CEF-funded xBorder ePrescription

openMedicine, Stockholm
20/12/2016
Public healthcare providers
- Hospital districts (20)
- Primary care org. (192)
- Private healthcare providers (4000)
- Pharmacies (~800)

Health care professionals
- eHealth DSI (CEF)

Citizens (> 5 000 000)

Social care providers

Main standards
- HL7 V3: CDA R2 L3 and Medical Records
- HL7 FHIR DSTU2 (PHR)
- JSON, XHTML (PHR and social services)
- PDF/A (legacy data and social services)
- IHE IT-I Profiles (Imaging and epSOS)
- W3C XML DSig
- WS Addressing, WS-I
- TLS, X.509

Other national services
- National code server
- Code systems and terminologies
- Form structures
- Pharmacy register
- Organization register
- X-Road
- Certification services
- HCP and SCP register

Kanta services
- Pharmacetical database
- ePrescription service
- Patient data repository
- Patient data management service
- Consent and will management
- Personal Health Record
- Customer’s mydata
- Data repository for social services
- Customer docs
- Customership and service item data
- Legacy data
- Summary management
- Logs

Kanta messaging layer
- Web-GUIs for HCPs
- eHealth National Contact Point
- My Kanta pages

Radiology DICOM studies
- Encounters
- Logs
- Radiology
- Logs

Health records, structured
- Health records, legacy
- Health records, structured
- Health records, legacy

Diagnoses
- Risks
- Other summary data
- Consents and their restrictions
- Living wills and other wills (organ donation, etc)

Patient summary management
- My Kanta pages

Consent and will management
- Consent and will management
- Consent and will management
- Consent and will management
- Consent and will management
Electronic Prescriptions Dispensed by Pharmacies Compared to Prescriptions Reimbursed Directly at Pharmacies by Month 01/2009–07/2016
(3 month moving average in bold)
Number of Electronic Prescriptions and Medicine Dispensing Events 05/2010–07/2016

Prescriptions
Dispensing Events

2010
2011
2012
2013
2014
2015
2016

75%
Electronic Prescription
10.08.2016

20 Patient and Pharmacy Data Systems
2 Data Systems in Joint Testing
815 Pharmacies (100%)
177 Public Healthcare Subscribers (100%)
268 Private Healthcare Subscribers

>90% Of All Dispensing Events with eRx (2015)
49.0 Mill. Medicine Dispensing Events (2015)
27.9 Mill. Prescriptions Issued (2015)
(Taloustutkimus Oy)

<table>
<thead>
<tr>
<th>2016</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Yle Areena</td>
<td>Yle Areena</td>
</tr>
<tr>
<td>2. Kanta.fi</td>
<td>Ilmatieteen laitos</td>
</tr>
<tr>
<td>3. Ilmatieteen laitos</td>
<td>Kanta.fi</td>
</tr>
<tr>
<td>4. HelMet</td>
<td>Yle</td>
</tr>
<tr>
<td>5. Yle</td>
<td>HSL Reittiopas</td>
</tr>
<tr>
<td>6. HSL Reittiopas</td>
<td>HelMet</td>
</tr>
<tr>
<td>7. Vero.fi</td>
<td>Vero.fi</td>
</tr>
<tr>
<td>8. Foreca</td>
<td>Poliisi.fi</td>
</tr>
<tr>
<td>9. Kela.fi</td>
<td>Foreca</td>
</tr>
<tr>
<td>10. OP</td>
<td>OP</td>
</tr>
</tbody>
</table>
Finnish eHealth cross-border data exchange architecture

Country A
- NCP A (OpenNCP)
- National connector A (OpenNCP)
- Patient Data Repository (consent service)
- Pharmaceutical database

Country B
- NCP B (OpenNCP)
- National connector B (OpenNCP)
- Prescription centre
- Pharmacy systems
- Terhikki (HCP professional rights register)

Central services
- Configuration service
- Terminology service

Pharmacy system connector
- National connector B (OpenNCP)
- NCP B (OpenNCP)
- Patient Data Repository (consent service)
Differences to epSOS-architecture

• Codeservice HealthTerm to be replaced
  – Possibly a hybrid solution with part of properties in national infrastructures
  – Architecture is being planned

• Centralized configuration server replaced with a hybrid solution
  – Replaced by SMP/SML-solution developed in eSENS based on OASIS Service Metadata Publishing -standard
  – Under development

• Better solution for Non-repudiation
  – Non-repudiation Building Block from eSENS

• VPN-connections to be replaced possibly by TESTA-NG-network
  – VPN-connection caused a lot of problems during epSOS pilot
  – TESTA-NG-network is being deployed also in EESSI (Electronic Exchange of Social Security Information)
  – Planning not started

• Changes in contents of documents
  – In epSOS pilot there were a lot of prescriptions out of scope
  – There is a aim to bring into scope at least combination medications and base creams
## Prescriptions “out of scope”, case Finland

<table>
<thead>
<tr>
<th>No</th>
<th>Description</th>
<th>Reason</th>
<th>Suggestion with regards to pivot</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>central nervous system drugs</td>
<td>Difference in classification (what is a CNS drug and what is not) in different countries</td>
<td>No change</td>
</tr>
<tr>
<td>2</td>
<td>drugs with potential for recreational use (narcotics)</td>
<td>Out of scope of epSOS in general</td>
<td>No change</td>
</tr>
<tr>
<td>3</td>
<td>drugs to be prepared in the pharmacy</td>
<td>Preparation instructions only in Finnish/Swedish</td>
<td>No change</td>
</tr>
<tr>
<td>4</td>
<td>base creams</td>
<td>No ATC code or strength, which are mandatory in pivot</td>
<td>Include → make ATC code and strength optional in pivot</td>
</tr>
<tr>
<td>5</td>
<td>clinical nutritional preparations</td>
<td>No ATC code or strength, which are mandatory in pivot</td>
<td>Include → make ATC code and strength optional in pivot</td>
</tr>
<tr>
<td>6</td>
<td>care accessories, dietary supplements and bandages</td>
<td>No ATC code and some other information which is mandatory in pivot</td>
<td>No change</td>
</tr>
<tr>
<td>7</td>
<td>prescriptions valid for defined time periods</td>
<td>No information on package size and number of packages</td>
<td>No change. Some countries are able to send suitable info (amount to be dispensed at once).</td>
</tr>
<tr>
<td>8</td>
<td>iterated prescriptions</td>
<td>Difficult to calculate the remaining amount. Iteration rules vary among countries.</td>
<td>No change. Some countries are able to send suitable info (amount to be dispensed at once).</td>
</tr>
<tr>
<td>9</td>
<td>combination medications</td>
<td>ATC code system not designed for this use case. Text-based strength not allowed.</td>
<td>Allow providing non-structured strength information (text)</td>
</tr>
<tr>
<td>10</td>
<td>combination packages</td>
<td>Package size is difficult to structure.</td>
<td>No change</td>
</tr>
<tr>
<td>11</td>
<td>the prescription is in held state</td>
<td>National rules</td>
<td>No change</td>
</tr>
<tr>
<td>12</td>
<td>the prescription is in reservation state</td>
<td>National rules</td>
<td>No change</td>
</tr>
<tr>
<td>13</td>
<td>package size is not in structured form</td>
<td>Package size is difficult to structure.</td>
<td>No change</td>
</tr>
</tbody>
</table>
Issues

• Timetabling: building country B –functionality, new Pharmaceutical database and eMedication simultaneously. The changes have similar timetable (spring 2019), but delays can happen. Changes affect especially country A side.

• It is still unclear what code systems are used in 2019 (EDQM, EUTCT etc.) Old code systems cannot be made obsolete at once so they will be used side by side

• Consent management. Opt-in or opt-out. Old law has opt-in and new one probably opt-out, but it is still unclear when the new law is in place. In epSOS law changes stalled changes

• Restricting certain medicines and prescription from the service and informing citizens and professionals
We did it once and we’ll do it again.