Survey on Medical Records and EHR in Asia-Pacific Region

Languages, Purposes, IDs and Regulations

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Health care surveys, medical records, electronic health records, languages, privacy

Summary
Objectives: To clarify health record background information in the Asia-Pacific region, for planning and evaluation of medical information systems.
Methods: The survey was carried out in the summer of 2009. Of the 14 APAMI (Asia-Pacific Association for Medical Informatics) delegates 12 responded which were Australia, China, Hong Kong, India, Indonesia, Japan, Korea, New Zealand, the Philippines, Singapore, Thailand, and Taiwan.
Results: English is used for records and education in Australia, Hong Kong, India, New Zealand, the Philippines, Singapore and Taiwan. Most of the countries/regions are British Commonwealth. Nine out of 12 delegates responded that the second purpose of medical records was for the billing of medical services. Seven out of nine responders to this question answered that the second purpose of EHR (Electronic Health Records) was healthcare cost cutting. In Singapore, a versatile resident ID is used which can be applied to a variety of uses. Seven other regions have resident IDs which are used for a varying range of purposes. Regarding healthcare ID, resident ID is simply used as healthcare ID in Hong Kong, Singapore and Thailand. In most cases, disclosure of medical data with patient’s name identified is allowed only for the purpose of disease control within a legal framework and for disclosure to the patient and referred doctors. Secondary use of medical information with the patient’s identification anonymized is usually allowed in particular cases for specific purposes.
Conclusion: This survey on the health record background information has yielded the above mentioned results. This information contributes to the planning and evaluation of medical information systems in the Asia-Pacific region.

1. Introduction

In the Asia-Pacific region, the use of Electronic Health Record (EHR) systems has been increasingly expanded among healthcare institutions, and many regional/national EHR projects have already been reported [1–4]. Also, systematic review is done on the quality requirements of EHR [5], of which only few of deployment in Asia-Pacific region is included. On the other hand, there is such a diversity of background in the countries and regions of the Asia-Pacific area that it would be a mistake to make sweeping generalizations.

First, the gap between medical demands and supply varies among developing and developed countries. Therefore, the purposes of EHR and data sharing will also vary among providers and will naturally reflect their demand-supply gap. At a fundamental level, therefore, the purposes of the medical record itself – regardless the medium (paper or electronic) – will be different.

Next, the language used for medical records, education and practices vary among regions. Language difference directly reflects IT system difference, not only for its display and command language, but also for coding schema of medical terms and concepts. The existence or absence of patient ID numbers, their range of application when used, and regulations governing private data and secondary use...
of medical information are also different because of the users’ diverse political systems.

A consideration of such background information is critical when planning, executing or developing EHR projects as well as when attempting to learn from and evaluate other EHR projects.

Because of these reasons, it is important to know current situations, purposes, regulations concerning medical records and EHR at each country and region, for the benefit of implementers and designers of IT systems, as well as policy makers of healthcare. There was no complied report on these issues before.

In November, 2009, the APAMI (Asia-Pacific Association for Medical Informatics) Conference 2009 was held in Hiroshima, Japan. A survey was conducted prior to the conference in order to clarify the above stated background information of each nation or region. We will now report the results of that survey.

2. Methods

The survey was carried out in the summer of 2009. Of the 14 APAMI delegates 12 responded which were Australia, China, Hong Kong, India, Indonesia, Japan, Korea, New Zealand, the Philippines, Singapore, Thailand, and Taiwan.

Questionnaire was sent and answered by APAMI member societies, as they are the appropriate person who know their situations.
The questionnaire was as follows:
- Purpose of medical records is primarily for healthcare itself, what are 2nd? 3rd?
- Does your country/region have a National ID, a National Health ID?
- What is the status of your country/region’s EHR (lifelong health record) project status?
- Purpose of EHR is primarily for continuity of care, what are 2nd? 3rd?
- What language is used for medical records, nursing records?
- Disclosure of medical record contents to patient, referred physician, insurance payer, public health dept., health policy dept. are unconditional/conditional/prohibited?
- Secondary use of medical record (dis-identified) by public health dept., health policy dept., non-profit research, for-profit research, are unconditional/conditional/prohibited? Any general regulations exist in your country/region?
- Does your country/region have unique healthcare ID for patients?
- Is there any regulation/legislation concerning secondary use of private data? (Person’s ID sufficiently anonymous, and without person’s consent)

At the APAMI Conference held on November 2009, the result of the survey was released in the keynote speech by the President of the conference. During the discussion at the conference, the importance of the linkage between the National Health IDs and other social IDs was suggested and a further survey was proposed to cover privacy regulations with a clear definition of “dis-identified.” In response to this, a follow up questionnaire including the following questions was sent out and answered by all 12 respondents in February 2010.

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3. Results

3.1 Languages Used

The questions were “What language is used for medical records, nursing records, medical school education and nursing school education? And are there any regulations on the description of medical records?”. The results are shown in Table 1.

3.2 Purposes of Medical Records

The question was “Purpose of medical records is primary for healthcare itself, what comes after it?” The responders are asked to choose the second, third and fourth purposes from the following options; billing, clinical research, public health, medical education and hospital management. If there were any other important purposes, they were requested to specify them. The results are shown in Table 2.

3.3 Status and Purposes of Electronic Medical Records (EHR)

The question was “What is the status of your country/region’s EHR (lifelong health record) project status?” with the option to choose from ‘accomplished’, ‘almost accomplished’, ‘partially tested’ and ‘no plan’. Then the question continues “Purpose of...
EHR is primary for continuity of care, what comes after it?” with the definition of “EHR” as the patient healthcare records shared by multi-institutions to use. The responders are asked to choose the second, third and fourth purposes of EHR from the following options: public health/disease control, healthcare cost cut and clinical research. The results are provided in Table 3 and 4.

3.4 Resident ID, Healthcare ID

The question was about the presence or absence of unique resident ID and healthcare ID. If there was a resident ID/healthcare ID, then the question went on to ask whether the ID was used or was linkable to other social IDs. The results are shown in Table 5 and 6.

3.5 Disclosure

The question was “Disclosure of medical record contents to 1) patient, 2) referred physician, 3) insurance payer, 4) public health dept., and 5) health policy dept. are unconditional/conditional/prohibited?” The results are shown in Table 7.

3.6 Secondary Use

The question was “Secondary use of medical record (Person’s ID made sufficiently anonymous, and without the person’s consent) by 1) public health dept., 2) health policy dept., 3) non-profit research organizations, and 4) for-profit research organizations, are unconditional/conditional/prohibited?” And then the question went on to ask whether there are any general regulations on such secondary use? The results are shown in Table 8.

4. Discussions

As these questionnaires were answered by persons representing APAMI member societies, current local situations are fully reflected. This survey report is the first, which lines up all answers at a time.

4.1 Languages Used (Table 1)

Garrett reported language barriers in clinical practice [6]. To overcome this barrier, there have been many trials to standardize and code the medical languages [7].

In current practice, English is used for records and education in Australia, Hong Kong, India, New Zealand, the Philippines, Singapore and Taiwan. Most of the countries/regions are British Commonwealth members. Because of the institutionalized collaboration in credit sharing among universities in the commonwealth members, English is used for education in those countries. English is also used in the Philippines mainly because of the influence of the U.S.

In Taiwan, English is used for medical records, but Chinese is used for nursing records and education. Australia, Indonesia, Japan and Korea, use their own languages in medical records. In Japan, the reason this is done is to assure transparency of medical practices from patients’ point of view.

4.2 Purposes of Medical Records (Table 2)

Textbook of medical record keeping says that secondary use for research is also important, though, of course, the primary purpose of medical record is information
sharing between practitioners [8]. Nine out of 12 delegates responded that the second purpose of medical records was for the billing of medical services. For the remaining three delegates the second purpose was hospital management. Research, education and public health received lower priorities. Given that conventional medical records were paper based, it would be difficult to put such data to practical use for the purposes of research or public health.

4.3 Status and Purposes of Electronic Medical Records (EHR) (Tables 3 and 4)

Most answers were “being partially tested” [2–4, 9, 10] with Hong Kong alone answering “almost accomplished” [1]. It is worth noting that Hong Kong has an EHR initiative to create a territory-wide information network system for sharing basic information on patients, test results and prescriptions.

4.4 Resident ID, Healthcare ID (Tables 5 and 6)

In Singapore, a versatile resident ID is used which can be applied to a variety of uses. Seven other regions have resident IDs which are used for a varying range of purposes. In Hong Kong and Taiwan, resident IDs are used for a relatively wide range of purposes, whereas in China, Indonesia and Japan IDs have a limited application that is primarily restricted to administration purposes (e.g. taxpayer ID number and drivers’ license number) and does not include medical and welfare purposes.

Regarding healthcare ID, resident ID is simply used as healthcare ID in Hong Kong, Singapore and Thailand. When a unique healthcare ID is used that is different from the resident ID, the primary purpose is for insurance claims (Japan, New Zealand and Taiwan). In Singapore where regulations are strictly enforced, resident ID can be simply used as a patient number at any healthcare institution. Most nations/regions, however, employ dual ID systems where a separate patient number, linkable to resident ID, needs to be assigned at each healthcare institution. As in any clinical research, the use of a dual ID system is to prevent large-scale leakages of data involving patients’ private information.

4.5 Disclosure (Table 7)

Data disclosure to the patient occurs in 10 out of 12 nations/regions. In Japan, appro-
val is needed in cases where a physician judges that disclosure to the patient might harm the patient’s mental and/or physical well-being.

Contrary to our expectations, information disclosure to referred doctors is not accepted in five countries/regions. Most of these cases require the patient’s consent, suggesting a patient’s autonomous rights are respected in these areas.

Disclosure to insurance organizations and companies are accepted in the majority of the nations/regions, including Japan and New Zealand where the disclosure is restricted to insurance claim data, and does not extend to all medical data. Disclosure for the purpose of public health/disease control is allowed under the particular regulations of specified diseases, such as contagious diseases, in most nations/regions, with fewer countries/regions allowing disclosure for the purpose of healthcare policy making. This trend appears to reflect on public attitudes toward emerging infectious diseases and preparedness in the Asia-Pacific region.

4.6 Secondary Use (Table 8)

 Needless to say, data in healthcare information systems are highly valued for many purposes including researches, especially for translational research to tie laboratory and companies are accepted in the majority of the nations/regions, including Japan and New Zealand where the disclosure is restricted to insurance claim data, and does not extend to all medical data. Disclosure for the purpose of public health/disease control is allowed under the particular regulations of specified diseases, such as contagious diseases, in most nations/regions, with fewer countries/regions allowing disclosure for the purpose of healthcare policy making. This trend appears to reflect on public attitudes toward emerging infectious diseases and preparedness in the Asia-Pacific region.

Concerning languages used for medical records and education, English is widely used mainly in British Commonwealth members, while other countries use their own languages. In Indonesia, Japan and Korea, use of the native language is encouraged.

The most common reason given for the purpose of medical records (which comes after medical services and the most common answer about the purpose of EHR (which comes after continuity of care) is for healthcare cost savings. Next, disease control was given higher priority than clinical research, suggesting the Asia-Pacific region is at a particularly high risk of infectious diseases.

Eight countries/regions adopt resident ID but with varying degrees of application. In Singapore, resident ID can be used for various purposes including patient ID, but as a general rule patient ID is different from resident ID. In Taiwan and Hong Kong, resident ID is relatively versatile. When unique healthcare ID is different from resident ID, the primary purpose is for billing indicating that separate ID has yet to become a centerpiece of the EHR project.

In most cases, disclosure of medical data with patient’s name identified is allowed only for the purpose of disease control within a legal framework and for disclosure to the patient and referred doctors. Secondary use of medical information with the patient’s name removed is usually allowed in particular cases for specific purposes. When it is for research purposes, secondary use of medical information is permitted only with IRB approval.

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In summary, this first survey on the subject of EHR background information has yielded the above mentioned results. This information contributes to the planning and evaluation of medical information systems in the Asia-Pacific region.

Acknowledgment

Professor Yun Sik Kwak (Korea), the co-author and survey responder, passed away before the publication of this paper. The first author wishes to express his sincerest appreciation to Dr. Yun for his contribution to this survey and to medical informatics. May his soul rest in peace.

References