Authors: Yvonne Tollander de Balsch, Mika Torhola, Atostek

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Fast track to deploying electronic prescription system

Now with COVID-19, every country needs a national electronic prescription to make telemedicine really work. Here's how!

Executive Summary

The current state of the world with the COVID-19 pandemic has emphasized the importance of telemedicine as a means to reduce physical contacts in healthcare. Electronic prescription of medications is an important element in a fully functional telemedicine process. E-prescribing not only removes the need to physically visit a doctor to get the prescription, but also enables digitalized delivery service of pharmaceuticals.

While electronic prescribing can be utilized during the coronavirus pandemic, its introduction is also a long-term solution and a step towards the digitalization of healthcare. The benefits of an electronic prescription system are reflected in both safer healthcare, as well as in savings in healthcare costs.

To be useful in the management of the coronavirus pandemic, an electronic prescription system should be deployed on a fast schedule. However, the development of a secure and reliable system from scratch requires a substantial initial investment of money and time. Reliability and security are top priorities when handling patient data.

The delay of new system development can be bypassed by the introduction of a ready-made solution. Recibus is such a solution: a standardized, world-class electronic prescription system based on Finland's national investment of over ten years and 300 million euros. In Finland, the development of eHealth has been underway since the beginning of the 2000s, and now this knowledge can be utilized in the development of eHealth in other countries.

Recibus is a national and cross-organizational e-prescription solution that can be rapidly deployed anywhere in the world. It has years of development and knowledge derived from Finland's nationwide healthcare system behind it. Recibus, in Finland known as eRA resepti, is one the most widely used systems connected to the national Kanta services in Finland.

The construction of a full-blown digital healthcare infrastructure can begin with electronic prescribing. Recibus can be deployed as a stand-alone module and integrated into other healthcare systems as development progresses. The ultimate objective should be a national health record system that provides a centralized storage for all health information generated in a country's healthcare services. Recibus is a part of Clinibus, a national cross-organizational health record system that enables a seamless flow of information within a digital healthcare infrastructure. Atostek Ltd. has been developing the software since 2012.

Introduction

eHealth is the use of information and communication technologies (ICT) for health. In the 21st century, countries all over the world have increasingly developed their eHealth strategies. The Nordic countries, Estonia and the United Kingdom are pioneers in the digitalization of healthcare systems having begun development and investment at the turn of the millennium. eHealth services can improve quality of care and efficiency of healthcare and thus reduce costs, as well as provide new ways to support the well-being of citizens. Examples of eHealth solutions include but are not limited to National Health Record (NHR) systems, National Electronic Prescription Systems (EPS), Personal Health Record (PHR) systems and different telemedicine solutions that offer tools for patients to connect with healthcare professionals over a distance. A properly implemented eHealth infrastructure in a country can significantly speed up the adoption of telemedicine.

The current state of the world with the COVID-19 pandemic has raised the importance of telemedicine. For telemedicine to minimize unnecessary physical contacts, medications should be prescribed electronically. While electronic prescribing can be utilized during the coronavirus pandemic, its introduction is also a long-term solution and a part of the eHealth strategy. The construction of a digital healthcare infrastructure can begin with electronic prescribing as it can be deployed as a stand-alone module and integrated into broader systems as development progresses. By introducing Recibus, the international version of the Finnish electronic prescription system, a country can get a reliable system quickly and without the development costs and delays of a tailor-made system. This way, a country can immediately take advantage of the system based on Finland's national investment of over ten years and 300 million euros.

This paper primarily discusses the utilization of an electronic prescription system but also considers the benefits of a national health record system. The second chapter gives an overview of electronic prescribing and discusses the benefits of using an electronic prescription system, taking into account patient safety, infrastructure development, and financial implications. The third chapter presents the Finnish eHealth strategy and the digitalization of Finnish national healthcare. The fourth chapter introduces Recibus, a productized cross-organizational electronic prescription system based on the solution used in Finland. The fifth chapter discusses the importance of a National Health Record system (NHR) and presents the national cross-organizational health record system Clinibus. By NHR we refer to a comprehensive solution that combines different electronic services and provides a centralized storage for health information generated in the country's healthcare services.

The sixth and final chapter is a suggestion for a roadmap to deploy Recibus and Clinibus.

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Electronic Prescription

Overview of electronic prescribing

Electronic prescribing (e-prescribing, ePrescribing, e-Rx, eRx, electronic prescription) provides an electronic way for healthcare professionals to generate and send a prescription order directly to a pharmacy from the point of care. Electronic prescribing improves patient safety and quality of care since e-prescriptions are unambiguous, pharmacists do not have to interpret handwriting, and a physical visit to physician's office is not required - which is important during a pandemic. Advanced electronic prescription systems allow healthcare professionals to create and renew prescriptions for individual patients, dispense medications, and view patient history. Such a system can connect to the pharmacies and can be integrated into an electronic medical record (EMR).

Cross-organizational and national aspects

eHealth can be used to create a platform for national healthcare and to create a center where different services can be connected, with electronic prescription being one of the services. However, without a common strategy and organized development, the odds are that various organizations start using separate software and systems, and connecting them later turns out to be laborious. The earliest possible start to the construction of an integrated system will enable efficient information sharing between services and reduce problems in the future due to incompatibilities between different systems.

With the use of a cross-organizational electronic prescription system, prescriptions do not spread to various services, but they are centrally stored. Overall, a cross-organizational system enables scalability and creates a sustainable foundation for the future and expansion of services. Besides, when using a cross-organizational system, the same user interface is used at various treatment sites, and healthcare professionals do not have to learn a new system when changing the workplace. At the same time, well designed integration APIs (Application Programming Interfaces) make it possible to implement competitive user interfaces in the future.

Benefits

Overall benefits

Electronic prescription system provides many benefits for all parties, including government, healthcare providers, healthcare professionals, pharmacists, and citizens. The benefits are reflected in both safer healthcare, as well as savings in healthcare costs and enabling infrastructure growth. However, deployment requires an initial investment, and system development and maintenance costs should be taken into account when considering potential savings.

For safer healthcare, e-prescribing allows error-free, accurate, and unambiguous prescriptions transferred electronically from the healthcare provider to the pharmacy. Compared to paper or faxed prescriptions, electronic prescribing improves medication compliance by removing the risk of losing a prescription. Additionally, prescriptions are always up-to-date and immediately visible to the pharmacists and other physicians. When using an electronic prescription system, a healthcare professional can view the patient's medication history from centralized storage, which makes prescribing medicines safer, prevents duplicate medications, and reduces drug abuse. Reliable drug substitution can be secured by using a database for compatible drugs. As the physician can see the history of medicines prescribed to a patient, the patient's drug use can be tracked by the amount of controlled substance prescriptions received which reduces the likelihood of over-prescribing or doctor-shopping.

Electronic prescribing can provide safer healthcare, increase patient safety, and improve quality of care, which are significant advantages. The benefits they bring are challenging to fully measure financially. One reason to introduce electronic prescribing is to make prescribing and using prescriptions more cost-effective and thereby bring savings. Electronic prescribing enables the fast renewal of prescriptions, which usually burden the physician's work. It also ensures that the patient can pick up the medication in time. Other practices that save the prescriber's time and therefore bring savings are that there is no need to locate paper prescriptions within the practice or need to reprint lost prescriptions. Also, cancelling electronic prescriptions is easy compared to paper versions.

From the patient's perspective, an electronic prescription system can save patients time and money when collecting their medications. EPS enables that medicines can be ready and waiting for the patients when they arrive at the pharmacy, which speeds up the prescription collection. Besides, EPS can provide more accurate storage of medicines in pharmacies if EPS is connected to the pharmacy's warehouse management system (WMS). Accurate storing prevents unnecessary visits to the pharmacy when the patient's medicines are not in stock.

Coronavirus

In the spring of 2020, coronavirus has tested healthcare capacity around the world. Healthcare professionals are operating under extreme conditions, and resources are directed to the treatment of corona patients in several countries. However, at the same time, people also need general healthcare for other diseases and ailments. The overall action to control the spread of the coronavirus has been to reduce physical contact, which has resulted in limited access to services. This has increased the demand for telemedicine, referring to remote clinical services. One of the effective service to support telemedicine and required healthcare is electronic prescribing which have proven its profitability and large-scale significance. As a second and considerably broader system to implement, the electronic health record (EHR) system facilitates access to healthcare information across healthcare organizations.

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Kanta

Legend:
— Dispensed prescriptions
— Prescripted
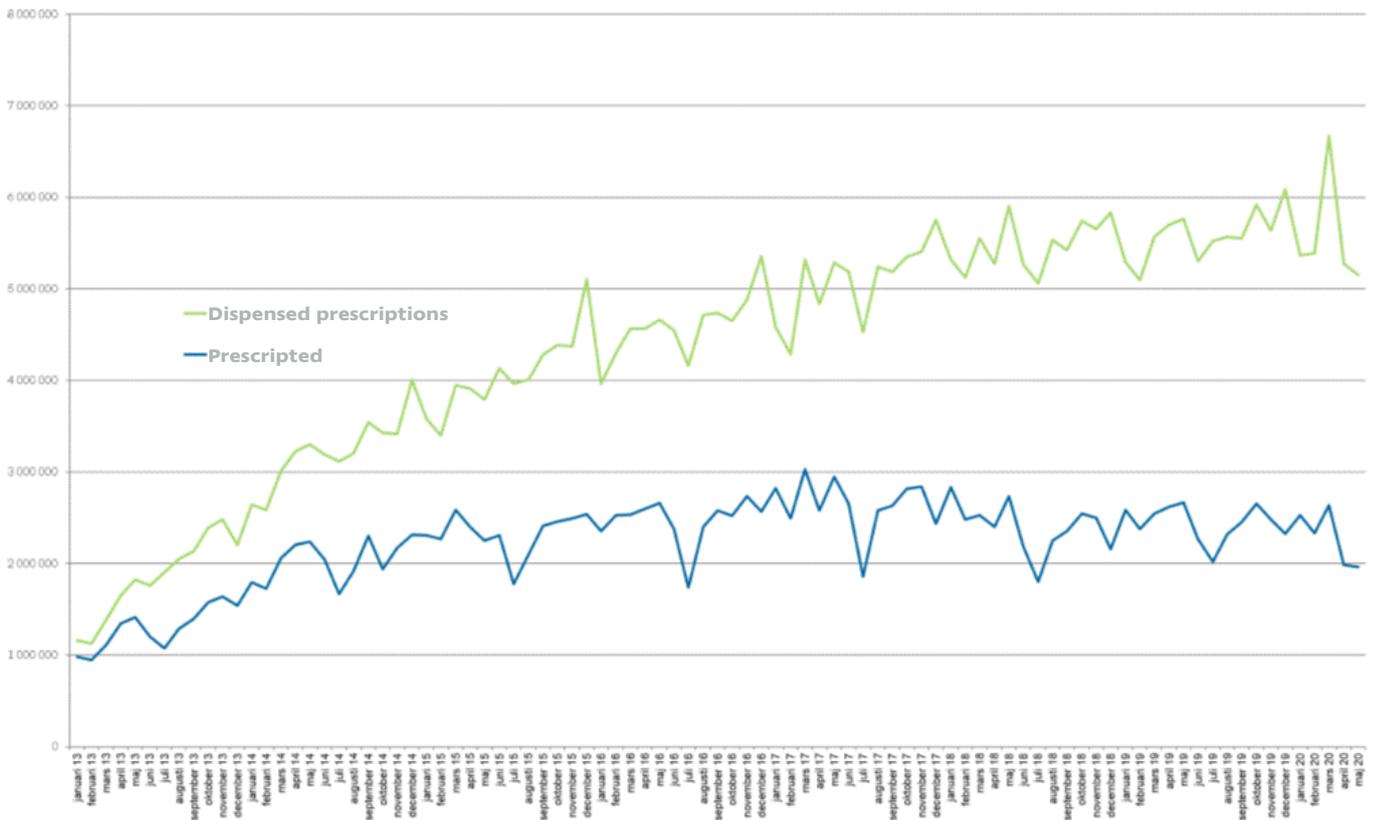
Prescripted and dispensed prescriptions per month in Finland

Legislation on e-prescribing varies considerably in different countries, which affects how and how quickly e-prescribing can be introduced or what other actions can be taken. Countries, where electronic prescriptions are partially or not at all implemented, have followed different strategies to utilize e-prescribing during coronavirus pandemic. The Australian Government has decided to fast track the implementation of electronic prescribing to help protect people most at risk from exposure to COVID-19 with invest up to $5 million in 2019-20 (1). Also, in Greece, coronavirus has sped up the implementations of electronic prescription, and a new electronic prescription system for vulnerable citizens was launched in April 2020. On the other hand, in April 2020 New Zealand introduced new rules regarding the New Zealand Electronic Prescription Service that was used by 29% of general practitioner practices in December 2019 and other temporary rules during the Covid-19 alert to support electronic prescribing (2, 3).

In Finland, where both a nationwide electronic health record system and electronic prescribing are in use, it has been possible to transfer ordinary healthcare services to remote services. Developed infrastructure has enab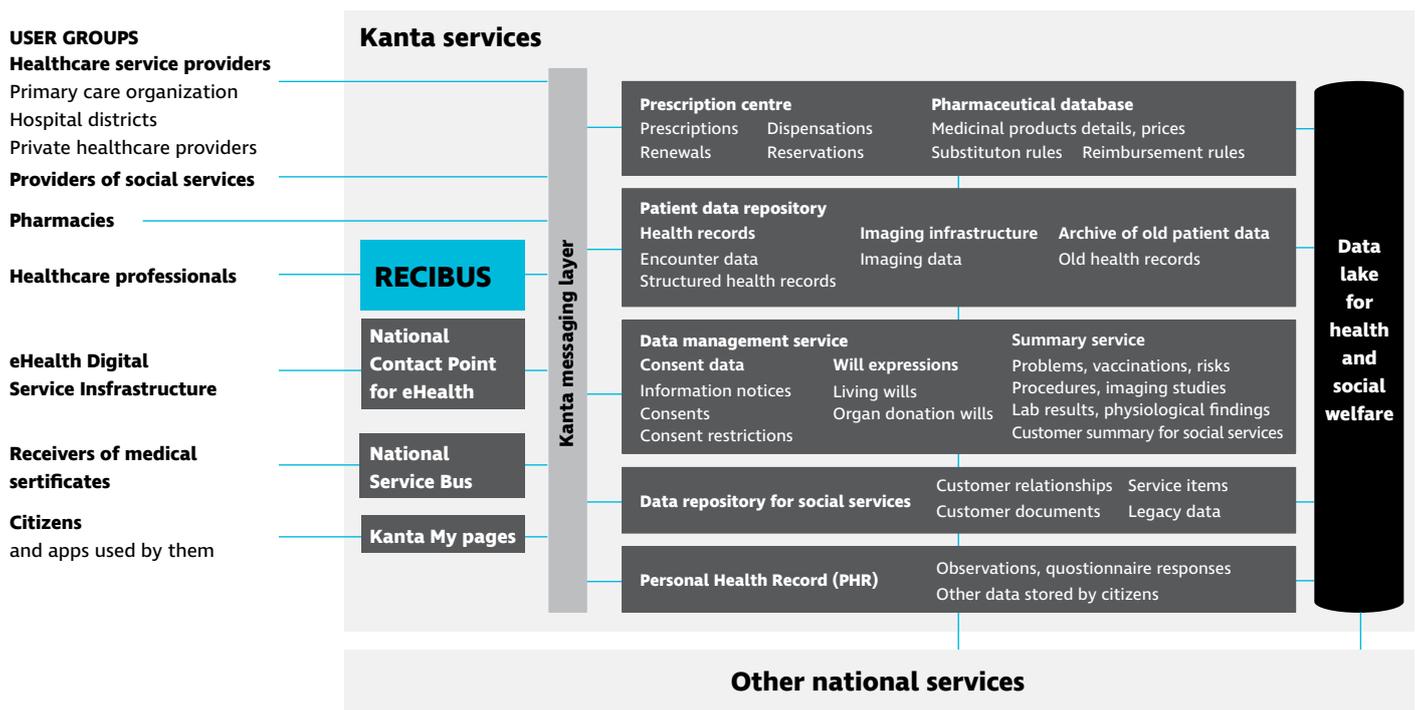led the introduction of new activities when the information is centralized, strong electronic authentication and authorization are in use for both citizens and professionals, and healthcare services are connected to social insurance institution and social welfare services. Both Finnish reported (May 2020) coronavirus cases (1188 / 1 M population) and a total number of deaths (55 / 1 M population) are under control, and intensive care units have been sufficient during the pandemic in Finland.

In prescribed and dispensed prescriptions, a slight spike can be seen in March 2020 when the coronavirus effects began to show more strongly in Finland, and substantial restrictions were introduced. This will be followed by a decline in both prescribing and dispensing in April when the restrictions were in force.

The impacts of coronavirus have transferred pharmacy transactions more online as the Ministry of Social Affairs and Health of Finland made a decision based on the Emergency Preparedness Act, which aims to direct people to remote transactions also in pharmacies. Pharmacies are required to arrange home delivery services where possible, and the delivery of medicines to home is strictly regulated activity to ensure safety.

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eHealth in Finland

In Finland, the development of eHealth has been underway since the beginning of the 2000s, and now this knowledge can be utilized in the development of eHealth in other countries. The Finnish healthcare system is based on public healthcare services to which everyone living in a country is entitled. According to the Finnish Constitution, public authorities must ensure adequate social and health services for everyone. In addition, Finnish healthcare is supported by numerous private health services operating in Finland.

USER GROUPS

Healthcare service providers
Primary care organization
Hospital districts
Private healthcare providers

Providers of social services

Pharmacies

Healthcare professionals

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**eHealth Digital
Service Insfrastructure**

**National
Contact Point
for eHealth**

**Receivers of medical
sertificates**

**National
Service Bus**

Citizens
and apps used by them

Kanta My pages

Kanta services

Kanta messaging layer

Prescription centre
Prescriptions   Dispensations
Renewals   Reservations

Pharmaceutical database
Medicinal products details, prices
Substituton rules   Reimbursement rules

Patient data repository
Health records   **Imaging infrastructure**   **Archive of old patient data**
Encounter data   Imaging data   Old health records
Structured health records

Data management service
Consent data   **Will expressions**
Information notices   Living wills
Consents   Organ donation wills
Consent restrictions

Summary service
Problems, vaccinations, risks
Procedures, imaging studies
Lab results, physiological findings
Customer summary for social services

Data repository for social services
Customer relationships   Service items
Customer documents   Legacy data

Personal Health Record (PHR)
Observations, quostionnaire responses
Other data stored by citizens

**Data
lake
for
health
and
social
welfare**

Other national services

eHealth in Finland

The development stages

In the 21st century, Finland has developed a national health information archive and introduced electronic prescribing nationwide. The evolution began in 2002 when the Finnish government decided that Finland should have a nationwide interoperable electronic health record system by the end of 2007. An agreement on the National archive for health information (Kanta) was reached by 2005. The project to build National Kanta repository was defined in 2007 while also e-prescription law took effect in Finland. The introduction of electronic prescriptions progressed first so that all Finnish pharmacies were able to receive electronic prescriptions in 2012, and ten years after the law came into force, the electronic prescription became mandatory in Finland in 2017. E-prescribing services are connected to the pharmaceutical database that provides professionals unified and up-to-date information about medicines and medicinal substances to prescribe and dispense medicines.

Prescription service is one part of a comprehensive Kanta solution. Other significant parts are patient data repository containing health records and the archive of imaging data, client data archive for social welfare services, and My Kanta pages for citizens to browse their medical records and prescriptions. Since Kanta Services are a national service, they are built in strict compliance with standards and structured documents like HL7 specifications. The Kanta Service concept requires HL7 interface specifications to ensure the interoperability of the messages and documents produced by systems linked to the services. In addition, the Social Insurance Institution of Finland (Kela) has published the Kanta CDA API source codes in the Github service to facilitate joint testing and be able to receive improvement suggestions. Kanta services are based on legislation, and several new legıslations have been needed to allow the new features.

Present state

Kanta Services has become a cornerstone of Finnish healthcare. Kanta produces digital services for the social welfare and healthcare sector by forming a unique service concept. Basic Kanta services have been deployed in stages since 2010, and in addition to ePrescription, eArchive, imaging data repository and social welfare repository are now in use. The current development project and a significant part of future healthcare is Kanta Personal Health Record. The production deployment of this Kanta service is already in use, and individual users can enter information about their wellbeing from approved applications. In the future, PHR data can be shared with social welfare and healthcare professionals, but at first new legislation of the client data act has to be entered into force.

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Future

Kanta services are developed continuously and becoming more comprehensive. To expand Kanta services, also new legislation needs to be developed. In 2019 new act on secondary use of health data passed in Finland, so that personal health and social data can be used securely for certain secondary purposes, such as research and statistics, innovation and development, knowledge management, teaching, and authority planning. The legislation was needed because primarily, the data can be used only for the purpose of which the data has been initially recorded, ie. clinical use.

In a global world, the future of healthcare will be international, and services cross borders. At the forefront, Europe is developing infrastructure for electronic cross-border health services, and Finnish citizens were the first EU patients to be able to retrieve medicine in the other country. Since January 2019, Finnish citizens have been able to retrieve e-prescriptions in pharmacies in Estonia and Croatia since September 2019.

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Recibus

Recibus is a national cross-organizational electronic prescription system that is applicable as a national solution for government agencies or as a corporate solution for healthcare organizations. It can also be used as an add-on for telehealth or EMR systems. Recibus is a productized version of Finnish eRA resepti and built according to Finnish national specifications, which adhere to international standards. Recibus can be integrated to existing EMR systems or used as stand-alone through web application.

The role of Atostek in Finnish healthcare

Atostek is a Finnish software company with 20 years of experience in system development and solid experience in healthcare and medical applications, industrial product development, and public sector information systems. Atostek has developed eRA services that enable healthcare and social welfare professionals and organizations to join Finnish Kanta services fast and conveniently. Currently, Atostek connects over 20 different electronic medical record and clinical systems to the Finnish National Health Register and was chosen to be a vendor for a nationwide integration solution in 2019.

How Recibus came to be?

Finland is among the first countries where national services were developed for electronic prescribing by the authorities. Atostek was one of the first private sector companies deciding to join the services to provide added value to healthcare providers. However, Finnish National Health Record consists of several national services, and all of them had complex and different interfaces built on international standards, but with extensions specified for use in Finland. In 2012 Finnish NHR was lacking a sandbox, where the functionality of integrations could be tested. At the time, integration interfaces in Finnish NHR were continually changing and did not take an unequivocal position on all use cases. A catalog for requirements did not exist, and at the same time, some of the requirements contradicted each other, which has made the work of developers more challenging. To join the services, Atostek has had to find out and demand answers and go through the bureaucracy, including test processes and permit applications.

Also, no national user interface for healthcare professionals was available for electronic prescriptions in the early days of development. In 2014 Atostek created Recibus in Finnish production as eRA resepti to fill the void, and it aimed to be the national interface for electronic prescribing. Recibus allows prescriptions to be made at low cost and bureaucracy. Recibus is a part of a more extensive solution called Clinibus, the international productized version of Finnish NHR services by Atostek. eRA is the most widely used Kanta integration service in the Finnish private sector. Atostek has been able to productize the Finnish NHR to an exportable international version called Recibus and Clinibus with the aid of Business Finland funding.

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Features and functionality

Recibus is a complete solution to start using electronic prescriptions in a country, region or organization. Recibus is browser-based cloud service and available in real-time everywhere and to all organizations configured to the system. It is a centralized solution that enables all joined pharmacies to access prescriptions and healthcare professionals to view a patient's full prescription history.

Usability

The user interface is designed to be simple so that it is quick to learn and easy to use. Patient records and entire prescription history are visible with one glance.

From physician's point of view:

- The physician can create, renew and cancel prescriptions together with viewing patient's medication history.
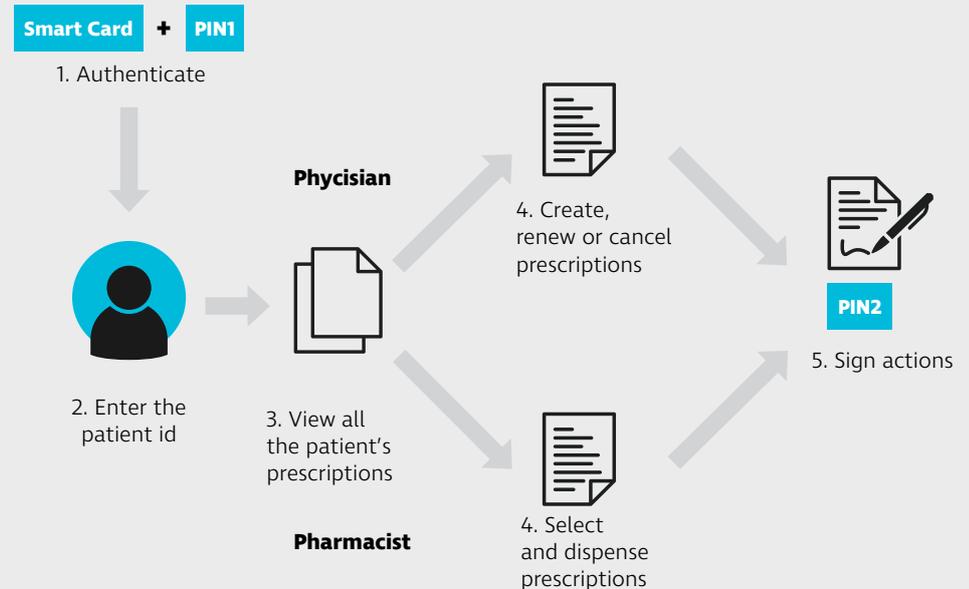
From pharmacist's point of view:

- The pharmacist can dispense a prescription and view patient's medication history.

From patient's point of view

- The patient only needs to prove their identity to the physician and pharmacist.

The workflow of a physician and a pharmacist

Smart Card **+** PIN1

1. Authenticate

2. Enter the patient id

3. View all the patient's prescriptions

Phycisian

4. Create, renew or cancel prescriptions

Pharmacist

4. Select and dispense prescriptions

PIN2

5. Sign actions

Compatibility

Prescriptions can be written and patient's prescription history can be seen from any internet-connected device, also with mobile devices. Recibus is compatible with Windows, Mac, Android and iOS.

Standards

Recibus is built according to Finnish national specifications which adhere to international standards. Recibus is compliant with HL7 V3 and CDA R2.

Audit Trail

Recibus contains an audit trail with user action and error logs with which usage and error situations can be easily tracked and traced. Logging is the General Data Protection Regulation (GDPR) compatible and fulfills Finland's national requirements in accordance with the legislation.

Recibus SmartCard

Recibus service includes a SmartCard driver for (a) authentication with a smart card and (b) electronic signature. The driver is available to Windows, OS X, Android and iOS. Recibus SmartCard can be acquired as a stand-alone service as well to enable reliable authentication and digital signature in other clinical systems.

Code server

The code service manages uniform data structures for healthcare patient records and social care customer documents. The used coding service is agreed on a case by case basis but in Finland the Anatomical Therapeutic Chemical (ATC) classification system is in use at the Recibus side.

Authentication, authorization and digital signatures with smart card

Recibus is a secure solution. Healthcare professionals in hospitals and pharmacies are authenticated with smart card. Only authorized individuals have access to the records and can view patient information. All prescriptions are secured by each doctor's digital signature.
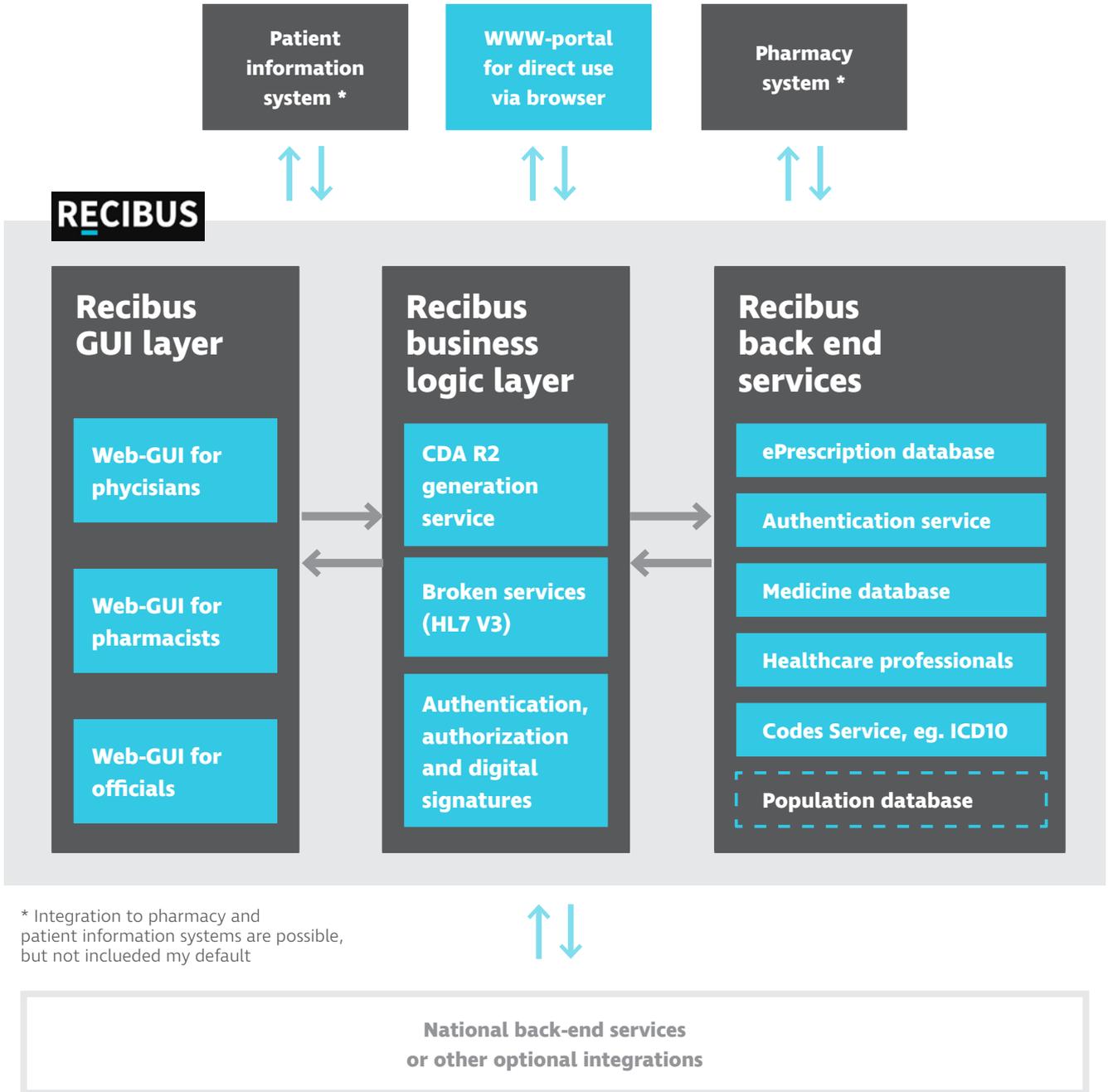
Prescription database

The prescription database is an internal database for storing prescription information like the states of prescriptions and dispensations. Both physician and pharmacist functions use this same database, which allows the data to be synchronized for all users at all times.

Registry of healthcare provider organisations and pharmacies

Recibus provides a register or supports the use of national register to monitor the information of private and public social and healthcare organizations. Register is used to identify the parties using the service.

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┌──────────────┐   ┌──────────────┐   ┌──────────────┐
│   Patient    │   │  WWW-portal  │   │   Pharmacy   │
│ information  │   │ for direct   │   │   system *   │
│  system *    │   │  use via     │   │              │
│              │   │   browser    │   │              │
└──────────────┘   └──────────────┘   └──────────────┘
       ↑↓                ↑↓                 ↑↓
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Recibus GUI layer	Recibus business logic layer	Recibus back end services
Web-GUI for phycisians	CDA R2 generation service	ePrescription database
Web-GUI for pharmacists	Broken services (HL7 V3)	Authentication service
Web-GUI for officials	Authentication, authorization and digital signatures	Medicine database
		Healthcare professionals
		Codes Service, eg. ICD10
		Population database

* Integration to pharmacy and patient information systems are possible, but not inclueded my default

↑↓

National back-end services or other optional integrations

Medicine database

The medicine database contains information about medicines and medicinal substances for the purpose of prescribing and dispensing medicines. Reliable drug substitution is possible using a database of compatible drugs. The medicine database is determined by the country and can be automatically updated from a national system to Recibus.

Registry of healthcare professionals

Recibus provides a register or supports the use of national register to monitor authenticated healthcare professionals in order to authorize confirmed professionals.

Integration interface to EMR systems and pharmacy systems

Recibus can be integrated into existing EMR system and it has a full integration API for EMR integration. Secondly, Recibus can be integrated into pharmacy systems like pharmacy's warehouse management system. This enables that WMS gets the information of the prescribed drugs and utilize the information to process the order in the pharmacy and optimize stocks. The pharmacy integration interface does not currently exist but can be provided.

Deployment options

Recibus is a complete solution, and the most important localizations required are the translation into the national language, as well as incorporation of local medicine database. Recibus is cloud service, and it can be deployed from Azure, AWS and Google or from the customer's own data center. Atostek values local partners to enable 1st class 1st level support to allow the customers to receive the service in their native language.

What's next? – Clinibus

What is an NHR?

The national health record system (NHR system) is a national electronic health record system (EHR system) to which all healthcare services in the country can be connected. Electronic health record differs significantly from an electronic medical record (EMR), and terms should not be used interchangeably. EMR is a digital version of a paper chart with patient information containing the medical and treatment history in one practice. Whereas EHR is a digital record of health information collected from many organizations, providing more information than EMR, and the information is accessible to authorized healthcare professionals across practices and healthcare organizations. EHR is the center where all health information about each patient is stored. What makes NHR significant is that it is centralized at the national level and gathers all the information generated in different services.

A centralized store for healthcare information provides a significant number of benefits. The physician can view the patient's full medical history, and the information moves with the patient between different services. EHR contains details of medical history, medications, allergies, radiology images, treatment plans, risk information and laboratory results of patients. Information sharing prevents duplicate treatment such as unnecessary laboratory tests, and centralized data provides a possibility to use data for secondary purposes. NHR system provides a contact point for healthcare services and therefore gives a center to base national-level decision-making regarding healthcare services.

Clinibus is a national cross-organizational health record system based on the Finnish model - but international standards - of a nationwide EHR system. Clinibus, in Finland known as eRA, is the most widely used Kanta integration service in the Finnish private sector. Clinibus is a large-scale solution that can be deployed regionally or nationally for both the private and public sectors. It can be integrated into existing EMR systems and also used as a stand-alone through a web application. Clinibus contains multiple services, one being the electronic prescription system Recibus. Similarly to Recibus, Clinibus is built according to Finnish national specifications, which adhere to international standards. Finland uses ICD10 and parts of ICPC2 codes at the Clinibus side.

Clinibus consists of several services from which the desired can be selected. Services and their features are continuously developed and refined. The core services are Clinibus Archive, the health data archive, and Recibus ePrescription. Following with Clinibus Social, the social welfare data archive and Clinibus Images, the image archive. The old data from old systems can be viewed with Clinibus History, and Clinibus Laboratory is developed for laboratory data. In addition, Clinibus Statement is a service for physician statements and Clinibus Contractor for contractor authorizations. Finally, Clinibus Personal Health Record is for citizens to store their wellbeing information and currently in development.

Social welfare record

In addition to healthcare information, NHR allows storing information from social welfare services. Centralizing data from social and welfare services to NHR makes it more accessible to employees and customers and reduce the same data being collected multiple times. Clinibus Social service contains client data archive for social welfare services and allows to write, search, and view entries for authorized users. Clinibus Social provides an easier and more efficient processing of customer data saving social care resources and improving the customer experience.

Imaging record

Imaging record allows to store and view imaging studies through centralized service. The archive of imaging data provides better availability of data and, therefore, multiple benefits like searching previous reference images, easier cooperation with experts to examine images and prevents duplicate imaging studies. With a nationwide solution, costs can be saved when local archives are no longer needed, and manual recording is reduced.

A picture archiving and communication system (PACS) is a medical imaging technology that provides convenient access to images from multiple modalities (ultrasound, magnetic resonance, computed tomography, etc.) since all electronic images and reports are transferred digitally. Clinibus Images can be seen as a nationwide PACS and in compliance with Digital Imaging and Communications in Medicine (DICOM), the universal format for storing and transmitting medical images. The features of Clinibus Images are under development and will be introduced in stages as a part is productized during 2021. Clinibus Images will support at least X-rays, magnetic resonance imaging (MRI), fundus imaging, visible light imaging, and electrocardiography (ECG).

Personal health record

A personal health record (PHR) is a collection of information about individuals health. This data is collected by individual commonly using wellbeing applications and devices. Wellbeing applications and devices are becoming more advanced and their use more common thus, for future healthcare, there are innumerable possibilities for applying the data. Wellbeing data collected by a citizen can be utilized to preventive health care, support physicians in diagnosis of diseases and control and monitor the treatment of the disease. PHR data can be shared with social welfare and healthcare professionals if it is permitted by national law. Clinibus Personal Health Record is a national data repository, to which a citizen can store their wellbeing information.

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Suggestion for roadmap

Maturity analysis

The first step is to discuss and sort out the current healthcare status in the destination country. This analysis contains healthcare organizations and government functions as well as identification of organizations and factors that will be affected by the decisions. The next step is to decide target organizations, which can be public or private or both, and refine the business model according to the needs of the country. In order to pilot Recibus, existing systems and practices in the country are identified, including the format of citizen id, codes in use, required language translations and the status of medicine database, registry of healthcare professionals and registry of healthcare organizations.

ePrescription pilot

At this step, Recibus is installed for a limited number of pharmacies and healthcare organizations to demonstrate the service as a proof of concept.

ePrescription production

Recibus is integrated to agreed organizations. Atostek delivers software and agreed cloud service - or data center - that is used. Smart cards and readers are delivered to healthcare professionals, and the agreed party provides support in the configurations.

eArchive plan

The planning begins with a broad study of the country's infrastructure and eHealth strategy. Planning contains identifying the services a country needs and their order of priority as well as possible regional differences. After suitable services of Clinibus are identified, a realistic implementation plan and initial timetable will be created.

eArchive production

Clinibus is integrated gradually according to the plan with regular situation reviews and assessment of progress.

Contact us

**Mr. Mika Torhola
CEO
+358 50 412 3453
mika.torhola@recibus.com**

Endnotes

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Learn more about Kanta services: https://www.kanta.fi/en/citizens

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