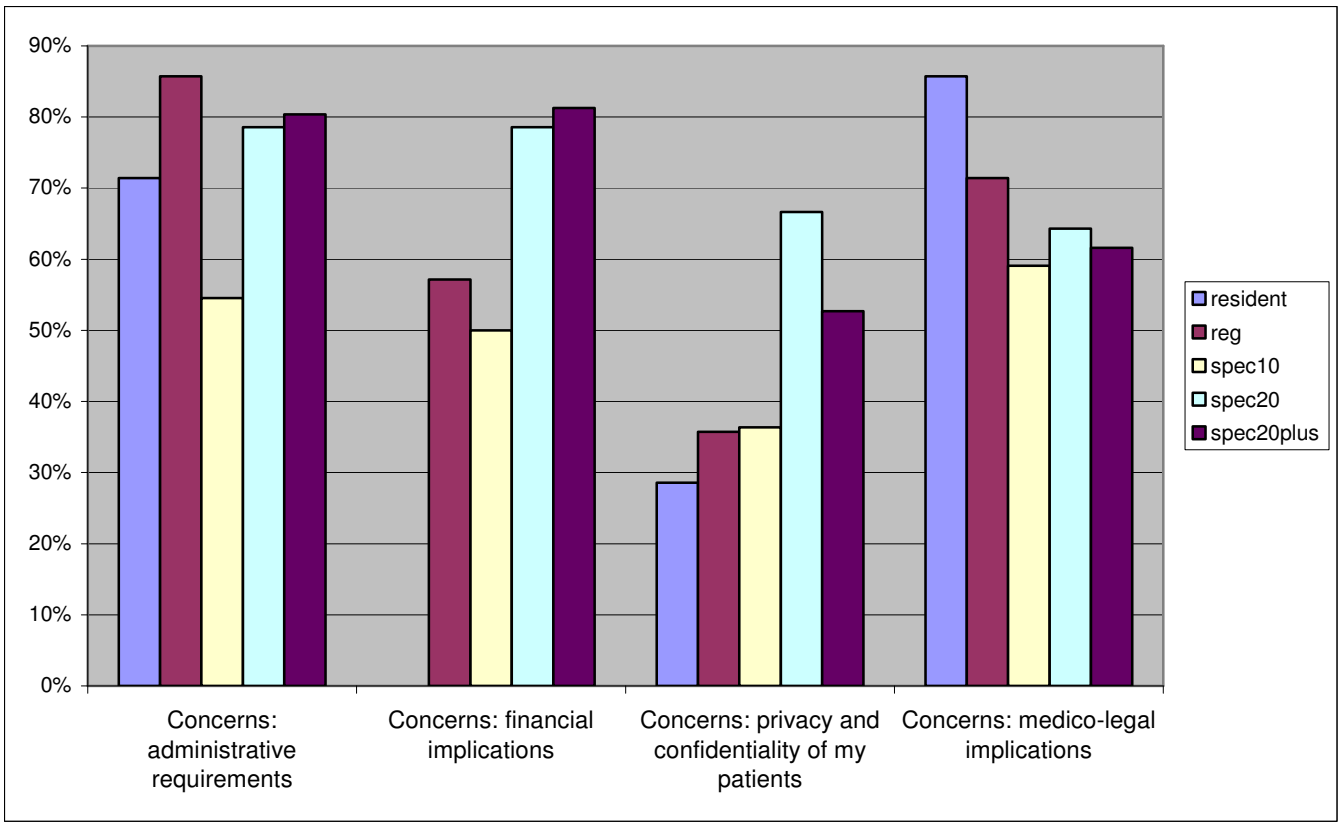
This bears out the fact that many GPs who know their own regular patients will already have their information well documented in their own clinical practice software systems. In this situation, there will not be a benefit from also having this information available in a shared electronic health record.

Together, these results that GPs are much more concerned about the implications of the PCEHR than other participants, and that they are less likely to use the PCEHR during patient care.

Concerns about the PCEHR

This section looks at responses to statements of concern about the PCEHR in more detail, by looking for differences between study groups.

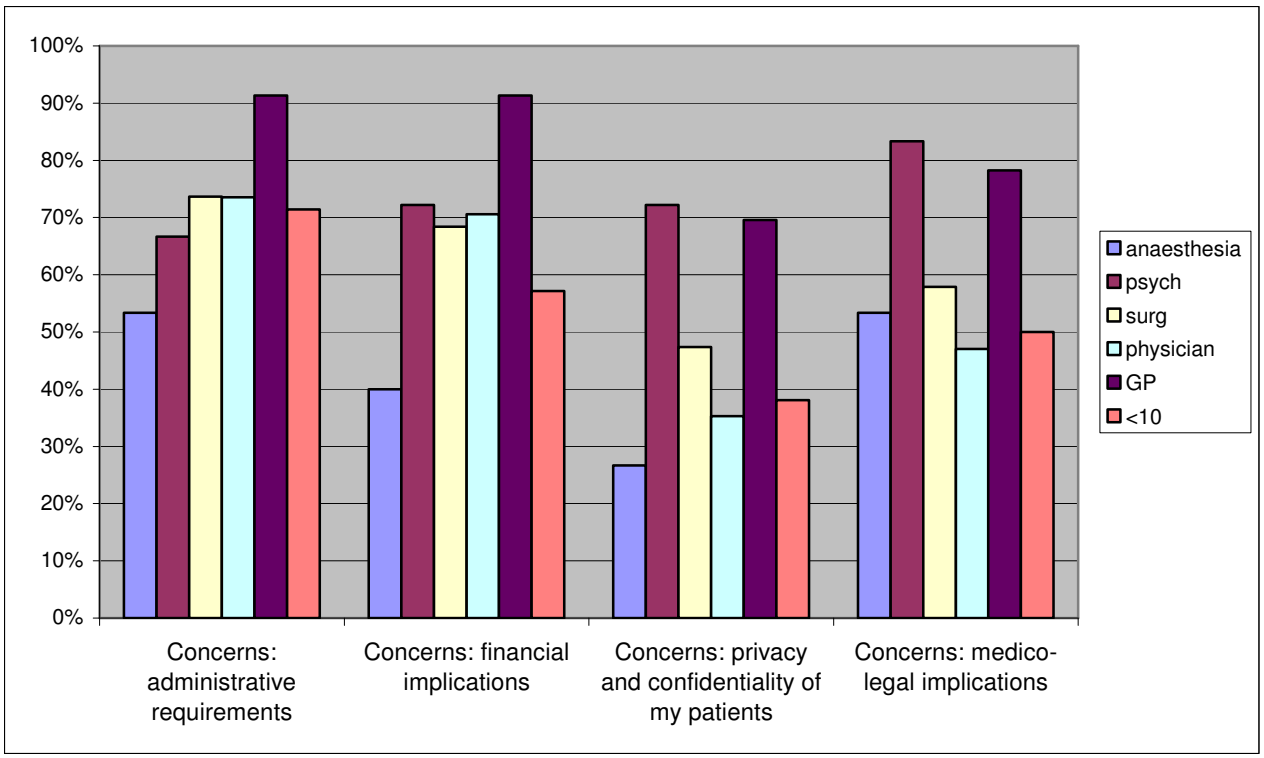
Career stage



This chart shows percent agreement with statements of concern for groups of participants at different career stages. Doctors-in-training agreed less with concerns about the financial implications of the PCEHR and concerns about patient privacy and confidentiality than their senior colleagues. However, they agreed more with concerns about medico-legal implications.

These results may simply reflect the differing roles and responsibilities of doctors at different stages in their careers.

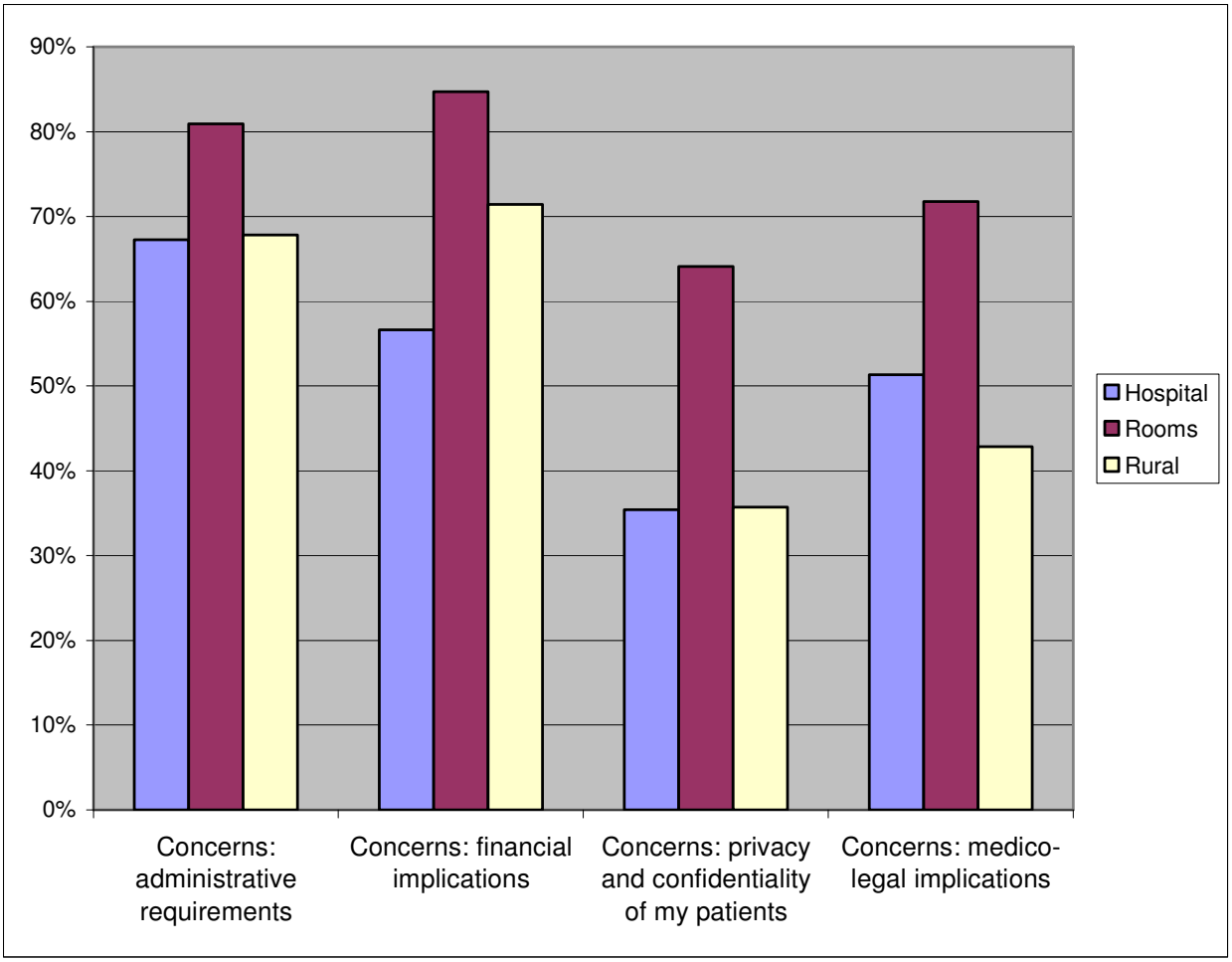
Specialty



Percent agreement with statements of concern about the PCEHR is shown here for different specialty groups. Specialties are represented individually for those that had more than 10 survey participants, and grouped together for others.

As we have seen already, general practitioners agreed more with concerns about the PCEHR. We can see also that psychiatrists particularly agreed with statements of concern about patient privacy and confidentiality when using the PCEHR, and about medico-legal implications of the system. These results could reflect the sensitive nature of psychiatric diagnoses; it will be important to consider this particular concern as the PCEHR system is prepared for launch.

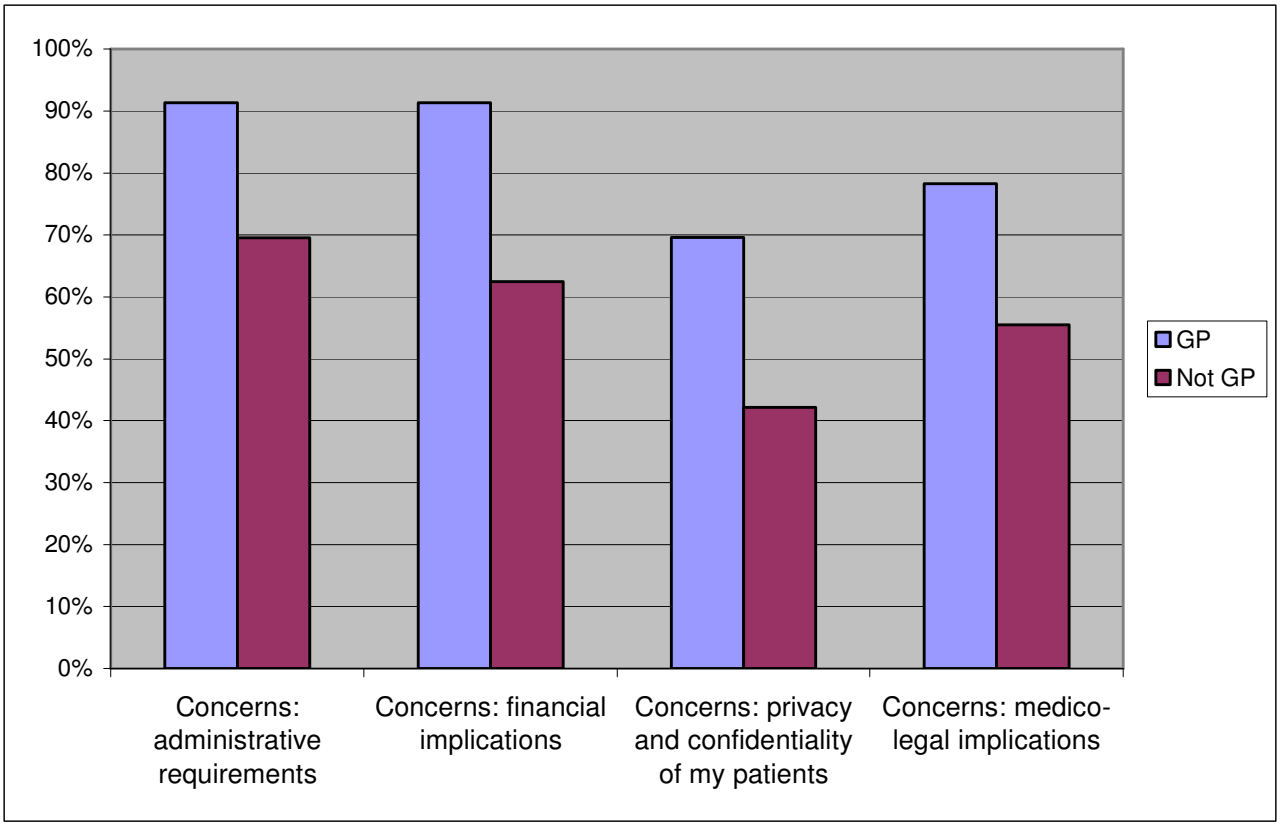
Practice setting



This chart compares agreement with each statement amongst participants working in hospitals, consulting rooms and in rural and remote settings.

Participants working in consulting rooms agreed more with these statements of concern about the PCEHR than doctors in hospitals and those in rural practice.

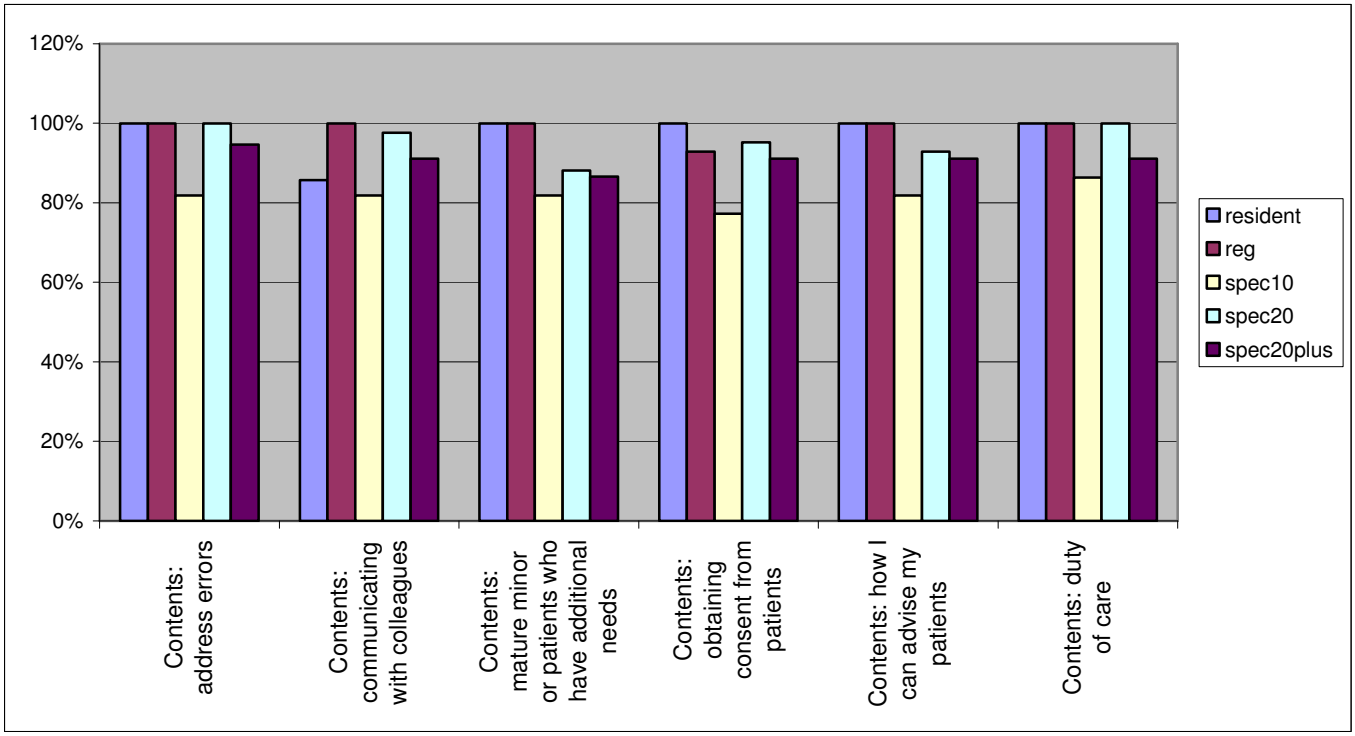
GPs / others



In this, agreement with statements of concern about the PCEHR is compared for general practitioners and other participants. As with other similar results that have already been discussed, GPs agree more with these concerns.

Other results

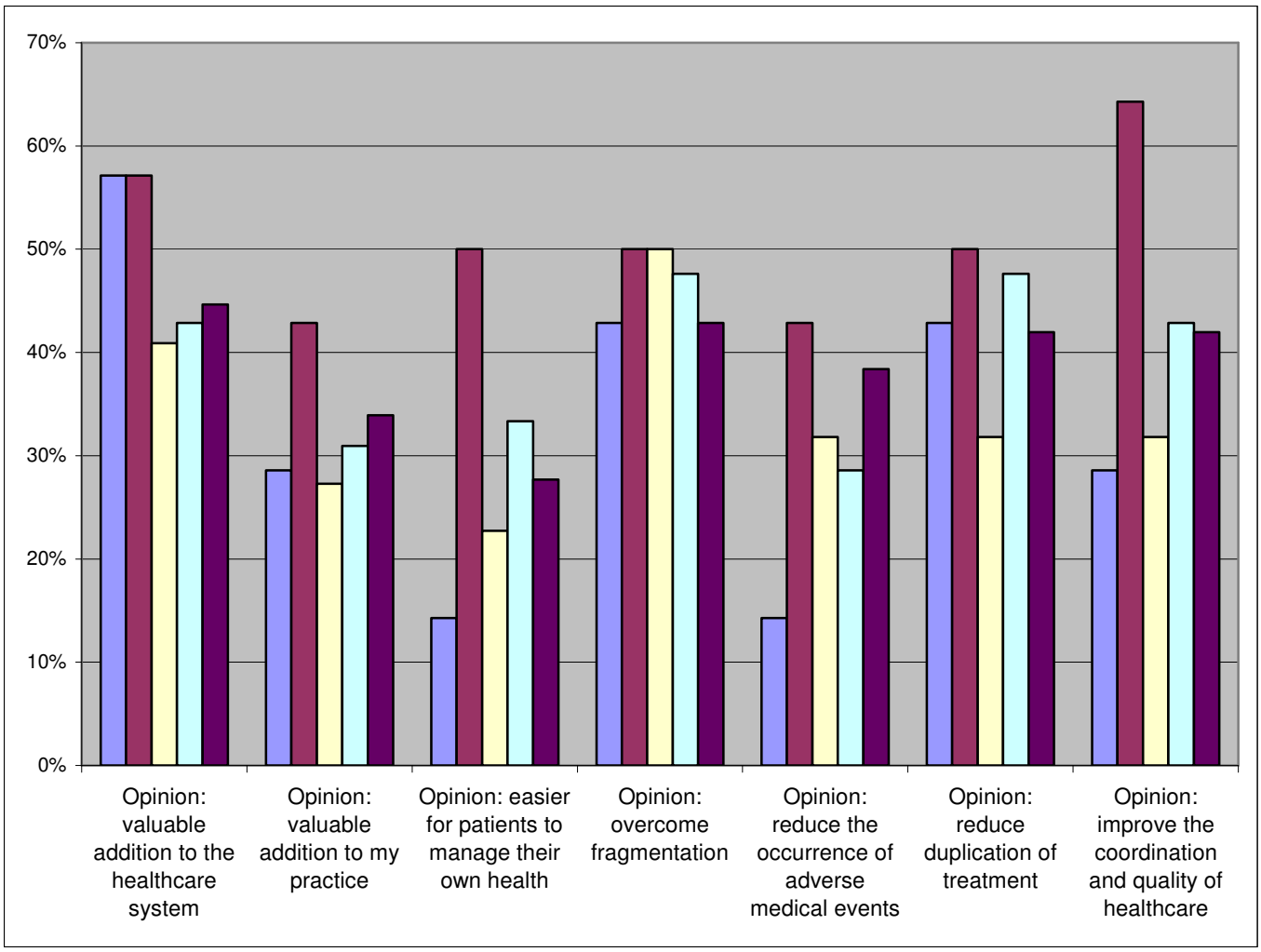
Contents of the guide by career stage



This chart presents agreement with statements about the content of the Essential Guide by career stage. Although agreement with the statements was high for all participants, this chart indicates that doctors-in-training and senior clinicians agree more with these statements than participants in the middle of their careers.

This could be related to roles of these medical practitioners as teachers and learners of medical practice, and might offer some guidance for the distribution and promotion of the Essential Guide and the PCEHR system.

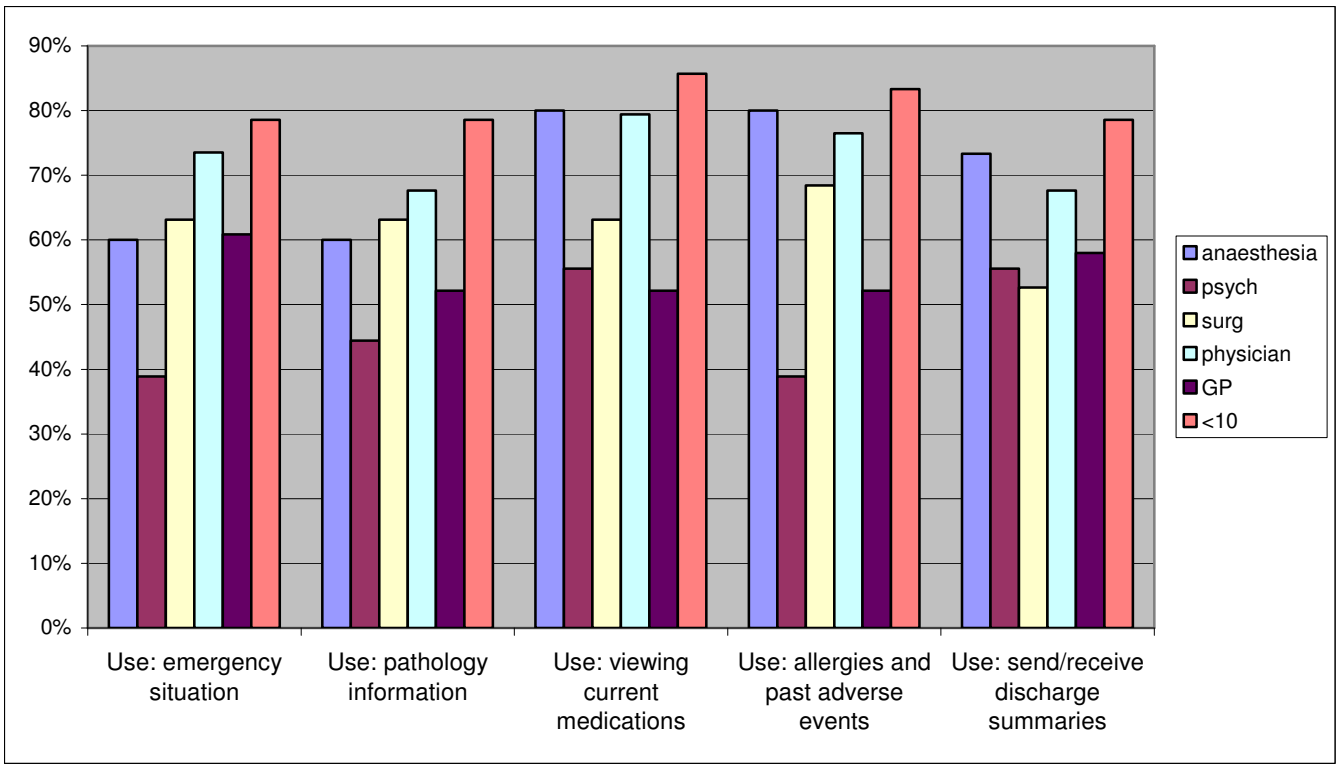
Opinion of the PCEHR by career stage



In this chart, agreement with statements of opinion about the PCEHR is shown by career stage. Agreement with statements varied considerably. However, registrars agreed more with these statements than participants at other stages in their careers.

These statements relate to the goals and outcomes of the PCEHR system. If registrars are seen to agree more with these goals and outcomes, this could provide some direction to the way that the Essential Guide is promoted and distributed.

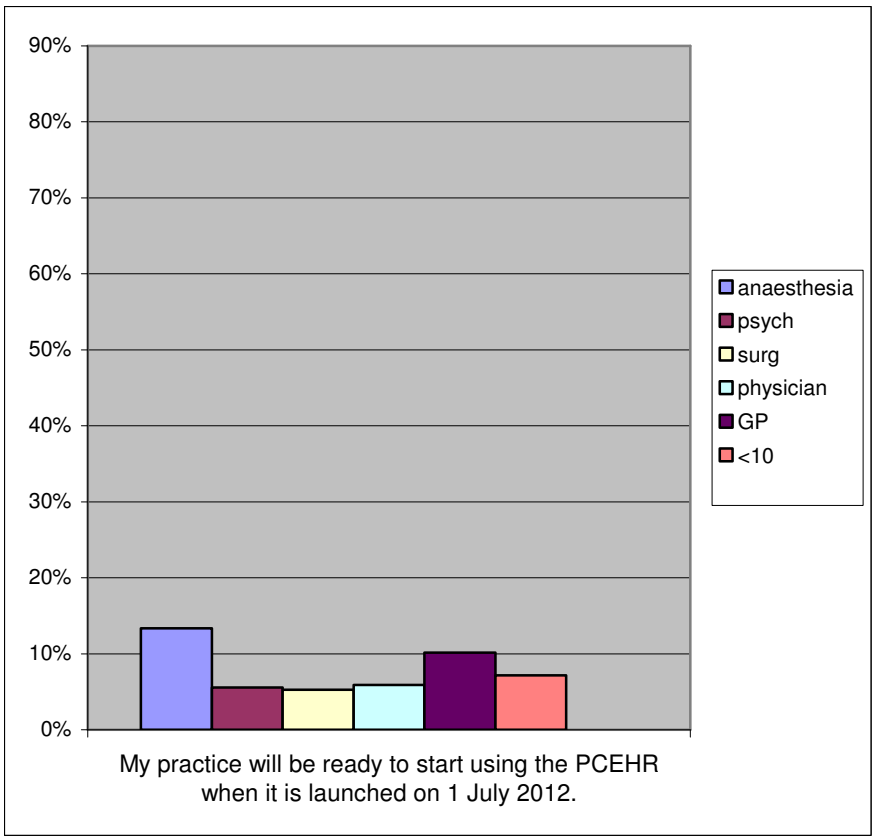
Use of the PCEHR by specialty



Agreement with statements about the use of the PCEHR is shown for each specialty group. General practitioners and psychiatrists agreed less with these statements, while physicians, anesthetists and others agreed more. Agreement with the statement relating to viewing medications was particularly strong.

As with previous results, general practitioners agreed less that they would use the PCEHR. This further illustrates the challenge of using the PCEHR system across the healthcare system: although general practitioners are more concerned about bearing the costs of adopting a shared electronic health record, they are less enthusiastic to use the system in their clinical practice.

Practice ready by specialty



Agreement with the statement relating to preparedness to use the PCEHR at launch in July 2012 is shown for each specialty group. There was very low agreement with this statement.

These results are consistent with unstructured feedback from medical practices that they will not be prepared to use the PCEHR when it launches. There are many barriers to adoption, some of which have been described in this report. For example, the lack of detailed knowledge about the PCEHR and widespread concerns about its financial and administrative burden on general practice are barriers to adoption of the system amongst general practitioners.

Free text responses

Concerns

Preparation

Other suggestions

Discussion