Cross Continental Medical Communication

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Annex 12

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Note:

This annex was commissioned by Prof. Dr. Dipak Kalra, Project Leader, and Prof. R. Vander Stichele, Workpackage Leader of SemanticHealth Net WP3, to Catherine Chronaki, HL7 International Foundation.

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Introduction

This brief note attempts to summarize the key findings from the Trillium Bridge project[1] with respect to cross-continental medical communication of Electronic Health Record Summaries, in an effort to elicit observations relevant to clinical stakeholders and perhaps engage them into solving some of the easier problems.

Aim of the Trillium Bridge Project

The Trillium Bridge project "Bridging Patient Summaries across the Atlantic" has been the operational arm of the EU/US Memorandum of Understanding on eHealth/Health Information Technology Cooperation Roadmap[2].

Clinically led developments of standardised medical summary specifications have been published over many years, in different countries and by different specialties, the most widely known being the ASTM E31.25 Continuity of Care Record (CCR)[3] based on earlier work of the Massachusetts Medical Society. The CCR is a generic medical summary intended to convey salient information when handing over the care of a patient from one organisation to another, such as when a patient is discharged from hospital. Then, HL7 jointly with ASTM developed HL7 CCD[4], a Clinical Document Architecture (CDA) implementation guide for CCR that can be exchanged as electronic messages. Later on, Standards Developing Organizations (SDOs) namely IHE, HL7, HealthStory collaborated to align implementation guides for seven clinical documents types, CCD being one of them. This effort resulted in the so called Consolidated CDA (CCDA). HL7 CCDA CCD is referenced in United States Meaningful Use program certification criteria as the means to achieve continuity of care and patient empowerment. Patients may receive their CCD after the visit to the general practitioner. Physicians may send the CCD as part of a referral request.

There have been subsequent parallel and to some degree divergent activities in the US and the EU to formalise the representation of an emergency care summary that can be used to inform an unscheduled clinical encounter. These activities include the incorporation of CCD in IHE projects, most notable among the ePSOS patient summary service that formed the basis of the European Union Patient Summary Specification and the work of HealtheWay and other eHealth exchanges in the United States.

Recognising that there is value in transatlantic collaboration to support emergency care scenarios when European patients travel to the US and vice versa, the Trillium Bridge project has brought together informatics experts and representatives from key standards bodies to compare specifications and samples, to create bridging translations between these summary specifications, and establish the common baseline.

Specifically, the aim of Trillium Bridge has been to compare patient summary samples from the European Union (EU) Patient Summary Guideline[5] (epSOS patient summary implementation Guide) and

[1] www.trilliumbridge.eu
[2] http://www.healthit.gov/policy-researchers-implementers/eu-and-us-step-cooperation-ehealth-and-health-it
[3] http://www.astm.org/Standards/E2369.htm
[4] http://www.hl7.org/implement/standards/product_brief.cfm?product_id=6
[5] http://ec.europa.eu/health/ehealth/docs/guidelines_patient_summary_en.pdf

the United States (US) Meaningful Use II Program Clinical Summary for Transitions of Care (HL7 Consolidated Clinical Document Architecture, Continuity of Care Record).

Methodological approach

Starting from Concrete Patient Stories of unplanned events affecting people traveling across the Atlantic we captured the relevant patient summaries in Europe and clinical summaries in the US. Two main situations of using patient summaries in an unplanned care setting were identified. The first was a patient mediated scenario where a patient carries his/her own summary transforms it into a format fit for the purpose of use on the other side of the Atlantic, shares it with a physician in an unplanned setting, and receives an encounter report in the same format to take back home. The second is a provider mediated scenario where with the consent of the patient, the physician connects with the home health system of the patient, requests and receives the patient's patient summary.

Results

Multiple demonstrations attested to the technical feasibility of the exchange, even if there are concrete policy challenges related to the issues of consent, privacy, security, etc. However, when focusing on the clinical aspects of the emergency/unplanned care EHR summary, Trillium Bridge identified a clear base line of clinically aligned content in the EU and US comprising demographics, problems, medications, allergies[6]. In a proof of concept endeavor, the transformer[7] software created by Mayo Clinic, employs the Common Terminology Service[8] of Phast to convert patient summaries created in the EU context, to patient summaries that can potentially be useful in the US context.

Through multi-stakeholder expert interactions and workshops Trillium Bridge is also exploring the other critical success factors for this bridging specification to become widely adopted and incorporated into products, deployed across Europe and the US, successfully used by healthcare organisations to generate meaningful summaries, for receiving healthcare providers to trust and make good use of that summary information, and for all stakeholders to be comfortable with the protections in place over these information flows. That work will be encapsulated as a set of policy recommendations, to be published in June 2015 as part of the Trillium Bridge Feasibility Study.

Discussion

Naturally this is just the starting point. Even in the limited setting of a patient summary fit for the purpose of unplanned care, a lot remains to be done. Further engagement of Physicians and their

[6] http://www.cinc.org/archives/2014/pdf/0481.pdf
[7] http://informatics.mayo.edu/trillium-bridge
[8] http://extension.phast.fr/STS_UI

associations is necessary. The structures and value sets used on the two sides of the Atlantic are significantly different (see figure). However, there are clear indications that we are making small progress. The Standing Committee of European Doctors (CPME) has decided to tackle the issue of health professional identification. Several European Projects including Trillium Bridge and EXPAND, are creating and delivering shared interoperability assets that in the medium to long term are expected to lower the cost of interoperability.

Moving forward, standards development organizations need to step up their game. Cooperation is the key to building trust and perhaps a systematic iterative process of harmonization or consolidation is a useful route to consider moving forward. Large scale deployment in Europe and around the world calls for a trusted infostructure. Initiatives at both sides of the Atlantic need to learn from each other and cooperate, setting an example for global collaboration.

In the end, standards are just a measure of our shared understanding, but interoperability can be a safety net where we travel across the globe subject to the whims of fate.

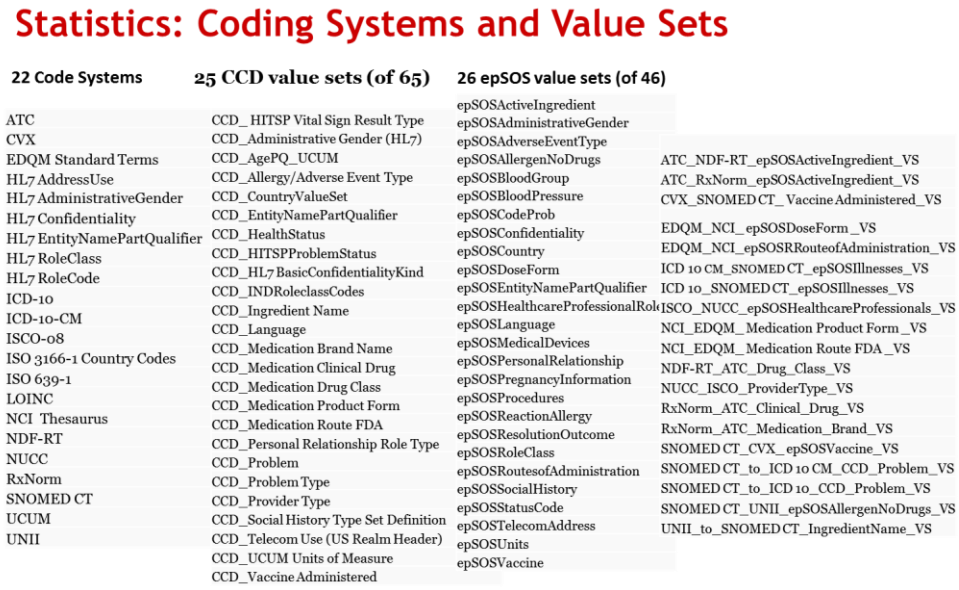

Figure 1: Coding systems and value sets in EU Patient Summary based on the epSOS patient summary implementation guide and Meaningful Use II.

epSOS Value Set	epSOS Code System	concepts with corresponence/ concepts present/ (% covered)	CCD Value Set	CCD Code System	concepts with corresponence/ concepts present/ (% covered)
epSOSActiveIngredient	ATC	606/5592 (6%)	Medication Drug Class	NDF-RT	1365/10699 (13%)
epSOSActiveIngredient	ATC	2836/5592 (51%)	Medication Brand Name	RxNorm	3329/13885 (24%)
epSOSActiveIngredient	ATC	2836/5592 (51%)	Medication Clinical Drug	RxNorm	9642/31214 (31%)
epSOSAllergenNoDrugs	SNOMED CT	79/112 (71%)	Ingredient Name	UNII	5315/63996 (8%)*
epSOSRoutesofAdministration	EDQM Standard Terms	55/73 (75%)	Medication Route FDA	NCI Thesaurus	57/118 (48%)
epSOSDoseForm	EDQM Standard Terms	28/457 (6%)	Medication Product Form	NCI Thesaurus	99/153 (65%)
epSOSIllnessesandDisorders	ICD-10	1775/9525 (19%) IHTSDO maps	Problem	SNOMED CT	7204/16443 (44%) IHTSDO maps
epSOSIllnessesandDisorders	ICD-10	1147/9525 (12%) NLM maps	Problem	SNOMED CT	6914/16443 (42%) NLM maps
epSOSVaccine	SNOMED CT	27/31 (87%)	Vaccine Administered	CVX	87/163 (53%)

Figure 2: Value Set Mappings in Trillium Bridge