A Homecare Application based on the ASTM E2369-05 Standard Specification for Continuity of Care Record

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Abstract: The purpose of this study is the presentation of a system appropriate to be used upon the transition of a patient from hospital to homecare. The developed system is structured according to the ASTM E2369-05 Standard Specification for Continuity of Care Record and its function is based upon the creation of a structured subset of data, containing the patient’s most relevant clinical information, enabling simultaneously the planning and the optimal documentation of the provided homecare.

Introduction
It is generally expected that the Electronic Health Record (EHR) will facilitate and simplify the exchange of information between different care providers, improving the quality and continuity of care. However, a key question arises: which is the scope and the level of information-detail that should be exchanged when a patient is referred to a different care provider, especially in the case of transition from hospital to homecare. Aiming to assure at least a minimum standard of health information transportability when a patient is discharged, referred or transferred, ASTM has recently approved the E2369-05, Standard Specification for Continuity of Care Record (CCR).

Methods
Implementing this standard, we developed a system appropriate to be used upon the transition or the referral of a patient, and especially in transition from hospital to homecare. The developed system consists of two modules. The first module allows for the creation of a typical CCR that contains the appropriate demographic and administrative data, as well as the relevant clinical information, while the second module enables the creation of a homecare plan that will be included in the Care Plan section of the CCR.

The typical–CCR module can either collect the necessary data from an already installed EHR system or allow for the user to enter the data manually by filling special forms. The Homecare module facilitates the creation of a structured subset of data, containing the monitoring, treatment, diagnostic and nursing activities that should be employed during the post-discharge homecare period. The developed module allows for every Hospital Department or Medical/Nursing group, to individually redefine appropriate profiles of homecare activities to specific diagnoses codes that are coded according to Diagnosis Related Group (DRG) codification.

However, the system, apart from producing, electronically or in paper – format, the CCR, it can also produce a number of additional forms, including advisory and informational notes for the patient himself or for his relatives, diagrams of patient-data that should be monitored, and forms that should be filled by the visiting nurses during home-care. Thus, the responsible physician can appropriately modify the care – plan of the specific patient by evaluating these forms.

The structure and data of the produced CCR are complying with the ASTM E2369-05 Specification for Continuity of Care Record, while XML is used for the representation of the data. The XML representation is made according to the W3C XML schema proposed by ASTM.

Implementation and Evaluation
The system developed is currently being laboratory tested with an EHR system that has been developed by our team. The laboratory implementation indicates that the system, whether interfaced to an EHR or not, is stable enough for practical use and it actually provides a simple, effective and easily expandable tool for the formation of, both, a CCR and a homecare plan. The implementation of the ASTM-CCR Specification Standard confirms that the specific protocol ensures indeed easy documentation and manipulation while, at the same time, it assures at least a minimum standard of health information transportability.

Discussion
We strongly believe that the long term use of CCR will stimulate the Electronic Health Records development by facilitating its shaping of content, especially in some countries, including Greece, where there is not presently, an official approach to the EHR.