The Trillium Bridge Project

Giorgio Cangioli
HL7 Int. Foundation

IHE Symposium
Med-e-Tel, Luxembourg

April 22th, 2015
Trillium Bridge Overview

Primary Question: “Is it feasible the exchange of Patient Summaries across the Atlantic?”

Purpose
• Reduce barriers and accelerate convergence

Means
• Feasibility study/Gap Analysis implementation/demonstration, Testing, Recommendations

Keywords
• Transformation (EU Patient Summary from and to CCDA CCD)
• Transmission (IHE XCPD and XCA)
• Patient Mediated Exchange

Participants
Trillium Bridge Overview

Sign on

Sign on help

Blue Button Download My Data

Patient Mediated
Trillium Bridge Overview

Provider Mediated

epSOS PS

C-CDA CCD

eHealth Exchange gateway

有意义的使用

NCP

NCP

NCP

CTS2

欧洲联盟

美国
Provider Mediated Exchange

Trillium Bridge Gateway facilitates clinical content exchange between the US and EU

- Remediate differences between IHE exchange specification implementation (epSOS and eHealth)
- Clinical content transformation service
  - EU epSOS from /to US Consolidated CDA Patient Summary
Trillium Bridge Gateway
Trillium Bridge Transformer

TBXform Syntax Transformation

C-CDA CCD

EPSOS PS

Context Depending Code Mapping / Translation

IT IS A PROOF OF CONCEPT!

Text Translation Table Based

Local Remote

C-CDA CCD

EPSOS PS

MAYO CLINIC

PHAST

CTS2

bing
Trillium Exchange Accomplishments

Web Based Service for Supporting Patient Mediated Scenario

Open Source Software
Trillium Exchange Accomplishments

Realized a bi-directional exchange of Patient Summaries between Kaiser Permanente and Luxembourg, Spain and Portugal

Kaiser Permanente Exchange Platform

Reference epSOS NCPs (PPT)
Team worked through differences in how the specifications (IHE XCPD and XCA) were implemented in order to achieve successful exchange across the Atlantic.

Examples of most significant issues with specification alignment:

- **Certificates**: Self signed for purposes of demonstration
- **SAML**: Significant differences in the requirements for eHealth versus epSOS implementation
- **Patient Discovery**: Demographics versus identifier based search
- **Document Query**: Difference in Class Code for Document Type used
- **Document Retrieve**: Country specific identifier is used to retrieve for epSOS
Lessons Learned

Just a first step ....

- **C-CDA versioning and vocabularies optionality**: Several Versions of the C-CDA are actually implemented (DSTU R1.1; DSTU R1.1 with errata; DSTU R2.0); several vocabulary implementation options are allowed.

- **Mapping**: missing mapping, loss of information

- **Displayable with standard CDA stylesheets**: for being used with real EHR-S the translated CDA needs to be displayable using standard CDA stylesheets.

- **Textual Translation**: within well defined usage boundaries the textual translation should be reconsidered.
Conclusions

Big challenges...great results

- Developed a proof of concept for both the patient and the provider mediated scenarios, demonstrated in Athens (April 2014), Boston (October 2014) and Chicago (last week)
  - Enthusiastic feedbacks during the last demonstration in Chicago.
- Specified transformation rules and mappings
- Standard based solutions: HL7 CDA; IHE XCPD, XCA; HL7/OMG CTS2 terminology services
What should be next?

Don’t miss the momentum

Suggested Next Steps

• From the “proof of concept” to a “limited” pilot
  • Beyond the US EU exchange?
• Improve mapping and transformation rules validation
• A path towards harmonized standards
Thank you to an incredible team and journey

HL7 Europe:
Catherine Chronaki
Giorgio Cangioli

Kaiser Permanente:
Jamie Ferguson
Kevin Isbell
Virginia John
Zachary Gillen

Gnomon:
Kostis Kaggelides
Alexander Berler
Kostas Karkaletsis

Mayo Clinic:
Harold Solbrig
Christopher Chute
Kevin Peterson

Phast:
Nicolas Canu
Ana Estelrich
Franck Gener

IHE Europe:
Karima Bourquad
Charles Parisot
Eric Poiseau

Spain:
Arturo Romero
Juan Pablo Martinez
Iciar Abad

Luxembourg:
Heiko Zimmerman
Herve Barge

Italy:
Marcello Melgara

Portugal:
Henrique Martins
Arlete Monteiro
Alexandra Cabral
Alexandre Santos
Licinio Kustra Mano
Rui Alves

Smart EHR:
Elaine Blechman

Atrius Health Foundation

cen

eHealthPass

Eurorec:
Dipak Kalra