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Norwegian Health Care Professionals' Attitudes towards eHealth

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Abstract

The Health Informatics community delivers suggestions on how to achieve better services, and better quality of care, from better use of patient data. These suggestions may be accepted and adopted as public health policies, as health and privacy legislation, and even as IT systems. Yet the acid test remains; alleged improvements also need to be accepted by the patients and by the health care professionals. Research on the patients' attitudes towards various eHealth scenarios indicates they are willing to accept broader use of their data. They even expect data to become more available, both to relevant health care professionals and to themselves. The survey results that are briefly presented in this paper show that many health care professionals are skeptical to some aspects of eHealth. This survey is discussed against other research results. In particular, comparing this survey on health care professionals' attitudes to a survey on patients' attitudes, carried out by Statistics Sweden in 2005, reveals interesting differences between the patients and the health care professionals.

Keywords:

Patient Access to Records; Privacy

Introduction

Various well grounded developments in health care cause, or require, more use and better use of patient health data. Specializations of care activities, efficient resource allocation within or between institutions, patient-centered health care, among other developments, increase the demand for patient data to be communicated to the patients and between health care professionals. A growing number of health care professionals contribute to the collection of data on each patient. This leads to a need for better ways to organize the data, a need for standardization of terms and concepts, and a need for the patient to control what personal data is accessible to whom.

Technical solutions, policies and legislation, which is aimed at meeting the new demands, sometimes raise important and difficult controversies. EHealth policies introduce new "facts on the ground" which may revive old debates over privacy, paternalism versus autonomy, professionalism versus general management and so on.

A survey carried out by Statistics Sweden[1], shows that the general population to a large extent is in favor both of the patients' electronic access to the EHR, and of centralized health data to be available between cooperating health care professionals and institutions.

An American study[2] on attitudes about communication between patients and providers concluded that "clinicians were less positive about using electronic communication than their patients". However, the purposes and methods for communication studied were somewhat different from relevant eHealth policies in Scandinavia today.

The survey presented in this paper is a small investigation into the attitudes among Norwegian health care professionals, towards some fragments of eHealth policies that are relevant or that may become relevant in the near future. The main part of the paper is plainly a descriptive presentation of the results. The discussion at the end of the paper compares the results to others' findings, mainly to the Swedish report on patients' attitudes.

Material and Methods

A questionnaire was sent to 700 health care professionals, selected from three different professions, out of the 28 defined categories in the Health Personnel Act[3] § 48. The distribution between categories were: 300 Doctors, of which 200 working in hospitals and 100 working in general practices, 200 Medical Secretaries and 200 Radiographers. The reason for choosing these three professions was to obtain answers from respondents who differ in education, as well as in their professional tasks and relations to the patients.

In addition to the results presented in this paper, the questionnaire also contained other questions. These other questions were about the health care professionals' compliance with legal regulations on handling sensitive patient data. The choice of a biased sample where two thirds of the Doctors work in hospitals was mainly out of consideration for other parts of the questionnaire. The questionnaire was strictly anonymous. No responses are in any way traceable to the respondent. Between the other two professions, the sample was completely random, though the choice of Medical Secretaries as one of the categories led to bias in the gender distribution.

The questionnaire was out in October 2007, with one reminder sent in December. The total number of answers was 395, out of a net sample of 688. There were a very few empty answers to some of the questions. The overall response rate was 57.4%. The distribution of response rates were 62.1% for Doctors, 49.2% for Medical Secretaries, and 58.3% for Radiographers.

For each question, the respondents could choose a score from five possible answers. For readability, the graphics in the Results section use shorthand labels ranging from *Do it!* via *Positive*, *Neutral* and *Skeptic*, to *Avoid it!* The corresponding actual alternatives in the questionnaire were “Yes, this ought to be done!” on the protagonists side, via “A conditional yes, I see this as primarily advantageous”, “Neutral, I find it hard to weigh pros and cons” and “Probably not a good idea, I find this primarily disadvantageous”, to “No, this should be avoided!”

Results

The first four questions were different scenarios allowing the patient to use some service available on the Internet to exercise control over data in his own EHR. The four scenarios were as follows:

1. The patient may access his EHR, through a service available on the Internet
2. The patient may review, through a service available on the Internet, which individual health care professionals have read or edited his health data
3. The patient may decide, through a service available on the Internet, which institutions and/or individual health care professionals shall *not* have access to his health data
4. The patient may add to his own EHR data (e.g. experiences with the prescribed medication), through a service available on the Internet

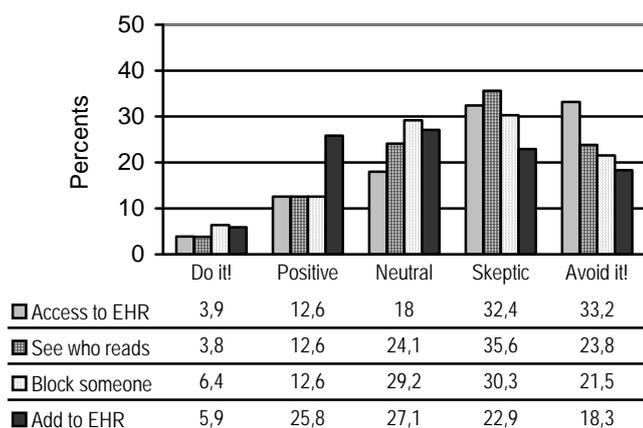


Figure 1 – all respondents, by EHR eHealth functionalities

The distribution of each scenario, over all respondents, shows the health care professionals were, in short, skeptical.

The first four questions are related, as they all deal with aspects of letting the patient exercise control over his data through a service on the Internet.

In the following figures 2 through 5, these four patient-centered scenarios are combined into a computed mean. The label for this compound, in this paper, is *EHR eHealth functionalities*.

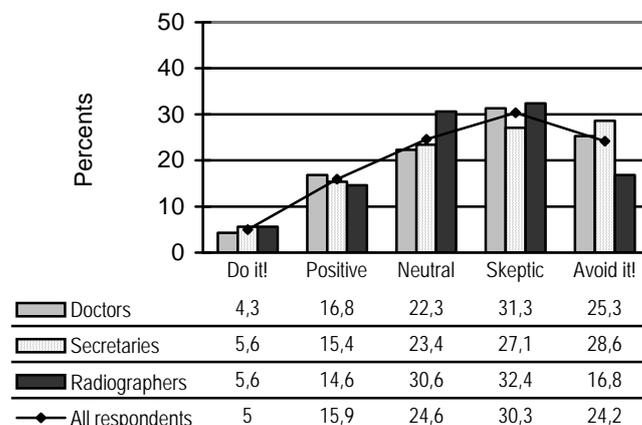


Figure 2 – EHR eHealth functionalities, by profession

Apart from the radiographers being slightly less skeptical, the attitudes towards patients' opportunities for exercising control are almost the same among the three different professions.

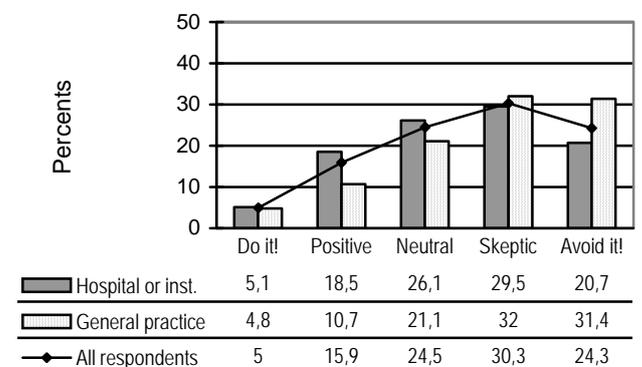


Figure 3 – EHR eHealth functionalities, by type of practice

Health care professionals who work in hospitals or in other institutions are less skeptical than those who work in general practices.

This seems to be the single factor that has the most influence on the attitudes towards EHR eHealth functionalities.

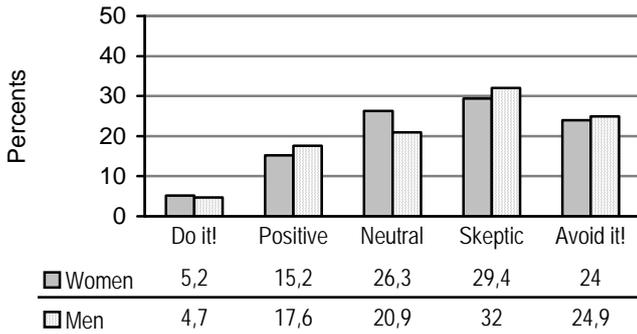


Figure 4 – EHR eHealth functionalities, by gender

Female health care professionals appear to show just a little bit more positive attitude towards EHR eHealth functionalities than their male colleagues.

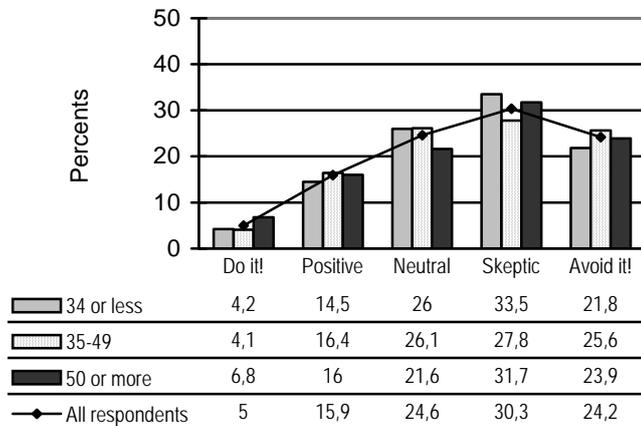


Figure 5 – EHR eHealth functionalities, by age group

The age group that the health care professional belongs to does not appear to influence attitudes very much

The next question is also related to patient-centered services on the Internet, but not specifically related to EHR functionality. The scenario is *online consultations*. It is not important whether a respondent perceives of the communication as a text-based messaging or “chatting”-environment, or if it is envisioned as some form of video conferencing. The scenario read:

- The patient may receive online consultations, by agreement with a health care professional, through a protected channel on the Internet

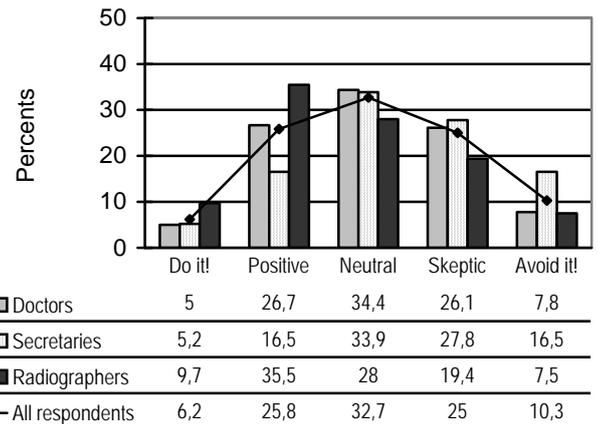


Figure 6 – online consultations, by profession

Compared to any of the previous figures, illustrating EHR eHealth functionalities, the attitudes towards online consultations appear to be more positive with all groups of health care professionals. The line graph illustrating all respondents shows an even distribution between the positive and the skeptical sides. The radiographers are more positive towards online consultations than the other two professional categories.

The sixth question is about putting the patient more actively in charge of exercising control over whom to share data with. In addition to a security device, this approach also implies that the patient, at least to some extent, retains the EHR data in his own physical possession.

- The patient carries his EHR data in a secure ‘smart card’, and he may share the information with whom-ever he chooses

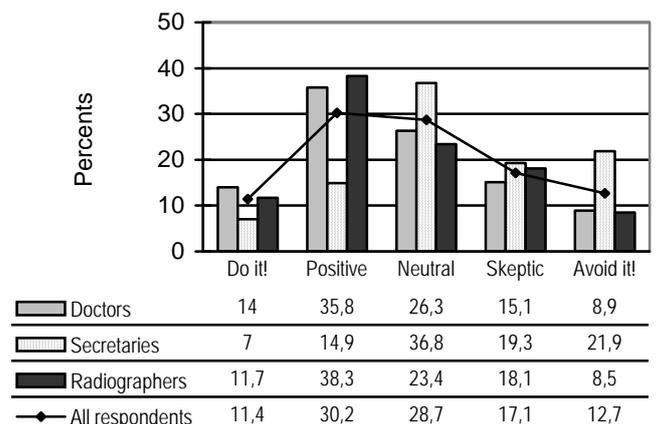


Figure 7 – “smart card” with patient held data, by profession

The line graph illustrating all respondents shows the attitudes lean to the positive side on this scenario. The attitudes appear to differ more between categories of health care professionals on this eHealth scenario than on any of the other scenarios. Medical Secretaries are remarkably more skeptical to “smart cards” with patient held data than the other two groups.

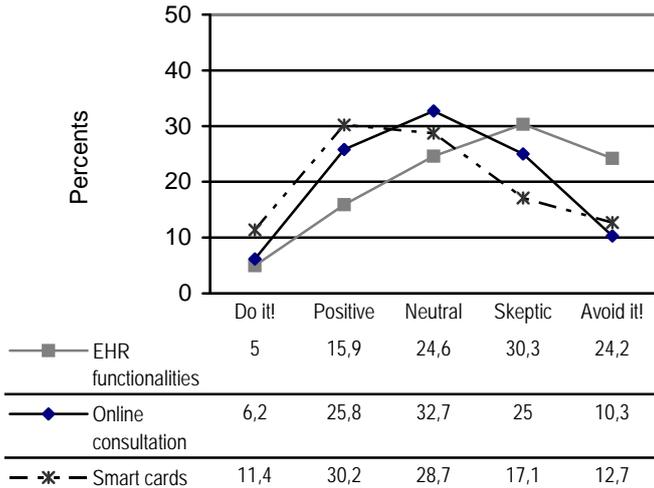


Figure 8 – comparing eHealth aspects, all respondents

The three lines shown in figure 8 are the mean values of *all respondents*, in figures 2, 6 and 7 respectively. They provide a suggestive bird's eye view on the variations in attitudes towards different fragments of eHealth scenarios. Health care professionals tend to have a positive attitude towards patient controlled disclosure and dissemination of patient-held EHR data. They seem to have a neutral attitude towards online consultations, while they are more skeptical to letting the patient control institution-held EHR data.

The last two scenarios are on policy fragments related to organizing of EHRs. They are not *patient-centered* scenarios comparable to the six earlier questions. However, choices on how to organize EHR data guide regulations, possibilities and opportunities governing use of patient data. The two scenarios, both on some degree of centralized EHR data, were as follows:

7. Only one EHR for each single patient: A centralized database containing all health data on each patient who consent.
8. A less radical version of the above scenario: A centralized database containing only patient identification, hospital admissions, and a small selection of not very sensitive data.

This second centralization scenario is often referred to as a “core EHR”¹, but this term was avoided in the questionnaire because it might not sound familiar to the respondents.

The questionnaire gave no specific indication of the scope or coverage of the centralized EHR data. In a small country like Norway, it is reasonable to assume a system either on a national or on a regional level. Both of the versions of the centralized EHR scenario, questions 7 and 8, would be dependant on the patients' consent.

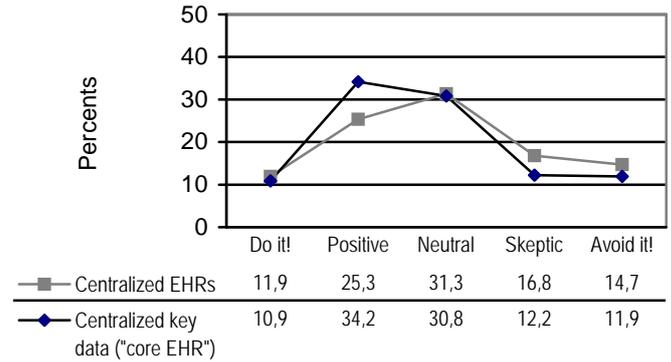


Figure 9 – centralized EHR data

Figure 9 compares the attitudes towards the “Only one EHR for each single patient” scenario to the “core EHR” scenario. In general, health care professionals tend to lean towards a positive attitude, both to the radical and to the softer versions of centralized EHR repositories. The attitudes are slightly more positive towards the “core EHR”.

Discussion

The respondents were asked about attitudes on some fragments of eHealth policies. These fragments are to various degrees part of a policy debate both in Norway and in other countries. This study measures top-of-the-head reflections on future might-to-be services. A scrutiny of what will be the best choices of eHealth policies in the near future must be based on both a deeper and a broader research. However, it is important not to leave the large body of health care professionals out of the considerations. They have the obligations to document each individual instance of health care that is provided, and they have the hands-on knowledge and experience with the actual contents of the records. Finally yet importantly, patients are probably not prone to trust or distrust abstract nation-wide or regional entities. Health care, even when it is eHealth, has names and faces. It is the patients' trust in their little-world health care professionals that is at stake.

This survey does not provide reliable answers to *why* the health care professionals are skeptical to the proposed scenarios. That is a question which deserves further research.

Studies show that patients tend to have more positive attitudes than health care professionals towards eHealth services. In Norway, as in other European countries, people use the Internet for health purposes. Most of the Internet eHealth use so far is about information-seeking and other general, non-identified services. It is also likely there will be an increasing demand for eHealth services where patients communicates directly with their appointed health care providers[4]. The patients' actual use of Internet for seeking information might blaze the trail for anticipating more patient-centered personal eHealth services.

A Swedish survey on the populations' views on some aspects of eHealth[1], provides some data almost directly comparable to the present survey.

¹ The term “core EHR” has been attributed to Thomas Beale, one of the founders of the *openEHR* Foundation

In the following three tables, there is an asterisk (*) marking a “neutral” position. The asterisk is to denote that the neutral position is not strictly comparable between these two surveys. In the Norwegian questionnaire to health care professionals, “neutral” means the respondent assigns equal weight to the advantages and the disadvantages of the proposed scenario. In the Swedish questionnaire to the patient population, “neutral” may signify that the respondent has no opinion on the matter. However, the remaining four scores are comparable, although the text guiding each option was not exactly the same.

Table 1 – comparison of attitudes on patients’ access to EHR

	Very positive	Positive	Neutral (*)	Skeptic	Very skeptic
Professionals	4	13	(18)	32	33
Patients	45	16	(4)	10	26

The percentages for professionals in table 1 are rounded numbers taken from the top row in figure 1, Access to EHR. Combining “very positive” and “positive” attitudes, amount to 61 % for patients, 17 % for health care professionals.

Tables 2 and 3 below compare the attitudes towards complete centralized EHR and a centralized “core EHR”.

Table 2 – comparison of attitudes on centralized EHR

	Very positive	Positive	Neutral (*)	Skeptic	Very skeptic
Professionals	12	25	(31)	17	15
Patients	51	28	(3)	14	4

The percentages for professionals in table 2 are rounded numbers taken from the top row in figure 9, Centralized EHRs.

Table 3 – comparison of attitudes on centralized “core EHR”

	Very positive	Positive	Neutral (*)	Skeptic	Very skeptic
Professionals	11	34	(31)	12	12
Patients	56	23	(4)	11	5

The percentages for professionals in table 3 are rounded numbers taken from the bottom row in figure 9, Centralized key data, “core EHR”.

Even though the health care professionals’ attitudes towards centralized EHRs, both variations, are more positive than their attitudes towards EHR eHealth functionalities, the health care professionals are much more skeptical to this than the patients are.

Conclusion

Health care professionals tend to be more skeptical about eHealth policies than the patients are.

This survey provides descriptive data supporting this conclusion. It is merely a starting point. An investigation into causes and possible remedies will need a deeper qualitative research. Anyhow, I think the findings should be read as a warning sign not to ignore or overlook the views of the large body of health care professionals who may not be more than average optimistic about, or interested in, technological developments.

Acknowledgements

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References

- [1] Din patientjournal: Enkätundersökning 2005. Stockholm: Statistiska Centralbyrån; 2005.
- [2] Hassol A, Walker JM, Kidder D, Rokita K, Young D, Pierdon S, Deitz D, Kuck S, Ortiz E. Patient experiences and attitudes about access to a patient electronic health care record and linked web messaging. *J Am Med Inform Assoc.* 2004;11(6):505-13.
- [3] helsepersonelloven. *Lov om helsepersonell m.v.*, 2. juli 1999 nr. 64. Available from: <http://www.lovdatab.no/all/hl-19990702-064.html>
- [4] Andreassen H, Bujnowska-Fedak M, Chronaki C, Dumitru R, Pudule I, Santana S, Voss H, Wynn R. European citizens' use of E-health services: A study of seven countries. *BMC Public Health.* 2007;7(1):53.

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