Integrating the Healthcare Enterprise

IHE Patient Care Coordination
Technical Framework Supplement

Dynamic Care Planning
(DCP)

HL7 FHIR® DSTU2
Rev 1.1 – Trial Implementation

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Foreword

This is a supplement to the IHE Patient Care Coordination Technical Framework V10.0. Each supplement undergoes a process of public comment and trial implementation before being incorporated into the volumes of the Technical Frameworks.

This supplement is published on September 9, 2016 for trial implementation and may be available for testing at subsequent IHE Connectathons. The supplement may be amended based on the results of testing. Following successful testing it will be incorporated into the Patient Care Coordination Technical Framework. Comments are invited and may be submitted at http://www.ihe.net/PCC_Public_Comments.

This supplement describes changes to the existing technical framework documents.

"Boxed" instructions like the sample below indicate to the Volume Editor how to integrate the relevant section(s) into the relevant Technical Framework volume.

Amend Section X.X by the following:

Where the amendment adds text, make the added text **bold underline**. Where the amendment removes text, make the removed text **bold strikethrough**. When entire new sections are added, introduce with editor's instructions to "add new text" or similar, which for readability are not bolded or underlined.

General information about IHE can be found at: http://ihe.net.

Information about the IHE Patient Care Coordination domain can be found at: http://ihe.net/IHE_Domains.

Information about the organization of IHE Technical Frameworks and Supplements and the process used to create them can be found at: http://ihe.net/IHE_Process and http://ihe.net/Profiles.

The current version of the IHE IT Infrastructure Technical Framework can be found at: http://ihe.net/Technical_Frameworks.

CONTENTS

160

Introduction to this Supplement

The Dynamic Care Planning (DCP) Profile provides the structures and transactions for care planning and sharing Care Plans that meet the needs of many, such as providers, patients and payers. Care Plans can be dynamically updated as the patient interacts with the healthcare system. HL7 FHIR®[1] resources and transactions are used by this profile. This profile does not define, nor assume, a single Care Plan for a patient.

165

Open Issues and Questions

1. Need to determine the FHIR version and what to do about future updates.

170   2. (closed on 2/15/16) This profile will not attempt to 'discover' all possible providers that have provided care for the patient. There are other means of discovering patient's points of care such as state HIE services, Nationwide Health Information Network (NwHIN) and CommonWell Health Alliance. This profile will account for known providers that have provided care for the patient.

3. Care Plan Contributor vs. Care Plan Creator

175   4. Is an ATNA Grouping required? If so, how does that impact potential mobile uses of this profile?

5. When profiling the FHIR Resource make sure we can make references to existing documents. (4/25/16 – what / who is the source of this issue?)

6. (closed 7/18/16) Should the FHIR CarePlan.subject be restricted to Patient?

180   a.   What does CarePlan.subject of type Group mean?

7. (closed 3/28/16) Does FHIR Search using POST create a resource when the search fails to match on the search criteria?

8. Concepts from the Care Plan model, DAM or C-CDA, do not have clear mappings to the FHIR CarePlan resource.

185   9. The CarePlan resource includes activity.actionResulting – need understanding how this related to Care Plan concepts.

10. The modeling of the Care Team is changing with newer versions of FHIR. How do we handle these changes?

11. Differing "roles" on the Care Team will likely be needed. We should state in the open
190   issues that representation of the Care Team is not well defined yet and still needs to be addressed.

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[1] FHIR is a registered trademark of Health Level Seven International.

Closed Issues

1. 2/15/16 Scope: This profile will not attempt to 'discover' all possible providers that have provided care for the patient. …this means that information on the location of actors is not profiled and is obtained by methods outside of the scope of this profile (similar to how XDS actors know with whom they communicate).

2. (2/16/16) The Care Plan Contributor should use the following pattern, from http://hl7.org/fhir/http.html#transactional-integrity

   • The server provides a read interaction for any resource it accepts update interactions on

   • Before updating, the client reads the latest version of the resource

   • The client applies the changes it wants to the resource, leaving other information intact (note the extension related rules around this)

   • The client writes the result back as an update interaction, and is able to handle a 409 or 412 response (usually by trying again)

   If clients follow this pattern, then information from other systems that they do not understand will be maintained through the update.
   Note that it's possible for a server to choose to maintain the information that would be lost, but there is no defined way for a server to determine whether the client omitted the information because it wasn't supported (perhaps in this case) or whether it wishes to delete the information.

3. (3/28/16) Does FHIR Search using POST create a resource when the search fails to match on the search criteria?
   No, the search operation, indicated by _search, does not cause creation of content on the server.

4. (7/18/16) Should the FHIR CarePlan.subject be restricted to Patient?

   b. What does CarePlan.subject of type Group mean?

   In behavioral science where "Group" can be family, disaster victim/survivor group, defence or police force groups

   Example: treatment of PTSD in these groups requires observation and management of group dynamics

   In public health where "Group" can be family, community, residents of certain floors or entire building, airplane/cruise passenger cohort

   Example: tracking, monitoring and managing communicable diseases outbreak in these groups

General Introduction

Update the following Appendices to the General Introduction as indicated below. Note that these are not appendices to Volume 1.

Appendix A - Actor Summary Definitions

230   *Add the following actors to the IHE Technical Frameworks General Introduction list of Actors:*

Actor	Definition
Care Plan Contributor	This actor reads, creates and updates Care Plans hosted on a Care Plan Service.
Care Plan Service	This actor manages Care Plans received from Care Plan Contributors, and provides updated Care Plans to subscribed Care Plan Contributors.

Appendix B - Transaction Summary Definitions

235

Add the following transactions to the IHE Technical Frameworks General Introduction list of Transactions:

Transaction	Definition
Update Care Plan	Update an existing or create a new Care Plan
Retrieve Care Plan	Retrieve a Care Plan
Subscribe to Care Plan Updates	Subscribe to receive updated Care Plans for specific patients
Provide Care Plan	Provide updated Care Plans to subscribers
Search for Care Plan	Used to find a care plan

Glossary

Add the following glossary terms to the IHE Technical Frameworks General Introduction Glossary:

240

Glossary Term	Definition
Care Plan Domain Analysis Model	A common reference used to support the development of implementable care plan models[2]
Coordination of Care Services Functional Model	Supports shared and coordinated care plans as well as support of multidisciplinary care team members to communicate changes resulting from care plan interventions and collaborate in removing barriers to care.[3]
Care Plan (as used in this profile)	Tool used by clinicians to plan and coordinate care for an individual patient. It aids in understanding and coordinating the actions that need to be performed for the target of care. The care plan is known by several similar and often interchangeable names such as the plan of care and treatment plan.[4]

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[2] Care Plan Project - PCWG. (2015, November 5). Retrieved February 15, 2016, from
http://wiki.hl7.org/index.php?title=Care_Plan_Project_-_PCWG
Care Plan Domain Analysis Model (DAM) Documents

[3] Care Coordination Capabilities. (2014, February 8). Retrieved February 15, 2016, from
http://wiki.hl7.org/index.php?title=Care_Coordination_Capabilities
[4] Care Plan Project - PCWG. (2015, November 5). Retrieved February 15, 2016, from
http://wiki.hl7.org/index.php?title=Care_Plan_Project_-_PCWG

Care Plan Domain Analysis Model (DAM) Documents

245

Volume 1 – Profiles

Copyright Licenses

NA

Add the following to the IHE Technical Frameworks General Introduction Copyright section:

250

Domain-specific additions

NA

Add Section X

X Dynamic Care Planning (DCP) Profile

255

The Dynamic Care Planning (DCP) Profile provides the structures and transactions for care planning and sharing Care Plans that meet the needs of many, such as providers, patients and payers. Care Plans can be dynamically updated as the patient interacts with the healthcare system. HL7 FHIR®[5] resources and transactions are used by this profile. This profile does not

260 define, nor assume, a single Care Plan for a patient.

Globally, the healthcare system is highly fragmented. Fragmentation can increase the number of hospital re-admissions. According to claims data reported for the Medicare beneficiaries in 2003-2004, 19.6% of re-hospitalizations occur within 30 days after discharge. This translated into $17.4 billion dollars in hospital payments from Medicare in 2004.[6]

265 The numbers of service delivery encounters required by individuals as well as the failure to deliver and coordinate needed services, are significant sources of frustration and errors, and are drivers of health care expenditures. Providing person-centered care is particularly important for medically-complex and/or functionally impaired individuals given the complexity, range, and on-going and evolving nature of their health status and the services needed. Effective,

270 collaborative partnerships between service providers and individuals are necessary to ensure that individuals have the ability to participate in planning their care and that their wants, needs, and preferences are respected in health care decision making.
The ability to target appropriate services and to coordinate care over time, across multiple clinicians and sites of service, with the engagement of the individual (i.e., longitudinal

275 coordination of care) is essential to alleviating fragmented, duplicative and costly care for these medically-complex and/or functionally impaired persons.

X.1 DCP Actors, Transactions, and Content Modules

This section defines the actors, transactions, and/or content modules in this profile. General definitions of actors are given in the Technical Frameworks General Introduction Appendix A at

280 http://ihe.net/Technical_Frameworks.

Figure X.1-1 shows the actors directly involved in the DCP Profile and the relevant transactions between them. If needed for context, other actors that may be indirectly involved due to their participation in other related profiles are shown in dotted lines. Actors which have a mandatory grouping are shown in conjoined boxes.

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[5] FHIR is a registered trademark of Health Level Seven International.

[6] Coleman, MD. MPH, Eric A. "Preparing Patients and Caregivers to Participate in Care Delivered Across Settings: The Care Transitions Intervention." *Journal of the American Geriatric Society* 52, (2004): 1817-1825.

Care Plan Contributor

Update Care Plan
[PCC-37] ↓

↓ Search for Care Plan
[PCC-41]

↓ Retrieve Care Plan
[PCC-38]

↓ Subscribe to Care Plan
Updates [PCC-39]

↑ Provide Care Plan
[PCC-40]

Care Plan Service
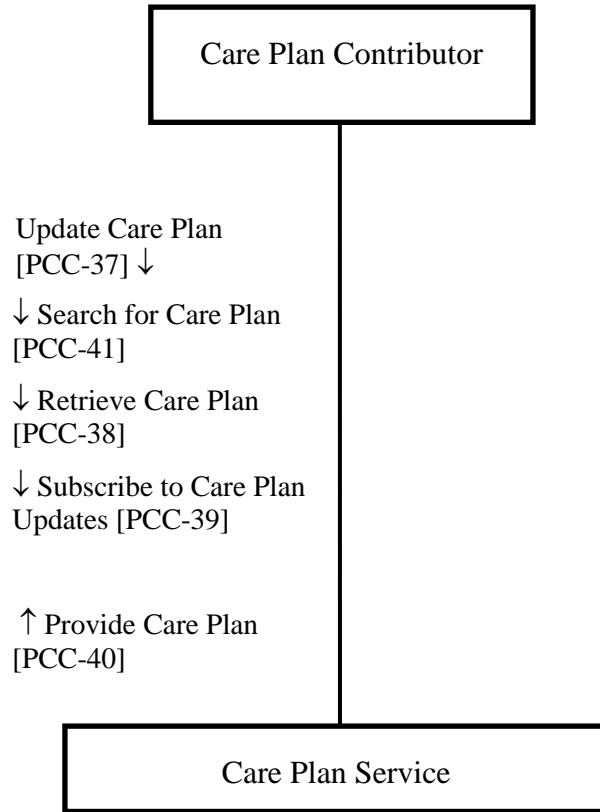
285

Figure X.1-1: DCP Actor Diagram

Table X.1-1: DCP Profile - Actors and Transactions

Actors	Transactions	Optionality	Reference
Care Plan Contributor	Update Care Plan	R	PCC TF-2: 3.37
	Search for Care Plan	R	PCC TF-2: 3.41
	Retrieve Care Plan	R	PCC TF-2: 3.38
	Subscribe to Care Plan Updates	O	PCC TF-2: 3.39
	Provide Care Plan	O	PCC TF-2: 3.40
Care Plan Service	Search for Care Plan	R	PCC TF-2: 3.41
	Update Care Plan	R	PCC TF-2: 3.37
	Retrieve Care Plan	R	PCC TF-2: 3.38
	Subscribe to Care Plan Updates	R	PCC TF-2: 3.39
	Provide Care Plan	R (as initiator)	PCC TF-2: 3.40

290

Table X.1-1 lists the transactions for each actor directly involved in the DCP Profile. To claim compliance with this Profile, an actor shall support all required transactions (labeled "R") and may support the optional transactions (labeled "O").

X.1.1 Actor Descriptions and Actor Profile Requirements

295   Most requirements are documented in Transactions (Volume 2) and Content Modules (Volume 3). This section documents any additional requirements on profile's actors.

X.1.1.1 Care Plan Contributor

This actor reads, creates and updates Care Plans hosted by a Care Plan Service.

In order to ensure data integrity, as is necessary when multiple Care Plan Contributors are 300   attempting to update to the same Care Plan, the Care Plan Contributor SHALL use the following pattern, (from http://hl7.org/fhir/http.html#transactional-integrity)

- Before updating, the Care Plan Contributor SHALL read the latest version of the Care Plan;

- The Care Plan Contributor SHALL apply the changes (additions, updates, deletions) it 305   wants to the Care Plan, leaving all other information intact;

- The Care Plan Contributor SHALL write the Care Plan back as an update interaction, and is able to handle a failure response, commonly due to other Contributor Updates (usually by trying again).

If a Care Plan Contributor follows this pattern, then information from other systems that they do 310   not manage will be maintained through the update.

X.1.1.3 Care Plan Service

This actor manages Care Plans received from Care Plan Contributors, and provides updated Care Plans to subscribers.

As described above under the Care Plan Contributor, the Care Plan Service receives a Care Plan 315   and manages versions of the Care Plan as a whole. Note – the Care Plan Service SHALL support versioning of the CarePlan resource.

The Care Plan Service SHALL support the delete interaction for the Subscription resource. See: http://hl7.org/fhir/DSTU2/http.html#delete This enables a Care Plan Contributor to unsubscribe from updates for a care plan.

X.2 DCP Actor Options

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Options that may be selected for each actor in this profile, if any, are listed in Table X.2-1. Dependencies between options when applicable are specified in notes.

Table X.2-1: DCP - Actors and Options

Actor	Option Name	Reference
Care Plan Contributor	Subscribe to Care Plan Updates	3.Y.3
Care Plan Service	No options defined	--

325

X.2.1 Subscribe to Care Plan Updates

Support for this Subscribe to Care Plan Updates means that the optional Subscribe to Care Plan Updates [PCC-39] and the optional Provide Care Plan [PCC-40] are both supported.

The alternative to subscribing to care plan updates is a polling process, where a Care Plan
330   Contributor would periodically query for a CarePlan resource history and determine that a Retrieve Care Plan was necessary.

X.3 DCP Required Actor Groupings

335   **Table X.3-1: DCP - Required Actor Groupings**

DCP Actor	Actor to be grouped with	Reference	Content Bindings Reference
Care Plan Contributor	none		
Care Plan Service	none		--

X.4 DCP Overview

Care planning is needed to manage medically complex and/or functionally impaired individuals as they interact with the health care system. Often, these individuals require real time
340   coordination of the care as they receive care from multiple care providers and care settings. HL7[7] Care Plan Domain Analysis Model depicts the care plan as a tool used by clinicians to plan and coordinate care[8]. Effective care planning and care coordination for patient with complex health problems and needs are needed throughout the world. Both the European Union and the

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[7] HL7 is a registered trademark of Health Level Seven International.

[8] Care Plan Domain Analysis Model. (2015, November 5). Retrieved February 12, 2016, from
http://wiki.hl7.org/images/1/1d/PCWG_Care_Plan_DAM_Specification_-_Part_1_-_Draft_2015-11-04.pdf

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345 United States are currently working to encourage more effective use of information and communication technology to support the delivery of health services. This has led to the promotion of interoperability of health information and communication technology products and services.[9]

In the United States, providers and payers are interested in ensuring that patients are receiving effective and efficient care. The Medicare and Medicaid EHR incentive programs provide
350 financial incentives to care providers for the meaningful use of certified EHR technology that supports care coordination[10]. According to the United States Office of the National Coordinator for Health Information Technology's Connecting Health and Care for the Nation Shared Nationwide Interoperability Roadmap, "Providers also play a critical role in coordinating care with other providers in support of patients. However, coordinating care and engaging with multi-
355 disciplinary, cross-organization care, support and service teams has been incredibly difficult with the tools available today. Technology that does not facilitate the sharing and use of electronic health information that providers need, when they need it, which often creates additional challenges to care coordination. Additionally, care coordination via electronic means requires workflow changes for providers and their staff, particularly to close referral loops and ensure all
360 of an individual's health information is available to the entire care, support and services team. These workflow changes are not insignificant and must be overcome in order to enable interoperability."[11]

This profile depicts how multiple care plans can be shared and used to plan and coordinate care.

X.4.1 Concepts

365 Care plans have many different meanings to many different people. Each discipline has its own definition of what a care plan is and what it contains. Dynamic care planning expands the concept of care planning from being only discipline specific to an interdisciplinary process where all disciplines that care for the patient are able to share their plans of care, treatment plans, health issues, interventions and goals/outcomes, etc. for the patient. For a view of the Shared
370 Care Planning process, see
ftp://ftp.ihe.net/TF_Implementation_Material/PCC/DCP/Use%20Case%20Dynamic%20Care%20Planning%20Diagram.pptx

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[9] Transatlantic eHealth/health IT Cooperation Roadmap. (2015, November). Retrieved February 12, 2016, from https://www.healthit.gov/sites/default/files/eu-us-roadmap_final_nov2015_consultationversion.pdf

[10] Health IT Regulations: Meaningful Use Regulations. (2015, March 20). Retrieved February 12, 2016, from https://www.healthit.gov/policy-researchers-implementers/meaningful-use-regulations

[11] Connecting Health and Care for the Nation A Shared Nationwide Interoperability Roadmap. (2015, December 22). Retrieved February 12, 2016, from https://www.healthit.gov/sites/default/files/hie-interoperability/nationwide-interoperability-roadmap-final-version-1.0.pdf

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As identified in the IHE PCC Nursing White Paper to Advocate the Uptake of Patient Plan of Care and eNursing Summary Profiles July 2012, each clinical discipline's plan of care or treatment plan should be incorporated into one overarching central Care Plan for the patient.

In environments where there is no centralized care plan, this profile enables care team members to share the details of their specific care plans with other providers to coordinate care. For example, a payer or provider might share a care plan they have for a patient with the provider who is caring for them, or the payer who is covering the care of the patient using this profile, without any assumption that there is a centrally managed singular care plan for the patient.

X.4.2 Use Case

This profile reuses the HL7 Care Plan Domain Analysis Model specification storyboard 2: Chronic Conditions[12] with permission from HL7 Patient Care Work Group. The storyboard includes chronic disease management as well as a transition of care episode.

For the purpose of IHE profiling, the storyboard is being referred to as a use case.

X.4.2.1 Use Case: Chronic Conditions

The use case provides narrative description of clinical scenarios where the care plan is accessed, updated or used during care provision. For a process flow diagram of this entire use case, see the diagram at:
ftp://ftp.ihe.net/TF_Implementation_Material/PCC/DCP/DynamicCarePlanningFlow_chronicCondition.vsd

X.4.2.1.1 Chronic Conditions Use Case Description

The purpose of the HL7 chronic conditions care plan storyboard (use case) is to illustrate the communication flow and documentation of a care plan between a patient, his or her primary care provider, ancillary providers and specialists involved in the care and treatment of a case of Type II Diabetes Mellitus. It consists of four types of encounters (although in reality there could be many more encounters) which also include an episode of care in which transition of care occurs. The following encounters are depicted:

- Encounter A: Primary Care Physician Initial Visit
- Encounter(s) B: Allied Health Care Provider Visits/Specialist Visits
- Encounter(s) C: ED Visit with hospital admission (inpatient stay)
- Encounter D: Primary Care Follow-up post hospital discharge Visit

The use case contains the following actors and roles.

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[12] HL7 Care Plan Domain Analysis Model specification retrieved from
http://www.hl7.org/implement/standards/product_brief.cfm?product_id=435

- Primary Care Physician: Dr. Patricia Primary

- Patient: Mr. Bob Anyman

- Diabetic Educator: Ms. Edith Teaching

- Dietitian/Nutritionist: Ms. Debbie Nutrition

410
- Exercise Physiologist: Mr. Ed Active

- Pharmacist: Ms. Susan Script

- Optometrist: Dr. Victor Vision

- Podiatrist: Dr. Barry Bunion

- Psychologist: Dr. Larry Listener

415
- Emergency Department Physician: Dr. Eddie Emergent

- Hospital Attending Physician: Dr. Allen Attend

X.4.2.1.1.1 Encounter A: Primary Care Physician Initial Visit

Pre-conditions: Patient Mr. Bob Anyman attends his primary care physician (PCP) clinic because he has been feeling generally unwell in the past 7-8 months. His recent blood test results
420 reveal abnormal glucose challenge test profile.

Description of Encounter: Dr. Patricia Primary reviews Mr. Anyman's medical history, presenting complaints and the oral glucose tolerance test results and concludes the patient suffers from Type II Diabetes Mellitus (Type II DM). Dr. Primary accesses Mr. Anyman's medical record, and records the clinical assessment findings and the diagnosis.

425 Dr. Primary discusses with Mr. Anyman the identified problems, potential risks, goals, management strategies and intended outcomes. After ensuring that these are understood by the patient, Dr. Primary begins to draw up a customized chronic condition (Type II DM) care plan based on a standardized multi-disciplinary Type II DM care plan adopted for use by her practice. Agreed goals and scheduled activities specific for the care of Mr. Anyman are entered into the
430 care plan.

Dr. Primary also discusses with the patient the importance of good nutrition and medication management and exercise in achieving good control of the disease, as well as the criticality of good skin/foot care and eye care to prevent complications. Scheduling of consultations with diabetic educator, dietitian, exercise physiologist, community pharmacist, optometrist, and
435 podiatrist (allied health care providers) is discussed and agreed to by the patient. The frequency of visit to allied health care providers is scheduled according to the national professional recommendation for collaborative diabetes care. Dr. Primary also notices signs and symptoms of mood changes in the patient after the diagnosis is made. She recommends that the patient may benefit from seeing a clinical psychologist to which the patient also agrees.

440 Dr. Primary generates a set of referrals to these allied health care providers. The referrals contain information about the patient's medical history including the recent diagnosis of Type II diabetes, reasons for referral, requested services and supporting clinical information such as any relevant clinical assessment findings including test results. A copy of the care plan agreed to by the patient is made available with the referral.

445 **Post Condition:** Once the care plan is completed, it is committed to the patient's medical record. The patient is offered a copy of the plan.

A number of referrals in the form of notification/request for services together with the care plan are made available to the relevant health care providers.

The patient is advised to follow the referral practice/protocol specific to the local health care
450 system or insurance plan. For the first appointment, the patient may wait for scheduled appointments from the relevant health care providers to whom referral/request for services have been made, or may be able to schedule his own appointment using booking systems of the specialist or allied health providers.
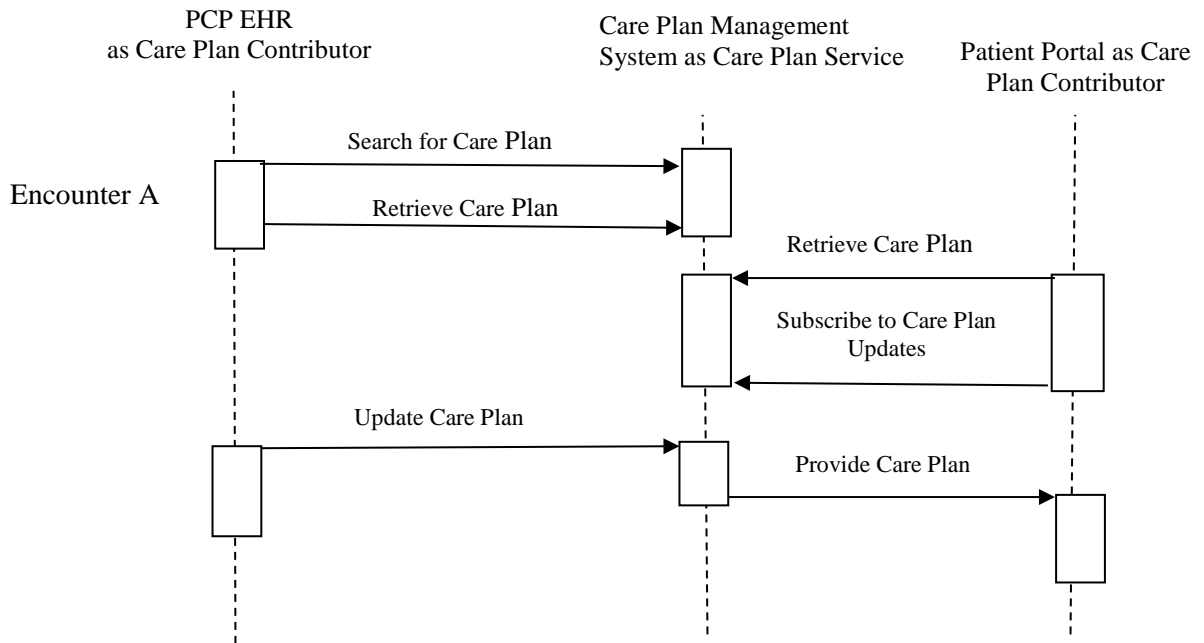
455

Figure X.4.2.1.1.1-1: Encounter A: Basic Process Flow in DCP Profile

X.4.2.1.1.2 Encounter(s) B: Allied Health Care Providers and Specialists

460 **Pre-conditions:** Mr. Anyman's allied health care providers and specialists have received a referral with copy of care plan from Dr. Patricia Primary.

The allied health care providers and specialists have accepted the referral and scheduled a first visit with the patient – Mr. Bob Anyman.

The case has been assigned to the following individual allied health care providers and referrals
465 made to the applicable specialists:

A. Ms. Edith Teaching (Diabetic Educator) for development and implementation of comprehensive diabetic education program and plan to ensure that the patient understands the nature of the disease, the problem, potential complications and how best to manage the condition and prevention of potential complications.

470 B. Ms. Debbie Nutrition (Dietitian/Nutritionist) for development and implementation of a nutrition care plan for diabetes to ensure effective stabilization of the blood glucose level with the help of effective diet control.

C. Mr. Ed Active (Exercise Physiologist) for development and implementation of an exercise regime.

475 D. In certain countries (e.g., Australia), the community pharmacist (Ms. Susan Script) provides patient with education on diabetic medications prescribed for the patient by Dr. Primary, and development and implementation of an effective and safe medication management program. The objectives are to gain and maintain effective control of the condition and to prevent hypo- and hyper- glycemic episodes.

480 E. Dr. Larry Listener (clinical psychologist) for counseling and to develop and implement an emotional support program; this includes a plan to reduce the impact of emotional stress brought about by the newly diagnosed condition and to improve the patient's psychological well-being. The plan may include enrolling patient in diabetic support group.

485 F. Dr. Victor Vision (Optometrist) for regular (e.g., 6 monthly) visual and retinal screening and to educate patient on the eye care and how best to prevent/minimize the risks of ocular complications.

G. Dr. Barry Bunion (Podiatrist) for education on the risks of foot complications and to develop and implement an effective foot care program including regular self-assessment,
490 care of the feet and follow-up visits.

Description of Encounter: The patient is registered at the allied health care provider/specialist's reception. Any additional or new information provided by the patient is recorded in the health care record system operated by the allied health provider clinic.

During the first consultation, the allied health care provider/specialist reviews the referral and
495 care plan provided by Dr. Primary.

During subsequent consultation, the allied health care provider/specialist reviews the patient's health care record and most recent care plan of the patient.

500 At each consultation, the allied health care provider reviews the patient's health record, assesses the patient, checks the progress and any risks of non-adherence (compliance) and complications, and discusses the outcomes of the management strategies and/or risks. Any difficulties in following the management strategies or activities by the patient are discussed. Any new/revised goals and timing, new intervention and self-care activities are discussed and agreed to by the patient. The new/changed activities are scheduled and target dates agreed upon.

505 The allied health care provider updates the clinical notes and the care plan with the assessment details, and any changes to the management plan including new advice to the patient. The date of next visit is also determined.

Table X.4.2.1.1.2-1: Allied Health Professionals/Specialists Encounters – Activities and Outcomes

Provider / Allied Health Provider	Encounter Activities	Outcomes	Communications
Diabetic Educator	Review referral/patient progress assess learning needs and strategy discuss and finalize education plan	Develop/update education plan Update clinical notes Generate progress notes	New/updated education plan to patient Summary care plan and progress note shared with primary care provider and other care providers,
Dietitian/Nutritionist	Review referral/patient progress Assess diet management needs and strategies Discuss and finalize diet management plan	Develop/update diet plan Weight assessment; Exercise plan Diet management plan; Referral to educator and exercise therapy if necessary Update clinical notes Generate progress notes	New/updated care plan to patient Summary care plan and progress note shared with primary care provider and other care providers, e.g., diabetic educator, exercise physiologist, etc.
Exercise Physiologist	Review referral/patient progress Assess exercise/activity needs and strategies Discuss and finalize exercise plan	Develop/update exercise plan: Weight assessment; exercise plan Update clinical notes Generate progress notes	New/updated exercise plan to patient Summary care plan and progress note shared with primary care provider and other care providers, e.g., diabetic educator, dietitian, etc.

Provider / Allied Health Provider	Encounter Activities	Outcomes	Communications
Community Pharmacist	Review patient medication profile Assess medication management (education, conformance, etc.) needs and strategies Discuss and finalize medication management plan	Develop/update medication management plan: patient current medication list assessment result; recommendation on meds management; referral to other provider(s) if necessary dispense record on dispensed meds Update clinical notes Generate progress notes	New/updated medication management plan to patient Summary care plan and progress note shared with primary care provider and to other care providers, e.g., diabetic educator, dietitian, etc.
Clinical Psychologist	Review referral/patient progress Assess emotional status, coping mechanisms and strategies Discuss and finalize psychological management plan	Develop/update psychological management plan: Emotion assessment; Psychotherapy session plan Update clinical notes Generate progress notes	New/updated psychological management plan to patient Summary care plan and progress note shared with primary care provider and other care providers, e.g., diabetic educator, dietitian, etc.
Optometrist	Review referral/patient progress Assess eye care needs and strategies Discuss and finalize eye care plan	Develop/update eye care plan: Regular eye checks for early detection of Diabetic retinopathy (1yearly to 2 yearly depending on national protocol and how advanced is DM) Stop smoking (prevent smoking related damage to eye cells) Wear sun glasses when in sun (prevent UV accelerating eye damage) – dispense prescription sun glasses if necessary; Referral to Dietitian/Nutritionist for counseling on diet rich in fruits and green leafy veg and Omega 3 fats along with effective weight control Update clinical notes Generate progress notes	New/updated eye care plan to patient Summary care plan and progress note shared with primary care provider and other care providers, e.g., diabetic educator, dietitian, etc.
Podiatrist	Review referral/patient progress Assess foot care needs and strategies Discuss and finalize foot care plan	Develop/update foot care plan Foot assessment Foot care plan Update clinical notes Generate progress notes	New/updated foot care plan to patient Summary care plan and progress note shared with primary care provider and other care providers, e.g., diabetic educator, dietitian, pharmacist, etc.

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Post Condition: An updated allied health domain specific care plan complete with action items and target dates is completed with patient agreement.

The patient is provided a copy of the new/updated care plan at the end of each allied health/specialist consultation.

515   Updates to the care plan are supported by workflow, where for example at the end of each consultation a progress note is written by the allied health provider/specialist which documents the outcomes of the assessment, any new risks identified and changes to or new management strategies that have been included in the updated care plan. This allied health domain specific progress note is shared with the patient's primary care provider, Dr. Primary. Any care

520   coordination responsibilities required of Dr. Primary is also communicated.

The progress note may also be shared with any other allied health care provider(s) who may need to be informed about changes in risks, goals, and management plan that are relevant to the ongoing management of the patient. For example, a progress note from a dietitian/nutritionist may contain clinical information that may need to be considered by the diabetic educator.
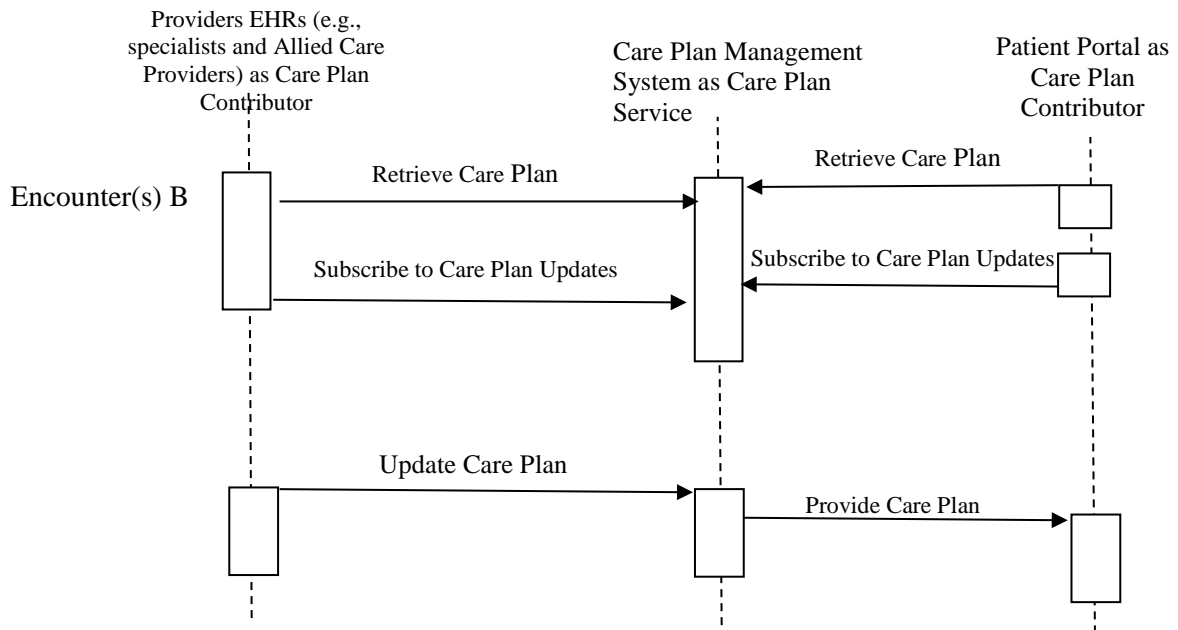
525

Figure X.4.2.1.1.2-1: Encounter(s) B: Basic Process Flow in DCP Profile

530   **X.4.2.1.1.3 Encounter(s) C: ED Visit and Hospital Admission**

Pre-Condition: Mr. Bob Anyman took a 3-month holiday in Australia during the southern hemisphere spring season, missed the influenza immunization window in his northern

hemisphere home country, and forgot about the immunization after he returned home. He develops a severe episode of influenza with broncho-pneumonia and very high blood glucose level (spot BSL = 23 mM) as complications. He suffers from increasing shortness of breath on a Saturday afternoon.

Mr. Anyman presents himself at the emergency department of his local hospital as Dr. Primary's clinic is closed over the weekend.

Description of Encounter: Mr. Anyman is admitted to the hospital and placed under the care of physicians from the general medicine clinical unit.

During the hospitalization, the patient is given a course of IV antibiotics and insulin injections to stabilize the blood glucose level. The patient was assessed by the hospital attending physician, Dr. Allen Attend, as medically fit for discharge after four days of inpatient care. Dr. Attend reconciles the medication treatment during inpatient care, creates a discharge medication list, outlines follow up information and discusses post discharge care with the patient. He recommends the patient to consider receiving influenza immunization before the next influenza session and updates this as recommendation to Dr. Primary in the patient's discharge plan.

Planning for discharge is initiated by the physician and the nurse assigned to care for the patient soon after admission as per hospital discharge planning protocol. The discharge plan is finalized on the day of discharge and a discharge summary is generated.

Post Condition: The patient's discharge care plan is completed. This plan may include information on changes to medications, management recommendations to the patient's primary care provider and the patient, and any health care services that are requested or scheduled.

The patient is given a copy of the discharge summary that includes the discharge care plan.

A discharge summary and the discharge care plan are shared with the patient's primary care provider, Dr. Primary with recommendation for pre-influenza season immunization.

Note: The process flow pattern for this encounter is the same as encounter(s) B. See Figure X.4.2.1.1.2-1.

X.4.2.1.1.4 Encounter D: Primary Care Follow-up Visits

Pre-Condition: Patient Mr. Bob Anyman is scheduled for a post-hospital discharge consultation with his primary care provider, Dr. Primary.

Mr. Anyman is seen by Dr. Primary at her clinic on the day of appointment.

The discharge summary information from the hospital is incorporated into the patient's medical record and is ready for Dr. Primary to review at the consultation.

Description of Encounter: Primary Care Physician Dr. Patricia Primary reviews patient Mr. Anyman's hospital discharge summary and discusses the pre-influenza season immunization recommendation with the patient. The patient agrees with the recommendation. The care plan is updated.

Dr. Primary notices that the patient has gained extra weight and the blood sugar level has not quite stabilized after discharge from hospital. Dr. Primary reviews the care plan and discusses
570   with patient the plan to change the diet and medication. Patient agrees. The care plan is updated.

Dr. Primary issues a new prescription to the patient, and asks the patient to make an early appointment to see the dietitian to discuss new nutrition management strategy and plan.

Dr. Primary generates progress notes with nutrition management and exercise change recommendations are generated by Dr. Primary and shared with the patient's dietitian. The care
575   plan is updated and shared with relevant allied health providers.

Dr. Primary changes patient's follow-up visits from four monthly to two monthly for the next two appointments with the aim to review the follow-up frequency after that.

Post Condition: A new prescription is shared with the patient's community pharmacy. Ms. Script will discuss the new medication management plan with the patient when he goes to pick
580   up his medications.

The patient also makes an early appointment to see the dietitian and exercise physiologist. A copy of progress notes from Dr. Primary will be made available to the dietitian and exercise physiologist before the scheduled appointment.

Patient gets a copy of the updated care plan, and a copy of the plan is also shared with relevant
585   allied health providers.

Note: The process flow pattern for this encounter is the same as encounter A. See Figure X.4.2.1.1.1-1.

X.5 DCP Security Considerations

In many other uses of the HTTP/REST pattern, applications are accessing far less sensitive information than patient identifiers and protected health information. When the mobile
590   environment comes into use, the challenges of security and privacy controls are unique, simply because the devices are harder to physically control. The DCP Profile provides access to the patient identifiers and other protected health information managed in healthcare. These factors present a unique and difficult challenge for the security model. It is recommended that application developers utilize a Risk Assessment in the design of the applications, and that the
595   operational environment utilize a Risk Assessment in the design and deployment of the operational environment. See FHIR DSTU2 Security http://hl7.org/fhir/DSTU2/security.html.

There are many reasonable methods of security for interoperability transactions, which can be implemented without modifying the characteristics of the DCP Profile transactions. The use of TLS is encouraged, as is the use of the ATNA Profile (see ITI TF-1:9).

600   User authentication on mobile devices and browsers is typically handled by more lightweight authentication schemes such as HTTP Authentication, OAuth, or OpenID Connect. IHE has a set of profiles for user authentication including: Enterprise User Authentication (EUA) on devices using HTTP and Internet User Authorization (IUA) for REST-based authentication. In all of these cases, the network communication security, and user authentication are layered in the

605   HTTP transport layer and do not modify the interoperability characteristics defined in the DCP Profile. The use of strong trust keys is encouraged.

Actors in the DCP Profile should make use of the audit logging (ATNA) Profile. However, support for ATNA-based audit logging on mobile devices and lightweight browser applications may be beyond their ability. The operational environment must choose how to mitigate the risk

610   of relying only on the service-side audit logging on the Care Plan Service. It is recommended that DCP Actors implement the Internet User Authentication (IUA) Profile, incorporating the subject of the IUA token in audit messages.

The Resource URL pattern defined in this profile means many requests may include Patient ID, names, or other demographic data as parameters for query. The advantage of this pattern is ease

615   of implementation and clear distinction of a patient's identity. The URL pattern does present a risk when using typical web server audit logging of URL requests and browser history. In both of these cases the URL with the Patient ID or Name query parameters is clearly visible.

X.6 DCP Cross Profile Considerations

A Content Consumer in Patient Care Coordination might be grouped with a Care Plan

620   Contributor to enable the filtering and display of Care Plan content. A Content Creator might be grouped with a Care Plan Contributor to enable the creation or update of clinical content. A Reconciliation Agent might be grouped with a Care Plan Contributor and also with a Care Plan Contributor to facilitate the reconciliation processes. As mentioned in the security considerations section, a Secure Node in the ATNA Profile might be grouped with any and all of the actors in

625   this profile.

Appendices

630 # Volume 2 – Transactions

Add Section 3.37

3.37 Update Care Plan [PCC-37]

3.37.1 Scope

This transaction is used to update or to create a care plan. A CarePlan resource is submitted to a
635 Care Plan Service where the update or creation is handled.

3.37.2 Actor Roles
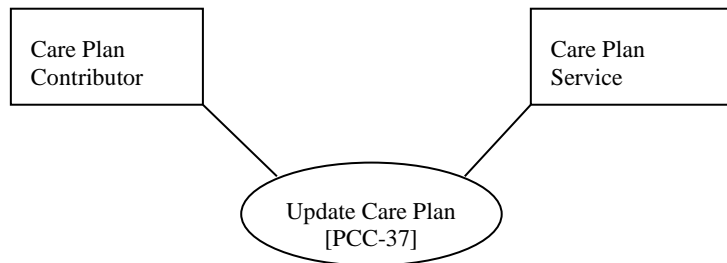
Figure 3.Y.2-1: Use Case Diagram

640

Table 3.Y.2-1: Actor Roles

Actor:	Care Plan Contributor
Role:	The Care Plan Contributor submits a care plan that is updated, or needs to be created.
Actor:	Care Plan Service
Role:	The Care Plan Service receives submitted care plans for management as per FHIR Resource Integrity management.

3.37.3 Referenced Standards

HL7® FHIR® standard DSTU 2.0

645 ## 3.37.4 Interaction Diagram

3.37.4.1 Update Care Plan

The Care Plan Contributor submits a care plan that has been edited to a Care Plan Service. The
Care Plan Service handles the FHIR CarePlan Resource according to FHIR Resource integrity.

650 ### 3.37.4.1.1 Trigger Events
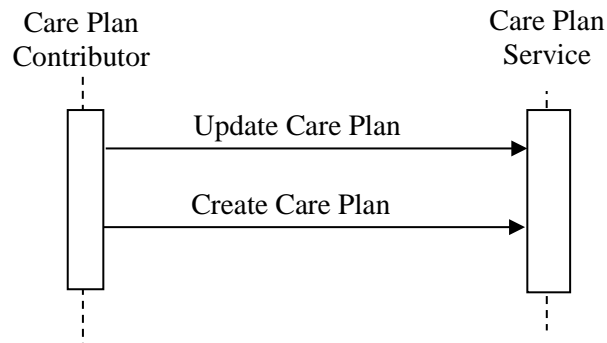
An existing care plan has been edited, and the set of activity for the care plan are to be
committed to a Care Plan Service.

3.37.4.1.2 Message Semantics

This is an HTTP or HTTPS PUT of a CarePlan resource, as constrained by this profile.

655 The base URL for this is: [base]/CarePlan/[id]

Where the body of the transaction contains the CarePlan resource.

See: http://hl7.org/fhir/http.html#update

3.37.4.1.3 Expected Actions

When updating an existing care plan, the Care Plan Contributor shall merge changes into a
660 recently received CarePlan, leaving unchanged content unaltered.

If the Care Plan Service returns an error to the Update Care Plan transaction, as would happen if
the version of the CarePlan is old, then the Care Plan Contributor should perform the steps of
Retrieve Care Plan, merge changes, and then attempt Update Care Plan again. For example, two
providers retrieved copies of a care plan, one after another, and then attempt to update the care
665 plan later.

Since the Care Plan Service SHALL support versioning of the CarePlan resouces, the response SHALL contain meta.versionId. See: http://hl7.org/fhir/DSTU2/http.html#create details on the response from the Care Plan Service.

3.37.4.2 Create Care Plan

670   The Care Plan Contributor submits a newly created care plan to a Care Plan Service.

3.37.4.2.1 Trigger Events

Newly created care plan content is ready to be saved to a Care Plan Service.

3.37.4.2.2 Message Semantics

This is an HTTP or HTTPS POST of a CarePlan resource, as constrained by this profile.

675   The base URL for this is: [base]/CarePlan

Where the body of the transaction contains the CarePlan resource.

See: http://hl7.org/fhir/http.html#create

3.37.4.2.3 Expected Actions

The Care Plan Service responds, with success or error, as defined by the FHIR RESTful create
680   interaction. See: http://hl7.org/fhir/http.html#create

3.37.5 Security Considerations

See X.5 DCP Security Considerations

3.38 Retrieve Care Plan [PCC-38]

3.38.1 Scope

685   This transaction is used to retrieve a specific care plan using a known FHIR CarePlan resource id.
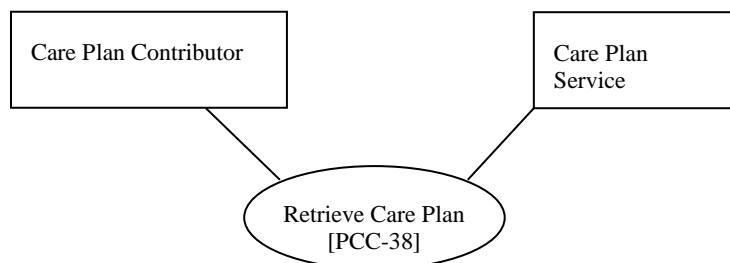
3.38.2 Actor Roles

Figure 3.38.2-1: Use Case Diagram

690

Table 3.38.2-1: Actor Roles

Actor:	Care Plan Contributor
Role:	The Care Plan Contributor requests a specific care plan using the CarePlan id
Actor:	Care Plan Service
Role:	The Care Plan Service returns the requested CarePlan resource, or an error if the requested id does not exist.

3.38.3 Referenced Standards

HL7® FHIR® standard DSTU 2.0

3.38.4 Interaction Diagram
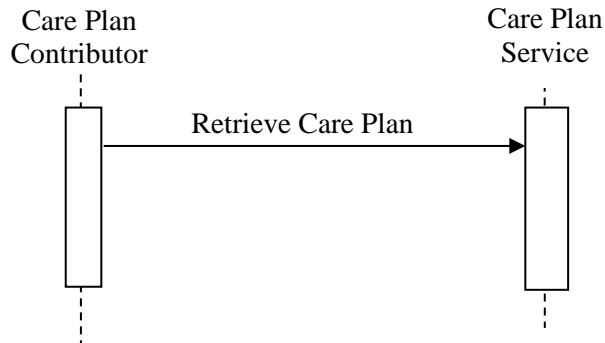
695

3.38.4.1 Retrieve Care Plan

The Care Plan Contributor retrieves a specific care plan from the Care Plan Service.

3.38.4.1.1 Trigger Events

Any time a specific care plan needs to be retrieved, for the purposes of viewing or in conjunction
700   with the preparation for an update to a care plan.

3.38.4.1.2 Message Semantics

The message is a FHIR HTTP or HTTPS GET of a CarePlan resources where the parameter provided is the CarePlan.id with an option to ask for a specific version of the given CarePlan

The URL for this operation is: [base]/CarePlan/[id]

705 or, if this is an historical, version specific retrieval: [base]/CarePlan/[id]/_history/[vid]

3.38.4.1.3 Expected Actions

The Care Plan Contributor initiates the retrieve request using HTTP or HTTPS GET, and the Care Plan Service responds according to the FHIR GET specification with the requested care plan or an error message. See: http://hl7.org/fhir/DSTU2/http.html#read

710 ### 3.38.5 Security Considerations

See X.5 DCP Security Considerations.

3.39 Subscribe to Care Plan Updates [PCC-39]

3.39.1 Scope

This transaction is used to subscribe to updates made to a Care Plan. As noted in TF-1:X-1.1.3,
715 the Care Plan Service SHALL support RESTful delete, as well as the following messages for creating and updating a Subscription.

3.39.2 Actor Roles
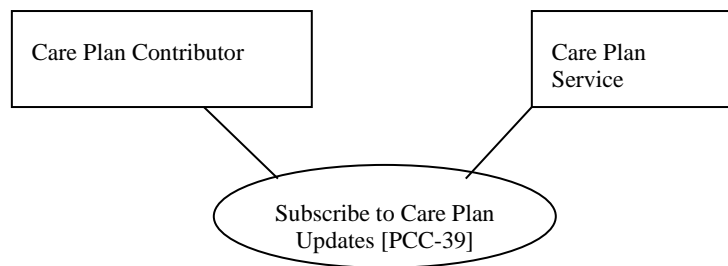
Figure 3.39.2-1: Use Case Diagram

720

Table 3.39.2-1: Actor Roles

Actor:	Care Plan Contributor
Role:	The Care Plan Contributor subscribes to updates based upon changes to a CarePlan resource.
Actor:	Care Plan Service
Role:	The Care Plan Service evaluates the involved resources of the Subscription and uses the defined channel to notify a Care Plan Contributor about changes.

3.39.3 Referenced Standards

HL7® FHIR® standard DSTU 2.0

3.39.4 Interaction Diagram

725

Care Plan Contributor   Care Plan Service

Subscribe to Care Plan Updates
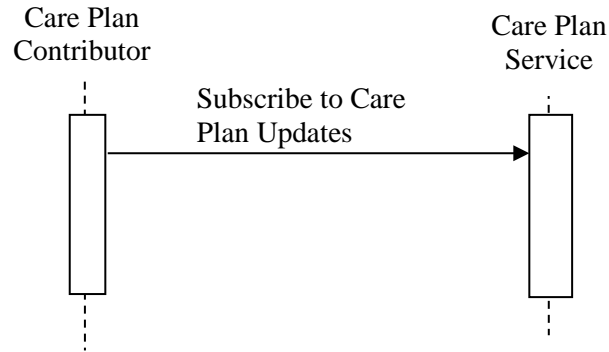
3.39.4.1 Subscribe to Care Plan Updates

A Care Plan Contributor may choose to receive updates as CarePlan resources are changed by using the Subscribe to Care Plan Updates transaction.

730   When the criteria of a subscription request are satisfied, the Care Plan Service sends the entire Care Plan resource, using the Provide Care Plan [PCC-40] transaction to the subscribing Care Plan Contributor.

3.39.4.1.1 Trigger Events

Subscribing to Care Plan Updates is a business and workflow decision, and the use of this is
735   optional in the DCP Profile.

The Subscription criteria, used to trigger updates, may be simple or complex.

A simple Subscription criteria includes only query parameters about a CarePlan resource, such as the id. A simple Subscription criteria results in notifications of changes to the CarePlan resource itself, but the subscription update would not be triggered by changes to a resource referenced by
740   the care plan.

A complex Subscription criteria contains chained parameters, such as parameters about resources that are referenced within the CarePlan. For example, chaining parameters about a goal referenced from a CarePlan results in notifications of changes to either the CarePlan or to the referenced goal.

745   ### 3.39.4.1.2 Message Semantics

This is an HTTP or HTTPS POST of a Subscription resource, as constrained by this profile.

The base URL for this is: [base]/Subscription

Where the body of the transaction contains the Subscription resource.

See: http://hl7.org/fhir/subscription.html

750 **3.39.4.1.3 Expected Actions**

The Care Plan Contributor shall check the response from the Care Plan Service. See http://hl7.org/fhir/DSTU2/http.html#create for details.

The Care Plan Service shall check that the Subscription resource meets the constraints defined by this profile, in PCC TF-3: 6.6.2.

755 When a Subscription resource is accepted, the Care Plan Service sets the status to "requested" and returns in the Location header the Subscription's logical id for use in future operations. This logical id shall be saved by the Care Plan Contributor.

A Subscription may be rejected by the Care Plan Service for a number of reasons, such as if the Subscription is incomplete or does not meet the requirements of this profile as in PCC TF-3:
760 6.6.2

As per FHIR POST protocol, a rejected transaction results in the return of a 406 – rejected HTTP response.

3.39.4.2 Update Subscription to Care Plan Updates

An existing subscription may be updated by a Care Plan Contributor, for example to refine the
765 search criteria.

3.39.4.2.1 Trigger Events

An existing subscription needs to be updated.

3.39.4.2.2 Message Semantics

This is an HTTP or HTTPS PUT of a Subscription resource, as constrained by this profile.

770 The base URL for this is: [base]/Subscription/[id]

Where the body of the transaction contains the Subscription resource.

See: http://hl7.org/fhir/DSTU2/http.html#update

3.39.4.2.3 Expected Actions

See http://hl7.org/fhir/DSTU2/http.html#update

775 **3.39.5 Security Considerations**

See X.5 DCP Security Considerations

3.40 Provide Care Plan [PCC-40]

3.40.1 Scope

780 This transaction is used to provide an updated CarePlan resource to a Care Plan Contributor that has subscribed to updates.

3.40.2 Actor Roles
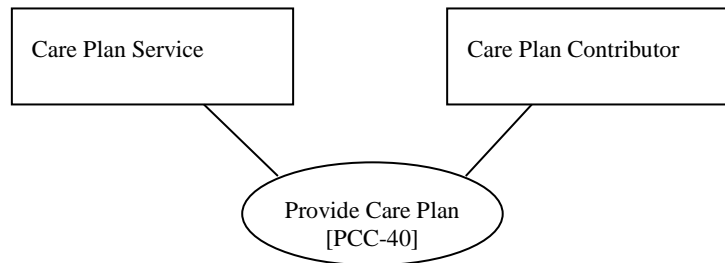
Figure 3.40.2-1: Use Case Diagram

785

**Table 3.40.2-1: Actor Roles**

Actor:	Care Plan Service
Role:	The Care Plan Service provides updated CarePlan resources to subscribed Care Plan Contributors.
Actor:	Care Plan Contributor
Role:	The Care Plan Contributor that has subscribed to care plan updates receives updates of changed CarePlan resources.

3.40.3 Referenced Standards

HL7® FHIR® standard DSTU 2.0

3.40.4 Interaction Diagram
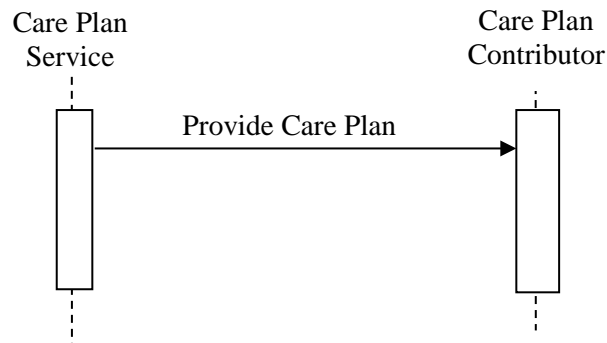
790

3.40.4.1 Provide Care Plan

The Care Plan Service sends a CarePlan resource to the endpoint specified in the Subscription resource.

3.40.4.1.1 Trigger Events

795   A change to a resource causes a Subscription Criteria to evaluate as true, so the Care Plan Service sends the updated CarePlan resource to the designated endpoint.

3.40.4.1.2 Message Semantics

This is an HTTP or HTTPS POST of a CarePlan resource, as constrained by this profile.

The base URL for this is specified in the registered Subscription resource.

800   Where the body of the transaction contains the CarePlan resource.

See: http://hl7.org/fhir/subscription.html

3.40.4.1.3 Expected Actions

The Care Plan Contributor receives the CarePlan resource in the body of the POST.

3.40.5 Security Considerations

805   See X.5 DCP Security Considerations

3.41 Search for Care Plan [PCC-41]

3.41.1 Scope

This transaction is used to find a care plan. The Care Plan Contributor searches for a care plan of interest. A care plan located by search may then be retrieved for viewing or updating.

810 ### 3.41.2 Actor Roles
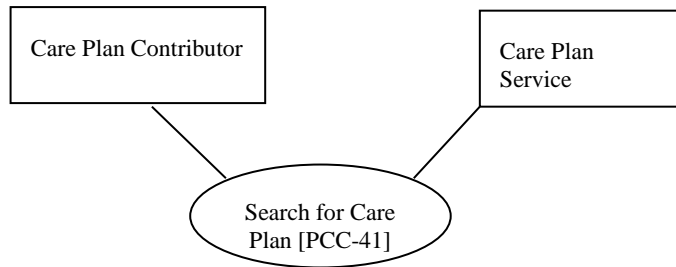
Figure 3.41.2-1: Use Case Diagram

Table 3.41.2-1: Actor Roles

Actor:	Care Plan Contributor
Role:	The Care Plan Contributor initiates Search for Care Plan in order to locate a care plan of interest.
Actor:	Care Plan Service
Role:	The Care Plan Service responds to the Search for Care Plan according to the search parameters and values provided in the transaction.

815

3.41.3 Referenced Standards

HL7® FHIR® standard DSTU 2.0

3.41.4 Interaction Diagram

820 ### 3.41.4.1 Search for Care Plan

The Search for Care Plan is implemented through the FHIR search operation using the REST platform constrained to the HTTP or HTTPS GET.

3.41.4.1.1 Trigger Events

The Search for Care Plan may be initiated for a number of different reasons:

825
1. need to view a care plan;
2. need to update a portion of a care plan
3. need to subscribe to updates for a care plan

3.41.4.1.2 Message Semantics

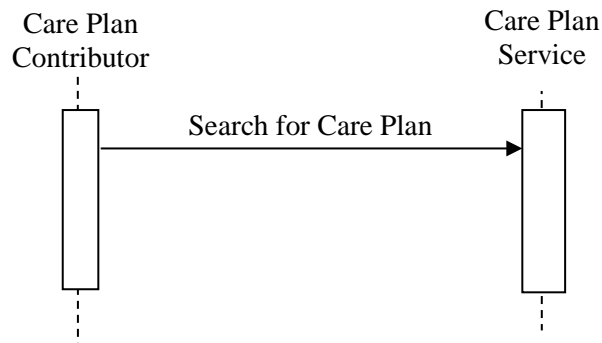This is a standard FHIR search operation on the CarePlan resource. It SHALL use the HTTP or
830 HTTPS GET protocol

The URL for this operation is: [base]/CarePlan/_search

See the FHIR CarePlan resource Search Parameters at http://hl7.org/fhir/careplan.html#search

3.41.4.1.3 Expected Actions

The Care Plan Contributor initiates the search using HTTP or HTTPS GET, and the Care Plan
835 Service responds according to the FHIR Search specification with zero or more care plans that match the search parameter values supplied with the search message. Specifically, the Care Plan Service returns a bundle as the HTTP Response, where the bundle includes the resources that are the results of the search.

3.41.5 Security Considerations

840 See X.5 DCP Security Considerations.

Appendices

None

Volume 2 Namespace Additions

845 | *Add the following terms to the IHE General Introduction Appendix G:* |

None

850

Volume 3 – Content Modules

5 Namespaces and Vocabularies

Add to Section 5 Namespaces and Vocabularies

NA

Add to Section 5.1.1 IHE Format Codes

855   NA

Add to Section 5.1.2 IHE ActCode Vocabulary

NA

Add to Section 5.1.3 IHE RoleCode Vocabulary

_____

6 Content Modules

860 ## 6.3.1 Content Modules

NA

6.6 HL7 FHIR® Content Module

6.6.1 Care Plan

The following table shows the DynamicCarePlan StructureDefinition, which constrains the
865 CarePlan resource. Constraints applied to the CarePlan base resource by this profile are shown in
bold. The xml of the StructuredDefinition is available here.

Table 6.6.1-2: CarePlan resource

Name	Card.	Description & Constraints	Comments
.. CarePlan		Healthcare plan for patient	
...identifier	1..*	External Ids for this plan	**This version of the profile requires at least one identifier.**
...subject	1..1	**Identifies the patient.**	**For this version of the profile, the use of group is not supported.**
...status	1..1	proposed | draft | active | completed | cancelled	
		CarePlanStatus (Required)	
...context	0..1	Created in context of	**This profile allows for CarePlan creation outside of the context of an encounter or episode.**
...period	1..1	Time period plan covers	**This version of the profile requires at least a start time for the CarePlan.**
...author	1..*	Who is responsible for contents of the plan	**This version of the profile requires at least one author.**
...modified	1..1	When last updated	**This version of the profile requires modified to indicate how current the plan is.**

_____

Name	Card.	Description & Constraints	Comments
...category	**1**..*	Type of plan	**This version of the profile fixes the code system to Snomed; http://snomed.info/sct**
...description	**1**..1	Summary of nature of plan	**This version of the profile requires a description**
...addresses	**1**..*	Health issues this plan addresses	**This version of the profile requires one of more addressed conditions/problems/concerns/diagnoses**
...support	0..*	Information considered as part of plan	
...relatedPlan	0..*	Plans related to this one	**This version of the profile requires that a related DynamicCarePlan be referenced when it is a relatedPlan.**
....code	0..1	includes | replaces | fulfills	
		CarePlanRelationship (Required)	
....plan	1..1	Plan relationship exists with	
...participant	**1**..*	Who's involved in plan?	
....role	0..1	Type of involvement	
		Participant Roles (Example)	
....member	**1**..1	Who is involved	**This version of the profile requires a member declaration.**
...goal	**1**..*	Desired outcome of plan	**This version of the profile requires at least one Goal.**
...activity	0..*	Action to occur as part of plan	
		Provide a reference or detail, not both	
....actionResulting	0..*	Appointments, orders, etc.	
....progress	0..*	Comments about the activity status/progress	
....reference	0..1	Activity details defined in specific resource	
....detail	0..1	In-line definition of activity	
.....category	0..1	diet | drug | encounter | observation | procedure | supply | other	
		CarePlanActivityCategory (Example)	

Name	Card.	Description & Constraints	Comments
.....code	0..1	Detail type of activity	
		Care Plan Activity (Example)	
.....reasonCode	0..*	Why activity should be done	
		Activity Reason (Example)	
.....reasonReference	0..*	Condition triggering need for activity	
.....goal	0..*	Goals this activity relates to	
.....status	0..1	not-started | scheduled | in-progress | on-hold | completed | cancelled	
		CarePlanActivityStatus (Required)	
.....statusReason	0..1	Reason for current status	
		GoalStatusReason (Example)	
.....prohibited	1..1	Do NOT do	
.....scheduled[x]	0..1	When activity is to occur	
......scheduledTiming			
......scheduledPeriod			
......scheduledString			
.....location	0..1	Where it should happen	
.....performer	0..*	Who will be responsible?	
.....product[x]	0..1	What is to be administered/supplied	
		SNOMED CT Medication Codes (Example)	
......productCodeableConcept			
......productReference			
.....dailyAmount	0..1	How to consume/day?	
.....quantity	0..1	How much to administer/supply/consume	
.....description	0..1	Extra info describing activity to perform	
...note	0..1	Comments about the plan	

6.6.2 Subscription

870   The following table documents the CarePlanSubscription, which constrains the Subscription
        resource. Changes to the base Subscription resource are shown in bold. The xml of the
        StructuredDefinition is available here.

Table 6.6.2-1: Subscription resource

Name	Card.	Description	Comments
.. Subscription		A server push subscription criteria	
...criteria	1..1	Rule for server push criteria	
...contact	0..*	Contact details for source (e.g., troubleshooting)	
...reason	1..1	Description of why this subscription was created	
...status	1..1	requested | active | error | off	
		SubscriptionStatus (Required)	
...error	0..1	Latest error note	
...channel	1..1	The channel on which to report matches to the criteria	
....type	1..1	**rest-hook**	**This version of the profile constrains the channel type to rest-hook**
		SubscriptionChannelType (Required)	
....endpoint	**1**..1	Where the channel points to	**This version of the profile constrains the channel type to rest-hook, the endpoint must be a valid URL for the Provide Care Plan [PCC-40] transaction.**
....payload	1..1	Mimetype to send	**This version of the profile constrains the channel payload to a non-blank value - the CarePlan resource must be the payload.**
....header	0..1	Usage depends on the channel type	
...end	0..1	When to automatically delete the subscription	
...tag	0..*	A tag to add to matching resources	
		SubscriptionTag (Example)	

875

Appendices

None

Volume 3 Namespace Additions

Add the following terms to the IHE Namespace:

880   None

Volume 4 – National Extensions

Add appropriate Country section

None