

Adaptable Clinical Pathways XG Group Charter – A Proposal

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This is a proposed charter for a W3C XG working group on Adaptable Clinical Pathways (Incubator Activity) [1]

1 Scope of ACP Ontology XG Group

Traditionally, a clinical pathway is a multi-disciplinary plan that is generated by a team of clinical professionals, with a clear clinical intention or goal – either to diagnose a disease, or to perform a treatment. This plan is always cause-specific, i.e. per disease, or medical condition. It is designed for a group of patients with similar needs.

This current clinical pathway modeling and implementations are mostly “static”, in the sense that a clinical pathway is a set of pre-fixed steps. It is difficult to accommodate the changes of individual patient conditions, of operational procedures and of medical guidelines, or to merge multiple clinical pathways when dealing with multiple pathological causes.

Adaptable Clinical Pathway [2] is proposed to address the above challenges. An adaptable clinical pathway is a step-wise care plan that is generated and validated using proof technology. It aims at providing patients with personalized care that fully complies with best medical practices, guidelines and hospital protocols, meanwhile, is adaptable to patient medical history and current conditions.

The proposed activity is one of the step towards realizing the potential of semantic web technology in connecting a broad range of crucial medical knowledge including patient medical record, medical research discovery, guidelines and protocols. The proposed “W3C XG working group for Adaptable Clinical Pathways” is chartered to establish a semantic webized framework for representation and execution of adaptable clinical pathway. More specifically, it is to establish a descriptive mechanism that expresses clinical pathways consisting of:

- Steps
- Connections between steps
- Inclusion and exclusion criteria
- Variances
- Medical intervention milestones or outcomes
- Time element in pathways

The working group will also exam the modeling of dynamic aspects of clinical pathway using a appropriate theory, for example pi-calculus [3].

To achieve a wide acceptance and adaptation within healthcare domain, the ACP ontology will be based on HL7's Reference Information Model [4].

2 Out of Scope

Due to the nature of medical practices, any care plan recommended or performed on a patient bears serious responsibilities. The adaptability of clinical pathways, either in the form of merging multiple clinical pathways, or changing a pre-defined step, could imply possible and unknown adverse event. The XG group is chartered to address technical issues, and will not extend its discussion to legal or regulatory implications of adaptable clinical pathways.

More specifically, the following aspects of clinical pathways are considered out of scope for this XG group:

- Trust or Rating of Medical Knowledge. Issues in this category could include
 - Expression of trust for medical knowledge
 - Verification of protocols, and rating of the effectiveness of a treatment plan
- Implication of FDA regulation in validating or approve treatment plan
- Implication on business model of hospital

3 Deliverables and Schedule

As a W3C Incubator Activities group, the expected duration of this working group is one year. The major deliverable is Adaptable Clinical Pathway Ontology 1.0, with test cases. A set of technical notes documenting important discussions, issues and group consensus are also considered as deliverables.

4 Relationship with Other Work

This work is considered as application of semantic web in healthcare and life science. It will utilize works from other working groups on Semantic Web technology. In particular, it is closely associated with "Semantic Web for Health-care and Life Sciences Interest Group (HCLSIG)" [5]. This XG working group can be considered as a focus group within the HCLSIG group. It will also follow the development at the proposed "Rule Working Group" [6].

The ACP XG group should liaise with "Clinical Decision Support working group" [7] the at HL7 organization

References

- [1]. W3C Incubator Activities Initiatives
<http://wopeg.he.agfa.be/w3c-ac-members/2005AprJun/0043.html>
- [2] Towards Adaptable Clinical Pathway Using Semantic Web Technology
http://lists.w3.org/Archives/Public/public-swls-ws/2004Sep/att-0030/W3C_Workshop_Semantic_Web_for_Life_Science_-_position.pdf
- [3] Pi Calculus
<http://eulersharp.sourceforge.net/2003/03swap/pi-rules.n3>
- [4] HL7 RIM model
http://www.hl7.org/library/data-model/RIM/modelpage_mem.htm
- [5] Semantic Web for Health-care and Life Sciences Interest Group
<http://www.w3.org/2005/05/swlsig-charter>
- [6] W3C Rules Working Group (proposed)
<http://www.w3.org/2005/07/rules/charter.html>
- [7] HL7 CDS working group
<http://www.hl7.org/>