



Using HealthShare for a national obstetric care portal

June 11th, 2014

Intersystems Symposium,
Antwerpen

Coenraad van Houten Hettinga



Profile BMA

Health IT solution provider

Software applications

Obstetrics

Profile BMA

International company

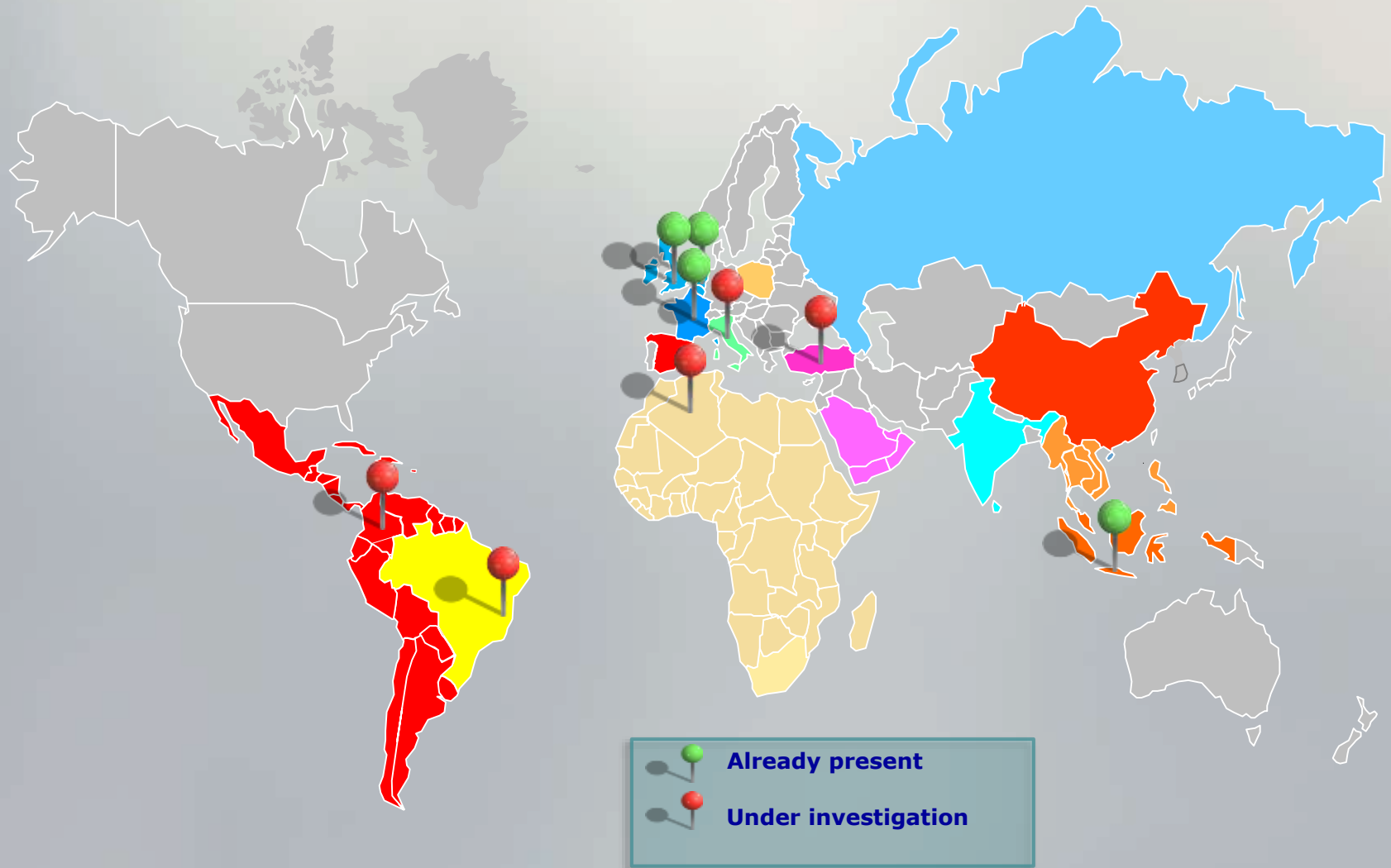
Market leader in:

Netherlands

Belgium



Internationalization strategy



Mission BMA

To improve Maternal and Child care,
around the world
through our specialised solutions,
professional services and partnerships.





Solutions BMA

Modular off-the-shelf system:

- Fetal Monitoring
- Ultrasound examination mgt
- Specialised EPR
(outpatient and inpatient)

And many more....

Our Mosos system - Pregnancy Timeline



Electronic
Delivery Report



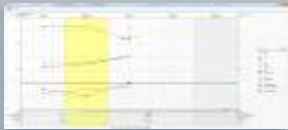
Electronic Maternal
& Perinatal Registration



Antenatal & Perinatal CTG monitoring




Electronic Home Monitoring



Electronic Clinical Inpatient Record



Statistical
Analysis
Reporting



Electronic Ultrasound Examinations



Electronic Outpatient Record

0

40





Solutions BMA

Integration of strategic importance

Medical devices

- CTG monitors, Ultrasound devices

Other health information systems

- HIS, EPR's, Lab systems

Intersystems as integration partner

Standards: HL7, DICOM



Innovations at BMA

- Home Service Antenatal Care
- eBirth (with Healthconnect)
- MyBaby2B
- Emergency message (Spoedbericht)
- Obstetric Collaboration Platform (Verloskundig Samenwerkings Platform)

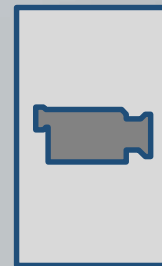
Innovations at BMA

Example patient application:

MyBaby2B

A mobile Pregnancy Diary

Import ultrasound images and
video clips out of Mosos





OBSTETRIC CARE PLATFORM



Background

- Relatively high perinatal mortality in the Netherlands
- Hospitals and first line practices are obliged to organize themselves in collaboration groups
- Political pressure to improve collaboration in the obstetric healthcare
- In the first line there are three obstetric care system providers
- BMA is the leading obstetric care system provider for hospitals
- Pilot VSP starts before the summer



Zwangere communicatie

- Toestemming geven
- Geboorteplan invoeren en delen
- Eigen dossier inzien

Verloskundig SamenwerkingsPlatform (VSP)



Spoodbericht igv thuisbevalling

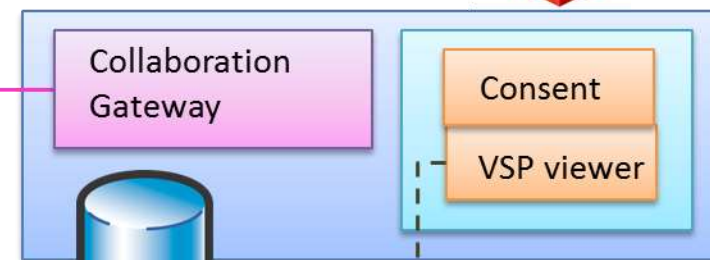
- Acute fase bericht
- Snapshot van dossier sturen/ontvangen



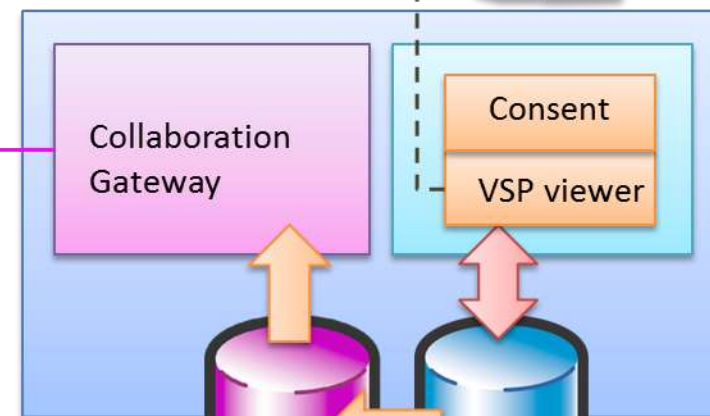
VSP berichten

- Aanmelden zwangere
- Zwangere toestemming vastleggen
- Verwijzingen sturen en ontvangen
- Geaggregeerd dossier opvragen

VSP architecture



Vrumun DB

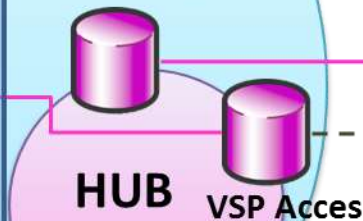


Mosos Edge



Mosos DB

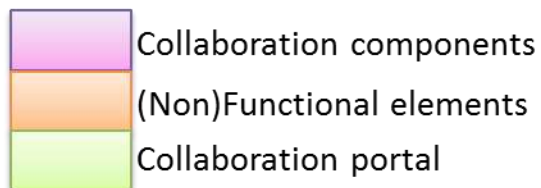
Vrumun Edge



Master Patient Index,
Consent, Master tables
(& maintenance) DB

Patient portal

Patient Web
viewer





The VSP process

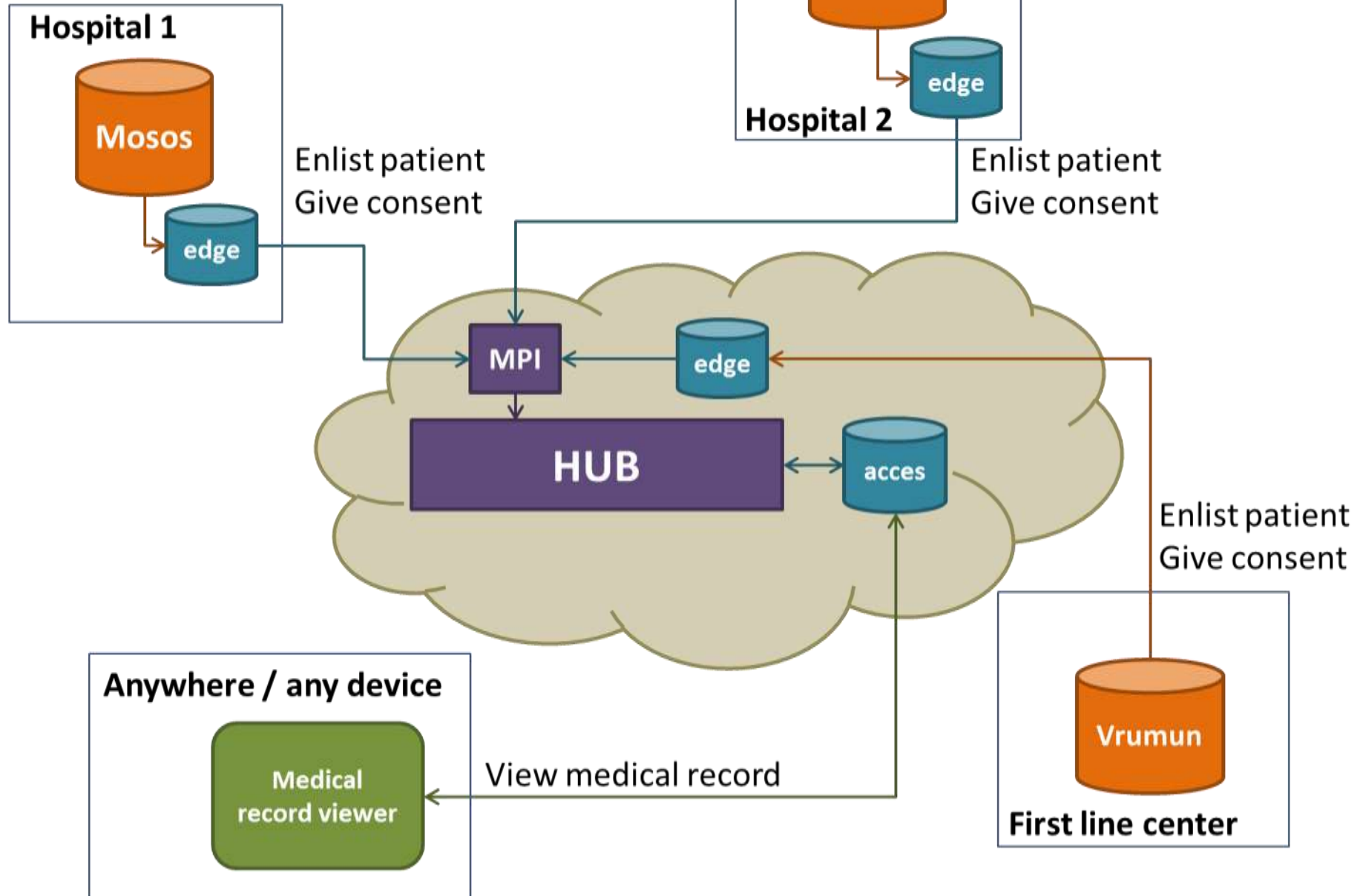
- At the first visit to a healthcare institution in her pregnancy the patient gives consent for the information exchange within the obstetric collaboration group.
- At every first visit to a healthcare institution a message is send to the central HUB to indicate that a patient record is available.
- If a patient enters a healthcare institution within the collaboration group, the aggregated patient record can be requested.



The viewer characteristics

- The aggregated patient record consist of around 100 medical items grouped in coherent medical sets and presented in a column for each patient record.
- Present pregnancies and previous pregnancies are shown.
- User interaction to maximize the use of the screen
- Indicate items with high risks (like HIV) or with different values (like different blood types)

VSP Spoke model





Hub and viewer requirements

Hub

- Central Hub where the patient record location is known
- Central registration of patient consent
- No medical data is stored on the HUB

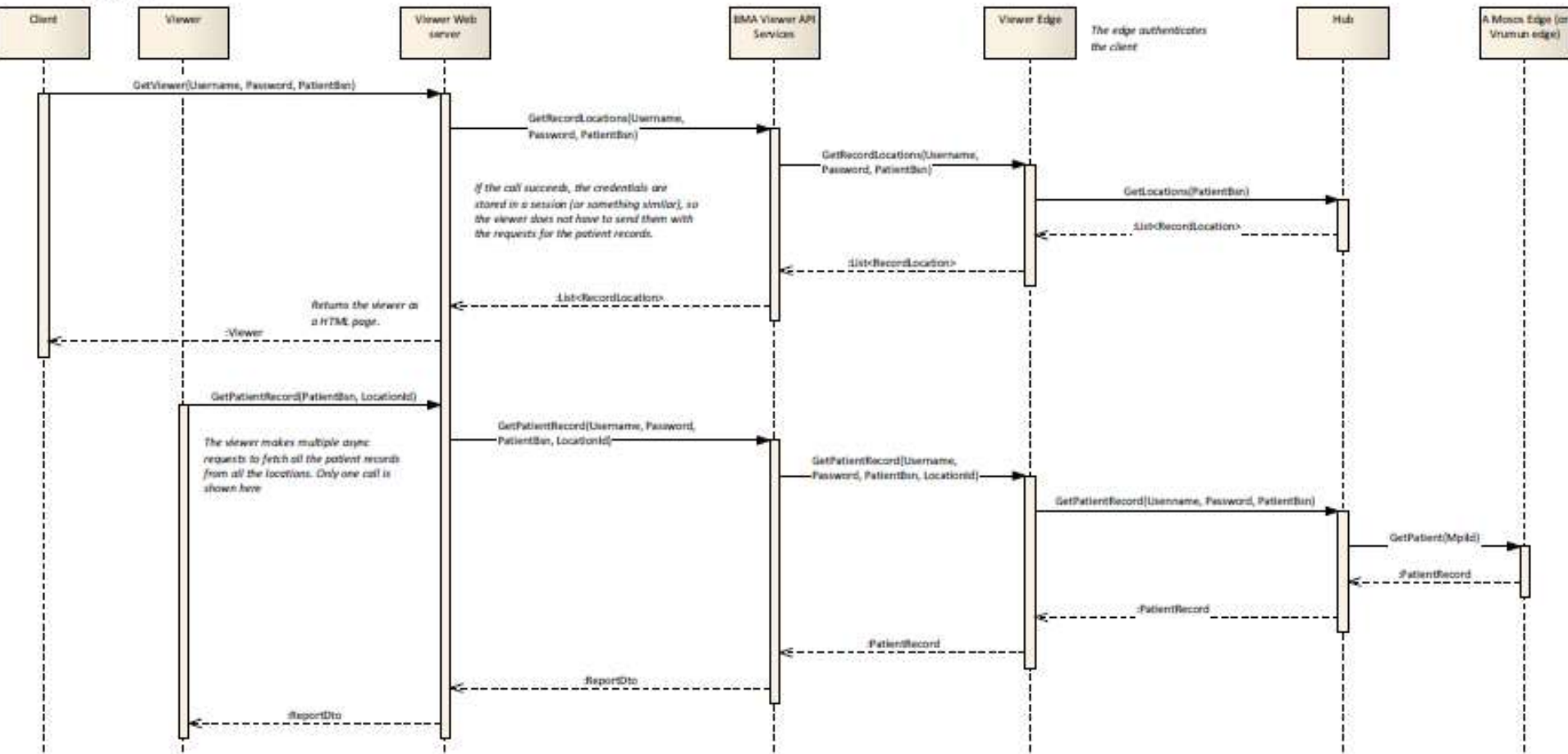
Viewer

- The patient record information from all the source systems that have patient information should be presented in one screen
- The viewer should be a webviewer and should operate on all devices using common browsers

General

- The VSP solution is sold to obstetric collaboration groups
- Patient privacy should be respected
- All connections should be secured

View the aggregated patient record
05-05-2014



The username and password parameters are used to authenticate the "client application" with Ensemble. That are not used for "user" authentication. This needs to be done on the specific client application itself.

To allow user specific logging on the Hub, extra parameters will need to be send to the server. This is to be discussed with Coenraad / Wiebe.



Mapping on HealthShare components

- **Master Patient Index**
Store the location of the available patient records
- **Provider registry**
System maintenance on collaboration group level
- **Consent Manager**
When is a user allowed to see the patient record (restricted to the collaboration group)
- **Clinical Message Delivery**
Secured communication with the source systems

HealthShare Components used for VSP

HealthShare Architecture



InterSystems
HEALTHSHARE™

Composite
Health Record

Aggregator

Clinical Message
Delivery

Patient Index

Provider
Registry

Clinician
Viewer

Consent
Management

Terminology

Actionable
Analytics

Components

Healthcare Standards, Documents & Protocols

iKnow

InterSystems
CACHE®

InterSystems
ENSEMBLE®

DeepSee

HealthShare Base

	Bma G 3	Bma G 2	Bma G 1	Vrumun G 2
Gegevens zwangere				
BSN nummer vrouw	987654329	987654329	987654329	100202020
Naam vrouw	T.F. van Steen - de Rots	T.F. van Steen - de Rots	T.F. van Steen - de Rots	Diny Bos
Geboortedatum vrouw	1-1-1985	1-1-1985	1-1-1985	4-8-1981
Huidige zwangerschap				
Nictiz identificatienummer	739	740	711	783
À terme datum	23-1-2014	11-2-2014	7-1-2013	3-5-2012
Graviditeit	3	2	1	2
Verwijzing				
Reden verwijzing				
Contactgegevens zorgorganisatie				
Naam	Naam	Naam	Naam	ABC Verloskundigenpraktijk
Agb	011236	011236	011236	
Ura				00023444
Lvr	0998	0998	0998	
CanonicalMessage.CareGiver.Full Name				Victor Verloskundige - de Rots
CanonicalMessage.CareGiver.PhoneNumbers				tel:+317025463726
Anamnese (algemeen)				
BMI				22,45
Allergie(en)				Ja
Allergie(en)	Pleisters van de Lidl,hooikoorts,jodium,nikkel	Pleisters van de Lidl,hooikoorts,jodium,nikkel		Latex allergy (disorder)
Ziekten				Ja
Ziekten	hypertensie	hypertensie		
Bloedgroep	B Negative	B Negative	B Negative	A Negative
Bloedtransfusie	Ja	Ja		Nee
Negatieve seksuele ervaringen	Ja	Ja		Ja
Nederlandse taalvaardigheid		Matig		Goed
Tolk gewenst		Ja		

Selecteer:	Alles	Niets
Bma		
<input checked="" type="checkbox"/>	3	[23-1-2014]
<input checked="" type="checkbox"/>	2	18-2-2014
<input checked="" type="checkbox"/>	1	[7-1-2013]
V991Edge		
<input checked="" type="checkbox"/>	2	[15-8-2014]
Vrumun		
<input checked="" type="checkbox"/>	2	[3-5-2012]

Questions?

Want to know more?

www.bma-mosos.nl

www.mybaby2b.nl