# Home-care Care Plan Storyboard – V0.2a

# (HL7 Patient Care Work group 2011-11-18)

* 1. Instructions to the Storyboard Reviewer(s)

We would like you to review this storyboard (SB), answer the following questions, and make recommendations to improve its accuracy, representativeness and completeness:

* Is the overall story and workflow representing a typical situation? What changes would you suggest to make it more illustrative?
* Is it clinically accurate?
* Is the information exchanged between providers and organization accurate without going into the details that may be specific to a jurisdiction or country?

You can provide your comments directly on this document (using the *Track Change* mode or *Insert Comment* feature of the Word software), or you can create a separate document and point to the specific section that you are commenting on.

Please send your comments and feedback to the HL7 Care Plan Initiative Co-Lead:

* André Boudreau, Boroan inc., Phone: 514.992.8433
	+ email: a.boudreau@boroan.ca)

Kindly give us your name and coordinates:

* My name is:
* Title, organization, jurisdiction, country:
* email address:
* Phone number(s):
	1. Introduction to HL7 Care Plan Storyboards

HL7 International Patient Care Work Group (PCWG) ([http://wiki.hl7.org/index.php? title=Patient\_Care](http://wiki.hl7.org/index.php?%20title=Patient_Care)) has launched a new initiative, the Care Plan Initiative Project 2011, (<http://wiki.hl7.org/index.php?title=Care_Plan_Initiative_project_2011>) to conduct a Domain Analysis Process (DAP) for Care Planning that will lead to updating the existing Draft For Trial Use (DSTU) version. The resulting Domain Analysis Model (DAM) will be an analysis model that describes business processes, use cases, process flows, business triggers, and the information exchanged that are derived from a project's requirements. A DAM is equivalent to a Requirements Analysis Specification and contains not only an information model but also a comprehensive analysis model which includes business processes, system interactions and behavioral/dynamic aspects. The focus is on interoperability in information sharing among different health care actors (i.e. providers, organizations, patient, other carers). (Ref 1, HL7 HDF 1.5)

Storyboards are one of the first deliverables of the initiative. A storyboard is a narrative description of a series of steps involving some exchange of information between different participants to achieve the objectives of a healthcare business process. The list of steps can be in generalized, abstract terms, or in the form of a real-world example.

The PCWG has identified six stories that would provide sufficient coverage of situations for the HL7 Care Plan DAM:

* Acute Care
* Chronic Care
* Home Care
* Pediatric and Allergy/Intolerance
* Perinatology
* Stay healthy/ health promotion

A storyboard content is developed primarily from guidance by the domain experts. Some guidelines in preparing a SB:

* Focused on one typical story, not on exceptions
* Is written in common clinical term, not in technical or IT terms (is architecture, implementation and platform independent), and it uses business terminology to illustrate the context for the message exchange, functional model, etc.
* Focused on the exchange of information about care plan; a clear distinction is made between Care Plan information and medical record information or other non care plan specific data (e.g. lab results, referral request)
* Identifies what should be a best practice in the exchange of clinical information, i.e. what is described here may not be the reality in some cases.
* Subjected to the VACCI test: Validity, Accuracy, Completeness, Clarity and Integration (that all the components are well interconnected/integrated and the flows of events are logical and smooth)
	1. Short Description of the Health Issue Thread covered in the Storyboard

The purpose of the home-care care plan storyboard is to illustrate the communication flow and documentation of a care plan between a patient, his or her primary care provider and the home health specialists involved in the rehabilitation efforts for a patient recovering from a minor stroke. This health issue thread (simplified) consists of four encounters, although in reality there could be many more encounters:

1. Hospital Discharge
2. Ambulatory Rehabilitation Clinic Visit
3. Home Health Visit
4. Primary Care Visit
5. Dietician Visit

Brief descriptions of the information exchanged are provided in Appendix using a IDnnn code as cross reference.

Care coordination should occur throughout the health issue thread, across several care settings and several care providers/givers. It is briefly discussed later in this document, after the series of encounters.

* 1. Storyboard Actors and Roles

Hospital Attending Physician

 Dr. Aaron Attend

Primary Care Physician

 Dr. Patricia Primary:

Patient

 Eve Everywoman:

Occupational Therapist

 Pamela Player

Physical therapist

 Seth Stretcher

Speech therapist

 George Speaker (not in HL7 list)

Home Health Nurse (Not in HL7 list)

 Nancy Nightingale

Dietician

 Connie Chow

* 1. Encounter A: Hospital Discharge

### Pre-Condition

Patient Eve Everywoman, a sixty-seven year old female is ready to be discharged from the hospital after having been diagnosed and treated from a minor stroke.

### Description of Encounter

Hospital Attending Physician Dr. Aaron Attend performs a discharge assessment (ID1) to verify that patient Eve Everywoman is stable to be sent home. During the assessment Dr. Aaron Attend reconciles the medications to continue, outlines follow up information and discusses activities to continue at home. He has observed some relatively minor difficulties in walking and in speaking, and therefore recommends some rehabilitation activities with the Ambulatory Rehabilitation Clinic of the hospital. As Dr. Aaron Attend and Eve Everywoman talk about the goals relating to the plan of care at the rehabilitation clinic and at home, they determine that a home health skilled nurse would be crucial as a complement to the rehabilitation activities they have agreed upon. After the plan of care has been discussed and agreed to, Dr. Aaron Attend documents the care plan (ID2), sends a referral request (ID3a) to the Ambulatory Rehabilitation Clinic, and schedules a list of rehabilitation activities that are to be performed by a home health skilled nurse (ID3b) in parallel to the Ambulatory Rehabilitation Clinic activities.

### Post Condition

Once the care plan was updated, a request for services (ID4a) was sent to the Ambulatory Rehabilitation Clinic with the patient hospital discharge summary (ID5) and the plan of care (ID6). A referral in the form of a notification (ID4b) was also sent to the home health agency notifying the agency of the need to have a home health nurse visit Eve Everywoman and help in her rehabilitation efforts; this was accompanied by a hospital discharge summary (ID5) and the plan of care (ID6). This same information is sent to the primary care provider (ID7). A copy of the care plan was also given to the patient (ID8a) and the patient was discharged to home.

* 1. Encounter B: Ambulatory Rehabilitation Clinic Visit (in parallel to Home Health Visit)

### Pre-Condition

The Ambulatory Rehabilitation Clinic has scheduled a first visit with patient Eve Everywoman to conduct a full assessment of the condition of Eve and to develop a detailed treatment plan. The case has been assigned to physical therapist Seth Stretcher as the multidisciplinary team lead; Seth has reviewed the information sent by Hospital Attending Physician Dr. Aaron Attend (ID4a, 5 and 6) and has determined that 2 other professionals are needed in the assessment: Occupational Therapist Pamela Player and Speech therapist George Speaker. He informs them of the case. He is aware from the care plan that a Home Health Nurse will be providing home care in parallel and that there will be a need for coordination of rehabilitation efforts with the home care nurse.

### Description of Encounter

Patient Eve Everywoman arrives at the Ambulatory Rehabilitation Clinic and is shown to an assessment room. Physical therapist Seth Stretcher introduces himself and starts a conversation to put Eve at ease. He reviews with her what she has gone through and the care plan prepared by Hospital Attending Physician Dr. Aaron Attend. He performs a preliminary assessment and records his observations and findings (ID8b). He then informs Eve that he would like her to see 2 other professionals, Occupational Therapist Pamela Player and Speech therapist George Speaker. In turn, Pamela and George meet with Eve, record their observations and findings (ID8c and 8d). The 3 professionals meet together, share their findings and agree on specific goals and treatments for the 3 areas of rehabilitation (ID8e). Seth meets with Eve, discusses with her what they have found and what they feel the detailed rehabilitation care plan should be, explains the collaboration between the clinic and the home care nurse, answers her questions, addresses her concerns, and obtains agreement from her on the Ambulatory Rehabilitation Clinic care plan and schedule of activities (ID8f).

### Post Condition

A copy of the care plan and schedule was given to the patient (ID8f) and the patient was sent home. A copy of findings (ID8b, c, d) and the care plan and schedule (ID8f) were sent to the home health agency, and a request was made for close coordination of activities at the clinic and in the home (ID8g). A summary of the information was sent as feedback to Primary Care Physician Dr. Patricia Primary and to Hospital Attending Physician Dr. Aaron Attend (ID8h).

* 1. Encounter C: Home Health Visit (in parallel to Ambulatory Rehabilitation Clinic Visit)

### Pre-Condition

Home Health Nurse Nancy Nightingale, upon receiving the request from Dr. Attending (ID4) , acknowledges receipt of the request (ID9), familiarizes herself with the discharge summary, and reviews the notes and activities that Dr. Attending desires to be completed in patient Eve Everywoman’s rehabilitation efforts. A home health visit appointment is scheduled (ID10).

### Description of Encounter

 During the first home visit, Home Health Nurse Nancy Nightingale takes a few minutes to introduce herself and gets to know patient Eve Everywoman. Nancy Nightingale uses the care plan as a reference (ID6) as she visits with Eve Everywoman and discusses the rehabilitation efforts Dr. Attend desires. Included in the care plan is the platelet inhibitor and cholesterol reducing medications that Eve Everywoman was discharged on. Nancy Nightingale discusses any questions regarding the medications and or any discharge orders that Eve Everywoman was sent home with. Nancy Nightingale takes a few minutes to perform a quick assessment including a basic set of vital signs and documents this in the appropriate area on the care plan (ID11). As Nancy Nightingale and Eve Everywoman talk about rehabilitation efforts, one of the goals that Eve Everywoman would like to work on emerges: it is about managing her weight. Nancy Nightingale documents this along with a set of realistic interventions and steps on weight management (ID12). As Nancy Nightingale leaves this home health visit, she reminds Eve Everywoman of the goals they have discussed and the time of the next visit.

### Post Condition

During the next few weeks, Home Health Nurse Nancy Nightingale continues to make home visits to patient Eve Everywoman and assist in rehabilitation efforts. During each visit Nancy is able to reference the care plan and updates assessments and progress (ID13). The time has come for Eve to follow up with her primary care provider.

* 1. Encounter D: Primary Care Visit

### Pre-Condition

Patient Eve Everywoman is scheduled to meet with her primary care provider on a monthly basis to assess her health and prevent future complications. Today is Eve Everywoman’s first visit to Primary Care Physician Dr. Patricia Primary since her minor stroke occurrence and her discharge from hospital. Her primary care provider had been copied on the hospital discharge summary (ID1) and the care plan (ID2).

### Description of Encounter

Primary Care Physician Dr. Patricia Primary reviews patient Eve Everywoman’s hospital discharge summary and care plan, and reviews the assessments and progress notes made over the last four weeks (ID11, 12, 13). Dr. Patricia Primary notices that one of Eve Everywoman’s goals is weight management. Dr. Patricia Primary congratulates Eve Everywoman on her weight loss over the last four weeks and also discusses the advantages of diet along with her exercise. She gains the approval of Eve Everywoman’s to meet with a registered dietician to consult on diet along with her exercise.

### Post Condition

After patient Eve Everywoman leaves the office, Primary Care Physician Dr. Patricia Primary takes a few minutes to update the care plan (ID14) and dictate progress notes (ID15), and copies the home care nurse on these. A week after Eve Everywoman’s appointment with Dr. Patricia Primary, Home Health Nurse Nancy Nightingale visits Eve Everywoman. Nancy Nightingale again accesses the care plan (ID14) and reviews the updates and progress notes (ID15) from the appointment with Primary Care Physician Dr. Patricia Primary. Nancy Nightingale notices that Dr. Patricia Primary advised Eve Everywoman to consult with a Dietician and asks Eve Everywoman if she needs any help scheduling that appointment. She adds notes to the care plan (ID16).

* 1. Encounter E: Dietician Visit

### Pre-Condition

Due to the recommendation of patient Eve Everywoman’s primary care provider to visit a dietician, patient Eve Everywoman, with the help of her home health nurse scheduled an appointment (ID17). Eve Everywoman has arrived at the dietician office for the scheduled appointment.

### Description of Encounter

The receptionist at the dietician’s office takes a few moments to register patient Eve Everywoman and verify the identification information that were sent over with the care plan. The receptionist also updates the care plan with the additional dietary information that Eve Everywoman was instructed to complete (ID18). Dietician Connie Chow visits with patient Eve Everywoman and reviews the care plan including the additional dietary information just updated. After reviewing this information and through the discussion with Eve, Connie Chow is able to assess Eve’s current state of dietary habits and health (ID19). Connie Chow makes specific recommendations for Eve and notes them in the care plan (ID20).

### Post Condition

Dietician Connie Chow gives to patient Eve Everywoman a copy of the care plan (ID21) with diet recommendations and recommends her to return for a follow up appointment in a couple of weeks. Connie Chow re-emphasizes the importance of maintaining a good diet to prevent other strokes from occurring. A progress note (ID22) is also sent to the home health nurse and to Dr. Patricia Primary updating the events of the appointment.

* 1. About Coordination of Care

The initial coordination of care provided by all providers would be under the responsibility of the hospital attending physician. This coordination role would then be transferred formally to the primary care physician who may work with a community care coordinator. However, we could see a shared coordination role between the primary care physician and the lead at the Ambulatory Rehabilitation Clinic.

Many models are possible. The following ones are of note:

* Add specific models. Include refs
	1. Appendix A.- Definitions (Glossary)

| **Term/Concept** | **Definition** | **Notes** | **Source/ref.** |
| --- | --- | --- | --- |
| Care plan | statement, based on needs assessment, of planned health care activities in a health care process. care plan will be reviewed repeatedly during a health care process, each review based on a new needs assessment. |  | ISO/TC215-ISO 13940- System of concepts to support continuity of care-ContSys-Committee Draft- Nov. 2011 |
| Clinical guideline | set of systematically developed statements to assist the decisions made by health care actors about health care activities to be performed with regard to health issues in specified clinical circumstances |  | ISO 13940 CD |
| Clinical pathway | Structured pattern for a health care workflow to be used in standardised care plans for subjects of care having similar health conditions with a predictable clinical cours |  | ISO 13940 CD |
| Encounter (contact) | Patient encounter is defined as an interaction between a patient and one or more healthcare practitioners for the purpose of providing patient services or assessing the health status of the patient. (HL7)Event during which subject of care interacts, directly or indirectly, with one or more health care professionals (ISO, ‘contact’) |  | HL7 Version 3 Standard: Patient Administration Release 2; Patient Encounter, Release 1DSTU Ballot 1 - May 2011ISO 13940 CD |
| Feedback | The return of information about the result of a process or activity.  |  | Dictionary.com |
| Health issue | Issue related to the health of a subject of care, as identified and labelled by a specific health care actor |  | ISO 13940 CD |
| Health issue thread | Defined association between health issues and/or health issue treads, as decided and labelled by one or several health care actors. A health issue thread inherently associates the health care and clinical processes as well as the health care activity period elements referring to those health issues. |  | ISO 13940 CD |
| Health objective | Desired ultimate achievement of the health care activities in a care plan. A health objective could be expressed as one or several target conditions |  | ISO 13940 CD |
| Outcome | something that follows from an action, dispute, situation, etc; result; consequence |  | Dictionary.com. Collins English Dictionary |
| Protocol | clinical guidelines and/or clinical pathways customised for operational use. A protocol is more precise than a clinical guideline. However it does no more concern any subject of care in particular than a clinical guideline. |  | ISO 13940 CD |
| Target Condition | possible health condition representing health objectives and/or health care goals |  | ISO 13940 CD |

* 1. Appendix B.- Description of Information Created and Exchanged

| **ID No.** | **Brief Description of Information** | **Examples** | **Source/ref.** |
| --- | --- | --- | --- |
| 1 | Discharge assessment: functional assessment in relation to daily living | C-HOBICinterRAI |  |
| 2 | Plan of care: problems to address, associated goals and targets, treatments to be carried out (by type of professional and organization), notes and suggestions, feedback expected  |  |  |
| 3a | Referral request:  |  |  |
| 3b | Rehabilitation activities for home health skilled nurse:  |  |  |
| 4a | Request for services:  |  |  |
| 4b | Referral in the form of a notification |  |  |
| 5 | Hospital discharge summary:  |  |  |
| 6 | Plan of care sent to home health agency: |  |  |
| 7 | Plan of care sent to primary care provider:  |  |  |
| 8a | Copy of plan of care given to patient:  |  |  |
| 8b | Physical therapist assessment:  |  |  |
| 8c | Occupational Therapist |  |  |
| 8d | Speech therapist |  |  |
| 8e | Rehabilitation clinic goals and treatments:  |  |  |
| 8f | Ambulatory Rehabilitation Clinic care plan and schedule of activities:  |  |  |
| 8g | Request for close coordination of activities |  |  |
| 8h | Summary sent to physicians (feedback):  |  |  |
| 9 | Acknowledgement of request received:  |  |  |
| 10 | Home health visit appointment:  |  |  |
| 11 | Home assessment:  |  |  |
| 12 | Weight management objective and plan:  |  |  |
| 13 | Care plan updates and progress:  |  |  |
| 14 | Care plan update by primary care physician:  |  |  |
| 15 | Progress Notes:  |  |  |
| 16 | Care plan update about nutrition:  |  |  |
| 17 | Appointment with dietician:  |  |  |
| 18 | Dietary information:  |  |  |
| 19 | Dietary assessment:  |  |  |
| 20 | Care plan update by dietician:  |  |  |
| 21 | Care plan for diet recommendations:  |  |  |
| 22 | Dietecian progress note:  |  |  |
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* 1. Appendix B.- References
1. HL7 Healthcare Development Framework Version 1.5 Release 1; Modeling and Methodology Work Group, November 21st , 2009, section 3, pages 34 to 53
2. Modeling shared care plans using CONTsys and openEHR to support shared homecare of the elderly, by Maria Hagglund, Rong Chen, Sabine Koch; Karolinska Institutet, Stockholm, Sweden; J Am Med Inform Assoc 2011;18:66e69. doi:10.1136/jamia.2009.000216; jamia.bmj.com. See summary models below.



* 1. Appendix C.- History of SB Validation Process

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| --- | --- | --- | --- |
| **Date/Period** | **Activity** | **Participants** | **Outcome** |
| June to Sept. 2011 | Draft and reviews | HL7 Care Plan meeting participants | Major updates to SB |
| Nov. 18, 2011 | Final update of Appendices 1 and 2 | André Boudreau | SB ready for review by clinicians |
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