The potential role of patient summaries in the LHS: reflections from the Trillium Bridge project

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Vision of the Learning Health System

A healthcare system that
- Draws on the best evidence to provide the care most appropriate to each patient,
- Emphasizes prevention and health promotion,
- Delivers the most value,
- Adds to learning throughout the delivery of care
- Leads to improvements in health.

Question:
What is the role of patient summaries in the learning health system?
What has Trillium Bridge to offer?
Trillium Bridge Project

What:

- Pragmatic Feasibility study on the exchange of Patient Summaries across the Atlantic

How:

- Comparing, analyzing, and mapping patient summaries starting with Meaningful Use 2 C-CDA/CCD and EU patient summaries (epSOS)

When:

- From: July 2013 to June 2015

Who:

- A stellar consortium comprising EU member state ministries, provider networks, industry, associations, SDOs

http://www.trilliumbridge.eu
Workplan of Trillium Bridge

Selecting Grounds:
- Pilot Use Cases
- Business Architecture
- Gap Analysis

Building the Bridge:
- Aligning Structure & Terminology
- Trust Agreements
- Interoperability assets

Testing the Bridge:
- Testing Tools
- Data Sets
- Validation Reports

Policy Convergence:
- Feasibility Analysis
- Cross-vendor integration
- Incentives
- Standardization
- Innovative Business models
- eIdentification
- Security and privacy
- Education
- Clinical Research

http://www.trilliumbridge.eu/
Achievements of Trillium Bridge

**Gap analysis**
- Compared patient summary specifications in EU/US
- Shared clinical elements: problems, medications, allergies

**Interoperability Assets**
- Established a terminology prototype CTS-2 service: [http://extension.phast.fr/STS_UI](http://extension.phast.fr/STS_UI)
- Developed Transformer of Patient summaries: [http://informatics.mayo.edu/trillium-bridge](http://informatics.mayo.edu/trillium-bridge)
- Mediated Differences in EU/US IHE XCPD/XCA profiles for Patient Identity and Document Query/Retrieve

**Validation activities: 4 EU countries/ Kaiser Permanente**
- EU/US Marketplace; HIMSS 2015; IHE Europe Connectathon 2015, eHealthWeek 2014, 15

**Feasibility study:**
- Reflected upon standards, cross-vendor integration, incentives, clinical research, security and privacy, innovative business models, education

**Recommendation:**

“Advance an International Patient Summary (IPS) standard to enable people to access and share their health information for emergency or unplanned care anywhere and as needed. At minimum the IPS should include immunizations, allergies, medications, clinical problems, past operations and implants.”
Comparison of EHR summaries and the JIC International Patient Summary Standard Sets

Joint Initiative Council (JIC) on SDO Global Health Informatics Standardization

JIC endorsement
Follow-up with Patient Summary Standard Sets project

http://www.trilliumbridge.eu
Feedback from countries

Spain:
- Trillium Bridge fits with the Spanish eHealth Strategy
- 15 million citizens of Spain with a patient summary in 2015
- Patient summaries automatically created from primary and family care (HCDSN)

Portugal:
- Explore service provision of cross border eHealth for Portuguese and US citizens: Portuguese communities living in the US (1,173,691 citizens); US citizens travelling to Portugal (156,100 citizens, 2014 q1) of 227 M€
- Patient summary stored in the national health system, 9Mil allergies and medication/3Mil also the diseases

Lombardy, Italy:
- Patient summary retrieved from the GP system, 1.5M
Do European GPs communicate?

Figure 7 Interaction with specialists and/or hospitals (Q9)

It seems that GPs interact with specialists and hospitals fairly often ...

Ref: Benchmarking Deployment of eHealth among General Practitioners (2013)
Do they have problems?

56% of GPs report having compatibility problems when exchanging patients’ data.

Figure 13 Compatibility problems for data exchange (Q16)

Ref: Benchmarking Deployment of eHealth among General Practitioners (2013)
Figure 16 EHR: from awareness to use

Ref: Benchmarking Deployment of eHealth Among General Practitioners (2013)
Figure 17 HIE: from awareness to use

- Receive laboratory reports: 8% Not aware, 64% Use it routinely
- Certify sick leaves: 10% Not aware, 47% Use it routinely
- Send/receive referral and discharge letters: 13% Not aware, 32% Use it routinely
- Certify disabilities: 9% Not aware, 25% Use it routinely
- Patient appointment requests: 14% Not aware, 25% Use it routinely
- Transfer prescriptions to pharmacists: 8% Not aware, 24% Use it routinely
- Receive and send laboratory reports and share them with other healthcare professionals/providers: 14% Not aware, 23% Use it routinely
- Exchange medical patient data with other healthcare providers and professionals: 17% Not aware, 20% Use it routinely
- Exchange administrative patient data with reimbursers or other care providers: 11% Not aware, 18% Use it routinely
- Exchange patient medication lists with other healthcare professionals/providers: 12% Not aware, 17% Use it routinely
- Order supplies for your practice: 17% Not aware, 17% Use it routinely
- Exchange radiology reports with other healthcare professionals/providers: 12% Not aware, 16% Use it routinely
- Make appointments at other care providers on your patients’ behalf: 9% Not aware, 14% Use it routinely
- Interact with patients by email about health-related issues: 21% Not aware, 14% Use it routinely
- Exchange medical patient data with any healthcare provider in other countries: 6% Not aware, 8% Use it routinely

Ref: Benchmarking Deployment of eHealth among General Practitioners (2013)
Patient empowerment views

Figure 19 PHR functionalities: from awareness to use

- Supplement their medical records: 2% aware, 2% not aware
- View their medical records: 3% aware, 3% not aware
- View test results: 4% aware, 4% not aware
- Request referrals: 5% aware, 4% not aware
- Request renewals or prescriptions: 10% aware, 13% not aware
- Request appointments: 13% aware, 13% not aware

Ref: Benchmarking Deployment of eHealth among General Practitioners (2013)
Trillium Bridge Recommendations for policy convergence

Ecosystem to enable the International Patient Summary

- Future standardisation
- Cross-vendor integration
- Innovation
- Incentives
- Privacy and security
- Education
- Research
Trillium Bridge Recommendations for policy convergence

The Joint Initiative Council unanimously endorses this key recommendation and, through strategic global leadership in health informatics standardization, we are committed to: enabling practical standards-based health information sharing, contributing to better patient health and more effective health outcomes, and undertaking specific initiatives that address these global needs.

In particular, we are currently focused on bringing together core sets of compatible standards needed to support: use of patient care summaries within and across communities and implementation of the Trillium Bridge recommendation and we are committed to work with others who share these goals.
Trillium Bridge Recommendations for policy convergence

Future standardisation

Cross-vendor integration
- procure the capability to export IPS
- procure the capability to import and integrate IPS data
- enhance conformity assessment methods and tools

Education

Research

Dipak Kalra, Trillium Bridge final review, July 2015
Trillium Bridge Recommendations for policy convergence

Future standardisation

- lower trade barriers
- encourage innovative business models
- showcase the value of transatlantic sharing
- develop new models of stewardship

Innovation

Research
Trillium Bridge Recommendations for policy convergence

Incentives
- develop quality criteria for good health record-keeping
- reward healthcare providers for good records
- assess record-keeping at staff appraisals and accreditation

Future standardisation
- Cross-vendor integration

Education
- Research

Dipak Kalra, Trillium Bridge final review, July 2015
Trillium Bridge Recommendations for policy convergence

Privacy and security
- develop and adopt an enabling legal framework
- enforce and assure organisational and security safeguards
- specify policies and security measures

Future standardisation

Research

Dipak Kalra, Trillium Bridge final review, July 2015
Trillium Bridge Recommendations for policy convergence

Future standardisation

Cross-vendor integration

Education

guide and train health professionals to use the IPS

motivate and equip patients to use the IPS for illness and wellness self-management

Research

Dipak Kalra, Trillium Bridge final review, July 2015
Trillium Bridge Recommendations for policy convergence

Future standardisation

Cross-vendor integration

Research

develop quality metrics for the IPS
monitor the impact and value from using the IPS

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monitor the impact and value from using the IPS
Conclusion

LHS goal:

By 2020, 90% of clinical decisions will be supported by accurate, timely, and up-to-date clinical information, and will reflect the best available evidence.

Trillium Bridge recommendations suggest principles for IPS to be a level of engagement and learning for eHealth to get quality, access, and cost.
General Practitioners in Europe: pillar of LHS

The overall framework, elaborated from the reviewed literature, integrates individual, meso, and macro level variables...

Ref: Benchmarking Deployment of eHealth among General Practitioners (2013)
Standards Virtuous cycle in LHS

Ref: Jeremy Thorp
Vision of eStandards

eHealth Standards and Profiles in Action for Europe and Beyond

• Think of a global eHealth ecosystem where:
  • people (digital natives and immigrants) enjoy timely safe and informed health, anywhere around the globe
  • interoperability assets fuel creativity, entrepreneurship, and innovation

• where eStandards:
  • nurture large-scale eHealth deployments to strengthen Europe’s voice and impact locally on its citizens and globally on the world
  • enable co-creation in interoperability where trusted dialogs on health, costs, and plans meet great expectations.

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Ref: The case for Formal Standardization in large scale eHealth Deployment
Access to health care: unmet patient needs

Figure 5: Self-declared unmet needs for medical examination by reason, proportion of population (%)


Unlock the power of health information