

Case Summary

The "Hospital ICT use" study was carried out by the American Hospital Association in conjunction with and support from the federal government of the United States and a team of researchers from Harvard University and Massachusetts General Hospital. The purpose of the study was to measure the use of computerized systems and electronic health records in hospitals across the United States, as well as to better understand the barriers to adoption in hospitals that have not yet implemented the technology. The survey was in the field from March, 2008 through September, 2008. Approximately 4,850 hospitals were surveyed via direct mailings with phone follow-up. The data are still being analyzed, but preliminary results indicate important information regarding the percent of US hospitals with a basic Electronic Health Record (EHR) in place, and those with a comprehensive EHR. Learning about perceptions of barriers to adoption will also yield valuable information on how to encourage more widespread use of information technology in hospitals.

Background and Objectives

Objectives

The aim of the benchmarking activity was to learn about the extent of the use of information technology in the US hospital setting, as well as to understand barriers to more widespread adoption.

Background Information

The benchmarking activity is linked to a national strategy to promote the use of ICTs in healthcare.

This survey focused on hospitals only.

Type of activity

- Measuring eHealth / ICT availability and use
- Measuring attitudes towards eHealth and eHealth use
- Data gathering with the aim of eHealth market sizing
- Evaluation of an eHealth application / Service

Budget

Unfortunately, the budget for the development of this new survey instrument and for the implementation of the survey are not publicly available. However, several individual professionals (physicians, survey experts) and a group of nationally-recognized leaders were involved in developing the instrument and the AHA implemented it by multiple mailings and phone calls to nearly 5000 institutions. The cost of the implementation was approximately \$100,000. It was lower than what might be expected because it was part (a supplement) to an existing survey.

Hospital ICT use survey

Executing agency



American Hospital Association

American Hospital Association

Year of publication 2008

Year(s) of available data 2008

Geographic coverage USA

Main Actors

American Health Association

Business Association
Fieldwork

Office of the National Coordinator for Health Information Technology

Public Authority
Funding

Harvard School of Public Health

University
Development of survey and strategic plan for implementation

Implementation

Data gathering approach

The data were gathered by a survey questionnaire. The instrument has been included in the reference section.

Sampling and fieldwork

This survey was a census (not a sample) of all acute-care hospitals in the U.S. The survey was sent by mail with phone follow-up for non-respondents. The response rate was 63.1%.

Timing

The questionnaire development took place between July and December of 2007. The survey was in the field from March, 2008 through September 2008. Analysis is presently being completed, with reporting and publication to follow.

Analysis and Reporting

Data analysis is currently taking place. More information on analysis methods will be provided when the results are reported, which is expected in early 2009.

Evaluation of implementation aspects

Quality Criteria	Score	Explanation
1. Relevance and transferability		
"The indicators clearly refer to eHealth."	●●●●	
"The indicators cover the respective issues/topics in sufficient depth."	○●●●	The survey has good details about ICT indicators but due to time/length constraints, some potentially important details were not obtained.
"The indicators allow regular measurement in the same context in the future".	●●●●	
"The indicators can be applied to a different national context."	●●●●	The indicators are based on functionalities and therefore, should be readily transferable.
2. Accessibility of information		
"The publication of the study presents enough methodological information to enable the reader to judge its validity. (i.e. information on sample size, weighting etc.)"	NA	
"The research results have been published in English"	NA	
3. Validity of measurement		
"The concept of eHealth used by the study is clearly expressed and therefore understandable for a variety of survey respondents."	●●●●	The survey instrument gauges how health information technology is being used by asking about specific functions with separate questions for each.
"The operationalisation of the indicators has been validated before use."	○●●●	The indicators went through rigorous review by national experts in the field, tested in a few hospitals but other validation efforts were not taken. They will be in the future.
"The likelihood of social desirability bias/context bias is avoided as much as possible"	○●●●	The questions were factual and required few opinions or assessments from the respondents.
"In the case of a multinational study: appropriate translation procedures of survey instruments are used."	NA	
"The instrument follows the general rules for questionnaire design:" Question wording: simple, unambiguous, defining unclear terms Question wording: single stimuli Question wording: factual, not hypothetic Question wording: clear time and actor reference Question wording: neutral, not suggestive Question content: respondent has necessary knowledge and information in order to answer the questions	●●●●	Several nationally-recognized experts in survey methodology were involved in the creation of the survey. Quests were simple and unambiguous, factual and neutral. Testing of the questions with hospital leaders helped ensure that the questions were understood as intended and were easy to answer.

Population validity

Sampling frame quality: It was a census of all U.S. acute care hospitals and therefore, the sample was a very valid reflector of that population (since it included all members of the population).

Data collection quality: The survey used standard methodology for data collection: sending out a mailed questionnaire followed by further mailings and phone calls. It achieved a response rate of 63.1% with respondents being very similar in their characteristics to non-respondents.

Non-response rate documentation: As described above, the survey achieved a modestly high response rate. Although the respondents and non-respondents were similar in critical characteristics (such as hospital size, academic status, other technological capabilities), all study results are analyzed to

adjust for non-response bias using multivariable modelling that accounts for baseline differences in response rates.

The sampling frame was a census of all acute care hospitals and therefore there was no deviation from the sampling frame.

Respondent load

The survey covers multiple topics in depth without being too extensive to deter respondents. The typical respondent takes 30 minutes to answer the questions.

Conclusions and learning points

From the point of view of the ordering customer / funding organisation

Strengths

The most valuable feature of this survey was that it broke out each functionality separately so we could discern which functions are most likely to be adopted and which ones were likely to be adopted first. This allowed us to create a standard definition of EHR adoption that can be replicated in the future by other studies.

Weaknesses

There were a few weaknesses with this survey. The major concern was that of a response bias in spite of a fairly high response rate. Secondly, we did not adequately distinguish between adoption and use of these systems.

Facilitators

The most important feature of this survey was the ability to break the survey down by functionality so that multiple definitions of EHR could be utilized. This allowed us to create a new definition of EHR adoption but also to continue to trend the rate of adoption using previously utilized definitions.

Constraints

The major challenge is achieving a high enough response rate to ensure generalizability of the findings.

From the point of view of the implementing organisation

Strengths

It was a survey with clear definitions of functionalities that was administered to nearly every hospital in the U.S.

Weaknesses

Because of the length of the survey, it did not allow for adequate distinctions between adoption and use of these technologies.

Facilitators

It was supported by the federal government and administered by the hospital trade association.

Constraints

The biggest challenge was that it added to the survey burden that hospitals already experience.

References

Jha AK, Ferris TG, Donelan K, et al. How common are electronic health records in the United States? A summary of the evidence. *Health Aff (Millwood)*. Nov-Dec 2006;25(6):w496-507.

DesRoches CM, Campbell EG, Rao SR, et al. Electronic health records in ambulatory care--a national survey of physicians. *N Engl J Med*. Jul 3 2008;359(1):50-60.

Learning points

Be clear as possible in your definitions of functionalities.

Identify key features of the technology that you want to know about and focus first on those.

Allocate enough effort and resources, and partner with those that are most likely to be able to achieve a high response rate.

Focus on key functionalities that are important.

Partner with organizations, such as trade groups and governmental agencies, that can help create momentum.

Keep the survey simple.

The eHealth Benchmarking Study

The "eHealth Benchmarking" study is carried out by empirica on behalf of the European Commission, Information Society and Media Directorate-General. The study aims to collate and analyse existing eHealth monitoring and benchmarking sources in order to identify best practice in data gathering and to develop a framework for an EU-wide eHealth benchmarking activity. The intention is not only to help better understand eHealth progress but also to identify the main gaps, obstacles and barriers in relation to eHealth monitoring / benchmarking to be overcome in the next few years. In doing so, the study covers the Member States of the European Union, Norway, Iceland, Canada and the United States.

The benchmarking sources were identified by means of a combination of different research methods, including a survey among the experts of the EEA Working Group on Information Society statistics, desk research on sources of eHealth data and measurements on a supranational and European level, and research on the national level carried out by a network of national correspondents.

More information on the study is available online at <http://www.ehealth-benchmarking.eu/> or from the project coordinator:



empirica Gesellschaft für Kommunikations- und Technologieforschung mbH
Oxfordstr. 2, 53111 Bonn, Germany
Phone: +49 228 98 53 00
E-Mail [ehbench \(at\) empirica \(dot\) com](mailto:ehbench@empirica.com)

Authorship

This case was written by the case owner organisation.

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