How well do clinicians use computer-based information for clinical practice? Postal survey of clinicians' views in Japan

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Introduction
The use of computer-based information by clinicians has been increasingly advocated for improving the quality of patient care and providing better use of evidence. However, it is still not clear how well clinicians use the computer-based information for their clinical practice in Japan. The purpose of study was to make clear the status of clinical use of computer-based information system by clinicians in university hospitals in Japan through a questionnaire survey.

Methods
468 clinicians from 78 university hospitals (group1) and 100 clinicians from Hokkaido University Hospital (group2) were selected randomly and investigated by a self-administered questionnaire during July and August 1999. The questions focused on the frequency of computer use, computer-based literature retrieval for clinical practice, Internet use for clinical practice, hospital information system (HIS) use, information collection for clinical practice and e-mail communication with patient.

Results and Discussion
The valid answers were obtained from 283 (60.5%) clinicians in 78 university hospitals (group1) and 61 (61%) clinicians in Hokkaido University Hospital (group2).

1. Frequency of three sources use
Although only about 32% clinicians use literature databases almost every day, the percentage is up to about 96% if we counted at the level of 1-2 times per month at least. However, when the question "What percentage for purpose of seeking solution for problems on your practice?" was asked, 61.8% (group1) and 60.7% (group2) clinicians used the computer-based literature databases for clinical practice less than 20%, and only 11.0% (group1) and 23.0% (group2) up to more than 50%.

The emergence of Internet and widespread adoption of WWW have showed a promising prospect for improving clinician’s access to information resources. However, in our survey, only 4.6% (group1) and 6.6% (group2) clinicians use Internet to seek solution for the problems on clinical practice almost every day, and 26.5% (group1) and 13.1% (group2) clinicians never used Internet clinically.

24.7% (group1) and 31.1% (group2) clinicians use computer-based hospital information system almost every day to seek relevant patient information for the solution of the problems on clinical practice, and 17.7% (group1) and 21.3% (group2) clinicians never used them for clinical practice.

The Fisher's PLSD test was performed to examine the difference among above three computerized information sources used by clinicians every day for their clinical practice. The statistical results showed that there was significant difference between Internet use and literature database use (P<0.05) and between Internet use and HIS use (P<0.05). It indicated that hospital information system and literature database sources were used more frequently than that from Internet sources for the solution of problems on clinical practice. It seems that the expected advantages from Internet-based information sources were not well developed for clinicians in Japan.

2. E-mail communication with patients
E-mail communication among all participants in the health care delivery system will transfer computerized information that possibly facilitates the patient care. The survey showed a high frequency of e-mail use by clinicians, with that 71.7% (group1) and 96.7% (group2) clinicians sending or receiving e-mail messages 1-2 per week at least. It reflected that clinicians in Japan embraced the electronic communication way well just like other traditional ways.

However, the survey showed that e-mail communication with patients was an exception for its prevailing usage. The question "Do you think if it is necessary to use e-mail between clinicians and patients?" was answered by clinicians. 25.4% (group1) and 23.0% (group2) clinicians answered "necessary" or "critical necessary", and 47.7% (group1) and 39.3% (group2) clinicians "not so necessary". In addition, 19.8% (group1) and 23.0% (group2) answered "unnecessary". The free answers reflected that clinicians cared some problems about communication security and privacy, payment system, too much occupied time and its effectiveness, etc. The result indicated that the most of clinicians in Japan owned the cautious attitude for e-mail communication with patients.

Summary
It still will take a long way to take full use of advantages of computerized information sources and to overcome its barriers by clinicians for their clinical practice in Japan. The cautious attitudes owned by most of clinicians in Japan on e-mail communication with patients indicated that further studies are needed to clarify its blur points.