# Electronic health record systems as tool for physicians 2021

Instructions for responding

Welcome to this survey on electronic health record (EHR) systems.

Please respond to the questions and statements given on the form with regard to your current main employment. If you are not employed now, please answer with regard to your latest employment.
Try to answer all questions on the form based on your experiences. If any question feels too difficult to answer, or you have no basis for answering it, please leave it blank and move on to the following question.

You can proceed in the survey without answering every question (with the exception of those marked with an asterisk). For technical reasons, it is not possible to move back on the form. If you like, you can interrupt responding and continue later by using the original e-mail link to return to the questionnaire. Please submit the form by pressing the Send button on the last page.

**I use health care information systems**

- o   for my work with patients
- o   for administrative work
- o   for both my work with patients and administrative work
- o   I don't use health care information systems at all

**Gender**

- o   Male
- o   Female
- o   Other
- o   I don't wish to say

**Year of birth (please select)**

**Basic degree in medicine: year of completion (please select)**

**Stage of specialization**

- o Not specialized
- o In specialist training
- o Specialized

**Please state your field of specialization (also if you are currently in specialist training). If you are specialized in several fields, please give the latest one (please select)**

- o Emergency Medicine
- o Anaesthesiology and Intensive Care Medicine
- o Endocrinology
- o Phoniatrics
- o Physical and rehabilitation medicine
- o Gastroenterology
- o Gastroenterological surgery
- o Geriatrics
- o Dermatology and Allergology
- o Infectious Diseases
- o Cardiology
- o Respiratory Medicine and Allergology
- o Clinical Pharmacology and Pharmacotherapy
- o Clinical Physiology and Nuclear Medicine
- o Clinical Haematology
- o Clinical Chemistry
- o Clinical Microbiology
- o Clinical Neurophysiology
- o Otolaryngology
- o Hand Surgery
- o Paediatric Surgery
- o Child Neurology
- o Child Psychiatry
- o Paediatrics
- o Sports Medicine
- o Obstetrics and Gynaecology
- o Nephrology
- o Neurosurgery
- o Neurology
- o Adolescent Psychiatry
- o Forensic Medicine
- o Forensic Psychiatry
- o Orthopaedics and Traumatology
- o Pathology
- o Clinical Genetics
- o Plastic Surgery
- o Psychiatry
- o Radiology
- o Rheumatology
- o Ophthalmology

- Internal Medicine
- Oral and Maxillofacial Surgery
- Cardiothoracic Surgery
- Oncology
- Public Health
- Occupational Health
- Urology
- Vascular Surgery
- General Surgery
- General Practice

## Main employment sector

- Municipality
- State
- Private (incl. The Social Insurance Institution of Finland (Kela))
- University
- I am not employed

*If you are not currently employed, please answer the question on your workplace on the basis of your latest workplace.*

*If you have a secondary post at a hospital or health centre, please answer the following questions from that point of view.*

## Place of main employment

- University central hospital
- Central hospital
- Other public hospital (regional hospital, town hospital)
- Municipal health centre, welfare centre or station
- Private medical station, centre or hospital
- State office, institution or hospital
- Other, please specify

## Title in main employment

- Medical director, director, chief physician or equivalent
- Head of department, deputy chief physician
- Specialist, senior ward physician
- Physician in specialist training, hospital physician, physician in specific training in general medical practice
- Health centre physician
- Occupational health physician
- Occupational health physician in charge
- Professor

- o Clinical lecturer, senior assistant
- o Researcher, doctoral student, assistant
- o Private practitioner
- o Other medical profession
- o Other than medical profession

**Location of your main employment, hospital district (please select)**

- o Åland
- o South Karelia
- o South Ostrobothnia
- o South Savo
- o Helsinki and Uusimaa
- o East Savo
- o Kainuu
- o Kanta-Häme
- o Central Ostrobothnia
- o Central Finland
- o Kymenlaakso
- o Lapland
- o Länsi-Pohja
- o Pirkanmaa
- o North Karelia
- o Northern Ostrobothnia
- o North Savo
- o Päijät-Häme
- o Satakunta
- o Vaasa
- o Southwest Finland

*The following questions are designed to assess electronic health record systems in the working environment you select.*

**When doing clinical work do you MAINLY work**

- o On an in-patient ward
- o In outpatient care, in an outpatient clinic or doctor's practice
- o In emergency department
- o In emergency medical service
- o In administration
- o In diagnostic medical specialties – e.g. radiology, laboratory medicine, pathology
- o In the operating theatre
- o In an intensive care or monitoring room
- o In the delivery room

**Does your main employment involve teleconsultation with patients (remote treatment by phone, chat, video contact, other electronic contact)?**

- o Very much
- o Much
- o Some
- o A little
- o Not at all

**How many different clinical systems do you log into daily in your clinical work?**

- o 0
- o 1
- o 2
- o 3
- o 4
- o 5 or more
- o I do no clinical work

**On a scale from 1 to 5, how experienced do you consider yourself as a user of EHR systems? (1 = Beginner, 5 = Highly experienced)**

- o 1: Beginner
- o 2
- o 3
- o 4
- o 5: Highly experienced

**Which EHR system do you MAINLY use in your employment?**

- o Abilita
- o Acute
- o Apotti (Epic)
- o DynamicHealth
- o Effica
- o eRA
- o ESKO
- o GFS (Graafinen Finstar)
- o Lifecare
- o Mediatri
- o Pegasos
- o Radiologien PACS/RIS
- o Siro
- o Softmedic

- o Uranus
- o Other, please specify


**For how long have you used the system?**

- o Less than 6 months
- o 6 months - less than a year
- o 1 - 3 years
- o 4 - 6 years
- o More than 6 years


**To what extent do you agree with the following statement? Use of the EHR system on a mobile device provides additional benefit for my work.**

- o Fully agree
- o Somewhat agree
- o Neither agree nor disagree
- o Somewhat disagree
- o Fully disagree
- o This feature is not available / not associated with my work


**To what extent do you use the following ways of obtaining patient data from ANOTHER organization?**

Response options: daily/ weekly/ less frequently/ not at all

1. Paper, fax
2. Regional health information exchange system (Altti/Navitas, Alue-Effica, Kunta-Esko, AluePegasos, AlueMediatri, Apotti)
3. Kanta Patient Data Repository

# Usability and functionality of EHR systems

**Use the following statements to assess the usability and functionality of the #EHR brand# EHR system from the point of view of a physician working at #place of employment#. (N.B.! The EHR system and your place of employment were taken from your previous answers.)**

Response options: Fully agree/ somewhat agree/ neither agree nor disagree/ somewhat disagree/ fully disagree

1. The system is stable in terms of technical functionality (does not crash, no downtime).
2. The system responds quickly to inputs.
3. Faulty system function has caused or has nearly caused a serious adverse event for the patient.

**Use the following statements to assess the usability of the #EHR brand# EHR system from the point of view of a physician working at #place of employment#.**

Response options: Fully agree/ somewhat agree/ neither agree nor disagree/ somewhat disagree/ fully disagree

1. The arrangement of fields and functions is logical on computer screen.
2. Terminology on the screen is clear and understandable (for example titles and labels).
3. Routine tasks can be performed in a straightforward manner without the need for extra steps using the system.
4. If I have problems with the system, I can easily get help.

**Use the following statements to assess how the EHR systems you use support a physician's work at #place of employment#.**

Response options: Fully agree/ somewhat agree/ neither agree nor disagree/ somewhat disagree/ fully disagree

1. Learning to use the electronic health record system does not require a lot of training.
2. It is easy to obtain necessary patient information using the EHR system.
3. Entering and documenting patient data is quick, easy and smooth.
4. The reminders, alerts and warnings provided by the system are useful and are adequate.
5. Patient data (also from other organizations) are comprehensive, up-to-date and reliable.
6. Information on medications ordered in other organizations is easily available.

**Use the following statements to assess how the information systems you use support a physician's work at #place of employment#.**

Response options: Fully agree/ somewhat agree/ neither agree nor disagree/ somewhat disagree/ fully disagree

1. Information systems help in preventing errors and mistakes associated with medications.
2. Information systems help to avoid duplicate tests and examinations.
3. Information systems help to ensure continuity of care.
4. Information systems help to improve quality of care.
5. Information systems support compliance and adherence with the treatment recommendations.

**Use the following statements to assess how the information systems you use support a physician's work. (N.B.! The following features are not available in all EHR systems. If so, please select 'Feature not available'.)**

Response options: Fully agree/ somewhat agree/ neither agree nor disagree/ somewhat disagree/ fully disagree/ feature not available

1. The EHR system generates a summary view that helps to form an overall picture of the patient's health status.
2. The information on the nursing record is in easily readable format.
3. The patient's current medication list is presented in a clear format.
4. The possibility of personalizing/customizing the information system by end-users makes my work smoother.
5. Entering and documenting patient data for statistical purposes and reporting is fluent.
6. Measurement results and other health data provided electronically by the patient can be easily utilized in patient care.
7. EHR systems help identify specific patient groups (such as those requiring a lot of services).
8. Using the EHR system on a mobile device is easy.

**How well do you consider that information systems support collaboration and information exchange between various parties?**

Response options: Very well/ fairly well/ neither well nor poorly/ rather poorly/ very poorly

1. Between physicians in your own organization
2. Between physicians working in different organizations
3. Between physicians and nurses
4. Between physicians and patients

**To what extent do you agree with the following statement?  Information systems support smooth teleconsultations**

o Very well
o Fairly well
o Neither well nor poorly
o Rather poorly
o Very poorly

o   This is irrelevant for me / Don't know


## Problems and needs for developing EHR systems

**The following questions help to give feedback to the EHR system provider. Which of the problems observed with current EHR systems complicate a physician's work most? Please select NO MORE THAN FIVE (5) needs for development that you consider the most important.**

false/true

1. The same things need to be entered in many places
2. The user interface view is always the same regardless of the system user's tasks or needs
3. Slowness of the systems and unexpected interruptions in use
4. Illogicality (paths need to be learned by heart)
5. Poor support for electronic decision making (notes, reminders, and links to clinical guidelines)
6. The systems do not help to prevent errors
7. Awkwardness of seeking information in the Kanta Patient Data Repository
8. Acknowledgment of information received in results mail / memo / in-basket and reacting to it is arduous.
9. Lack or poor quality of summary view.
10. Structured entering of patient care makes it difficult to get a holistic picture of a patient
11. Poor usability of electronic prescription (e-prescription)
12. Electronic communication with patient impossible or arduous
13. Forms are not intelligent or self-completing (e.g. referrals, certificates)
14. The operational logics of the system / EHR systems (tai of the EHR system(s) used in various work posts in the organization vary.
15. Something apart from above, please specify


## Features working well in EHR systems

**What works well in current EHR systems? Please choose as many features as you like.**

false/ true

1. Search in the Kanta Patient Data Repository
2. Electronic prescription (e-prescription)
3. Reminders of laboratory tests needed, for example saving of phrases and/or favorite prescriptions/orders
4. Saving of phrases and/or favorite prescriptions/orders
5. Logical keyboard shortcuts (e.g. Ctrl+P for printing)
6. Voice recognition
7. Comprehensive summary view
8. Possibility of editing the view according to one's own needs
9. Easy follow-up of costs and invoicing
10. Results mail / memo / in-basket (for laboratory results, for example)

11. Self-completing and logical forms
12. Possibility of collecting texts from various specialties to a chronological patient record
13. Checking of drug interactions
14. Management of work, office or appointment lists
15. The software provides data to support management (e.g. reports, summaries)
16. Something apart from above, please specify

**What kind of experiences have you had about providing feedback on the health care information systems you use and about development? Please assess the following statements based on your experiences.**

Response options: Fully agree/ somewhat agree/ neither agree nor disagree/ somewhat disagree/ fully disagree

1. I know how and to whom I can send feedback about the system if I wish to do so.
2. The system vendor is interested in feedback about the system provided by the end users.
3. The system vendor implements corrections and change requests according to the suggestions of the end users.
4. Corrections and change requests are implemented within a reasonable time frame.

**Have you participated in information systems development work?**

o Yes, some of my working time has been allocated for such development work
o Yes, in addition to my work
o No

**Please specify how you have participated in systems development work (open-ended response)**

**On a scale of 4 to 10 (with 4 being the lowest score and 10 being the highest score) how would you rate the EHR you mainly use?**

o 10
o 9
o 8
o 7
o 6
o 5
o 4
o I am not able to give a grade, or I do not wish to answer

**Here you can write other comments or feedback on EHR systems (open-ended response).**

# Information systems as support for management

**How, in all, do the information systems used in an organization work as a management tool?**

*INSTRUCTIONS FOR RESPONDING: If you do NOT have administrative/management responsibilities, please do not grade the statements below; move to the following page.*

Response options: Fully agree/ somewhat agree/ neither agree nor disagree/ somewhat disagree/ fully disagree

1. I have to collect information needed for management from several information systems.
2. I can use information systems to guide daily activity
3. Information systems facilitate measurement and monitoring of functional quality.
4. Available data support research, innovation, and business activities.
5. Information systems help me to monitor the achieving of the targets set by my unit (e.g. numbers of patients, periods of treatment, types of operations).
6. Follow-up data provided by the systems is reliable and faultless
7. Information systems have helped to improve the efficacy of my unit in the last few years.
8. I can use information systems to follow the use of personnel, equipment, and room resources.
9. I use some systems facilitating follow-up of activity every day.
10. It is easy to perform searches with the systems used for following up activity.

# Data protection

**To what extent do you agree with the following statements on data protection?**

Response options: Strongly agree / Agree / Neither agree nor disagree / Disagree / Strongly disagree

1. I am aware of external threats to the data we possess and to the systems using such data.
2. I find that the IT-department's initiatives to secure data and computers are more of a nuisance than a benefit.
3. I am attentive towards how I operate computers to avoid being hacked.

# Digital work

**Electronic health care services have increased. EHR systems have been used for a long time but, in addition, patients are increasingly often offered electronic services, such as self-care services, teleconsultation, appointment scheduling, and services for recording and viewing their data. How has such digitalization of health care affected your work? Please assess the change during the past three years.**

Response options: Fully agree/ somewhat agree/ neither agree nor disagree/ somewhat disagree/ fully disagree

1. Patients have assumed a more active role in their treatment.
2. Possibilities for preventive work have improved.
3. Interprofessional cooperation has progressed.
4. Intelligent decision support systems support a physician's work.
5. It has become easier to obtain information on patients.
6. Consultations with patients have become faster.

## EHR systems and wellbeing at work

**In this survey we wish to find out any connection between EHR systems and your wellbeing at work.**

**How often has each of the issues mentioned below clearly disturbed, worried or burdened you at work during the past 6 months?**

Very often or constantly/ quite often/ every once in a while/ quite rarely/ very rarely or never

1. Constant rush and pressure due to uncompleted work.
2. Not enough time to perform work properly.
3. Changing EHR systems.
4. Awkward, poorly functioning information technical equipment/software.

**Stress means a situation where a person feels tense, restless, nervous or anxious or finds it hard to sleep because they constantly worry about things. Do you feel such stress now?**

- o Not at all
- o Just a little
- o To some extent
- o Quite a lot
- o Very much

**Any message to the research group and your feedback on this survey (open-ended response).**