

Survey on the use of ICT systems in health care services

**Commissioned by the Ministry of Social Affairs and Health
FinnTelemedicum and the National Institute for Health and Welfare.**

Notes on the use of these metrics

*The survey metrics consist of three sets of questions:
one for public secondary care (hospital-based specialised medical care), one for public primary care (health care centres) and one for private care providers. Because the sets of questions were quite similar, only the master question set (for secondary care) is published here.*

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Instructions for responding to multiple-choice questions:

All of the questions apply to information and communications technology (ICT) systems or applications unless otherwise specified in the question. First, we ask about the use of the system or application in your unit. ‘*In use*’ means that you are using the system or application in service production or otherwise in an actual operating environment. In the context of paid services, ‘in use’ usually means that a price has been determined for the service. Some questions are more specific about what stage you are at in introducing an application. In these questions, ‘in use’ means the same as above, ‘*testing*’ means that the system or application is being tried out or piloted at your unit, ‘*planned*’ means that you intend to introduce the system or application in the next few years or are preparing to procure it, and ‘*no*’ or ‘*no plans*’ means that you are not using the system or application and have no plans to introduce it.

Estimated intensity of production use: ‘Production use’ means the regular use of the application or information system in an actual operating environment. In several questions concerning an ICT system or application, respondents are asked to estimate how large a percentage of the function for which it was introduced the system or application is being used for. The scale in most cases was: 10%, 25%, 50%, 90%, and >90%.

Example 1: if you estimate that eReferrals are used for about one third of all referrals, the estimated intensity of production use of the eReferral system is more than 25% but less than 50%; select '< 50%'. Or, if you estimate that more than half but not all of the patient records related to home care are transferred wirelessly, select '>90%'.

Example 2. If the transfer of patient records in the regional information system represents about one third of all transfers of patient information between health care units in the region (the remainder involving sending papers by mail, etc.), select '< 50%'. Answer similarly for laboratory results, imaging, etc.

Function evaluation means that the usability, effectiveness or cost-effectiveness of the system or application has been evaluated at your unit.

NB: In case of a health centre run by a municipal federation with several municipalities or a health centre run on the host model, respond according to the situation at the main health centre unless otherwise specified.

Public specialist medical care

Background information on respondent (*required fields)

Please select your hospital districts* (menu)

How many physicians are working in your organization (counted as person years)?

Respondents contact information:

Name*

E-mail*

Phone*

Your title or job duty at the unit (menu)

1. ELECTRONIC PATIENT RECORDS SYSTEM

1.1. What is the product brand of the electronic patient record (EPR) system in your organisation (principal system) (menu)?

If other, please specify the product brand: (*answer box*)

Is the EPR system mentioned above in use for

- a) conservative area? Yes/No Estimated intensity of production use (10%, 25%, 50%, 90%, >90%)
- b) operative area? Yes/No Estimated intensity of production use (10%, 25%, 50%, 90%, >90%)
- c) psychiatric area? Yes/No Estimated intensity of production use (10%, 25%, 50%, 90%, >90%)
- d) emergency clinic area? Yes/No Estimated intensity of production use (10%, 25%, 50%, 90%, >90%)

1.2.

- a) What is your organisation' produt brand for picture archiving and communication system (PACS)? (menu)

Estimated intensity of production use (10%, 25%, 50%, 90%, >90%)

If other, please specify the product brand: (*answer box*)

- b) Does your organization still use conventional film for imaging? Yes/No

If yes, please specify for what services: (*answer box*)

1.3. What is your organisation' produt brand for radiology information system (RIS)? (Menu)

If yes, please specify for what services: (*answer box*)

1.4.

- a) Do you use a laboratory information system (LIS)? Yes/No
- b) Please enter the product brand of the laboratory information system (LIS): (*answer box*)
- c) Please enter the product brand of user interface for LIS: (*answer box*)

1.5. In addition to your principal system does your organization have another EPR system for the following speciality areas?

- Pathology, Yes/No
- Kardiology, Yes/No
- Intensive care, Yes/No
- Surgery, Yes/No
- Labor, Yes/No
- Emergency, Yes/No
- Other, Yes/No
- Please, specify the product brand: (*answer box*)

1.6. Does your organisation use electronic ECG? Yes/No

If YES, is it (select one or more):

- a) compliant with the DICOM standard
- b) compliant with another standard or the manufacturer's own
- c) a system that saves the ECG in PDF format

1.7.

a) Do you use electronic nursing documentation (this does not mean entering 'other information' in the EPR)?

- Yes, included in the principal system
- Yes, separate brand, please specify: (*answer box*)
- No

b) Is the documentation structured? Yes/No

1.8. Do you have a voice recognition system (which converts dictation directly into text)? Yes/No

If yes, please specify is it used for

- a) radiology, Yes/No
- b) Some other speciality Yes/No. Please specify the speciality area where in use: (*answer box*)

1.9.

d) How large a percentage of your physicians have a smart phone provided by the organization? (*answer box*)

Can it be used to access the EPR system? Yes/No

Can it be used use to access medical databases? Yes/No

e) How large a percentage of your physicians have a tablet computer provided by the organization? (*answer box*)

Can it be used to access the EPR system? Yes/No

Can it be used use to access medical databases? Yes/No

1.10. Does your organisation have wireless access to the EPR system?

- a) outside the unit, for text-based information (e.g. backups, home care, not related to patient transport) Yes/No
- b) outside the unit, for imaging information (e.g. backups) Yes/No

1.11. Has your organisation' EPR sytem been integrated to workflow quidance system? Yes/No

If yes, is it integrated to monitor

- a) clinical pathways
- b) organisation' resourses
- c) Other, please spesify: (*answer box*)

1.12.

a) Does your organisation have a single sign on prosedure for essential care component of your EPR system? Yes/No

b) Does it keep your signed on when switching to another terminal? Yes/No

1.13. Does your organisations' EPR system include a possibility to list patients

- a) based on diagnoses? Yes/No
- b) based on laboratory results? Yes/No
- c) based on medication? Yes/No

d) other, please specify? Yes/No

1.14. Does your organisation have an electronic medication management system that registers and verifies right medication for right patient (for example bar code, RFID)? In use/being/planned/being tested/no

1.15. Does your organisations EPR system have a structured recording of vaccinations? Yes/No

2. QUESTIONS RELATED TO THE NATIONAL ARCHIVE OF HEALTH INFORMATION

2.1. Please, specify here what have been, to your estimation, the most important challenges in the process on joining the National Archive of Health Information (Kanta) system? (*answer box*)

2.2. Please, specify here what have been, to your estimation, the most important challenges in the process on joining the electronic prescription system? (*answer box*)

2.3. Which of the following classifications available on the health care code server is used by your organisation in its patient record systems?

More information	AR/Form – Personal information form	YES/NO
More information	AR/Core – Primacy of diagnosis or procedure	YES/NO
More information	AR/Core – Stage of care process	YES/NO
More information	AR/Core – Type of risk data	YES/NO
More information	Fimea – ATC classification	YES/NO
More information	FinLOINC – Physiological measurements	YES/NO
More information	Nursing – Care need classification (v 3.0)	YES/NO
More information	Nursing – Care need classification (v 2.0.1)	YES/NO
More information	Nursing – Care procedure classification SHToL v 3.0	YES/NO
More information	Nursing – Care procedure classification SHToL v 2.0.1	YES/NO
More information	Nursing – Care outcome classification	YES/NO
More information	Association of Finnish Local and Regional Authorities – ICPC-2 Basic health care classification	YES/NO
More information	Association of Finnish Local and Regional Authorities – Nomenclature of assistive rehabilitation services	YES/NO

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More information	Association of Finnish Local and Regional Authorities – Physiotherapy codes	YES/NO
More information	Association of Finnish Local and Regional Authorities – Laboratory test codes	YES/NO
More information	Association of Finnish Local and Regional Authorities - Radiology examination and procedure classification	YES/NO
More information	Association of Finnish Local and Regional Authorities - Occupational therapy codes	YES/NO
More information	PTHAVO - SPAT, The Finnish classification of procedures in open primary care	YES/NO
More information	SFS/THL - Assistive device classification	YES/NO
More information	Ministry of Social Affairs and Health - Health care functions classification	YES/NO
More information	THL - Register for social and health organisations	YES/NO
More information	THL - Oral health procedure classification	YES/NO
More information	THL - ICD-10 classification of diseases	YES/NO
More information	THL - Source of information	YES/NO
More information	THL – Procedure classification	YES/NO
More information	THL/Information content – Health and care plan	YES/NO
More information	THL/Information content – Diagnoses	YES/NO
More information	THL/Information content – Imaging examinations	YES/NO
More information	THL/Information content - Laboratory examinations	YES/NO
More information	THL/Information content – Risk data	YES/NO
More information	THL/Information content – Vaccinations	YES/NO
More information	THL/Information content – Procedures	YES/NO

2.4. Which solutions are principally used in the ICT systems of your unit at the moment for information exchange between organisations in your region?

- a) OVT/EDI
- b) HL7 CDA R1
- c) HL7 CDA R2
- d) DICOM
- e) eReferral and eDischarge messages in XML
- f) IHE-XDS
- g) HL7 CCD (continuity of care document)
- h) other, please specify: (*answer box*)

3. REGIONAL INFORMATION EXCHANGE

3.1. Which Regional Information System model (ATJ) do you use? A 'regional information system' is here understood to mean an ICT system where one party is a hospital in the hospital district and another party is a health centre, public-sector hospital or possibly a private service provider.

- a) Master patient index system, Altti/Navitas model, Yes/No, Which components are in use? Patient record/Laboratory/Imaging/Imaging statements
- b) Alue-Effica Yes/No. Which components are in use? Patient record/Laboratory/Imaging/Imaging statement
- c) Kunta-ESKO model? Yes/No. Which components are in use? Patient record/Laboratory/Imaging/Imaging statements
- d) Alue-Pegasos? Yes/No. Which components are in use? Patient record/Laboratory/Imaging/Imaging statements
- e) Alue-Mediatri? Yes/No. Which components are in use? Patient record/Laboratory/Imaging/Imaging statements
- f) Other model, please specify what, Yes/No. Which components are in use? Patient record/Laboratory/Imaging/Imaging statements
- g) No regional information system

3.2. Co-operation to develop regional information exchange is being pursued in many regions. The new Health Care Act mentions the possibility of maintaining a joint database for regional information exchange. Is your organization part of such a joined database? Is there a regional information management project in progress in your region? Yes/No

If you answered YES, is the regional joined data base accessed via Kanta-service? Yes/No

Please, write your experiences or experienced benefits for using this joined database. (*answer box*)

3.3. Is a regional information system, or regional information exchange otherwise, available to you in the following?

- a) sending/receiving patient summary and reading them Yes/No
- b) sending/receiving patient record data and reading them Yes/No
 - b1) sending/receiving patient' basic physiological functions (such as body temperature, puls, blood pressure, respiration rate) Yes/No
 - b2) sending/receiving patient' data on allergies Yes/No
 - b3) sending/receiving patient' vaccination data Yes/No
- c) Ordering laboratory examinations Yes/No
- d) sending/receiving lab results and reading them Yes/No
- e) sending/receiving imaging examination results (=images) and reading them Yes/No
- f) sending/receiving imaging examination consultation responses and reading them Yes/No
- g) access to an image archive shared by several organisations Yes/No

3.4.

- a) receiving a consultation eReferral from basic health care (with identification but care responsibility retained by the basic health care unit)
 - a1) somatic health care Yes/No. Estimated intensity of production use: 10%, 25%, 50%, 90%, >90%
 - a2) psychiatric health care Yes/No. Estimated intensity of production use: 10%, 25%, 50%, 90%, >90%

If consultation eReferrals are not in use in certain specialist areas, please list them: (*answer box*)

- b) Receiving an eReferral from basic health care (accepting care responsibility from the sender)
 - b1) somatic health care Yes/No. Estimated intensity of production use: 10%, 25%, 50%, 90%, >90%
 - b2) psychiatric health care Yes/No. Estimated intensity of production use: 10%, 25%, 50%, 90%, >90%If eReferrals are not in use in certain specialist areas, please list them: (*answer box*)
- c) Can you send eReferrals to another specialist medical care unit? Yes/No Estimated intensity of production use (10%, 25%, 50%, 90%, >90%).
- d) Can you receive eReferrals from another specialist medical care unit? Yes/No Estimated intensity of production use (10%, 25%, 50%, 90%, >90%).
- e) Can you send an eDischarge letter (epicrisis) to another unit? Yes/No Estimated intensity of production use (10%, 25%, 50%, 90%, >90%).
- f) Can you receive an eDischarge letter (epicrisis) from another unit? Yes/No Estimated intensity of production use (10%, 25%, 50%, 90%, >90%).
- g) Can you send an electronic document of nursing to another unit? Yes/No Estimated intensity of production use (10%, 25%, 50%, 90%, >90%).
- h) Can you receive an electronic document of nursing from another unit? Yes/No Estimated intensity of production use (10%, 25%, 50%, 90%, >90%).

3.5. Can you engage in an informal electronic consultation (between professionals) about a patient without supplying patient identification? Yes/No Estimated intensity of production use (10%, 25%, 50%, 90%, >90%).

3.6. Can you engage in a remote consultation with another unit by televideoconferencing? Yes/No

How often is the system used? (in the last three months/more seldom/not in use). Has this activity been evaluated? Yes/No

In which specialist areas is this system used for consultations: psychiatry/child psychiatry/dermatology/ophthalmology/surgery/other, please specify (*answer box*)

3.7. Can you receive ECG telemetry data from ambulance units? Yes/No Estimated intensity of production use (10%, 25%, 50%, 90%, 90+%). Has this activity been evaluated? Yes/No

3.8.

- a) Can your organisation access data on a patient in the social services client information system (with the patient's permission)? Yes/No
- b) Can the social services organisation(s) in your region access data on a patient in your organisation's EPR system (with the patient's permission)? Yes/No

3.9. In your organisation, what is the primary source of patients' medication list? Please select those that fit best

- a) Local database
- b) Regional database
- c) National prescription database
- d) Other, please specify: (*answer box*)

3.10. Are you using or planning to use special healthcare region related information systems, such as imaging center, for example in the following areas?

- Patient record? In use, being/planned/being tested/no
- Imaging? In use, being/planned/being tested/no
- Laboratory? In use, being/planned/being tested/no
- Other, please specify (*answer box*)? In use, being/planned/being tested/no

4. PRIVACY AND AUTHENTICATION SYSTEM

4.1 In addition to Electronic Identification for Health Care Professionals, is your organisation using other eSignature for professionals?

Yes, please specify (*answer box*)

No

4.2. Which authentication method(s) do you use for patients/clients?

- a) Population Register card Yes/No
- b) Tupas or online banking IDs Yes/No

- c) user ID and password Yes/No
- d) mobile authentication of client Yes/No
- e) Other, please specify (*answer box*) Yes/No

4.2.1. Does your organisation use authentication of patients/clients by eSignature? Yes/No

4.2.2. Does your organisation use patients/clients automatic/electronic registration when arriving to the clinic?
(Yes, in routine use/Yes, in some of the organisation' clinics/Yes, as a pilot/Being planned/No)

4.3. Please describe briefly how your organisation currently manages patient consent and prohibitions: (*answer box*)

4.4. Does your unit have a written information security policy (defining objectives, responsibilities, management, etc.)?
<http://www.stakes.fi/verkkojulkaisut/raportit/Ra5-2005.pdf> Yes/No

4.5. Does your unit have

- a) a written information security plan? Yes/No
- b) a written Business Continuity Plan? (BCP) Yes/No
- c) a written Disaster Recovery Plan? (DRP) Yes/No
 - c1) If yes, has it been obliged to activate Disaster Recovery Plan recovery actions? Yes/No
- d) a security plan for medical devices connected to data network? Yes/No
- e) Is it allowed to connect personal devices to your organisations' network? Yes/No
- f) Does your organisation have a written policy for using personal devices in organisations network?

If your unit has had to activate Disaster Recovery Plan actions, please describe in what kind of occasions? (*answer box*)

4.6

- a) Has your organisation defined a permissible downtime for its EPR system? Yes/No
- b) If yes, please specify how long it is (*answer box*)
- c) What was the percentage of downtime period based on total EPR usage time in 2013? (*answer box*)

4.7. Does your unit have a designated privacy officer? Yes/No

5. INFORMATION EXCHANGE WITH PATIENTS RELATING TO EXAMINATIONS AND TREATMENT

5.1. Does your organisation have a website with information on health care services? Yes/No

What information and/or functions does the website offer?

- a) information on services provided by the organisation Yes/No
- b) information on the organisation's units (contact information, location) Yes/No
- c) search function for units or service providers providing various services in the region Yes/No
- d) services for self-assessment of health (risk tests, etc.) Yes/No
- e) function for sending preliminary data to the care facility online Yes/No
- f) function for sending patient feedback on the care Yes/No
- g) function for entering a living will Yes/No
- h) function for entering organ donation will Yes/No
- i) electronic question-answer service, without identification Yes/No
- j) electronic question-answer service, with identification Yes/No
- k) entering patient-produced information into a health account (information on state of health, illnesses, their treatment, self-medication): in use/being tested/ being planned/no
- l) other, please specify Yes/No

5.2. Does your organisation provide general health, illness and service consultation by phone (without authentication)?

- a) at the level of your organisation (hospital district) Yes/No
- b) at the hospital level Yes/No
- c) other Yes/No

5.3. Does your organisation provide consultation with authentication by phone (contact centre) for triage and referral to treatment?

- a) at the level of your organisation (hospital district) Yes/No
- b) at the hospital level Yes/No
- c) other Yes/No

5.4. Electronic appointment

What of the following services does your organisation offer for the patients?

- a) direct online appointment booking or conformation (patient selects appointment time on his/her computer) Yes/No; if you answered yes, please specify for which services this is in use (menu)
How large a percentage of appointments for this service(s) is made online? (*answer box*)
- b) appointment booking and confirmation by text message Yes/No; if you answered yes, please specify for which services this is in use (menu)
How large a percentage of appointments for this service(s) is made by text message?
- c) appointment booking and confirmation by e-mail Yes/No; if you answered yes, please specify for which services this is in use: (*answer box*)
- d) offering an appointment or a cancellation time to a patient in a queue by text message Yes/No; if you answered yes, please specify for which services this is in use. (*answer box*)
- e) changing or cancelling appointment by online service or txt message Yes/No; if you answered yes, please specify for which services this is in use (*answer box*)

5.5 Information change with patient

Which of the following functions available for patients are integrated to your system?

- a) information exchange with patient using conventional e-mail Yes/No
- b) information exchange with patient using e-mail with encryption Yes/No
- c) information exchange with patient using text messages Yes/No
- d) online system where patients can read their EPRs Yes/No
- e) online system where patients can read their laboratory results Yes/No
- f) online system where patients can read their imaging examination statements Yes/No
- g) online system where patients can read their medications Yes/No
- h) online system where patients can read their diagnoses Yes/No
- i) online system where patients can request renewal of medication Yes/No

5.6. What kind of systems your organisation has to receive self produced information from patients?

- a) patient system where patients can enter self-performed measurement results in the health care system Yes/No
How often do you receive this kind of data? (Often/occasionally/seldom/not at all/I am not able to say)
- b) patient system where patients can enter text in the health care system Yes/No
- c) patient home monitoring system that does not require any actions from the patient? Yes/No
If Yes, please specify for what? (*answer box*)

5.7. Does your organisation have televideoconferencing service for patients (this does not mean the patient's physician consulting another physician in the presence of the patient) Yes/No
How often have you used it? (During the last three months/more seldom/not in use)

6. ADMINISTRATIVE SYSTEMS

6.1. Does your organisation have access to local or regional data warehouses of operating information? Yes/No

6.2. Does your organisation have access to an online system monitoring access to treatment? Yes/No

6.3. Does your organisation have access to an electronic incident reporting system?

d) HaiPro? (<http://haipro.vtt.fi/>) Yes/No

e) Other? YES/NO, if yes, please specify: (*answer box*)

6.4. Does your organisation have a system for lending out assistive devices? Yes/No

Brand of the system: (*answer box*)

6.5. Does your organisation use one or more ICT systems for operations, administration or other purposes (stand-alone systems) which was/were not referred to earlier in this survey and which may be of relevance in terms of interoperability considering connecting with national information system services (Kanta)? Please specify which system(s) and for what purpose they are used. (*answer box*)

7. ELECTRONIC DATABASES AND SYSTEMS FOR PROFESSIONAL DECISION-MAKING AND TRAINING

7.1. Specify your decision-making system by integration level:

a) database separate from the patient record system on the desktop. (Multiple choice: Terveystietojärjestelmä/ GP manual and database/drug interactions system (e.g. SFINX)/ Nurse's handbook/ regional care programmes/ other (please specify)/ not in use)

b) navigation from the patient record system to the database (multiple choice: Terveystietojärjestelmä/ GP manual and database/drug interactions system (e.g. SFINX)/ Nurse's handbook/ regional care programmes/ other (please specify)/ not in use)

c) automatic illustrations (graphics, reminders, alerts, e.g. unusual lab test results). (Multiple choice: Terveystietojärjestelmä/ GP manual and database/drug interactions system (e.g. SFINX)/ Nurse's handbook/ regional care programmes/ other (please specify)/ not in use)

d) automatic integration of patient record data and database data. (Multiple choice: Terveystietojärjestelmä/ GP manual and database/drug interactions system (e.g. SFINX)/ Nurse's handbook/ regional care programmes/ other (please specify)/ not in use).

7.2

- a) Does your organisation use specified test collections (for example diagnose based) which can be ordered with one action. Yes/No
- b) Does your system alarm on known medication allergies when prescribing medication? Yes/No

7.3. Does your organisation use televideoconferencing system for training? Yes/No

If yes, how often does your organisation organise training by televideoconferencing? (At least once a week / 1–3 times a month / a few times a year / rarely / not at all).

8. READINESS AND RESOURCES FOR USING ICT SERVICES

8.1. How large a percentage (%) of the employees whose job includes entering and/or reading patient information is computer-literate (basic skills)? (menu: % 10, 20, 30, 40, 50, 60, 70, 80, 90, 100)

8.2. How much privacy / information security training have your employees received? (Comprehensively/some/not at all)

8.3. Do you use online training for your personnel training? Yes/No

If you answered yes, is it (select one or more):

- privacy / information security training
- operating model training
- radiation safety
- patient security
- other

8.4. How comprehensively has your organisation made technical support available for users of the patient record system? (At all times during opening hours of the organisation/during normal office hours/daily, but for less than normal office hours/occasionally)

8.5. How much of the budget for your unit in 2013 was used in all for the procurement, maintenance and development of ICT systems and for training employees in how to use them? (In euros) (*answer box*), as % of total budget. (*answer box*)

Was the information above (menu): (Calculated/estimated)

How would you estimate the percentage of your budget used for ICT systems in 2013 as compared to 2012? (Stayed the same/gone up/ gone down)

9. OPINIONS ON THE OPERATIVE GUIDANCE OF NATIONAL SOCIAL AND HEALTH CARE

In order to implement the new provisions in the legislation on the handling of EPRs and ePrescriptions, the information systems of health care service providers must be updated. National specifications are being drawn up for this purpose.

9.1. Have representatives of your organisation been involved in the selection and definition of national information structures:

- a) participating in preparatory work in expert groups Yes/No
- b) participating in online work Yes/No
- c) participating in workshops organised on the topic Yes/No
- d) submitting expert statements to the responsible authorities on request Yes/No
- e) having direct contact with the responsible authorities Yes/No

9.2. National Institute for Health and Welfare includes operative unit (OPER) which guides national social and health care information management development and joining to National Archive of Health Information system.

- a) Are you aware that regional coordinators are available from OPER? Yes/No
- b) Have you done cooperation with THL OPER personnel/regional coordinator in the last 12 months? (Often/view times/not at all)

10. Are there any other issues that you would like to bring up? Please specify: (*answer box*)