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HL7 Implementation Guide for CDA Release 2.0 Appointment Document

(Danish profile – DK APD)

Draft for Trial Use

Release 2.0

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Revision History			
Release	**Author**	**Date**	**Notes**
1.0	MedCom	22.05.2017	Draft for trial use
1.1	MedCom	08.06.2018	Added HL7 version 3 status codes and removed "Cancelled" status and corrected erroneous cardinality for effectiveTime(section 5.1) finally added a figure of the DK-APD structure)
2.0_draft	MedCom	16.08.2019	Updated after pilot test
2.0_draft_2	MedCom	18.09.2019	Updated after review
2.0	MedCom	04.11.2019	Changes from DK-APD1.1 and IG 1) Added EpisodeOfCareLabel to data content in section 1.2.2 2) Only status "active" is allowed as encounter status 3) Encounter.code reflects if created by regional, munipalicy or practitioner 4) Added CDA APD version in CDA header 5) Added information regarding if appointment is part of a repetition pattern 6) Added possible to show appointment interval as guiding 7) DK Header effectiveTime has added templateId 1.2.208.184.200.1.11 8) Added CDA APD document version information in the CDA header

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1   INTRODUCTION

1.1   Audience

The audience for this document includes software developers and implementers of products and services for publishing of patient health care appointments. This includes public and private disease management organizations as well as local, regional, and national health information exchange networks that wish to create and process appointment documents created according to this specification.

1.2   Purpose

This document is a Danish profile of the Clinical Document Architecture (CDA) Release 2, Consolidated CDA Template for Clinical Notes, August 2015, Planned Encounter V2.

The purpose of this specification is to facilitate the communication of patient health care appointments between applications. Such communication of an appointment is instances of the performance of a service. An appointment describes the "why", the "who" and the "when" and consists of an intended health care service, for a period of time, for a specific reason at a specific location.

A specific use of this specification is to make it possible to show all the citizens health care appointment at Sundhed.dk. This access will provide a common collected overview for health care appointments for the individual citizens and for the health professionals involved in the citizen's treatment.

1.2.1   Application roles and typical use cases

In this specification, there are three roles that an application can assume: a filler application role, a placer application role, and an auxiliary application role.
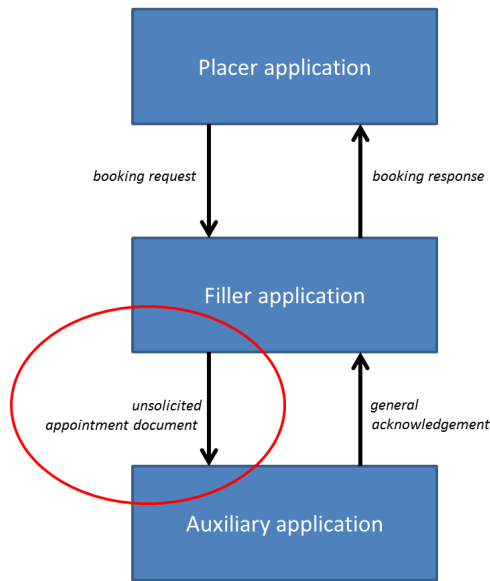
Figure 1. Application role relationships.

These application roles define the interaction that an application will have with other applications. In this specification, the definition of application roles is not intended to define or limit the functionality of specific products developed by vendors of such applications. Instead, this information is provided to help define the model used to develop this specification, and to provide an unambiguous way for applications to communicate with each other.

Application type	Role
Placer application	A placer application requests the booking, modification, cancellation, etc., of a scheduled activity for a health care service. Because it cannot exert any control over the schedule for that resource, it must send its requests to the filler application. Example: A booking request is sent from the Electronic Health Record system to the booking system.
Filler application	A filler application is one that "owns" one or more schedules for one or more health care services. In other words, a filler application exerts control over a certain set of services and the schedules that define the availability of those services or resources. The filler application either fulfills or denies requests to book slots, or to modify the schedules for the services over which it exerts control. Finally, the filler application also provides information about scheduled activities to other applications. Example: A booking confirmation is sent from the booking system to the Electronic Health Record system. The booking confirmation triggers the preparation of an Appointment Document (following the specification in this document). The Appointment

Application type	Role
	Document is sent unsolicited to the Auxiliary application.
Auxiliary application	An auxiliary application passively collects information by receiving unsolicited updates from a filler application. It is only concerned with gathering information about appointments and has no possibilities in changing or controlling appointments in any way. Example: Received Appointment Documents are archived in an XDS repository and the corresponding XDS index is updated.

1.2.2 Data content

The data elements for an appointment include the following:

Content	Description
Appointment identification code	A unique appointment code, generated by the filler system
Document identification code	A unique document code, generated by the filler system
Patient	The person who are booked for a health care service.
Appointment requester	The organization/person who have ordered the appointment
Appointment responsible	The health care organization responsible for fulfilling the appointment
Appointment performer	The responsible performing health care organization/person for the appointment. The performing health care organization is often the appointment responsible
Start date and time	Start date and time when the appointment is planned to take place
End date and time	End date and the time when the appointment is planned to conclude
Location	The visit address for the appointment
Reason	The medical reason for the appointment
Status	The status of the document (always "active")
Version	The CDA APD document version
Information regarding LPR3 episode of care label	Possible episode of care label information
Information regarding repetition pattern	Possible information that may link appointments with the same repetition pattern
Information regarding guiding interval	Possible information if the appointment interval shall be displayed as guiding

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The link between the data elements and the Clinical Document Architecture structure is shown in appendix A.

The following figure shows the structure of the DK CDA Appointment.
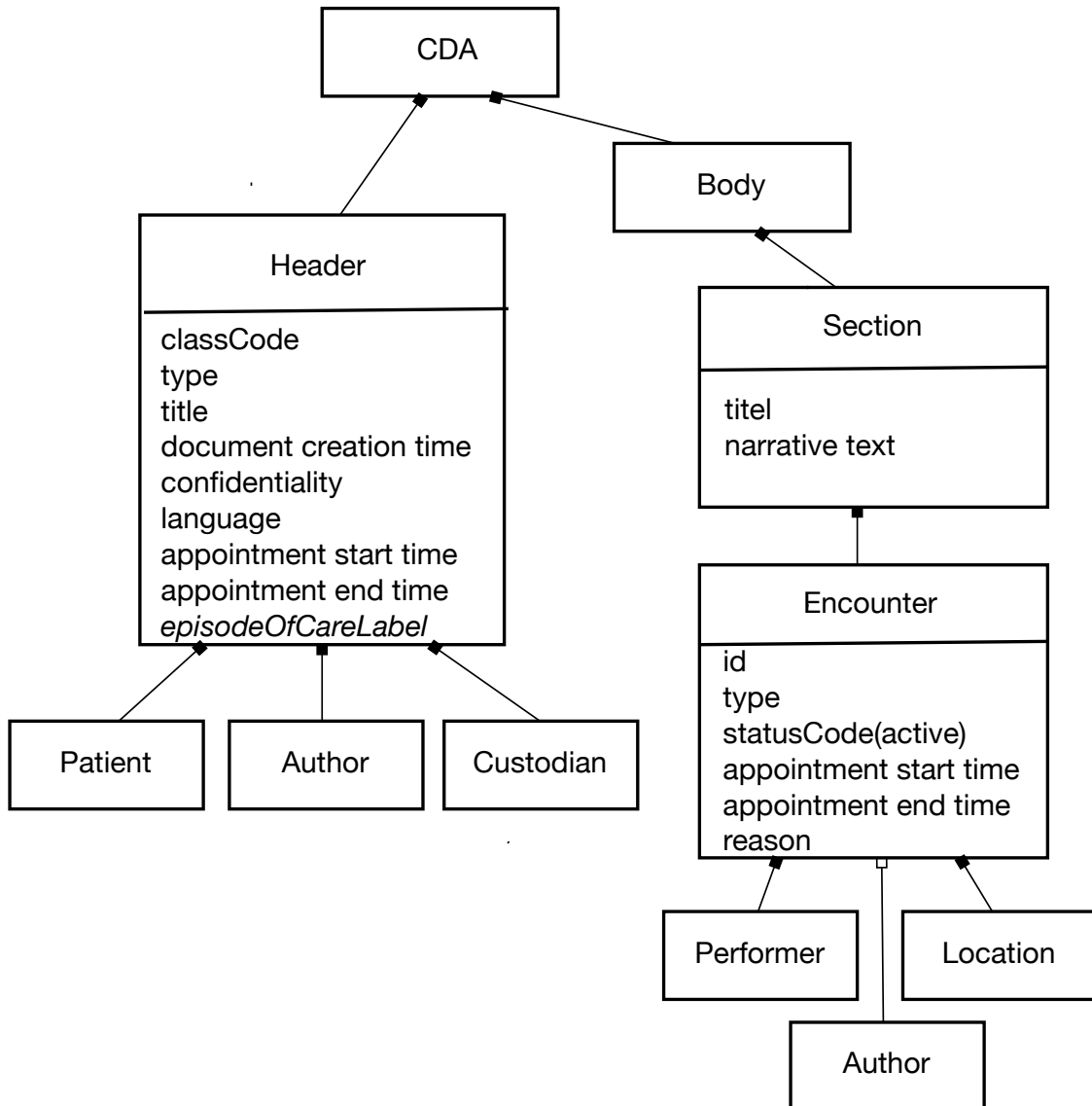
Figure 2: DK CDA Appointment structure.
A closed connection is a mandatatory segments and italics are optional elements.

1.3   Scope

This implementation guide is a conformance profile, as described in the "Refinement and Localization"[i] section of the *HL7 Version 3 Interoperability Standards*. The base standard for this implementation guide is the *HL7 Clinical Document Architecture, Release 2.0*[ii].
This implementation guide does not describe every aspect of the CDA. Rather, it defines constraints on the base C-CDA used for the Danish Appointment Document (DK APD) profile.

1.4   Approach

Overall, the approach taken here is consistent with balloted implementation guides (IGs) for CDA. These publications view the ultimate implementation specification as a series of layered constraints. CDA itself is a set of constraints on the Health Level Seven (HL7) Reference Information Model (RIM). Implementation guides such as this document add constraints to CDA through conformance statements that further define and restrict the sequence and cardinality of CDA objects and the vocabulary sets for coded elements.

1.4.1   Keywords

The keywords SHALL, SHALL NOT, SHOULD, SHOULD NOT, MAY, and NEED NOT in this document is to be interpreted as described in the HL7 Version 3 Publishing Facilitator's Guide:

- **SHALL:** an absolute requirement
- **SHALL NOT:** an absolute prohibition against inclusion
- **SHOULD/SHOULD NOT:** best practice or recommendation. There may be valid reasons to ignore an item, but the full implications must be understood and carefully weighed before choosing a different course
- **MAY/NEED NOT:** truly optional; can be included or omitted as the author decides with no implications

The keyword SHALL allow the use of nullFlavor unless the requirement is on an attribute or the use of nullFlavor is explicitly precluded. Please refer to the nullable column in the constrain tables.

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[i] http://www.hl7.org/v3ballot/html/infrastructure/conformance/conformance.htm
[ii] HL7 Clinical Document Architecture (CDA Release 2).
http://www.hl7.org/implement/standards/cda.cfm

1.4.2 Conformance Requirements

Constraint in this profile is based on the specification in the Clinical Document Architecture (CDA) Release 2, Consolidated CDA Template for Clinical Notes, August 2015 are widely used. For constraint reused the conformance requirement is formatted **CONF: XX**, which will each the traceability for future revision of this document.

In some cases it has been necessary to modify or create new constraints for the use in Denmark. In such case the conformance criteria is formatted **CONF-DK-APD: XX**. The XX is a unique 4 character id.

1.5 Development process

This Danish profile has been prepared by the MedCom in collaboration with a workgroup composed by a number of partners from the health sector and suppliers of ICT solutions to the healthcare sector.

The workgroup meet to four workshops in the period from December 2016 to March 2017. The workgroup included:

Alexei Mihalchuk	A-Data
Michael Christensen	Alexandra Instituttet
Jens Villadsen	CSC
Ole Vilstrup	CSC
Thomas Bo Nielsen	DAK-E
Hans Christian Lund Clausen	DAK-E
Kristian Nielsen Foged	DataGruppen MultiMed
Søren Mikkelsen	Lakeside
Anders Jensen	MedCom
Michael Johansen	MedCom
Michael Due Madsen	MedCom
Jan Petersen	MedCom
Lars Siemensen	Region Midtjylland
Jesper Nielsen	Region Syddanamark
Flemming Elbrønd	Region Syddanmark
Jane Christiansen	Sundhedsdatastyrelsen
Thor Schliemann	Sundhedsdatastyrelsen
Christian Jeppesen	Systematic

For participating in the DK-APD update to version 2.0 following workgroup has participated.

Kim Frederiksen	Cap Gemini
Lars Storm	Systematic
Kjeld Froberg	Lakeside
Søren Mikkelsen	Lakeside
Kathrine Rosenklient Noer	Sundhedsdatastyrelsen
Thor Schliemann	Sundhedsdatastyrelsen
Michael Due Madsen	MedCom
Irene Zuschlag	MedCom

Morten Bruun-Rasmussen from MEDIQ assisted as consultant in connection with preparation and update of this profile.

1.6   Organization of This Guide

This guide includes a set of CDA Templates and prescribes their use within an Appointment CDA document. The main chapters are:

- Chapter 2: Appointment document Header Template describes constraints that apply to the header within the scope of this implementation guide.

- Chapter 3: Appointment Document-Level Template defines the document constraints that apply to Appointment Documents.

- Chapter 4: Section-Level Template defines the section template in the Appointment Documents.

- Chapter 5: Entry-Level Template defines the entry template in Appointment Documents.

- Appendix A shows the mapping between the appointment content and the CDA structure

- Appendix B shows the link between the DK templates and HL7 C-CDA templates used in this specification

1.7   Content of the Package

The following files comprise the package:

Table 1: Content of the Package

Filename[iii]	Description	Standards Applicability
DK-APD-v2.1	This implementation guide	Normative
DK-CDA-Header	Defines general requirement for the CDA header	Normative
Metadat-v1.0	The metadata definition	
MedCom Message Codes.xlsx	The message codes defined for this standard	
DK-APD_Example_home_care.xml	The sample CDA XML file that includes examples of templates discussed in this guide: • Example 1: Home Care example with repetition	Informative

The files can be downloaded from http://svn.medcom.dk/svn/releases/Standarder/HL7/

DK-APD_Example_ practitioner.xml	The sample CDA XML file that includes examples of templates discussed in this guide: • Example 2: Practitioner example with exact appointment start and end timestamp	
DK-APD_Example_ hospital.xml	The sample CDA XML file that includes examples of templates discussed in this guide: • Example 3: Hospital appointment where Appointment start time is exact, but end time is not known	
DK-APD Implementation Guidelines	Document that describes the implementation of DK-APD appointments, relevant business considerations and examples of appointment for regional, municipalicy and practioner	Informative
CDA.xsl	Stylesheet for display of CDA instances	Informative
DK-IHE_Metadata-Common_Code_systems-Value_sets.xlsx	Definition of OIDS relevant for this document	

2 APPOINTMENT DOCUMENT HEADER TEMPLATE

The DK CDA Header document describes the constrains that apply to the CDA header. Some constraints for the DK-APD CDA header apply only for appointments and are defined in the following section.

Please note that the constraints listed in this section always overrules the constraints listed in the DK CDA Header document.

If an attribute or element of the DK-APD Header is not listed in this section, please refer to the DK CDA Header for the constraints.

This template describes constraints that apply to the DK CDA Header within the scope of this implementation guide. Header constraints are described in the appropriate document-specific section below.

Please refer to the Metadata version 1.0 document for data applying to the required IHE XDS metadata parameters.

2.1 Danish Profile Appointment Document Header

The underlying basis for the DK CDA Appointment Document Header is specified in the DK CDA Header.

Additional constraints to the DK CDA Header used the DK CDA Header Appointment Document are described below.

1. **SHALL** contain exactly one [1..1] header-level `templateId` (CONF-DK-APD: c1cb) such that it
   a. This `templateId` **SHALL** contain exactly one [1..1] @root="1.2.208.184.14.1" (CONF-DK-APD: 4897).
2. **SHALL** contain exactly one [1..1] `id` (CONF-DK-APD: a5bd).
   a. This `id` **SHALL** be a globally unique identifier for the document (CONF-DK-APD: c89b).
   Please refer to DK CDA Header implementation guide for definition of unique identifiers.

3. **SHALL** contain exactly one [1..1] `code` (CONF-DK-APD:f917).
   a) This `code` **SHALL** specify the Appointment Document generated by the filler system (CONF-DK-APD:c0ad).
   b) This `code` **SHALL** be selected from the LOINC Ontology which indicates a "Follow-up (referred to) provider &or specialist, appointment date" between the patient and the care provider. (CONF-DK-APD: 577b).
      a. This `code` **SHALL** always be set to "39289-4" (CONF-DK-APD:7d26).
      b. The @displayName **SHALL** always be set to "Dato og tidspunkt for møde mellem patient og sundhedsperson" (CONF-DK-APD:e56b).
4. **SHALL** contain exactly one [1..1] `title` (CONF-DK-APD:17da).

a) This `title` **SHALL** always be set to "Aftale for" followed by the patient id (CONF-DK-APD:9ac6).

```
<realmCode code="DK"/>
<typeId root="2.16.840.1.113883.1.3" extension="POCD_HD000040"/>
<!-- MedCom DK CDA APD profile OID -->
<templateId root="1.2.208.184.14.1"/>
<id extension="aa2386d0-79ea-11e3-981f-0800200c9a66" root="1.2.208.184"
  assigningAuthorityName="MedCom"/>
<!-- LOINC code for appointment date -->
<code code="39289-4" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
  displayName="Dato og tidspunkt for møde mellem patient og sundhedsperson"/>
<!-- title = "Aftale for" + patient id -->
<title>Aftale for 2512489996</title>
<effectiveTime value="20170113100000+0100"/>
<confidentialityCode code="N" codeSystem="2.16.840.1.113883.5.25"/>
<languageCode code="da-DK"/>

<!-- information about the patient-->
<recordTarget typeCode="RCT" contextControlCode="OP"> [22 lines]

<!-- the health care organisation and person responsible for the appointment -->
<author typeCode="AUT" contextControlCode="OP"> [26 lines]

<!-- the organisation responsible for maintaing the CDA document -->
<custodian typeCode="CST"> [14 lines]

<!-- the date and time for when the service event will take place -->
<documentationOf typeCode="DOC"> [7 lines]
```

Figure 3: DK Realm Appointment Document Header Example

2.1.1 recordTarget

Please refer to DK CDA Header implementation guide section "Patient" for definition of recordTarget.

2.1.2 author

The `author` element represents the creator of the clinical document. Please refer to DK CDA Header implementation guide section "Author" for definition of author.

In the context of this IG (the Appointment Document), the author defined in the CDA Header is the organization responsible for fulfilling the appointment (the health care organization/person responsible for the appointment).

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```xml
<!-- the health care organisation and person responsible for the appointment -->
<author typeCode="AUT" contextControlCode="OP">
<time value="20170216100000+0100"/>
<assignedAuthor classCode="ASSIGNED">
    <id extension="242621000016001" root="1.2.208.176.1.1" assigningAuthorityName="SOR"/>
    <addr use="WP">
      <streetAddressLine>Valdemarsgade 53</streetAddressLine>
      <postalCode>5700</postalCode>
      <city>Svendborg</city>
      <country>Danmark</country>
    </addr>
    <telecom value="tel:65113333" use="WP"/>
    <assignedPerson classCode="PSN" determinerCode="INSTANCE">
      <name>
        <prefix>Læge</prefix>
         <given>Jens</given>
        <family>Jensen</family>
      </name>
    </assignedPerson>
    <representedOrganization classCode="ORG" determinerCode="INSTANCE">
      <name>OUH Radiologisk Afdeling (Svendborg)</name>
      <telecom nullFlavor="NI"/>
      <addr use="WP">
        <streetAddressLine nullFlavor="NI"/>
      </addr>
    </representedOrganization>
  </assignedAuthor>
</author>
```

Figure 4: Person author example

2.1.3   dataEnterer

The `dataEnterer` element may not be used.

2.1.4   informant

The `informant` element may not be used.

2.1.5   custodian

In the context of this IG (the Appointment Document), the custodian is the organization in charge of the filler system.
Please refer to DK CDA Header implementation guide section "Steward" for definition of author.

```xml
<!-- the organisation responsible for maintaing the CDA document -->
<custodian typeCode="CST">
<assignedCustodian classCode="ASSIGNED">
    <representedCustodianOrganization classCode="ORG" determinerCode="INSTANCE">
        <id extension="515361000016007" root="1.2.208.176.1.1" assigningAuthorityName="SOR"/>
        <name>OUH Klinisk IT (Odense)</name>
        <telecom value="tel:66113333" use="WP"/>
        <addr use="WP">
          <streetAddressLine>J. B. Winsløwsvej 4 1</streetAddressLine>
          <postalCode>5000</postalCode>
          <city>Odense C</city>
          <country>Danmark</country>
        </addr>
    </representedCustodianOrganization>
  </assignedCustodian>
</custodian>
```

Figure 5: Custodian example

2.1.6 informationRecipient

The `informationRecipient` element may not be used.

2.1.7 legalAuthenticator

The `legalAuthenticator` element may not be used.

2.1.8 authenticator

The `authenticator` element may not be used.

2.1.9 participant (Support)

The `participant` element may not be used.

2.1.10 documentationOf

The documentationOf segments for DK-APD is explained in the following section.
Maximum three and minimum two segments of documentationOf is required.

Following segment shall be defined in documentationOf segments:
  Appointment Date and Time
  Appointment version

Following segments shall be defined if an appointment is part of an episode of care national health package (Like cancer or diabetes):

  Appointment episode of care label

2.1.10.1 Appointment Date and Time

The `documentationOf/serviceEvent/templateId` element defines the template of the `documentationOf/serviceEvent` for defining the appointment time interval. The templateId shall be 1.2.208.184.200.1.11. (CONF-DK-APD:4318). The template defining the appointment start and end time shall always be present (CONF-DK-APD:851d) and shall only be defined once (CONF-DK-APD:37d2)

The service time segment `documentationOf/serviceEvent/effectiveTime/low` element defines the Appointment start time (corresponds to the metadata serviceStartTime) (CONF-DK-APD:0b52). The `documentationOf/serviceEvent/effectiveTime/low/value` attribute shall contain a valid timestamp (CONF-DK-APD:0561).
 It is not possible to annotate this element with a nullFlavor attribute (CONF-DK-APD:592c).

The `documentationOf/serviceEvent/effectiveTime/high` element defines the Appointment end time (corresponds to the metadata serviceStopTime) (CONF-DK-APD:2d8c). The `effectiveTime/high/value` attribute shall contain a valid timestamp (CONF-DK-APD:eff6).
 If the appointment end time is not available, the nullFlavor attribute may be applied (CONF-DK-APD:42aa).

Table 2: Appointment start/end time Constraints Overview

Xpath	Card	Verb	Nullable	CONF#	Fixed Value
documentationOf (1..1)					
serviceEvent	1..1	SHALL	No		
templateId	1..1	SHALL	No	CONF-DK-APD:4318 CONF-DK-APD:851d CONF-DK-APD:37d2	
@root	1..1	SHAL			1.2.208.184.200.1.11
@extensionRoot	1..1	SHALL			2019-09-10
effectiveTime	1..1	SHALL	No		
@low	1..1	SHALL		CONF-DK-APD:0b52 CONF-DK-APD:0561 CONF-DK-APD:592c	
@high	1..1	SHALL		CONF-DK-APD:2d8c CONF-DK-APD:eff6 CONF-DK-APD:42aa	

The header `documentationOf/serviceEvent/effectiveTime/low` element shall be identical to the body `encounter/effectiveTime/low` attribute. (CONF-DK-APD:ad38)

The header `documentationOf/serviceEvent/effectiveTime/high` element shall be identical to the body `encounter/effectiveTime/high` attribute. (CONF-DK-APD:7e5c)

```xml
<documentationOf typeCode="DOC">
  <serviceEvent   classCode="MPROT" moodCode="EVN">
    <templateId root="1.2.208.184.200.1.11" extension="2019-09-10"/>
    <effectiveTime>
      <low value="20191231090000+0100"/>
      <high value="20191231120000+0100"/>
    </effectiveTime>
  </serviceEvent>
</documentationOf>
```

Figure 6: Appointment start and end time example

2.1.10.2   Appointment version

The `documentationOf/serviceEvent/templateId` with id 1.2.208.184.200.1.10 defines the appointment version. The metadata

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formatCode shall be defined using the version code. Please refer to the mapping table defined[iv]. (CONF-DK-APD:f246).

The templateId 1.2.208.184.200.1.10 **SHALL** be present (CONF-DK-APD:69ee) and only defined once (CONF-DK-APD:5363). The templateId

    a. **SHALL** contain exactly one [1..1] `@root="1.2.208.184.14.11.1"` (CONF-DK-APD:6c69).

    b. **SHALL** contain exactly one [1..1] `@extension="2019-09-10"` (CONF-DK-APD:0b61).

The `documentationOf/serviceEvent/id` element defines the version of the CDA appointment document. (CONF-DK-APD:a2e5) The id

    a. **SHALL** contain exactly one [1..1] `@root="1.2.208.184.100.3"` (CONF-DK-APD:44bb).

    b. **SHALL** contain exactly one [1..1] `@extension="apd-v2.0"` (CONF-DK-APD:9f67).

    c. **SHALL** contain exactly one [1..1] `@assigningAuthorityName="MedCom"` (CONF-DK-APD: c69d).

Table 3: Appointment Version Constraints Overview

XPath	Card	Verb	Nullable	CONF#	Fixed Value
documentationOf (1..1)					
serviceEvent	1..1	SHALL	No		
templateId	1..1	SHALL	No	CONF-DK-APD:69ee CONF-DK-APD:5363	
@root	1..1	SHALL		CONF-DK-APD:6c69	1.2.208.184.200.1.10
@extensionRoot	1..1	SHALL		CONF-DK-APD:0b61	2019-09-10
id	1..1	SHALL	No	CONF-DK-APD:a2e5	
@root	1..1	SHALL		CONF-DK-APD:44bb	1.2.208.184.100.3
@extension	1..1	SHALL		CONF-DK-APD:9f67	apd-v2.0
@assigningAuthorityName	1..1	SHALL		CONF-DK-APD: c69d	MedCom

[iv] http://svn.medcom.dk/svn/drafts/Standarder/IHE/OID/DK-IHE_Metadata-Common_Code_systems-Value_sets.xlsx

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```
<!--This documentationOf holds the version of the CDA-profile -->
<documentationOf>
  <serviceEvent>
    <!--This templateId tells that this serviceEvent holds the identification (apd)
      and version (v2.0) of the CDA profile -->
    <templateId root="1.2.208.184.200.1.10" extension="2019-09-10"/>
    <!--This id @extension equals the identification and version of the CDA profile-->
    <id root="1.2.208.184.100.3" extension="apd-v2.0" assigningAuthorityName="MedCom"/>
  </serviceEvent>
</documentationOf>
```

Figure 7: Appointment version Example

2.1.10.3   Appointment episode of care label

An appointment may be related to LPR3 episode of care label.

The `documentationOf/serviceEvent/templateId` with id
1.2.208.184.200.1.12 may be present when the appointment is part of a national
defined episode of care label. (CONF-DK-APD:2035). The templateId
1.2.208.184.200.1.12 shall if defined, only be defined once. (CONF-DK-
APD:42f3). The templateId

    a. **SHALL** contain exactly one [1..1]
       `@root="1.2.208.184.200.1.12"` (CONF-DK-APD:3d9b).
    b. **SHALL** contain exactly one [1..1] `@extension="2019-09-`
       `10"` (CONF-DK-APD:50c5).

If an appointment is part of a registered LPR3 episode of care, the
episode of care identifier may be inserted using the id element. The
identifier may be inserted in the extension attribute.
(CONF-DK-APD:8aa5).) The id

    a. **SHALL** contain exactly one [1..1] `@root="1.2.208.184"`
       (CONF-DK-APD:7126).
    b. **SHALL** contain exactly one [1..1] `@extension`. The
       `@extension` attribute contains the UUID (CONF-DK-APD:
       83cf).
    c. **SHALL** contain exactly one [1..1]
       `@assigningAuthorityName="MedCom"`
       (CONF-DK-APD:79f1).

The `documentationOf/serviceEvent/code` element defines the episode
of care label. (CONF-DK-APD:158f). The code **SHALL** contain exactly one
[1..1] `code` (CONF: 1098-14749).

    a. This `code` **SHALL** contain exactly one [1..1] `@code`. The
       `@code` attribute contain the episode of care label (CONF-
       DK-APD:44e3).

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b. This `code` **SHALL** contain exactly one [1..1] @codeSystem="1.2.208.184.300.1" (CONF-DK-APD:b670).

c. This `code` **SHALL** contain exactly one [1..1] @codeSystemName="EpisodeOfCareLabels" (CONF-DK-APD:8b6d).

Table 4: Appointment episode of care label Constraints Overview

XPath	Card	Verb	Nullable	CONF#	Fixed Value
documentationOf (0..1)					
serviceEvent	1..1	SHALL	No		
templateid	1..1	SHALL	No	CONF-DK-APD:2035 CONF-DK-APD:42f3	
@root	1..1	SHALL		CONF-DK-APD:3d9b	1.2.208.184.200.1.12
@extension	1..1	SHALL		CONF-DK-APD:50c5	2019-09-10
id	0..*	May	Yes	CONF-DK-APD:8aa5	
@root	1..1			CONF-DK-APD:7126	1.2.208.184
@extension	1..1	SHALL		CONF-DK-APD:83cf	
@assigningAuthority Name	1..1	SHALL		CONF-DK-APD:79f1	MedCom
code	1..1	SHALL	No	CONF-DK-APD:158f	
@code	1..1	SHALL		CONF-DK-APD:44e3	
@codeSystem	1..1	SHALL		CONF-DK-APD:b670	1.2.208.184.300.1
@codeSystemName	0..1	SHALL		CONF-DK-APD:8b6d	EpisodeOfCareLabels

```
<documentationOf typeCode="DOC">
  <templateId root="1.2.208.184.200.1.12" extension="2019-09-10"/>
  <serviceEvent   classCode="MPROT" moodCode="EVN">
    <code code="DiabetesPackage" codeSystem="1.2.208.184.300.1"
      codeSystemName="EpisodeOfCareLabels" />
  </serviceEvent>
</documentationOf>
```

Figure 8: Appointment EpisodeOfCareLabel Example

```
<documentationOf typeCode="DOC">
  <templateId root="1.2.208.184.200.1.12" extension="2019-09-10"/>
  <serviceEvent   classCode="MPROT" moodCode="EVN">
    <id   extension="39d615cd-5d62-4a54-9762-d33197c63aba"  root="1.2.208.184"
      assigningAuthorityName="MedCom"/>
    <id   extension="e7532c08-729b-4413-83d7-bd2cdf147ef7" root="1.2.208.184"
      assigningAuthorityName="MedCom"/>
    <code code="DiabetesPackage" codeSystem="1.2.208.184.300.1"
      codeSystemName="EpisodeOfCareLabels" />
  </serviceEvent>
</documentationOf>
```

Figure 9: Appointment Example with EpisodeOfCare Identifers

2.1.11   inFulfillmentOf

The `inFulfillmentOf` element may not be used.

2.2   Rendering Header Information for Human Presentation

Following information shall be present whenever the Appointment Document is viewed in for instance a browser:

Appointment details as shown in the figure below (CONF-DK-APD:32d1).

Patient
Start date and time
End date and time
Location
Reason
Information if time interval is guiding
Information if the appointment is part of a repeating pattern

Figure 10: Required data in narrative

3   DOCUMENT-LEVEL TEMPLATE

This chapter defines document-level template which describe the purpose and rules for constructing a conforming CDA document for its use case.

3.1   Appointment Document

`[ClinicalDocument: templateId 1.2.208.184.14.1]`

This template describes constraints that apply to the Appointment Document containing a planned health care service, for a period of time, for a specific reason at a specific location.

This document-level template contains the following information:

- Description and explanatory narrative
- Template metadata (e.g., `templateId`, etc.)
- Header constraints
- The required section-level template

Table 5: Appointment Document Contexts

Used By:	Contains Entries:
	Plan of treatment Section

1. **SHALL** contain exactly one [1..1] ClinicalDocument with templateId/root such as "1.2.208.184.14.1".(CONF-DK-APD:919b)

2. **SHALL** contain exactly one [1..1] component (CONF-DK-APD:7ccb).
    a. **SHALL** contain exactly one [1..1] structuredBody (CONF-DK-APD:30fc).
        i. This structuredBody **SHALL** contain exactly one [1..1] component (CONF-DK-APD:63ff) such that it
            1. **SHALL** contain exactly one [1..1] section. CONF-DK-APD:4981).

Table 6: Appointment Document Constraints Overview

XPath	Card	Verb	Null able	CONF#	Fixed Value
ClinicalDocument[templateId/@root = '1.2.208.184.14.1']					
component	1..1	SHALL	No	CONF-DK-APD:7ccb	
structuredBody	1..1	SHALL	No	CONF-DK-APD:30fc	
component	1..1	SHALL	No	CONF-DK-APD:63ff	
section	1..1	SHALL	No	CONF-DK-APD:4981	

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4 SECTION-LEVEL TEMPLATE

This section contains section-level templates used by the Appointment Document in this Implementation Guide.

Each section-level template contains the following:

- Template metadata (e.g., `templateId`, etc.)
- Description
- Section code
- Section title
- Entry-level template names and Ids for referenced templates (required and optional)

4.1 Appointment Section

```
[section: templateId 1.2.208.184.14.11.1]
```

This section contains data that define an encounter for the appointment.

Table 7: Appointment Section Pattern Contexts

Used By:	Contains Entries:
Appointment document-level template (required)	Appointment entry-level

1. **SHALL** contain exactly one [1..1] `templateId` (CONF:1098-7723) such that it
    - d. **SHALL** contain exactly one [1..1] `@root="1.2.208.184.14.11.1"` (CONF-DK-APD:9b39).
    - e. **SHALL** contain exactly one [1..1] `@extension="2019-09-10"` (CONF-DK-APD:efbf).
2. **SHALL** contain exactly one [1..1] `code` (CONF: 1098-14749).
    - d. This `code` **SHALL** contain exactly one [1..1] `@code="18776-5"`(CONF:1098-14750).
    - e. This `code` **SHALL** contain exactly one [1..1] `@codeSystem="2.16.840.1.113883.6.1"` (CONF:1098-30813).
    - f. This `code` **SHALL** contain exactly one [1..1] `@codeSystemName="LOINC"` (CONF-DK:bfb2).
    - g. This `code` **SHALL** contain exactly one [1..1].
3. **SHALL** contain exactly one [1..1] `title` (CONF-DK-APD:d9f0).
4. **SHALL** contain exactly one [1..1] `text` (CONF:1098-7725).
5. **SHALL** contain exactly one [1..1] `entry` (CONF-DK-APD:8506) such that it
    - a. **SHALL** contain exactly one [1..1] Planned Encounter (V2) template `(templateId: 1.2.208.184.14.11.2)` (CONF-DK-APD:dfed)

Table 8: Appointment Section Constraint Overview

XPath	Card	Verb	Null able	CONF#	Fixed Value
templateId	1..1	SHALL	No	1098-7723	
@root	1..1	SHALL		CONF-DK-APD: 9b39	1.2.208.184.14.11.1
@extension	1..1	SHALL		CONF-DK-APD: efbf	2019-09-10
code	1..1	SHALL	No	CONF:1098-14749	
@code	1..1	SHALL		CONF:1098-14750	18776-5
@codeSystem	1..1	SHALL		1098-30813	2.16.840.1.113883.6.1
@codeSystemName	1..1	SHALL		CONF-DK-APD: bfb2	LOINC
@displayName	0..1	MAY			
title	1..1	SHALL	No	CONF-DK-APD: d9f0	Aftale
text	1..1	SHALL	No	1098-7725	
entry	1..1	SHALL	No	CONF-DK-APD: 8506	
encounter	1..1	SHALL	No	CONF-DK-APD: dfed	

```xml
<section classCode="DOCSECT" moodCode="EVN">
  <templateId root="1.2.208.184.14.11.1" extension="2019-09-10"/>
  <code code="18776-5" codeSystem="2.16.840.1.113883.6.1"
    codeSystemName="LOINC" displayName="Plan of care note" />
  <title>Aftale</title>
  <text>
    <paragraph>Aftale:</paragraph>
    <table width="100%">
      <tbody>
        <tr>
          <th>Aftale dato</th>
          <th>Vedrørende</th>
          <th>Mødested</th>
          <th>Kommentar</th>
        </tr>
        <tr>
          <td>2019-12-31 09:00 - 2019-12-31 12:00. Tidspunktet er vejledende</td>
          <td>Hjemmehjælpsbesøg</td>
          <td>Borgers Hjemmeadresse</td>
          <td>Aftalen er en del af et repeterende mønster</td>
        </tr>
      </tbody>
    </table>
  </text>
  <entry>
```

Figure 11: Appointment Section Example

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Entry-level template

This part of the guide describes the entry template used within the section of the Appointment Document.

Entry-level template contains an `id` element, which is an identifier for that entry. This `id` may be referenced within the document, or by the system receiving the document. The `id` assigned must be globally unique.

4.2 Appointment content

```
[encounter: templateId 1.2.208.184.14.11.2]
```

This template is used to specify the content for a planned health care service, for a period of time, for a specific reason at a specific location.

Table 9: Appointment content Contexts

Used By:	Contains Entries:
Appointment section (required)	Appointment content

- **SHALL** contain exactly one [1..1] @`classCode="ENC"` (CodeSystem: `HL7ActClass 2.16.840.1.113883.5.6` **STATIC**) (CONF:1098-8564).
- **SHALL** contain exactly one [1..1] @`moodCode="APT"` Event (CodeSystem: `ActMood 2.16.840.1.113883.11.20.9.23` **STATIC**) (CONF-DK-APD:8f97).
- **SHALL** contain exactly one [1..1] `templateId` (CONF:1098-30437) such that it
    a) **SHALL** contain exactly one [1..1] @`root="1.2.208.184.14.11.2"` (CONF-DK-APD:49d8).
    b) **SHALL** contain exactly one [1..1] @`extension="2019-09-10"` (CONF-DK-APD:ad5b).
- **SHALL** contain exactly one [1..1] `id` (CONF-DK-APD:7493)
    a. This `id` **SHALL** be a globally unique identifier for the appointment (CONF-DK-APD:22dd).
6. **SHALL** contain exactly one [1..1] `code` (CONF: 1098-14749).
    h. This `code` **SHALL** contain exactly one [1..1] @`code.` (CONF-DK-APD:4df9). Following code may be applied for an munipalicy appointment: `MunicipalityAppointment`. For a hospital or regional appointment: `RegionalAppointment`. For a practitioner appointment: `PractitionerAppointment`. (CONF-DK-APD:9245)

    i. This `code` **SHALL** contain exactly one [1..1] @`codeSystem="1.2.208.184.100.1"` (CONF-DK-APD:ed37).

j. This `code` **SHALL** contain exactly one [1..1] @codeSystemName="MedCom Message Codes" (CONF-DK-APD:6306).

- **SHALL** contain exactly one [1..1] `statusCode` (CONF:134).
  a. This `statusCode` **SHALL** contain exactly one [1..1] @code="active") (CONF-DK-APD:0da6).

EffectiveTime represents the time for planned appointment.

- **SHALL** contain exactly one [1..1] `effectiveTime` (CONF-DK-APD:4021) such that it
  a. **SHALL** contain exactly one [1..1] low (CONF-DK-APD: 8bfe).
    i. **SHALL** contain exactly one [1..1] @value (CONF-DK-APD:d058).
  b. **SHALL** contain exactly one [1..1] high (CONF-DK-APD: 5df9).
    i. **SHALL** contain exactly one [1..1] @value (CONF-DK-APD:0d5c).

NullFlavor may be applied if the effectiveTime.high value is not known. (CONF-DK-APD:5c87)
A performer represents the organization/person that is responsible for the planned health care service.

- **SHALL** contain exactly one [1..1] `performer` (CONF-DK-APD:63d8). such that it
  a. **SHALL** contain exactly one [1..1] `assignedEntity` (CONF-DK-APD:6f0d) as specified in section 5.2

The author represents the organization/person who is requesting an appointment for health care service. Information on the conformance criteria regarding the author information is specified in in the DK-CDA-header document.

- **MAY** contain zero or one [0..1] `author`.

The location participant captures where the planned appointment for the health care service will take place.

- **SHALL** contain exactly one [1..1] `participant` (CONF-DK-APD:4ec7) such that it
  a. **SHALL** contain exactly one [1..1] @typeCode describing the type of location such that
    1) If the appointment place is in an organization the typecode attribute "LOC" is used. A SOR id shall always be applied. (CONF-DK-APD: 889e)
    2) If the appointment location is citizen/patients home address the typecode attribute "SBJ"

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shall be used. SOR id may be applied (CONF-DK-APD:9b47)

    b. **SHALL** contain exactly one [1..1] `participantrole` (CONF-DK-APD:44cd).

For further details see section 5.4.

The following entryRelationship captures the reason for the planned appointment for the health care service.

- **SHALL** contain exactly one [1..1] `entryRelationship` (CONF-DK-APD:ae0f) such that it
  - **SHALL** contain exactly one [1..1] `@typeCode="RSON"` (CodeSystem: `HL7ActRelationshipType 2.16.840.1.113883.5.1002`) (CONF-DK-APD:68a1).
  - **SHALL** contain exactly one [1..1] `observation` (CONF-DK-APD:250e).
  - **SHALL** contain exactly one [1..1] `@classCode="OBS"` (CONF-DK-APD:c362).
  - **SHALL** contain exactly one [1..1] `@moodeCode="EVN"` (CONF-DK-APD:7e02).

Reason for the planned appointment for the health care service shall be free text using the displayName attribute.

- **SHALL** contain exactly one [1..1] `code` (CONF-DK-APD:8993) such that
  - always contain exactly one attribute "displayName". (CONF-DK-APD:4c2c) The "displayName" value shall be used as the appointments subject when the appointment is displayed. (CONF-DK-APD:a7d3).
  - always contain exactly one attribute "code". The "code" SHALL contain "nullFlavor="NI" if no code system may be applied. (CONF-DK-APD:aa36).
  - The attributes "codeSystem" and "codesystemName" may be used if a valid international health code system is applied. Please noticed that the display name shall contain a valid Danish phrase (CONF-DK-APD:bfb3).

Table 10: Appointment content Constraints Overview

XPath	Card	Verb	Nullable	CONF#	Fixed Value
encounter[templateId/@root = '1.2.208.184.14.11.2']					
@classCode	1..1	SHALL		1098-8564	2.16.840.1.113883.5.6 (HL7ActClass)=ENC
@moodCode	1..1	SHALL		CONF-DK-APD:8f97	2.16.840.1.113883.11.10.9.23 (Planned moodcode) = APT
templateId	1..1	SHALL	No	1098-30437	
@root	1..1	SHALL		CONF-D-APDK:49d8	1.2.208.184.14.11.2
@extension	1..1	SHAL		CONF-DK-APD:ad5b	2019-09-10

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XPath	Card	Verb	Nullable	CONF#	Fixed Value
id	1..1	SHALL	No	CONF-DK-APD:7493 CONF-DK-APD:22dd	
code	1..1	SHALL	No	1098-14749	
@code	1..1	SHALL		CONF-DK-APD:4df9	MunicipalityAppointment or PractitionerAppointment or RegionalAppointment
@codeSystem	1..1	SHALL		CONF-DK-APD:ed37	1.2.208.184.100.1
@codesystemName	1..1	SHALL		CONF-DK-APD:6306	MedCom Message Codes
@displayname	0..1	MAY			
statusCode	1..1	SHALL	No	134	
@code				CONF-DK-APD:0da6	active
effectiveTime	1..1	SHALL	No	CONF-DK-APD:4021	
low	1..1	SHALL	No	CONF-DK-APD:8bfe	
@value	1..1	SHALL		CONF-DK-APD:d058	
high	1..1	SHALL	Yes	CONF-DK-APD:5df9	
@value	1..1	SHALL		CONF-DK-APD:0d5c	
performer	1..1	SHALL	No	CONF-DK-APD:63d8	
assignedEntity	1..1	SHALL	No	CONF-DK-APD:6f0d	
author	0..*	MAY	Yes		
participant	1..1	SHALL	No	CONF-DK-APD:4ec7	
@typeCode	1..1	SHALL		CONF-DK-APD:889e or CONF-DK-APD:9b47	
participantrole	1..1	SHALL	No	CONF-DK-APD:44cd	
entryRelationship	1..1	SHALL	No	CONF-DK-APD:ae0f	
@typeCode	1..1	SHALL		CONF-DK-APD:68a1	RSON
observation	1..1	SHALL	No	CONF-DK-APD:250e	
@classCode	1..1	SHALL		CONF-DK-APD:c362	OBS
@moodCode	1..1	SHALL		CONF-DK-APD:7e02	EVN
code	1..1	SHALL	No	CONF-DK-APD:8993	
@code	1..1	SHALL		CONF-DK-APD:aa36	
@codeSystem	0..1	MAY		CONF-DK-APD: bfb3	
@codesystemName	0..1	MAY		CONF-DK-APD: bfb3	
@displayname	1..1	SHALL		CONF-DK-APD:4c2c	

XPath	Card	Verb	Nullable	CONF#	Fixed Value
				CONF-DK-APD:a7d3	

```xml
<encounter moodCode="APT" classCode="ENC" >
  <templateId root="1.2.208.184.14.11.2" extension="2019-09-10" />
  <id
    root="1.2.208.184" extension="9a6d1bac-17d3-4195-89a4-1121bc809b4d"
    assigningAuthorityName="MedCom"/>
  <code
    code="MunicipalityAppointment" codeSystem="1.2.208.184.100.1"
    codeSystemName="MedCom Message Codes">
  </code>
  <statusCode code="active" />

  <effectiveTime>
    <low value="20191231090000+0100"/>
    <high value="20191231120000+0100"/>
  </effectiveTime>
  <performer typeCode="PRF">
    <assignedEntity classCode="ASSIGNED">
    <id extension="378631000016009" root="1.2.208.176.1.1" assigningAuthorityName="SOR"/>
    <addr use="WP">
        <streetAddressLine>Vestergade 5</streetAddressLine>
        <postalCode>3000</postalCode>
        <city>Odense</city>
    </addr>
    <telecom value="tel:66113333-3" use="WP"/>
    <representedOrganization classCode="ORG" determinerCode="INSTANCE">
      <name>Hjemmehjælp, afdeling City, Odense Kommune</name>
    </representedOrganization>
    </assignedEntity>
  </performer>
  <participant typeCode="SBJ">
    <participantRole classCode="SDLOC">
        <playingEntity classCode="PLC">
        <name>Borgers Hjemmeadresse</name>
        </playingEntity>
    </participantRole>
  </participant>

  <entryRelationship typeCode="RSON">
      <observation classCode="OBS" moodCode="EVN">
        <code code="NI" displayName="Hjemmehjælp"/>
      </observation>
  </entryRelationship>

  <precondition>
    <templateId root="1.2.208.184.14.11.5" extension="2019-09-10" />
    <criterion>
      <code code="GuidedIntervalType" codeSystem="1.2.208.184.100.1"
        codeSystemName="MedCom Message Codes"/>
      <text>Tidspunktet er vejledende</text>
    </criterion>
  </precondition>

  <precondition>
    <templateId root="1.2.208.184.14.11.4" extension="2019-09-10" />
    <criterion>
      <code code="RepeatingAppointmentType" codeSystem="1.2.208.184.100.1"
        codeSystemName="MedCom Message Codes"/>
      <value xsi:type="II" root="1.2.208.184" extension="06b2b3bb-dac5-446f-aa19-ed5c46d8b0b7"
        assigningAuthorityName="MedCom"  />
    </criterion>
  </precondition>
</encounter>
```

Figure 12: Appointment Home Care content Example

```xml
<encounter moodCode="APT" classCode="ENC" >
  <templateId root="1.2.208.184.14.11.2" extension="2019-09-10" />
  <id root="1.2.208.184" extension="9a6d1bac-17d3-4195-89a4-1121bc809b4d" assigningAuthorityName=
  <code code="RegionalAppointmentType" codeSystem="1.2.208.184.100.1" codeSystemVersion="MedCom M
  <statusCode code="active" />
  <effectiveTime>
    <low value="20191218090000+0100"/>
    <high nullFlavor="NA"/>
  </effectiveTime>
  <performer typeCode="PRF">
      <assignedEntity classCode="ASSIGNED">
      <id extension="320161000016005" root="1.2.208.176.1.1" assigningAuthorityName="SOR"/>
      <addr use="WP">
        <streetAddressLine>Valdemarsgade 53</streetAddressLine>
        <postalCode>5700</postalCode>
        <city>Svendborg</city>
      </addr>
      <telecom value="tel:66113333-3" use="WP"/>
      <representedOrganization classCode="ORG" determinerCode="INSTANCE" nullFlavor="NI" />
    </assignedEntity>
  </performer>
  <participant typeCode="LOC">
    <participantRole classCode="SDLOC">
      <templateId root="1.2.208.184.14.11.3" extension="2019-09-10"/>
      <id extension="320161000016005" root="1.2.208.176.1.1" assigningAuthorityName="SOR"/>
      <addr use="WP">
        <streetAddressLine>Vestergade 17</streetAddressLine>
        <postalCode>5800</postalCode>
        <city>Nyborg</city>
      </addr>
     <telecom value="tel:66113333-4" use="WP"/>
      <playingEntity classCode="PLC">
        <name>OUH Radiologisk Ambulatorium (Nyborg)</name>
      </playingEntity>
    </participantRole>
  </participant>
  <entryRelationship typeCode="RSON">
     <observation   classCode="OBS" moodCode="EVN">
      <code code="40701008" displayName="Ekkokardiografi" codeSystemName="SNOMED CT"
        codeSystem="2.16.840.1.113883.6.96"/>
    </observation>
  </entryRelationship>
</encounter>
```

Figure 13: Appointment Regional content Example

```xml
<encounter moodCode="APT" classCode="ENC" >
  <templateId root="1.2.208.184.14.11.2" extension="2019-09-10" />
  <id
    root="1.2.208.184" extension="9a6d1bac-17d3-4195-89a4-1121bc809b4d"
    assigningAuthorityName="MedCom"/>
  <code code="GeneralPractitionerType" codeSystem="1.2.208.100.1"/>
  <statusCode code="active" />
  <effectiveTime>
    <low value="20191218090000+0100"/>
    <high value="20191218092000+0100"/>
  </effectiveTime>
  <performer typeCode="PRF">
    <assignedEntity classCode="ASSIGNED">
      <id assigningAuthorityName="SOR" extension="12345678901234" root="1.2.208.176.1.1"/>
      <addr>
        <country>Danmark</country>
        <city>Århus C</city>
        <postalCode>8000</postalCode>
        <streetAddressLine>Doktorbakken 497</streetAddressLine>
      </addr>
      <telecom use="WP" value="tel:15141312"/>
      <assignedPerson classCode="PSN" determinerCode="INSTANCE">
        <name>
          <family>Møller</family>
          <given>Ida</given>
          <prefix>Læge</prefix>
        </name>
      </assignedPerson>
      <representedOrganization classCode="ORG" determinerCode="INSTANCE">
        <name>L1 klinik</name>
        <telecom value="tel:15141312"/>
        <addr use="WP">
          <country>Danmark</country>
          <city>Århus C</city>
          <postalCode>8000</postalCode>
          <streetAddressLine>Doktorbakken 497</streetAddressLine>
        </addr>
      </representedOrganization>
    </assignedEntity>
  </performer>
  <participant typeCode="LOC">
    <participantRole classCode="SDLOC">
      <templateId extension="2019-09-10" root="1.2.208.184.14.11.3"/>
      <id assigningAuthorityName="SOR" extension="12345678901234" root="1.2.208.176.1.1"/>
      <addr use="WP">
        <country>Danmark</country>
        <city>Århus C</city>
        <postalCode>8000</postalCode>
        <streetAddressLine>Doktorbakken 497</streetAddressLine>
      </addr>
      <telecom use="WP" value="tel:15141312"/>
      <playingEntity classCode="PLC">
        <name>minLæge klinik</name>
      </playingEntity>
    </participantRole>
  </participant>
  <entryRelationship typeCode="RSON">
    <observation classCode="OBS" moodCode="EVN">
      <code code="NI" displayName="Aftale lægeklinik"/>
    </observation>
  </entryRelationship>
</encounter>
```

Figure 14: Appointment Practitioner content Example

4.3 assignedEntity for the planned health care service

The conformance criteria for assignedEntity elements are specified in in the DK-CDA-header document.

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4.4 Service delivery location

Service delivery location is either at an health organization with defined SOR id (TypeCode="LOC") or at a place with no SOR id (TypeCode="SBJ").

4.4.1 Common constrains

SHALL contain exactly one [1..1] `participantrole` (CONF-DK-APD:44cd) such that it

- **SHALL** contain exactly one [1..1] `@classCode="SDLOC"` (CONF-DK-APD:7dc2).
- **SHALL** contain exactly one [1..1] `templateId` (CONF-DK-APD: 1792) such that it
  - **SHALL** contain exactly one [1..1] `@root="1.2.208.184.14.11.3"` (CONF-DK-APD:cce6).
  - **SHALL** contain exactly one [1..1] `@extension="2019-09-10"` (CONF-DK-APD:7df6).

If the appointment is located at a health organization with a defined SOR id the participant typecode is "LOC". The address to be used is "besøgsadressen" in the SOR registry.

4.4.2 Typecode = "LOC"

If typecode is "LOC" then

- **SHALL** contain exactly one [1..1] `id` (CONF-DK-APD:3315) such that it
- **SHALL** contain exactly one [1..1] `@extension` as a unique identifier for the physical address for the visit (SOR-besøgsadressen), (CONF-DK-APD:4862).
- **SHALL** contain exactly one [1..1] `@root="1.2.208.176.1.1"` (CONF-DK-APD:91ea).
- **SHALL** contain exactly one [1..1] `@assigningAuthorityName="SOR"` (CONF-DK-APD: 062f).
- **SHALL** contain exactly one [1..1] `addr` (CONF-DK-APD:ff1c). The conformance for the `addr` is specified in in the DK-CDA-header document.
- **SHALL** contain exactly one [1..1] `telecom` (CONF-DK-APD:c7e3). The conformance for the `telecom` is specified in in the DK-CDA-header document.
- **SHALL** contain exactly one [1..1] `playingEntity` (CONF-DK-APD:d9a4) such that it

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- **SHALL** contain exactly one [1..1] `@name` as a free text for the physical address for the visit (SOR-besøgsadressen), (CONF-DK-APD:87c3).
-

Table 11: Appointment participantrole typecode="LOC" Constraints Overview

XPath	Card	Verb	Null able	CONF#	Fixed Value
participantrole[templateId/@root = '1.2.208.184.14.11.3']					
@classCode	1..1	SHALL		CONF-DK-APD:7dc2	SDLOC
templateId	1..1	SHALL	No	CONF-DK-APD:1792	
@root	1..1	SHALL		CONF-DK-APD:cce6	1.2.208.184.14.11.3
@extension	1..1	SHALL		CONF-DK-APD:7df6	2019-09-10
id	1..1	SHALL		CONF-DK-APD:3315	
@extension	1..1	SHALL		CONF-DK-APD:4862	
@root	1..1	SHALL		CONF-DK-APD:91ea	1.2.208.176.1.1
@assigning AuthorityName	1..1	SHALL		CONF-DK-APD:062f	SOR
addr	1..1	SHALL		CONF-DK-APD:ff1c	
telecom	1..1	SHALL		CONF-DK-APD:c7e3	
playingEntity	1..1	SHALL		CONF-DK-APD:d9a4	
name	1..1	SHALL		CONF-DK-APD:87c3	

```xml
<participant typeCode="LOC">
    <participantRole classCode="SDLOC">
        <templateId extension="2017-03-10" root="1.2.208.184.14.11.3"/>
        <id assigningAuthorityName="SOR" extension="193051000016001" root="1.2.208.176.1.1"/>
        <addr use="WP">
            <streetAddressLine>Hospitalsvej 1</streetAddressLine>
            <postalCode>8000</postalCode>
            <city>Aarhus C</city>
            <country>Danmark</country>
        </addr>
        <telecom use="WP" value="tel:66313333-4"/>
        <playingEntity classCode="PLC">
            <name>Røntgen afdelingen, opgang 3, afnist B</name>
        </playingEntity>
    </participantRole>
</participant>
```

Figure 15: Appointment Hospital Participant Example

4.4.3 TypeCode = "SPJ"

If participant typecode is "SPJ" the id (CONF-DK-APD: 8d70) is optional.
- If the "id" is applied, it SHALL be a valid SOR id (with @root=1.2.208.176.1.1).
- `addr` is optional (CONF-DK-APD:e87d).

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- `telecom` is optional (CONF-DK-APD:cde9).

Please refer to DK-Header for details regarding definition of the `addr` or `telecom` if applied.

- **SHALL** contain exactly one [1..1] `playingEntity` (CONF-DK-APD:d9a4) such that it
    - a) **SHALL** contain exactly one [1..1] `@name` as a free text for the physical address for the (CONF-DK-APD:87c3).

Table 12: Appointment participantrole typecode="SBJ" Constraints Overview

XPath	Card	Verb	Null able	CONF#	Fixed Value
participantrole[templateId/@root = '1.2.208.184.14.11.3']					
@classCode	1..1	SHALL		CONF-DK-APD:7dc2	SDLOC
templateId	1..1	SHALL	No	CONF-DK-APD:1792	
@root	1..1	SHALL		CONF-DK-APD:cce6	1.2.208.184.14.11.3
@extension	1..1	SHALL		CONF-DK-APD:7df6	2019-09-10
id	0..1	MAY		CONF-DK-APD:8d70	
@extension	1..1	SHALL		CONF-DK-APD:4862	
@root	1..1	SHALL		CONF-DK-APD:91ea	1.2.208.176.1.1
@assigning AuthorityName	1..1	SHALL		CONF-DK-APD:062f	SOR
addr	0..1	SHOULD		CONF-DK-APD:e87d	
telecom	0..1	SHOULD		CONF-DK-APD:cde9	
playingEntity	1..1	SHALL		CONF-DK-APD:d9a4	
name	1..1	SHALL		CONF-DK-APD:87c3	

```xml
<participant typeCode="SBJ">
  <participantRole classCode="SDLOC">
     <playingEntity classCode="PLC">
     <name>Borgers Hjemmeadresse</name>
     </playingEntity>
  </participantRole>
</participant>
```

Figure 16: Appointment Home Care Participant Example

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4.5   Appointment repetition

If an appointment is part of a repetition pattern, for instance a daily home care visit, a repetition code may be used.

Appointments that has the same repetition pattern may be linked via a unique repetition pattern id. Please refer to the DK-APD Implementation Guidelines for further details.

The `../structuredBody/component/section/entry/ encounter/precondition/templateId` with templateId 1.2.208.184.14.11.4 shall be used for defining a repeating appointment (CONF-DK-APD:7ba6).
Following Constrains are defined if an appointment is part of a repeating pattern:

- **SHALL** contain exactly one [1..1] `templateId` (CONF-DK-APD:8768) such that it
    - c) **SHALL** contain exactly one [1..1] `@root="1.2.208.184.14.11.4"` (CONF-DK-APD:4c94).
    - d) **SHALL** contain exactly one [1..1] `@extension="2019-09-10"` (CONF-DK-APD:bb46).

- **SHALL** contain a `criterion` element (CONF-DK-APD:4464)

- **SHALL** contain exactly one [1..1] `code` (CONF-DK-APD:8ff3) such that
    - always contain exactly one attribute `code`. The `code` attribute SHALL contain "`RepeatingDocumentType`" (CONF-DK-APD:72b5).
    - The attribute `codeSystem` SHALL contain `1.2.208.184.100.1` (CONF-DK-APD:e3ff)
    - The attribute `codesystemName` SHALL contain `MedCom Messages Codes` (CONF-DK-APD:bd47).

A collection of repeating appointments may be grouped using an UUID. The element value is used to represent the UUID.

- **MAY** contain exactly one [1..1] `value` (CONF-DK-APD:d38c) with following attributes:
    - a. SHALL contain `xsi:type="II"` (CONF-DK-APD:40c2)
    - b. SHALL contain `root` with value `1.2.208.184` (CONF-DK-APD:b4af)
    - c. SHALL contain `extension` with UUID id for repetition pattern (CONF-DK-APD:6245)
    - d. SHALL contain `assigningAuthorityName` with value `MedCom` (CONF-DK-APD:4b55)

Table 13: Appointment Repetition Constraints Overview

XPath	Card	Verb	Nullable	CONF#	Fixed Value
preCondition(0..*)					
templateid	1..1	SHALL	No	CONF-DK-APD:8768	
@root	1..1	SHALL		CONF-DK-APD:4c94	1.2.208.184.14.11.4
@extension	1..1	SHALL		CONF-DK-APD:bb46	2019-09-10
criterion	1..1	SHALL	No	CONF-DK-APD:4464	
code	1..1	SHALL	No	CONF-DK-APD:8ff3	
@code	1..1	SHALL		CONF-DK-APD:72b5	RepeatingDocumentType
@codeSystem	1..1	SHALL		CONF-DK-APD:e3ff	1.2.208.184.100.1
@codeSystemName	0..1	SHALL		CONF-DK-APD:bd47	MedCom Messages Codes
value	0..1	MAY	Yes	CONF-DK-APD:d38c	
@xsi:type	1..1	SHALL		CONF-DK-APD:40c2	II
@root	1..1	SHALL		CONF-DK-APD:b4af	1.2.208.184
@extension	1..1	SHALL		CONF-DK-APD:6245	
@assigningAuthorityName	1..1	SHALL		CONF-DK-APD:4b55	MedCom

```xml
<precondition>
  <templateId root="1.2.208.184.14.11.4" extension="2019-09-10" />
  <criterion>
    <code code="RepeatingAppointmentType" codeSystem="1.2.208.184.100.1"
      codeSystemName="MedCom Message Codes"/>
    <value xsi:type="II" root="1.2.208.184" extension="06b2b3bb-dac5-446f-aa19-ed5c46d8b0b7"
      assigningAuthorityName="MedCom"  />
  </criterion>
</precondition>
```

Figure 17: Appointment repetition Example

4.6   Guided interval type

If the difference between an appointment start and end time is not the duration of the appointment, then the appointment CDA may include a code that marks the appointment time interval as guided.

The `../structuredBody/component/section/entry/ encounter/precondition/templateId` with templateId 1.2.208.184.14.11.5 shall be used for defining the appointment interval as guiding (CONF-DK-APD:0ef8).
Following Constrains are defined if an appointment is part of a repeating pattern:

- **SHALL** contain exactly one [1..1] `templateId` (CONF-DK-APD: d425) such that it

e) **SHALL** contain exactly one [1..1] `@root="1.2.208.184.14.11.5"` (CONF-DK-APD:e881).

f) **SHALL** contain exactly one [1..1] `@extension="2019-09-10"` (CONF-DK-APD:e24d).

- **SHALL** contain a `criterion` element (CONF-DK-APD:488b)
- **SHALL** contain exactly one [1..1] `code` (CONF-DK-APD:8f3d) such that
  - always contain exactly one attribute `code`. The `code` attribute SHALL contain "`GuidedIntervalType`" (CONF-DK-APD:2b78).
  - The attribute `codeSystem` SHALL contain `1.2.208.184.100.1` (CONF-DK-APD:ab85)
  - The attribute `codesystemName` SHALL contain `MedCom Messages Codes` (CONF-DK-APD:d00d).

- **MAY** contain a `text` that may be displayed (CONF-DK-APD:1c5e). If no `text` element is defined a default string shall be displayed if the appointment has a GuidedIntervalType. Please refer to the DK-APD Implementation Guidelines for handling the appointment displaying.

Table 14: Appointment Guided Interval

XPath	Card	Verb	Nullable	CONF#	Fixed Value
preCondition					
Templateid	1..1	SHALL	No	CONF-DK-APD:d425	
@root	1..1	SHALL		CONF-DK-APD:e881	1.2.208.184.14.11.5
@extension	1..1	SHALL		CONF-DK-APD:e24d	2019-09-10
criterion	1..1	SHALL	No	CONF-DK-APD:488b	
code	1..1	SHALL	No	CONF-DK-APD:8f3d	
@code	1..1	SHALL		CONF-DK-APD:2b78	GuidedIntervalType
@codeSystem	1..1	SHALL		CONF-DK-APD:ab85	1.2.208.184.100.1
@codeSystemName	1..1	SHALL		CONF-DK-APD:d00d	MedCom Messages Codes
text	0..1	SHOULD	Yes	CONF-DK-APD:1c5e	

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```xml
<precondition>
  <templateId root="1.2.208.184.14.11.5" extension="2019-09-10" />
  <criterion>
    <code code="GuidedIntervalType" codeSystem="1.2.208.184.100.1"
      codeSystemName="MedCom Message Codes"/>
    <text>Tidspunktet er vejledende</text>
  </criterion>
</precondition>
```

Figure 18: Appointment Guiding Interval Example

5   APPENDIX A. APPOINTMENT CONTENT

Appendix A shows the mapping between the appointment content and the CDA structure.

Data	Head/ Body	CDA element	Metadata parameter
Identification	H	ClinicalDocument.id	uniqueId
Type	H	ClinicalDocument.code	typeCode
Creation Time	H	ClinicalDocument.effectiveTime	CDA Document creationTime
Patient	H	ClinicalDocument. recordTarget	sourcePatientId sourcePatientInfo
Appointment requester	H	ClinicalDocument.author	author.authorInstitution author.authorPerson
Appointment responsible	H	ClinicalDocument.custodian	NA
Start date/time	B + H	<body>.encounter. effectiveTime.low, ClinicalDocument. documentationOF. effectiveTime.low	serviceStartTime
End date/time	B + H	<body>.encounter. effectiveTime.high ClinicalDocument. documentationOF.effectiveTime.high	serviceEndTime
Appointment guided time interval	B	<body>.encounter.preCondition.criterion.code	NA
Appointment status	B	<body>.encounter.status	NA
Appointment version	H	ClinicalDocument.documentationOf.id	FormatCode
Appointment Type	B	<body>.encounter.code,	NA
Appointment episode of care label	H	ClinicalDocument. documentationOF.code	eventCodeList
Appointment Repetition	B	<body>.encounter.preCondition.criterion.code	NA
Appointment Performing	B	<body>.encounter.performer	NA
Appointment Location	B	<body>.encounter.participant	NA

Appointment Reason/Titel	B	\<body>.encounter. entryRelationship.observation.code.displayName	title

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6 APPENDIX B. DK TEMPLATES

Appendix B shows the link between the DK templates and HL7 C-CDA templates used in this specification.

Id	Template name	Relationship	Status
1.2.208.184.14.1	DK CDA Appointment Document	N/A	Temporary
1.2.208.184.14.11.1	DK APD Plan of treatment section template	2.16.840.1.113883.10.20.22.2.10	Temporary
1.2.208.184.14.11.2	DK APD Planned Encounter template	2.16.840.1.113883.10.20.22.4.40	Temporary
1.2.208.184.14.11.3	DK Service Delivery Location	2.16.840.1.113883.10.20.22.4.32	Temporary
1.2.208.184.14.11.4	DK APD Appointment Repetition template	N/A	Temporary
1.2.208.184.14.11.5	DK Appointment Guided interval template	N/A	Temporary
1.2.208.184.200.1.10	DK header for Document Version template	N/A	Temporary
1.2.208.184.200.1.11	DK header effectiveTime	N/A	Temporary
1.2.208.184.200.1.12	DK header for EpisodeOfCare-Label template	N/A	Temporary

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Filnavn: DK-APD-v2.0.docx
Bibliotek:
                  /Users/ire/MedCom/oXsvn/drafts/Standarder/HL7/Appointment/Doku
     mentation
Skabelon: /Users/ire/Library/Group Containers/UBF8T346G9.Office/User
     Content.localized/Templates.localized/Normal.dotm
Titel: MedCom
Emne: Projektplan
Forfatter: Morten Bruun-Rasmussen
Nøgleord:
Kommentarer:
Oprettelsesdato: 18/09/2019 12.55.00
Versionsnummer: 482
Senest gemt: 04/11/2019 21.05.00
Senest gemt af: Irene Zuschlag
Redigeringstid: 6.682 minutter
Senest udskrevet: 04/11/2019 21.10.00
Ved seneste fulde udskrift
     Sider: 44
     Ord: 7.278 (ca.)
     Tegn: 44.396 (ca.)