Ehealth network meeting
Riga 11 may 2015
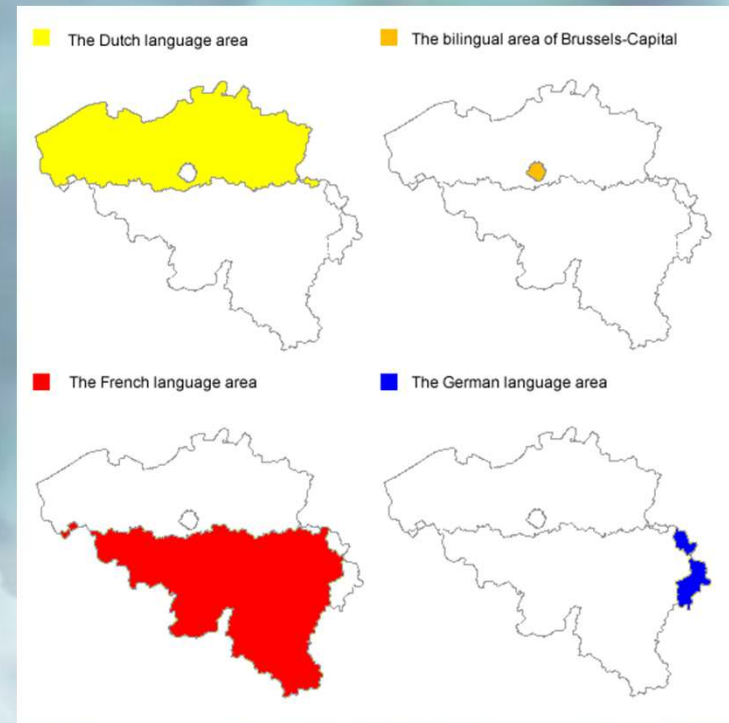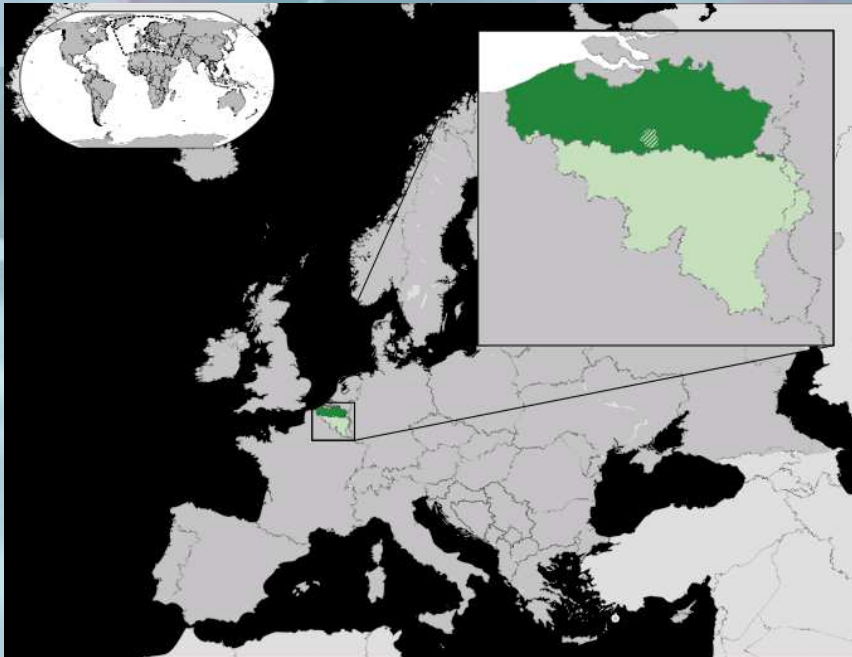

Luc Nicolas
Health Telematics, Informatics and Communication Unit
Public Federal Service Public Health

.be HEALTH TELEMATICS

1 country- 11,2 millions inhabitants– 3 languages- 5 governments

The Dutch language area

The bilingual area of Brussels-Capital

The French language area

The German language area

>Ehealth Roadmap (2014-2018)

Dorian

<Hospitalisation> <Implant>

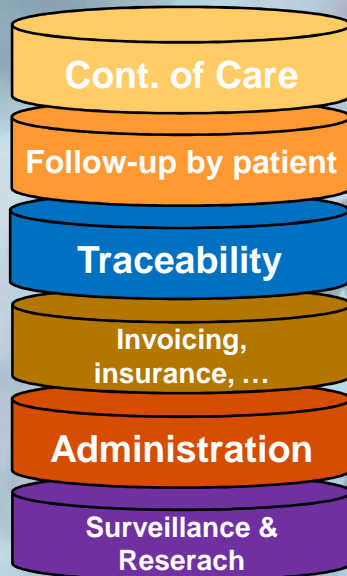<Laboratoire> <Imaging>

<Sumehr> <Therapeutic scheme>

<MyCarenet> <Register>

<RHM>

Gregory

<GP> <Specialist> <Imaging>

<Prescriptions> <Chapter 4>

<Pharmacist> <MyCarenet> <DMG>

<Laboratory> <Status handicaped>

<work incapacity>

Emily

<Homecare> <MRS> <Belrai> <Clinical path> <Hospitalisation> <Dentist>

<Sumehr> <multidisciplinary collaboration> <Paliative care> <

Home Hospitalisation>

Mona

<Auto monitoring> <Tele consultation>

<Tele monitoring> <Sumehr>

<Personal health record>

<Electronic Prescription> <eFact>

<eBirth>

Hillary

<Psychiatry> <Méthadone> <CPAS>

<Ambulance> <Emergency>

<Laboratory> <Imaging> <Sumehr>

<DMG>

<Wachtpost>

Belgium Ehealth RM 2013-2018

110

To be (h)ims

WS

- Cont. of Care
- Follow-up by patient
- Traceability
- Invoicing, insurance, …
- Administration
- Surveillance & Reserach

Action points 2013-2018

- AP 2: Hospital EPD
- AP 13: Terminology
- AP 12: Training

- AP 5: Hub-Metahub
- AP 10: Patient Portal
- AP 16: Traceability
- AP 14: MyCareNet
- AP 15: Admin. Simplification
- AP 18: Registers

HIMS: hospital information system; EPR: Electronic Patient Record

Sharing data via the hubs & metahub system

2014: *Consultation reports, discharge letters and surgery protocols, other reports and corresponding data.*

2016: Integration of data of other institutions

2015: *Imaging results and reports, implants placing*

Hospital EHR: Minimum data set per discipline mapped with technical and semantic standards

End 2014:

- •-Mapping rules to normallised clinical language for all main registers
- •- Publication of functonalities referential (To be implemented by 2017)
- •New standardized discharge letter

End 2015:
Minimum Content data set (implementation end 2016)

End 2016:

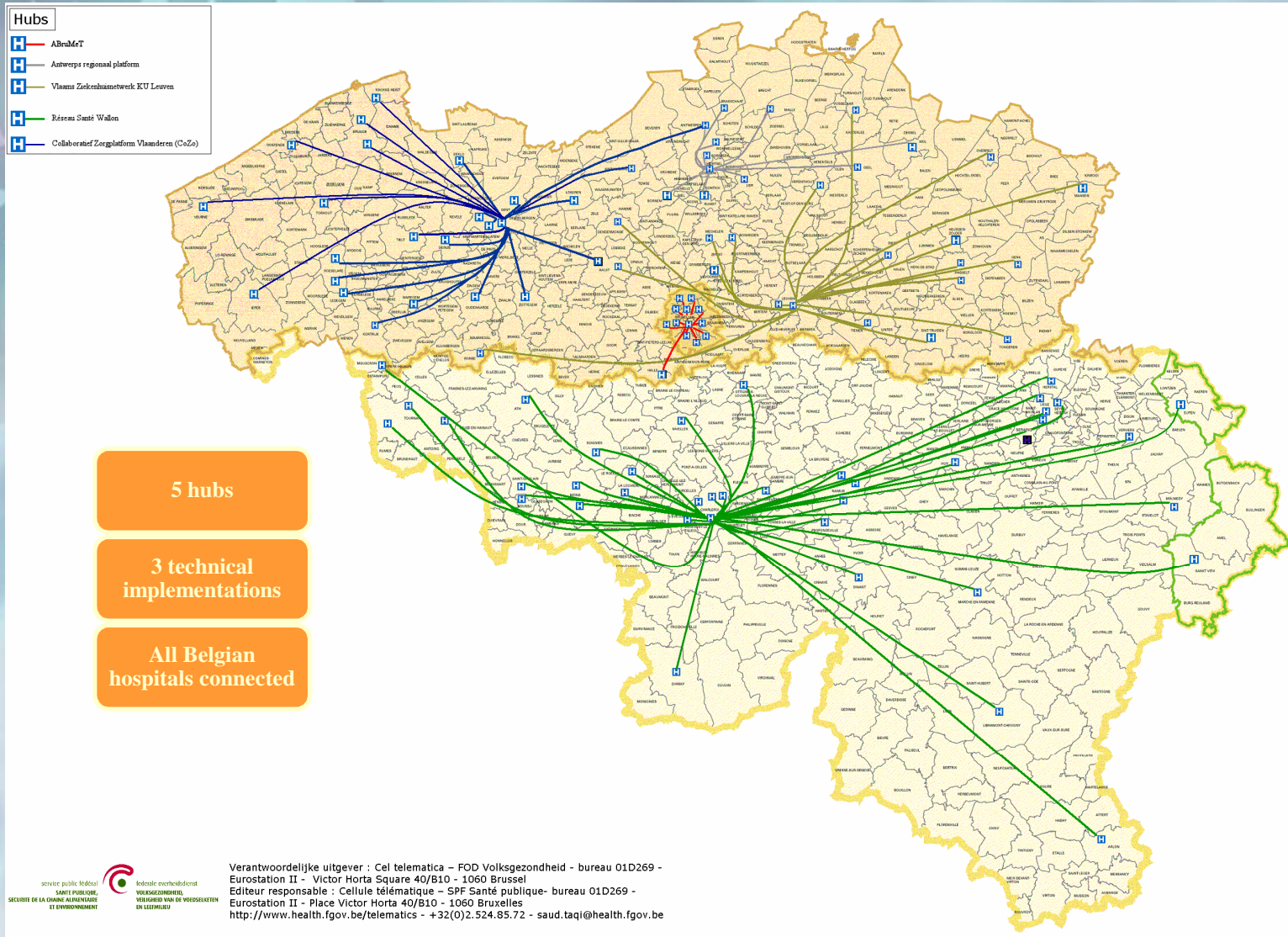- Structure (instauration fin 2017)

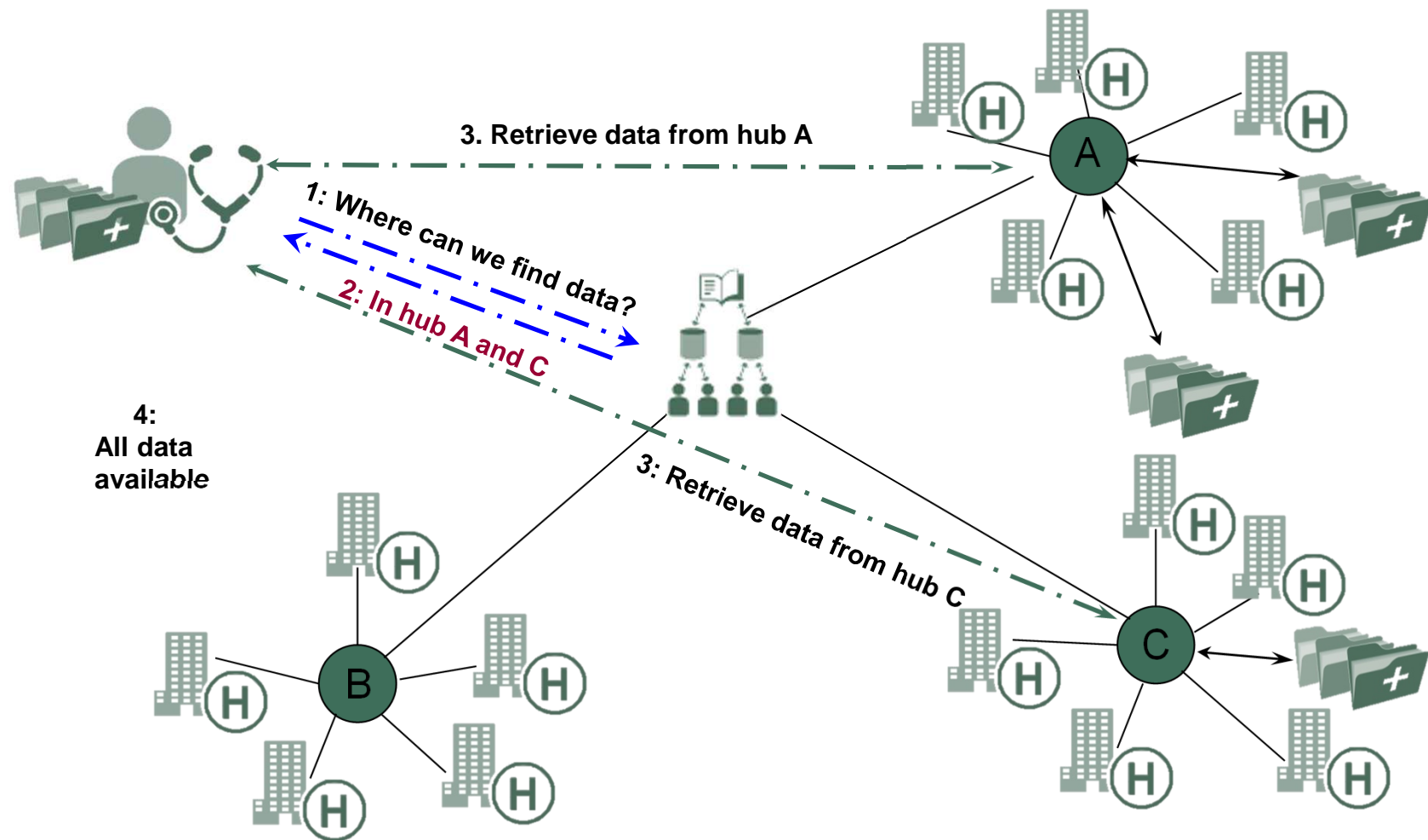- Schéma de médication de sortie

2017: EHR partially coded

End 2017:
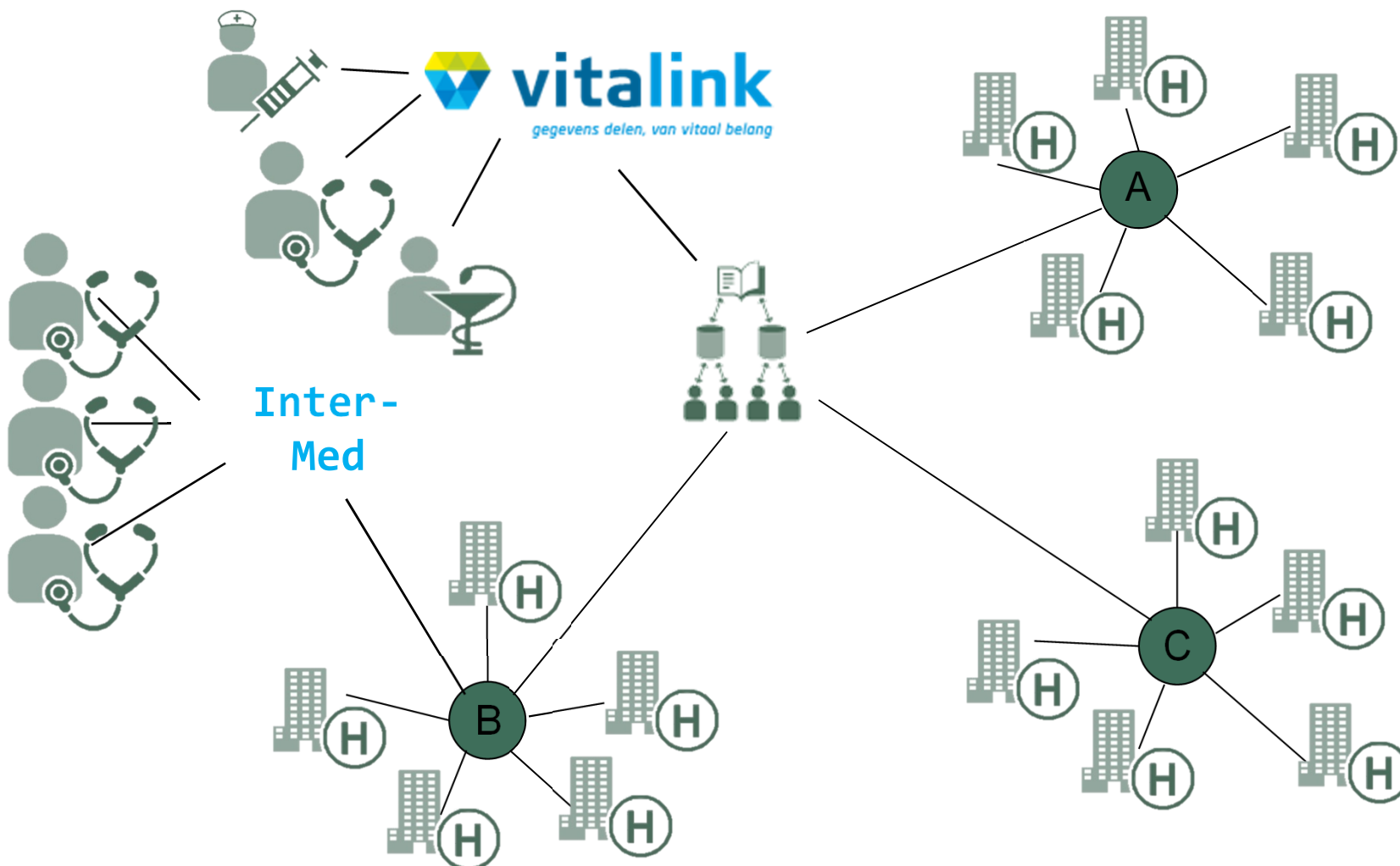Compulsory system to system communication for feeding registers

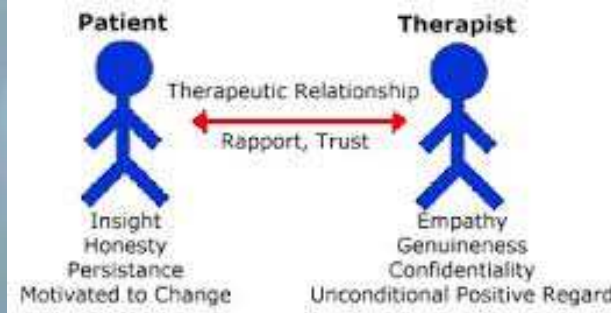# Hubs-metahub system: no central storage – only central locator service

Hubs
- ABruMeT
- Antwerps regionaal platform
- Vlaams Ziekenhuisnetwerk KU Leuven
- Réseau Santé Wallon
- Collaboratief Zorgplatform Vlaanderen (CoZo)

5 hubs

3 technical implementations

All Belgian hospitals connected

Hubs-metahub system: today

3. Retrieve data from hub A

1: Where can we find data?

2: In hub A and C

4: All data available

3: Retrieve data from hub C

Extramural data

Federal rules

**Informed Consent
Do you have it?**

Patient — Therapeutic Relationship — **Therapist**

Rapport, Trust

Insight
Honesty
Persistance
Motivated to Change

Empathy
Genuineness
Confidentiality
Unconditional Positive Regard

All services supporting continuity of care-approved by privacy commission

Access limited to proved therapeutic relationship

27 Standardized web services

KMEHR

Kind Messages For Electronic Healthcare Record - Belgian implementation standard

You are here » Home » Web Services

- Home
- Basic
- Tables
- Transactions
- Web Services
- Support

Contact us

Web Services

The definition of KMEHR is completed by a minimal set of web service operations to support the exchange and the sharing of medical files. Those web services result from concrete implementations initiated throughout the Flows projects.

In order to unify the interfaces developed within those local and regional initiatives, a revision of those interfaces has been undertaken within the 'G19 - Belgian Care Providers Telematic Advisory Group' in the context of the 'hubs-metahub' architecture. The result of this work is available here. The work currently published has the status of a draft as the definitions must still be validated through effective testing with partners involved in the hub-metahub project. Those tests are currently running.

The 'hub-metahub' architecture identifies two sets of web service operations: the operations provided by the hubs to their clients, called '*intrahub* webservices', and the web service operations provided by the hubs to the other hubs, called '*interhub* webservices'.

The functional specification of each operation is available in the table below.

The following archive file contains the complete XSD structure corresponding to the payload of the webservices. It also contains the WSDL that defines the interface at the interhub level.
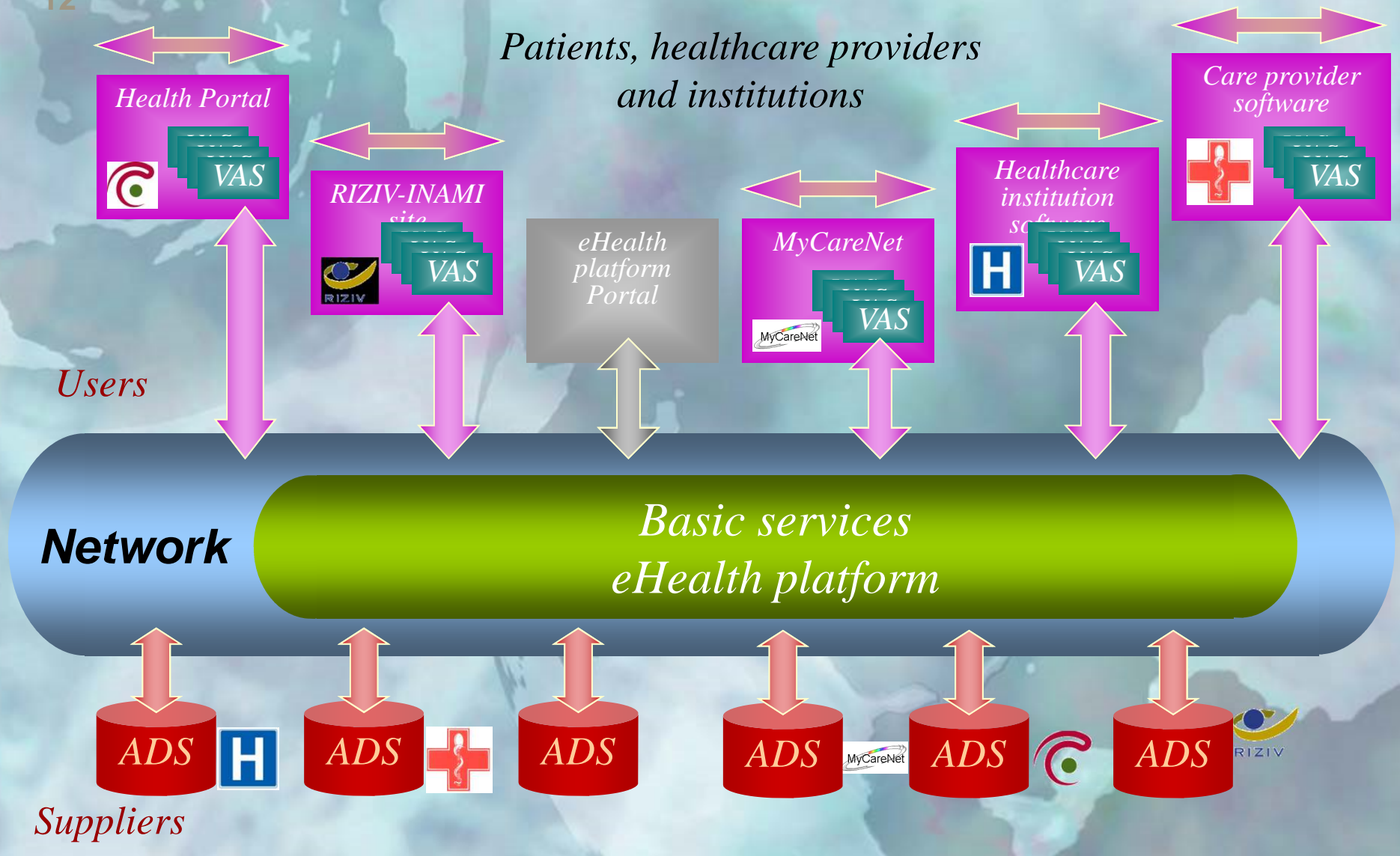
xsd-hubservices-1.1.0.zip ZIP (2013-06-03)

Show all

Name ▲	Category	Version	Status	Last update
declareTransaction	Intrahub	1.0	Draft	2010-07-30
getAccessRight	Interhub	1.0	Draft	2010-07-30
getHCParty	Intrahub	1.0	Draft	2010-07-30

Basic services and authentic sources

12

Patients, healthcare providers and institutions

Health Portal
VAS

RIZIV-INAMI site
VAS

eHealth platform Portal

MyCareNet
VAS

Healthcare institution software
VAS

Care provider software
VAS

Users

Network

Basic services
eHealth platform

ADS H

ADS

ADS

ADS MyCareNet

ADS

ADS RIZIV

Suppliers

10 Basic services www.ehealth.fgov.be

Coordination of electronic sub-processes

Portal

Integrated user and access management

Logging management

System for end-to-end encryption

eHealthBox

Timestamping

Encoding and anonymization

Consultation of the National Identification Registers

Reference directory (metahub)

Authentic Data Sources: Public investment

- **Key contribution for interoperability and security**
- **Need for European Infostructure**

NATIONAL REGISTER and SOCIAL SECURITY REGISTERS

CADASTER OF HEALTH PROFESSIONALS (Including agreement attributes)

MANDATES DATA SOURCE

HOSPITALS

PHARMACEUTICAL PRODUCTS and MEDICAL DEVICES

PATIENT RIGHTS (Health Insurance)

BEST PRACTICES

NATIONAL THESAURUS

REGISTER OF REGISTERS

And many others…

Testing and certification

ARH Antwerpse Regionale Hub

KU LEUVEN

- Mini « connecthatons »:
    - First targeted at Hubs and Metahub (Ehealth)
    - Opened later to local EHR (GP, nurses, etc..)
- Certification of individual Hospitals by Hubs.
- Certification of ambulatory care systems by Prorec/Ehealth platform

CoZo
COLLABORATIEF ZORGPLATFORM

Réseau Santé Wallon

au RÉSEAU SANTÉ
CONNECTÉ
BRUXELLOIS

Use of HL7 Standards

1

KMEHR

Kind Messages For Electronic Healthcare Record - Belgian implementation standard

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Introduction

This site aims to offer a central point for the documentation of the KMEHR normative elements. It mainly focuses on the most recent version of the norm.

This site replaces the historic KMEHR site sponsored by the CHU of Charleroi, which is no longer being maintained. Most of the content of the present site, however, comes from this historic site.

What is KMEHR?

KMEHR was introduced in 2002. It is an implementation of the fourth recommendation PDF of the Belgian Healthcare Telematics Commission, enabling the exchange of structured clinical information.

KMEHR is mainly composed of the following elements:

- an XML schema that defines a general and simple message grammar,
- a set of recognized medical transactions compliant with this grammar,
- a set of reference tables whose values may be used within KMEHR messages.

Those core elements have been complemented by a set of web services implemented in concrete initiatives for the standardized exchange of data between systems.

Content: based on existing standards

- **Consider** content already validated and used at international level, based on available standards.

- **Prepare** possible progressive transition from kmehr to HL7-CDA:
  - Mapping headings Kmehr-CDA
  - Based on existing data and **input from Business** prepare CDA specification for lab report and dismissal letter.

A « PARENT » like evolution: ONLY ONCE!

Healthdata's mission is to **facilitate the data exchange** between healthcare professionals and researchers according to the *principle of single multifunctional data collection* and the *re-use of data*, in order to **increase public health knowledge** and to **adjust health care policy**, with respect for the **privacy of the patient, the healthcare professional** and the medical confidentiality.

The challenge for scientific data collection

110

Signalitics, typical available in authentic sources

Variables needed for **scientific research question**

Register A

Register B

Information needed in context of **continuity of care** or internal **administration**

Register C

Register D

Information mostly **not available** in primary systems EPD, HIMS, LIMS, …)

healthdata.be
data we care for

131 registers (and counting..)

1. Ambulatory Care Health Information Lab (RIZIV-INAMI)
2. Annual Hospital Statistics (FOD-SPF)
3. Antwerpen registry of congenital anomalies (EUROCAT)
4. Belgian Abortion Register (FOD-SPF)
5. Belgian AIDS-reference centres (WIV-ISP)
6. Belgian AIDS-reference laboratories (WIV-ISP)
7. Belgian alpha-1 antitrypsin deficiency registry (Alpha One International Registry (AIR))
8. Belgian Association for Cardio-Thoracic Surgery Database
9. Belgian Cancer Register: Standard version (Belgian Cancer Registry)
10. Belgian Cystic Fibrosis registry (WIV-ISP)
11. Belgian Early Warning System for Drugs (WIV-ISP)
12. Belgian familial adenomatous polyposis registry
13. Belgian Langerhans cell histiocytosis registry (LCH)
14. Belgian Neuromuscular Disease Registry (WIV-ISP)
15. Belgian patient database for Wilson disease (EuroWilson registry)
16. Belgian Patient registry for rare bleeding disorders
17. Belgian Pediatricians Nephrology Registry (BPNR)
18. Belgian Register for Assisted Procreation (National College of Physicians in Reproductive Medicine)
19. Belgian Register Substitution Treatment (FAGG-AFMPS)
20. Belgian registry of primary immunodeficiencies (ESID European registry)
21. Belgian registry on acromegaly, epidemiology and quality of care (ACROBEL)
22. Belgian severe chronic neutropenia patient registry (SCN international registry (SCNIR)
23. Belgian sickle cell anemia registry
24. Belgian systemic sclerosis cohort
25. Belgian Virtual Tumourbank (Belgian Cancer Registry)
26. Belgian Treatment Demand Indicator Register (WIV-ISP)
27. BINC: Begeleiding in Cijfers
28. Biobank of the pediatric granulomatous arthritis international registry (UZLeuven)
29. Birth Register (VAZG, Observatbru, DGOPLASS, ADSEI)
30. Central Register of Rare Diseases (WIV-ISP)
31. Database Farmanet (IMA-AIM)
32. Database Health Care (IMA-AIM)
33. Database Population (IMA-AIM)
34. Database Palliative care (federatie palliatieve zorg Vlaanderen)
35. Declaration of Infectious diseases (MATRA, WIV-ISP)
36. Drug Related Infectious Diseases (WIV-ISP)
37. EFFectiveness of Endometrial Cancer Treatment (EFFECT) (Belgian Cancer Registry)
38. End of career measures (FOD-SPF)
39. Electronic Patient Registration Centers Mental Health Care Flanders
40. European alternating hemiplegia and rare epilepsies registry in childhood (ENRAH)
41. European Antimicrobial Resistance Surveillance Network (WIV-ISP)
42. European network for the study of orphan nephropathies registry (EUNEFRON)
43. European patient registry and cohort for congenital disorders of glycosylation (EUROGLYCANET)
44. European Point Prevalence Survey (PPS AB & HAI; WIV-ISP)
45. European registry of human alveolar echinococcosis: Belgium (EURECHINOREG)
46. European Surveillance of Antimicrobial Consumption (ESAC-Net; WIV-ISP)
47. Flemish Renal Registry (NBVN)

1. Haemoglobinopathies - database
2. Handhygiën (WIV-ISP)
3. Head and Neck: orofarynxcarcinomen Project (Belgian Cancer Registry)
4. Healthcare Associated Infections & Antimicrobial Use in European Long Term Care Facilities (WIV-ISP)
5. Hospital Financing (FINHOSTA, FOD-SPF)
6. Infectious diseases (sentinel laboratories) (WIV-ISP)
7. Informatiestroom tussen de ziekenhuizen en de administratie gezondheidszorg (VAZG)
8. Initiative for Quality improvement and Epidemiology in Diabetic Foot clinics (WIV-ISP)
9. Initiative for Quality promotion and Epidemiology in Diabetes care (WIV-ISP)
10. Initiative for Quality promotion and Epidemiology in Diabetes care for children and adolescents (WIV-ISP)
11. Integrated Computerized Network, INTEGO
12. Medical Emergency Services: MUGREG (FOD-SPF)
13. Minimum Hospital Data (FOD-SPF)
14. Minimum Psychiatric Data (FOD-SPF)
15. MIRAGE database (IKAROS; Kind & Gezin)
16. Mortality Register (VAZG, Observatbru, DGOPLASS, ADSEI)
17. National Surveillance of Antimicrobial Use in Belgian Hospitals (WIV-ISP)
18. National Surveillance of Healthcare Associated Infections in Intensive Care Units (WIV-ISP)
19. National Surveillance of Influenza (WIV-ISP)
20. National Surveillance of Meticillin resistant Staphylococcus aureus (MRSA) in Belgian hospitals (WIV-ISP)
21. National surveillance of multi-resistant micro-organisms in Belgian hospitals (WIV-ISP)
22. National Surveillance of Septicemia in the Hospital (WIV-ISP)
23. National Surveillance of Surgical Site Infections (WIV-ISP)
24. Netoverschrijdend ICT-project van de CLB's in samenwerking met het departement Onderwijs (VAZG)
25. Newborn college Register
26. ORTHOpedic Prosthesis Identification Data (RIZIV-INAMI)
27. Pediatric granulomatous arthritis international registry
28. Permanent Sample (IMA-AIM)
29. PROCARE (Belgian Cancer Registry)
30. Prospective collection of tissue, ascites and plasma samples from patients with ovarian cancer (UZLeuven)
31. Qermid© Coronaire stents (RIZIV-INAMI)
32. Qermid© Endoprothesen (RIZIV-INAMI)
33. Qermid© Hartdefibrillatoren (RIZIV-INAMI)
34. Qermid© Pacemakers (RIZIV-INAMI)
35. Quality Indicators Healthcare Associated Infections (WIV-ISP)
36. Register POMALYST (Celgene)
37. Register REVLIMID (Celgene)
38. Register THALOMID (Celgene)
39. Rest/care homes (FOD-SPF)
40. Robot Assisted Laparoscopic Prostatectomie (RALP) (Belgian Cancer Registry)
41. Sentinel General Practitioners (WIV-ISP)
42. Sexually transmitted infection (sentinel surveillance) (WIV-ISP)
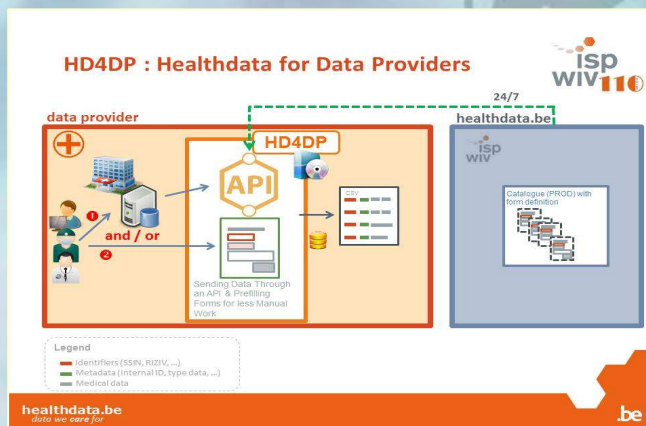43. Shared Arthritis File for Electronic use (RIZIV-INAMI)

Healthdata.be services

Index of Belgian data collections health

Management of Business Processes

Data collection technology

Data warehouse & BI reporting

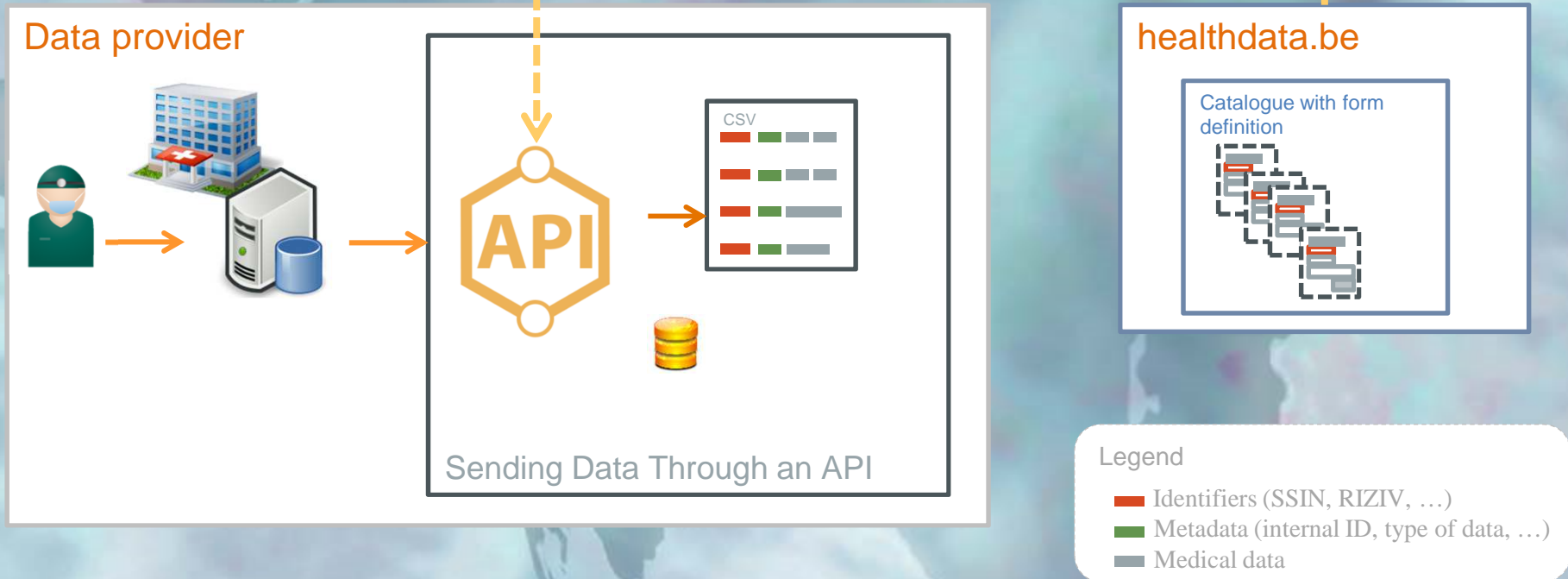healthdata.be
data we care for

www.healthstat.be

Capture Data
Automated Data Capture

« TO BE » scenario for most registers in 2018

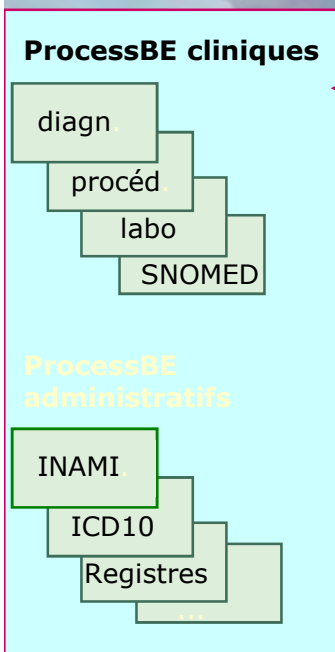# *The SEMANTIC Roadmap*

Snomed-ct based CMV

rhm

ICD-10-CM

To Be

Snomed

Health
DATA.be

Terminology server

Sources et classifications

Utilisateurs

ProcessBE cliniques

- diagn
- procéd.
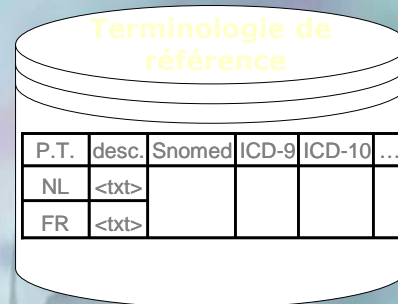- labo
- SNOMED

ProcessBE administratifs

- INAMI
- ICD10
- Registres

Workflow de validation

Interfaces de Gestion

- Mises à jour
- Gestion des versions
- Couplage, mapping
- Gestion des règles
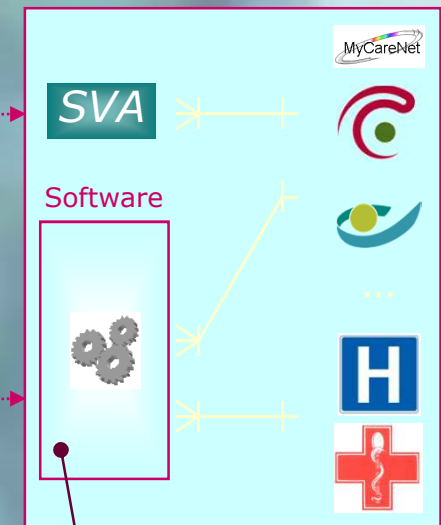- Validation

- Webservice / webap.

Terminologie de référence

P.T.	desc.	Snomed	ICD-9	ICD-10	...
NL	<txt>				
FR	<txt>				

Interfaces de consultation

- Load/Extract
- Requêtes
- Mapping
- Feed back

Documentation

- Glossaires
- Documentation et références
- Portail

MyCareNet

SVA

Software

H

ProcessBE administratifs ou médicaux
- Dossier médical,
- Remboursement,
- Registre du cancer, ...

Reference terminology (snomed.be)

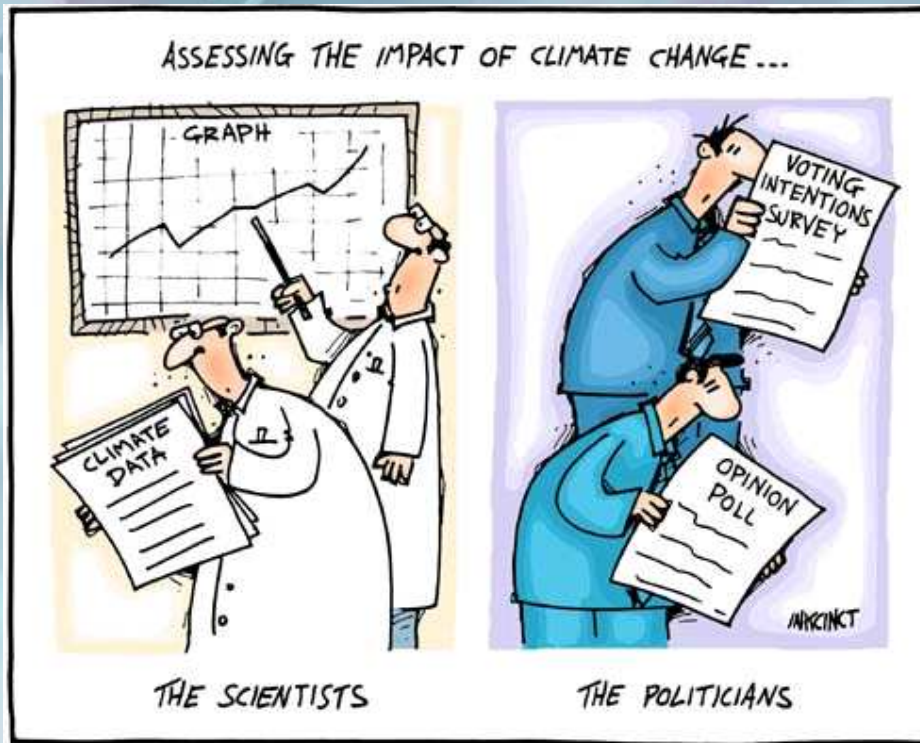| ICD_10_Code	SNOMEDID	Snomed CT number	EN_Clinical_Label	Fr_Belgium	Nl_Belgium
C08.9	M-81473	34603009	Basal cell adenocarcinoma	adénocarcinome basocellulaire	basaalcel adenocarcinoom
C16.9	M-81423	37995004	Linitis plastica	linite plastique	linitis plastica
C25.4	M-81513	20955008	Insulinoma, malignant	insulinome malin	maligne insulinoom
C25.4	M-81523	66515009	Glucagonoma, malignant	glucagonome malin	maligne glucagonoom
C25.4	M-81533	19756007	Gastrinoma, malignant	gastrinome malin	maligne gastrinoom
C44.9	M-84013	57141000	Apocrine adenocarcinoma	adénocarcinome apocrine	apocrien adenocarcinoom
C45.9	M-90503	62064005	Mesothelioma, malignant	mésothéliome	mesothelioom
C49.9	M-91333	54124005	Epithelioid hemangioendothelioma, malignant	hémangioendothéliome épithélioïde malin	hemangio-endotheliaalsarcoom
C56	M-86003	57622002	Thecoma, malignant	thécome malin	maligne thecoom
C69.2	M-95123	12354007	Retinoblastoma, undifferentiated	rétinoblastome indifférencié	ongedifferentieerd retinoblastoom
C71.9	M-938FF	115240006	Glioma	gliome	glioom
C71.9	M-94233	12943006	Polar spongioblastoma	spongioblastome polaire	polair spongioblastoom
C71.9	M-94243	78838008	Pleomorphic xanthoastrocytoma	xanthoastrocytome pléomorphe	xanthoastrocytoom
C71.9	M-94423	35262004	Gliosarcoma	gliosarcome	gliosarcoom
C71.9	M-94733	39781001	Primitive neuroectodermal tumor	tumeur primitive neuro-ectodermique	primitieve neuro-ectodermale tumor
C75.5	M-86803	9903002	Paraganglioma, malignant	paragangliome malin	maligne paraganglioom
C75.5	M-86933	32512003	Extra-adrenal paraganglioma, malignant	paragangliome extrasurrénalien malin	maligne extra-adrenaal paraganglioom
D27	M-84600	22116003	Papillary serous cystadenoma	cystadénome papillaire séreux	sereus papillair cystadenoom
D27	M-90000	74739000	Brenner tumor	tumeur de Brenner	Brennertumor
D76.3	M-77880	15960008	Reticulohistiocytic granuloma	granulome réticulo-histiocytaire	reticulohistiocytair granuloom

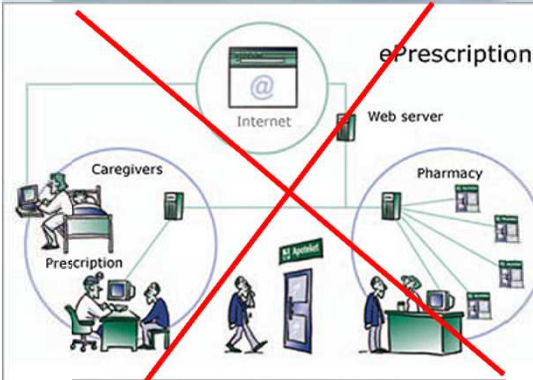# *User Interfaces (PM..Assesment?):*

- – Context sensitive pick list
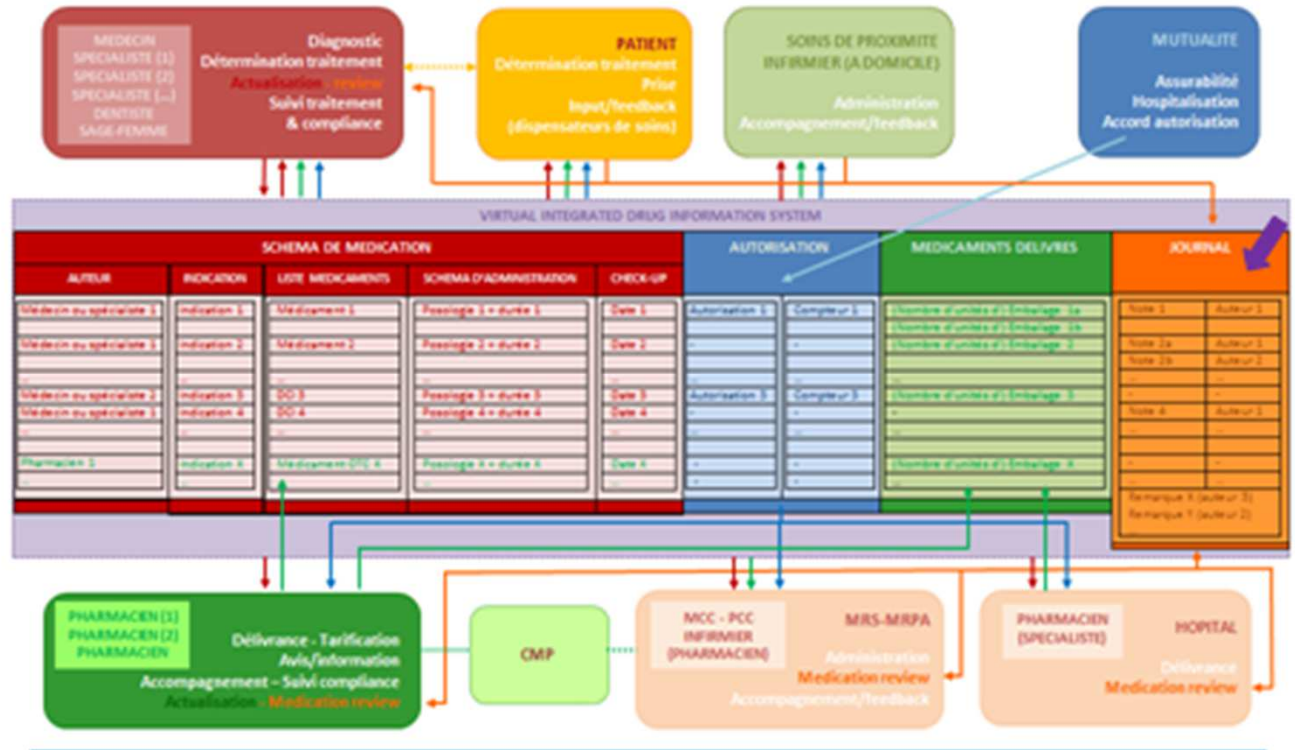- – Syntactic and semantic search
- – Rule Based Code convertor

From exchanging to sharing...

From exchanging to sharing

Thanks

Luc.nicolas@health.fgov.be

www.health.fgov.be