Joint workshop HL7-GS1: Information Exchange Standards meet Supply Chain Standard

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Abstract. Building on the experience gathered in previous joint workshops, including STC2010, Iceland, STC2011, Slovenia and MIE2011, Norway, HL7 International and GS1 continue to join forces in proposal a synergy workshop to demonstrate achievements in addressing core challenges of health information exchange and interoperability. Taking the scenario of an elderly lady living alone we will focus on adoption of standards to facilitate information exchange between the supply chain world to the healthcare world discussing relevant interoperability standards for healthcare information exchange and the supply chain standards. To facilitate the workshop preparation for speakers and attendees, a supporting scenario in the format of a use case is presented. In addition, a draft document for GS1 implementation in the Healthcare industry including linkage to HL7 standard will be made available. The workshop presenters will deliver a brief statement that leaves enough space for an active discussion with workshop's participants. The moderated discussion will be targeted to what is possible to implement, possible barriers to implementations, benefit of adoption, privacy and security challenges etc. In this way, challenges for innovative interplay of current and future standards will be identified to strengthen collaboration and commitment to adoption.

Keywords. GS1, Health Level Seven (HL7) International, information exchange, quality, integrated care

Introduction

Plug-n-play interoperability is a major aspect and challenge to quality for health information exchange requiring robust interworking of standards from different worlds. Starting in 1987, the mission of HL7 is to provide standards for health information interoperability that improve care delivery, optimize workflow, reduce ambiguity and enhance information transfer among all healthcare stakeholders, exhibit timeliness, scientific rigor and technical expertise without compromising transparency, accountability, practicality or privacy and security. The vision of GS1 is a world where

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things and related information move efficiently and securely for traceability that benefits businesses and helps improve people's lives, everyday, everywhere.

The concept of this workshop started from a long list of questions associated with collaborative sharing of meaningful information in a scenario of an elderly woman requiring health care service that cross the world of healthcare and that of the supply chain. This taps into the value proposition of synergies between HL7 and GS1. Some of the relevant questions were:

- What is the most important information needed to support integrated care, e.g. emergency care, public health, emergency, and social care for Mrs Erkel? For example, how to leverage GS1 and HL7 standards to document and retrieve medication?
- What are the GS1 and HL7 standards that support integrated care and what is the state of their adoption and interrelation? For example, how to leverage GS1 and HL7 standards to support core processes related to transfer of care?
- How can the quality of information exchange be secured? What about privacy, protection and maintained confidentiality?

1. **Aim of the discussion**

Starting from the story of a health-challenged elderly woman, short presentations will address collaborative sharing of information bridging the clinical and supply chain worlds. Inspired by the presentations the discussion will try to gain insight on the added value that GS1 and HL7 bring; the challenges and steps ahead. The workshop will be moderated by Bernd Blobel and Ulrike Kreysa.

**1.1. Use Case: Healthcare Information Exchange Needs of Mrs. Erkel (Anne Moen)**

Mrs. Erkel is an 90 year old widow living independently in her house in a small city. Once a week she pays to have her house cleaned. Mrs. Erkel has fewer friends to socialise with, and the last few months she has not been motivated to participate in any social activity at all. Last winter she had the flu, although she thinks she got her annual flu vaccine. Since the flu her energy has been depleted. Two months ago Mrs. Erkel had a doctor’s appointment. She explained to the doctor that she had to get up several times at night to urinate, and that she felt tiered. Her doctor examined her and took blood tests. The conclusion was that she had acquired diabetes mellitus type 2. After initial problems, Mrs Erkel is coached by local social services.

One evening Mrs. Erkel, while undressing for bed, becomes suddenly unsteady. She slips on the woven rug in front of her bed and falls between the bed and chair where she usually places her clothing. When she tries to get up from the floor again she is not capable of moving her left hip. When the home healthcare nurse visits the next morning she finds Mrs. Erkel on the floor, exhausted and in pain. The nurse calls an ambulance, and Mrs. Erkel is taken to the hospital. In the emergency room she is able to communicate her name and birth date. The ER-physician examines her and requests X-Ray, which shows that she has a hip fracture, and needs surgery.

The surgery is without complications. Her hip fracture is stabilized with a metal plate and screws. In the orthopedic unit, Mrs. Erkel experiences pain when using the
bedpan, she is still dizzy and blood tests show that she has a hemoglobin level of 9 g/dL. Iron tablets are prescribed. Two days later she is fully oriented again. Her blood sugar is within normal range again, she does not need the insulin injections, but just continues her usual diabetes tablets’ intake. Upon admittance to the orthopedic unit, the nurse in charge immediately started planning the discharge. It was planned that Mrs. Erkel would be transferred to a rehabilitation unit when her status was stable, and the nurse notified the rehabilitation unit accordingly. After 10 days, Mrs. Erkel is discharged from the rehabilitation clinic. The home healthcare service has decided that Mrs. Erkel needs more help now than before her fall/accident.

1.2. GS1: Supply Chain World (Christian Hay)

By concentrating on the information exchange along Mrs Erkel health journey from home to hospital, the presentation will highlight selected elements from both GS1 and HL7 which document the sequence of encounters.

Unique identifiers according the GS1 system of standards will be used along Mrs. Erkel’s journey, selected encounters being used as examples of supply chain achievements. The shift from GS1 messaging to HL7 messaging will further be drawn with the purpose to illustrate continuity of information.

From automatic identification data capture to data processing, some guidance will be provided to understand benefits of unique identification in the clinical environment.

1.3. HL7: Patient Summaries for health and social-care (Catherine Chronaki)

Starting from the story of Mrs. Erkel, the role of patient summaries in bridging the worlds of emergency, health and social care will be presented, building on best practices. Current limitations will be highlighted and the role of interoperability standards in amending them will be introduced as part of the solution.

1.4. HL7: Quality of Information Exchange (Charles Jaffe)

Misinformation is worse that no information at all. Starting from the story of Mrs. Erkel, HL7 standards that uphold quality at different stages of information exchange will be presented.

2. Expected outcome

The expected outcome of this workshop is to increase clarity of challenges to adopt interoperability standards’ as a contribution to more efficient information exchange that contribute quality information to support well-being of elderly people requiring integrated care.

3. References

[1] HL7: www.hl7.org