

## eHealth Benchmarking Good Practice Case

### Pilot on eHealth Indicators

#### Case summary

The "Pilot on eHealth Indicators" is a study carried out by empirica in association with IPSOS on behalf of the European Commission, Information Society and Media Directorate General. The purpose of the study was to measure the use of ICT by primary care physicians in the EU27 and EEA countries. This purpose was achieved by means of a survey with primary care physicians (GPs) in all 27 EU Member States, Norway and Iceland in the second half of 2007. A total of 6,789 interviews were conducted using computer aided telephone interview (CATI) technology. The data gathered concerned the GPs' use of ICT and Internet for communicating with patients and between primary and secondary care and other eHealth actors. The study included the first comprehensive survey addressing the ICT use of GPs in all the 27 EU member states.

#### Background and Objectives

##### Objectives

The purpose of the study was to measure the use of ICT by primary care physicians in the EU27 and EEA countries.

##### Background Information

In 2004, the European Commission adopted an Action Plan to develop the use of ICT in the Health sector. As a result, all Member States put in place strategies to accelerate eHealth deployment. eHealth is part of the Lead Market initiative for innovation launched by the Commission in 2008. The survey is set in this context and is a part of the i2010 initiative which the European Commission adopted in June 2005 to create a European Information Society for growth and employment.

The aim is to establish a coherent framework for benchmarking eHealth. However, in the case of the healthcare sector, suitable indicators are not available and the objective of this study is to obtain up-to-date information and data on eHealth developments and thereby to define an appropriate benchmarking procedure for eHealth. Benchmarking of progress to enable member states to monitor their performance in turn is seen as an important element of the Commission's contribution to the improvement of public services.

The study does not address target groups beyond the respondents.

##### 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

Overall budget: 590,700 Euro  
of which survey costs: 413,600 Euro

#### Pilot on eHealth Indicators

Executing agency



Year of publication 2008

Year(s) of available data 2002, 2007

Geographic coverage Belgium, Bulgaria, Suisse, Czech Republic, Denmark, Germany, Estonia, Ireland, Greece, Spain, France, Iceland, Italy, Latvia, Lithuania, Luxembourg, Hungary, Netherlands, Norway, Austria, Poland, Portugal, Romania, Slovenia, Slovakia, Finland, Sweden, United Kingdom (EU27+2)

Further information [http://ec.europa.eu/information\\_society/europe/i2010/benchmarking/index\\_en.htm](http://ec.europa.eu/information_society/europe/i2010/benchmarking/index_en.htm)

#### Main Actors

##### empirica. Communication and Technology Research

Status: Private research and consultancy firm

General role: Empirica is a private, internationally active research and consulting firm concentrating on the following areas: eBusiness, eInclusion & eAccessibility, eHealth & Telemedicine, the information and knowledge society .

Role for the study: Empirica was responsible for the research design, the commissioning of the research, the English master questionnaire development. Empirica was also responsible for the data analysis and the reporting of the survey results.

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**European Commission, Information Society and Media Directorate-General. – Unit C1 – Lisbon Strategy and i2010**

Status: public authority

Role: ordering customer

## Ipsos

Status: Private market research company

General Role: Ipsos is a globally operating independent market research company, conducting research and consultancy in more than 50 countries. Ipsos is member of the ESOMAR.

Role for study: The German Ipsos branch Ipsos GmbH, Mölln co-ordinated the fieldwork

Contact person: Christina Oltman

## Implementation

### Data gathering approach

The data was gathered by means of a survey. All in all 6,789 interviews with European GPs have been realised.

Data were gathered using a standardised CATI questionnaire. The questionnaire consisted of closed questions only. It included questions about

- Electronic storage of administrative patient data
- Electronic storage of medical patient data
- Use of computers in consultation, decision support software
- Internet access and connectivity
- Connecting with other health institutions through electronic networks
- Purpose of use of internet / electronic networks
- Transfer of patient data through electronic networks
- Interoperability
- Security
- Website
- Attitudes, motivation and barriers
- (Perceived) impact of ICT and e-health
- Response to patients' internet research

### Sampling and fieldwork

The universe consisted of all General Practitioners in the respective countries.

The target respondent within the practice / institution company was selected via a random procedure if more than one GP were present.

From the universe a random sample of practices / institutions with a quota on region and - where possible - private practice / institution was drawn. In total, 6,789 interviews were achieved. The sampling was done in a decentralised way by partner institutes.

The quality of the survey frame was of very high importance. In order to ensure the best possible quality of results in terms of raising the survey data, the institutes were explicitly instructed that the sampling/ address purchase and the sample frame should be based to the largest possible extent on "official" registers and address sources.

The chosen data gathering method was computer-aided telephone interview (CATI) technology. An exception was Malta where face-to-face interviews using P.A.P.I. methodology (Paper-and-Pencil Interviews) were conducted. In Sweden CATI Interviews were used until the sample was exhausted due to the specificities of the Swedish health system. The remaining interviews were accomplished through Computer-Aided Web-Interviews.

### Timing

The fieldwork was carried out between August 20 and October 17, 2007. The final project report was published in April 2008.

### Analysis and Reporting

Due to the quota sampling the sample was self weighting (per country). Thus, the only intra-country weighting that has been applied is to correct for an adjusted share of computer users due to some occurrences of abandoned interviews. These weighting factors are nearly negligible and vary within the limits of [0.96-1.01].

Apart from that, four different weighting schemes have been added to the data set and applied as appropriate: An EU27+2 total, an EU27 total, an NMS12 (New Member States) total and an equal sample sizes weight.

The three aggregate weight variables give each country its respective weight according to its size in the respective group of countries. EU27+2 allows for all the 29 countries surveyed. EU27 only includes the EU Member States and disregards Iceland and Norway. NMS12 finally includes those new Member States that have become Member of the European Union in or after 2004.

When it is said that in these three weighting schemes countries are weighted according to their "size", it should be noted that we do not refer to the number of General Practitioners nationally but to population size as a proxy. The EU average value thus represents each country according to its population size, not its GP population.

Data were analysed using uni- and bivariate methods.

Results have been published in a study report and 29 Country Profiles which are available online at [http://ec.europa.eu/information\\_society/eeurope/i2010/benchmarking/index\\_en.htm](http://ec.europa.eu/information_society/eeurope/i2010/benchmarking/index_en.htm) and <http://www.ehealth-indicators.eu>.

## Evaluation of implementation aspects

Quality Criteria	Score	Explanation
<b>1. Relevance and transferability</b>		
"The indicators clearly refer to eHealth."	●●●●	
"The indicators cover the respective issues/topics in sufficient depth."	●●●●	
"The indicators allow regular measurement in the same context in	●●●●	

the future".		
"The indicators can be applied to a different national context."	●●●●	The survey has already been conducted in 29 countries
<b>2. Accessibility of information</b>		
"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.)"	○●●●	Information on methodology has not been published, but is available through internal reports
"The research results have been published in English"	●●●●	
<b>3. Validity of measurement</b>		
"The concept of eHealth used by the study is clearly expressed and therefore understandable for a variety of survey respondents."	●●●●	The term "eHealth" was not explicitly mentioned in the questionnaire so as to avoid respondents' idiosyncratic understanding of the term. Instead, all indicators refer to concrete eHealth applications and use cases.
"The operationalisation of the indicators has been validated before use."	○●●●	The questionnaire development took into account lessons learned from a precursor study. Indicator development included multiple discussion sessions with eHealth experts as well as survey practitioners. This was followed by the "eHealth Indicators validation workshop" held in Brussels on Monday 25 June 2007 with international experts in the field. Modifications were integrated into the draft questionnaire which was tested in a pre-test phase: pilot interviews prior to the regular fieldwork were conducted in Germany. Based on the outcomes of the pre-test, the English Master Questionnaire was modified.
"The likelihood of social desirability bias/context bias is avoided as much as possible"	●●●●	No particular weaknesses obvious. Context bias has been avoided by a random variation on answer choices
"In the case of a multinational study: appropriate translation procedures of survey instruments are used."	●●●●	The Final English Master Questionnaire was delivered by Ipsos to all participating countries for translation into the major local language(s) spoken. As a next step for quality assurance, Ipsos arranged that the translated questionnaire versions were back-checked by an external translation agency, i.e. back-translation. Suggestions and amendments to the translations were made (if any) and the corrected translated version(s) were finally approved by Ipsos. The final translated questionnaire versions of the major languages spoken in the countries surveyed can be provided as Word documents.
"The instrument follows the general rules for questionnaire design:" Question wording: simple, unambiguous, defining unclear terms Question wording: single stimuli Question wording: factual, not hypothetical 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	●●●●	No particular deviations from these rules were found in the instrument

### Population validity

Sampling frame quality: The sampling frames consist of address sets offered by market leading database providers. Sampling frame quality can hence be assumed.

Data collection quality: Data collection followed highest international professional standards in B2B market research.

Documentation of non response rates: Detailed harmonised non-response tables were demanded and provided by the national survey organisations.

### Respondent load

The workload for each respondent is quite high. The average interview duration ranged between 6.5 (Latvia) and 26 minutes (Czech Republic and Slovak Republic). The burden

for the respondent imposed by this can be considered to be not too high.

## Conclusions and learning points

### From the point of view of the implementing organisation

#### Strengths

The survey provides data on ICT use by General Practitioners that is comparable across the 27 EU Member States, Norway and Iceland. It is one of the few sources currently available to do so, since most eHealth monitoring activities cover only single or few countries and data are therefore usually not comparable.

The concept of "eHealth" — which can be considered to be fairly abstract and far away from the day-to-day work of a GP — was operationalised in a way to cover concrete ICT applications and ICT use cases in a way that is line with the daily experiences of the practitioners. This process was further strengthened by expert support and a pre-test carried out in one country.

Despite the fact that the survey addressed a narrowly defined and difficult to reach target group, the field work was carried out with great success and — according to feedback from the national survey institutes — interviews ran by and large very smoothly.

### Weaknesses

The existence of a precursor survey carried out in 2002 allowed for a longitudinal analysis of selected indicators in order to throw some light at eHealth developments over the past five years. However, due to changes in underlying concepts and a more diversified understanding of eHealth applications today, some comparisons are difficult and must be treated with caution.

Some of the eHealth applications covered by the survey (e.g. telemonitoring) are currently not used by GPs to a larger extent. For this reason, response rates on questions dealing with such applications tend to be very low and results are not very reliable.

By its very nature, the survey covered only General Practitioners. The wider eHealth arena, however, comprises a large number of further actors that also often interact electronically (e.g. through patient data exchange) that remained uncovered by the present survey.

### Facilitators

The proper translation of the questionnaire into numerous national languages was of key concern, in particular to ensure that technical terms were translated correctly. In this, the chosen approach of translation by the national survey institute plus translation checks carried out by external translators was of invaluable help in order to arrive at high quality questionnaires.

### Constraints

To a certain degree, interviews about ICT and eHealth have to rely on the technical knowledge of the respondent and a common understanding of technical terms. The necessary "translation" of terms used in eHealth literature, expert discourses etc. into something closer to the day-to-day experience of a General Practitioner was a sometimes difficult and time-consuming task.

In some countries, GPs seem to be "over-researched", i.e. covered by a large number of different surveys. The resulting high burden (in terms of timing) reduces their willingness to participate in further surveys leading to increased drop-out rates.

## References

Meyer, I. et al., Benchmarking ICT use among General Practitioners in Europe. Final Report. Bonn, April 2008. Available online at: <http://www.ehealth-indicators.eu/>.

## Learning points

The active involvement of eHealth and indicator experts from the early stages of the survey design on proved to be an invaluable help. Support from this side should also be searched in future activities.

In some countries, especially where GPs work in health centres rather than being self-employed, endorsement from official side may help to motivate respondents to participate. This may also help to reduce drop-out among "over-researched" GPs in some countries.

The eHealth domain comprises a large number of different actors that often interact electronically (e.g. through patient data exchange). To get a better overview of the state-of-play in the domain, future activities should aim to directly cover as large a number of interacting actors as possible.

## 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:



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### Authorship

This case was written by the case owner organisation.

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