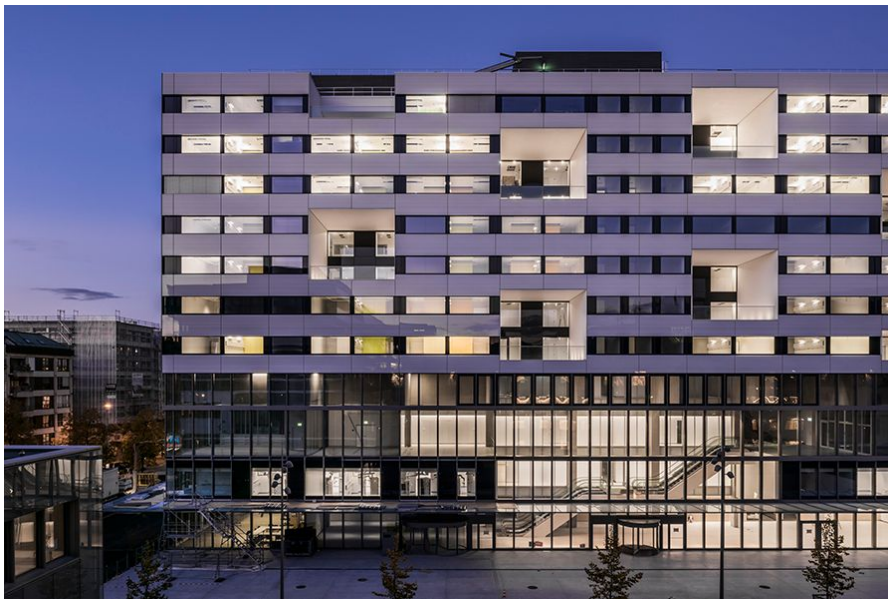
Implementation Case Study: Geneva, Switzerland - Shared Medication Treatment Plan

Project Name
MonDossierMedical.ch - Shared Medication Treatment Plan



University Hospitals of Geneva - Gustave Julliard hospital building

Location
Geneva, Switzerland Region

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Project Description

The Canton of Geneva Switzerland has built an Electronic Patient Record system aiming at regrouping all important documents for the patient's care. Documents are provided by all stakeholders. The patient is the owner of the patient record (patient centered). An added-value service exists for 3 years now enabling care providers to manage the medication treatment plan. The goal is to have a complete view of all medications taken by the patient.

The ongoing project is to link stakeholders' applications (prescription systems, dispensing systems, home care systems) directly with the core system in order to avoid any duplication of data entry and to have a true integration of all primary systems with the central shared medication treatment plan tool.

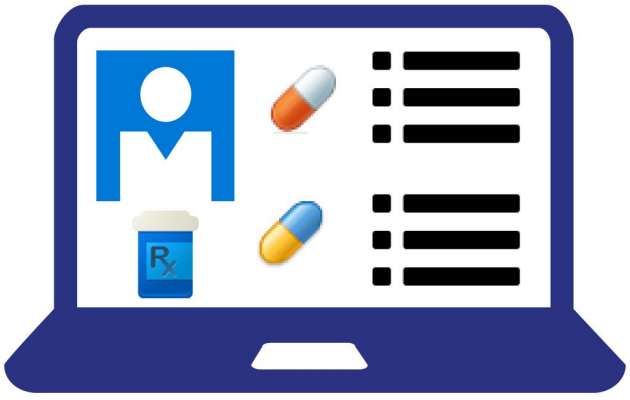
Project Scope/Scale

- Focus: medication treatment plan
- Partners: main hospital, GPs, pharmacists, home care nurses
- Population: long term (5 years): ~400K patients; currently: 25K patients
- Geographical region: Geneva State for the project, but national for the strategy / adoption of standard
- Funding: State of Geneva and partners

Goals, Benefits and Achievements

The primary goal of implementing the Shared Medication Treatment Plan is to achieve a real-time, global view of the past, current and planned medications taken by all patients. Creating this comprehensive picture of patients' medication history will create more complete and up-to-date medical histories that can be accessed anywhere that patient goes to receive care.

"It is quite rare to have the complete list of active drugs during a consultation for various reasons: prescriptions can been made on paper media and will not increment the patient's medication plan and the prescriptions can be made on a different EHR than that used by the doctor during the consultation," says Nicolas Perone, medical director of PRISM and medical practitioner in the community department of Hôpitaux universitaires de Genève.



At the hospital level, this project will play an important role in medication anamnesis during patient admission and medication reconciliation at the end of patient stays (discharge medication treatment). The Shared

Medication Treatment Plan represents the crucial first steps in building a full e-prescription/e-dispense system.

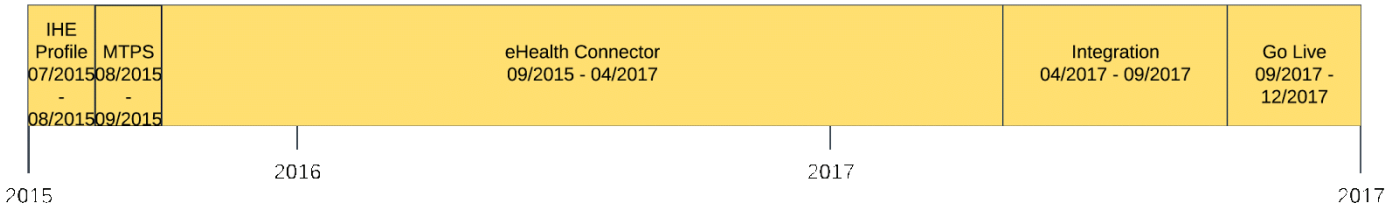
Pulling back to look at the long-term goals of the project, the Shared Medication Treatment Plan define a framework for supporting e-medication systems. In time, this framework will support the push for EU-wide e-prescription and e-dispense systems by defining national e-medication standards.

Timeline

- August 2015: New IHE Pharmacy Medication Treatment Plan profile published
- Sept 2015: National standard for implementing eMedication proposed (MTPS)
- April 2017: Implementation of a library for creating and parsing IHE Pharmacy CDA documents (MTP, PRE, DIS, PADV, PML) - eHealth Connector (open source)
- Q3 2017: Integration of hospital prescription system + 1 principal GP system with central platform using MTPS; possibly integration of at least 1 pharmacy system with central platform
- Q4 2017: Go live

Ways the Project Leverages IHE Products and Processes

National standard is fully based on IHE Pharmacy content profiles. The coverage of the IHE Pharmacy profiles was extended to suit the scope of the project (new profile covering the pre-prescription phase)



Ways the Project Leverages IHE Test Tools and Testing Processes

IHE Gazelle testing tools are currently being used for validating the produced CDA documents. For all those who will use the eHealth Connector in their implementation, this will mean that the produced document are valid. When more providers will be interconnected, we may ask them to go through a connectathon in order to validate their implementations, although this could also be done within the forthcoming national reference environment being built by IHE Services for the Swiss government.

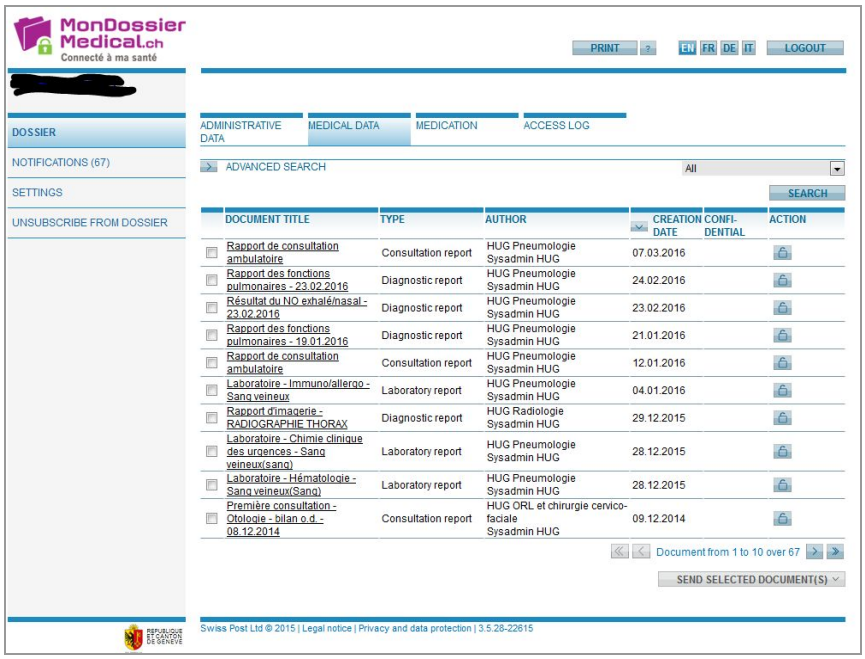
IHE Profiles Implemented

Specific to the project was the implementation of a set of IHE Pharmacy profiles that define the content and format of structured pharmacy documents used in planning, prescribing and dispensing patient medications:

- **Medication Treatment Plan (MTP)** - describes a medication document generated when a health care professional adds a medication to a patient treatment plan.
- **Pharmacy Prescription (PRE)** - describes a prescription document generated when a health care professional decides that the patient needs a medication.
- **Pharmacy Dispense (DIS)** - describes a dispense document generated when a health care professional dispenses a medication to a patient.
- **Pharmacy Pharmaceutical Advice (PADV)** - describes a pharmaceutical advice document generated when a health care professional validates a prescription item against pharmaceutical knowledge and regulations or manages a medication treatment plan or a dispensation.
- **Pharmacy Medication List (PML)** - describes a medication list document generated when a health care professional requests this information, for example when prescribing.

These documents are exchanged inside a central health information exchange platform based on key IHE IT Infrastructure profiles:

- **Cross-Enterprise Document Sharing (XDS)** - facilitates the registration, distribution and access patient electronic health records across care sites.
- **Patient Identifier Cross Referencing (PIX)** - supports the cross-referencing of patient identifiers from multiple Patient Identifier Domains.
- **Patient Demographics Query (PDQ)** - lets applications query a central patient information server and retrieve a patient's demographic and visit information.
- **Audit Trail and Node Authentication (ATNA)** - enables security measures that provide patient information confidentiality, data integrity and user accountability.



A subset of IHE Pharmacy **Community Medication Prescription and Dispense (CMPD)** profile is also implemented in order to create the on-demand Pharmacy Medication List CDA document and to manage the necessary conversions between the platform's internal data structure and the external CDA format.

Implementation Challenges
Some clinical challenges were already raised with the implementation of the tool in the central portal. New challenges were:

- **Clinical**: Clarifying the "medication reconciliation" phase and who should be responsible for which medication. Clinicians were concerned that by having access to the medications in a patient's record, they might become responsibility for any adverse drug events.
- **Technical**: Identifying the necessary interoperability standards (ultimately selecting IHE profiles), defining the value sets required and connecting the prescription systems of all (or most of) stakeholders to the shared medication treatment plan.
- **Political**: Raising awareness outside of Geneva to ensure adoption of the new national profile proposition. The decision to start with a medication list was taken in order to address fears about complexity.
- **Financial**: Obtaining the resources and manpower necessary to do the implementation

References and Publications
Related to the current version of the central tool (without interfaces):

- Rosemberg A, Plaut O, Sepulchre X, Spahni S. ["MonDossierMedical.ch": an efficient tool for sharing medical data between patients and doctors]. Rev Med Suisse. 2015 May 13;11(474):1069-73. French. PubMed PMID: 26118230.
- Spahni S, Guardia A, Boggini T, Geissbuhler A. Design and implementation of a shared treatment plan in a federated health information exchange. Stud Health Technol Inform. 2013;192:1090. PubMed PMID: 23920864.Provide links or references to any articles, press releases, research papers, websites or presentations about the project.

Participating Organizations

Hôpitaux Universitaires Genève

HUG (Geneva University Hospitals)

HUG was created in 1995, and is part of a tradition of excellence in medicine and science dating back hundreds of years. The group brings together eight Geneva public hospitals and 40 outpatient units throughout the canton of Geneva, and together they form the leading Swiss University Hospital. HUG has around 2,000 beds in total.

State of Geneva
Leading the regional infrastructure

Swiss Post
Implementing the regional infrastructure

Medshare
Initiator of the eHealth Connector

Mediway
Implementing GP software

OFAC
Implementing pharmacy software