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## Implementation of the Swiss eMedication Treatment Plan: Strategy and pilot project

Stéphane Spahni, PhD

eHealth & Telemedicine Unit , University Hospitals of Geneva

- Medication-related errors have a world financial impact estimated to \$42 billions in 2012 (Aitken & Gorokhovich, 2012)
- UK: a recent study estimates the number of medical errors to 66M per year, 1/3 having clinical consequences
- It is considered that 50% of medication errors are occurring during care transitions (hospital admission/discharge, change of physician, ...)
- A study of 2000 evaluated that 5 to 10% of emergency admissions are linked to medication problems (3% having a fatal issue)

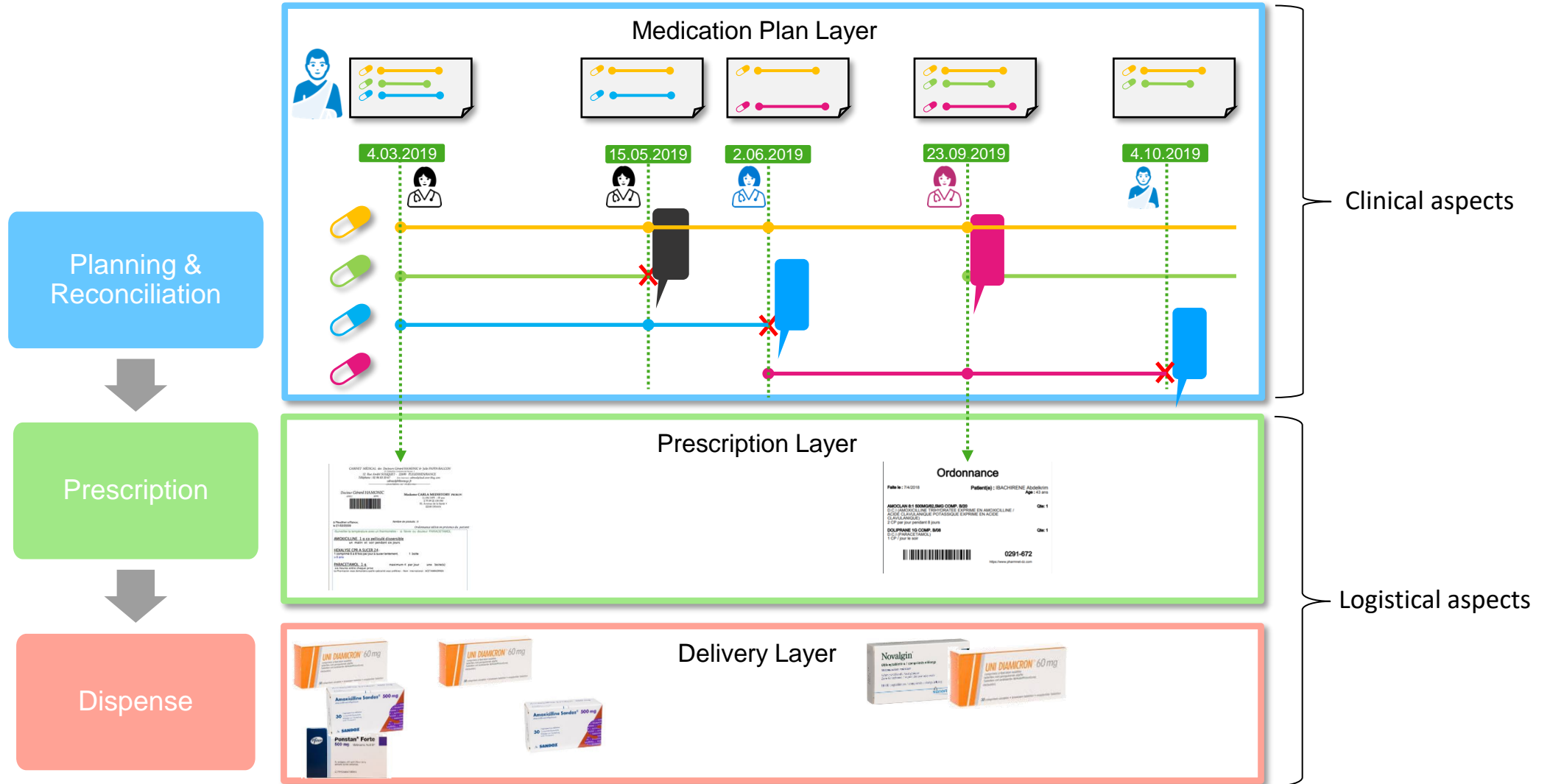
## National Law establishing the Electronic Patient Record (2017):

- National Architecture, IHE-Based
- Regional Implementations: (XDS.b) Communities
- Documents-based for the initial phase
  
- Implementation of initial services ongoing, 4 communities out of 10 foreseen already certified (3 are live)

- Geneva has an EPR-infrastructure since 2010
  - More than 50'000 patients enrolled
  - Close to National EPR Architecture
  - Will be replaced by a conformant implementation this autumn
  
- Importance of supporting eMedication recognized early
  - Integrated Shared Medication Treatment Plan tool since 2011
  - Proprietary
  - Only available through platform's portals
  - New concept / new implementation required

## Key characteristics

- Every stakeholder may contribute, including the patient
- Supporting both clinical view and logistical view
  - Aggregated information
  - Supporting medication anamnesis & medication reconciliation
  - Supporting logistical processes (prescription, dispense)
- Strong integration with primary systems (GPs, Hospitals, Pharmacists, Nursing care, ...)
  - Standards-based (IHE Pharmacy profiles including CMPD workflow)



- Gathering of key requirements
  - Business workgroups
  - Technical workgroups
  
- Definition of a national concept for eMedication
  - Anchored in National EPR Architecture
  - Fulfilling specific eMedication requirements
  
- Technical specification & implementation of a proof-of-concept
  
- Testing and validation of the proof-of-concept



### Strong coordination with key stakeholders

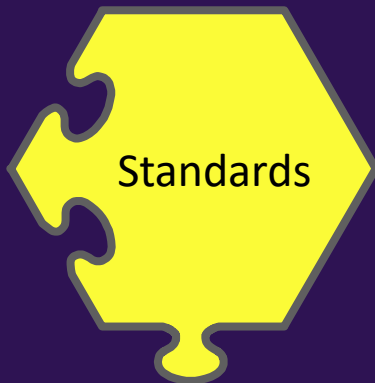
- eHealth-Suisse
  - Establishment of a national concept proposal
  - Technical (draft) specification validation
  - Relations with the other communities
- CARA Reference Community
  - The regional community is the project leader
  - The proof of concept is being implemented as an additional service offered by the regional community platform
- One key actor in the pharmacy landscape





Working groups to:

- Gather business requirements from
  - Healthcare professionals – physicians (hospitals & GPs), pharmacists, nurses
  - Patients
- Work on the technical aspects
  - Technical Architecture
  - Pilot projects for implementing & validating the concept



Use of IHE Profiles wherever it is possible:

- Communication interfaces based on EPR specifications
  - XDS.b (SOAP-based)
  - MHD (RESTful-based)
- Content based on IHE Pharmacy profiles
  - MTP – Planning (introduced in 2015)
  - PRE – Prescription
  - DIS – Dispense
  - PADV – Modification / validation
  - PML – Medication Lists
- Workflow based on IHE Pharmacy CMPD profile
  - Extended to support RESTful transactions (2021)
- Several CPs submitted to Pharmacy, ITI & PCC



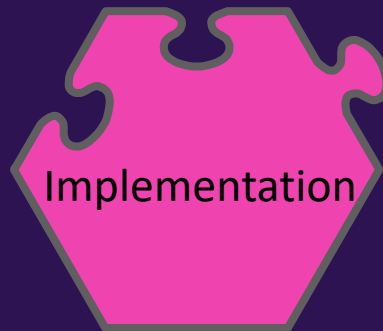
### Specialization/Swiss-ization of IHE Pharmacy Profiles

- CDA-CH-EMED
  - Based on CDA-CH specification for the header
  - Based on IHE Pharmacy MTP, PRE, DIS, PADV, PML for the content
  - Specialized Medication List (treatment card): PMLC
- CH-EMED
  - FHIR-based representation of MTP, PRE, DIS, PADV, PML, PMLC
  - Mapping between FHIR Resources and CDA documents is ongoing (supported by HL-7 CH)
- CH-CMPD
  - Support for documents containing FHIR Resources



### eMedication Service Concept:

- Taking into account current legislation (EPR Law & Ordinances)
- Designed as a component distinct from EPR-XDS.b infrastructure
  - With its own access rights management
  - With its own business logic
  - With its own primary storage
- Using all key components of the EPR-XDS.b Infrastructure
- Use of the same communication interfaces



eMedication Service based on a core component

➤ The eMedication Primary Aggregator

Key features of the eMedication Primary Aggregator:

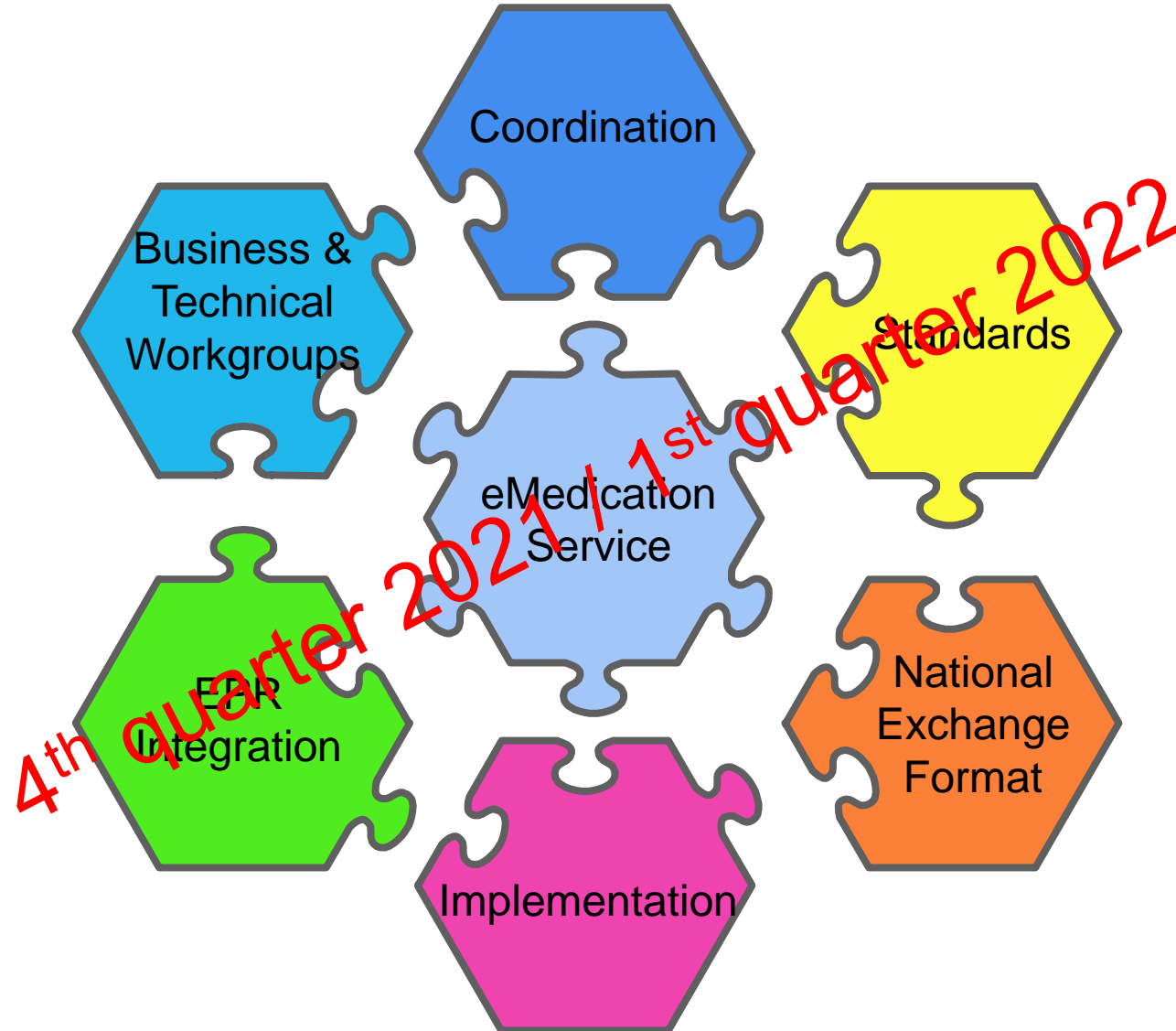
- Implements IHE Pharmacy CMPD Profile
- Implements all *aggregation* business logic but does not perform any *reconciliation*
- Creates aggregated views
- Manages access rights to eMedication data
- “Intermediary” between primary systems and EPR-XDS.b Infrastructure
- Acts as a primary system regarding the EPR-XDS.b Infrastructure (e.g. for patient’s contributions submitted through the portal)
- Relies on EPR Communities for secondary storage



### Proof-of-concept for the eMedication Service

- Integration of the eMedication Primary Aggregator into the CARA Community Platform
- Pilot phase – not everything is supported (limited dosage forms, no narcotics prescription, ...)
- Detailed Evaluation to be provided after a few months
  - Validation of the concept & approach
  - Sustainability evaluation (financial, technical)
  - Path toward a national coverage
  - Input for the forthcoming specific regulation
- Expected productive service starting date:  
4<sup>th</sup> quarter 2021 / 1<sup>st</sup> quarter 2022

# Building an eMedication Service for all stakeholders!



# *Questions?*

Contact information: [stephane.spahni@hcuge.ch](mailto:stephane.spahni@hcuge.ch)