

HL7 Implementation Guide for CDA Release 2  
**Personal Healthcare Monitoring Report**  
**(Danish profile – PHMR DK)**

**Release 2.1.0**  
**March 7<sup>th</sup> 2025**

Revision history			
Release	Auther	Date	Notes
1.0	MedCom	2014.03.31	First version for trial implementation
	MedCom	2014.06.25	CONF-PHMR-DK-19: The type of ClinicalDocument/id attributes further specified.
1.1	MedCom	2016.09.20	<p>OID's updated</p> <p>CONF-PHMR-2: Added for clarification</p> <p>CONF-PHMR-21: Changed to original wording</p> <p>CONF-PHMR-DK-1: Changed</p> <p>CONF-PHMR-DK-23: New</p> <p>CONF-PHMR-105: Added for clarification</p> <p>CONF-PHMR-76: Added for clarification</p> <p>CONF-PHMR-77: Added for clarification</p> <p>CONF-PHMR-78: Added for clarification</p> <p>CONF-PHMR-80: Added for clarification</p> <p>CONF-PHMR-DK-34: Added</p> <p>CONF-PHMR-DK-32: Deleted</p>
1.2	MedCom	2016.11.04	CONF-PHMR-DK-35: Specification of eventCodeList entries in documentationOf added. The use of references to external documents added to Appendix F
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2.0.0	MedCom	2025.02.14	<p>Chapter 1: Removed historic information and adjusted text.</p> <p>Chapter 2: New text</p> <p>Chapter 3, 4 and 5: New text</p> <p>Appendix: Removed</p> <p>All conformance statement is renumbered using format CONF-PHMR-DK-XX.</p>
2.0.1	MedCom	2025.02.25	- Reference to values (display names and units) changed to MedCom:Hjemmemålinger/klinikmålinger
2.1.0	MedCom	2025.03.07	<p>The update to the standard includes the following modifications:</p> <ul style="list-style-type: none"> <li>- Revised handling of measurements taken in a single sequence, such as blood pressure measurements.</li> <li>- Added missing specification for components under the organizer. <ul style="list-style-type: none"> <li>o The exact location <ul style="list-style-type: none"> <li>▪ .../structuredBody/component/section/entry/organizer/component</li> <li>▪ .../structuredBody/component/section/entry/organizer/component/observation</li> </ul> </li> </ul> </li> <li>- Adjusted cardinality. <ul style="list-style-type: none"> <li>o From [1..*] to [1..2] <ul style="list-style-type: none"> <li>▪ .../structuredBody/component</li> </ul> </li> <li>o From [1..1] to [1..*] <ul style="list-style-type: none"> <li>▪ .../structuredBody/component/section/entry</li> </ul> </li> <li>o From [1..1] to [0..1] <ul style="list-style-type: none"> <li>▪ ClinicalDocument/legalAuthenticator</li> </ul> </li> <li>o From [1..1] to [0..1] <ul style="list-style-type: none"> <li>▪ ...structuredBody/component/section/entry/organizer/component/observation/value/@unit</li> </ul> </li> </ul> </li> <li>- Addition of the use of header elements. <ul style="list-style-type: none"> <li>▪ ClinicalDocument/recordTarget</li> <li>▪ ClinicalDocument/dataEnterer</li> <li>▪ ClinicalDocument/informant</li> <li>▪ ClinicalDocument/informationRecipient</li> </ul> </li> <li>- Typo corrections.</li> </ul>

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# 1 INTRODUCTION

## 1.1 Purpose

The purpose of this document is to describe an implementation guide for HL7 CDA Personal Healthcare Monitoring Report (PHMR) documents for the use in the Danish healthcare sector.

## 1.2 Scope

The Danish Reference Architecture for Collecting Health Data from Citizens<sup>1</sup> is partially based on the Continua Health Alliance Framework which profiles several existing standards for data communication from health monitoring devices.

The Continua Health Alliance Architecture is shown on Figure 1 below.

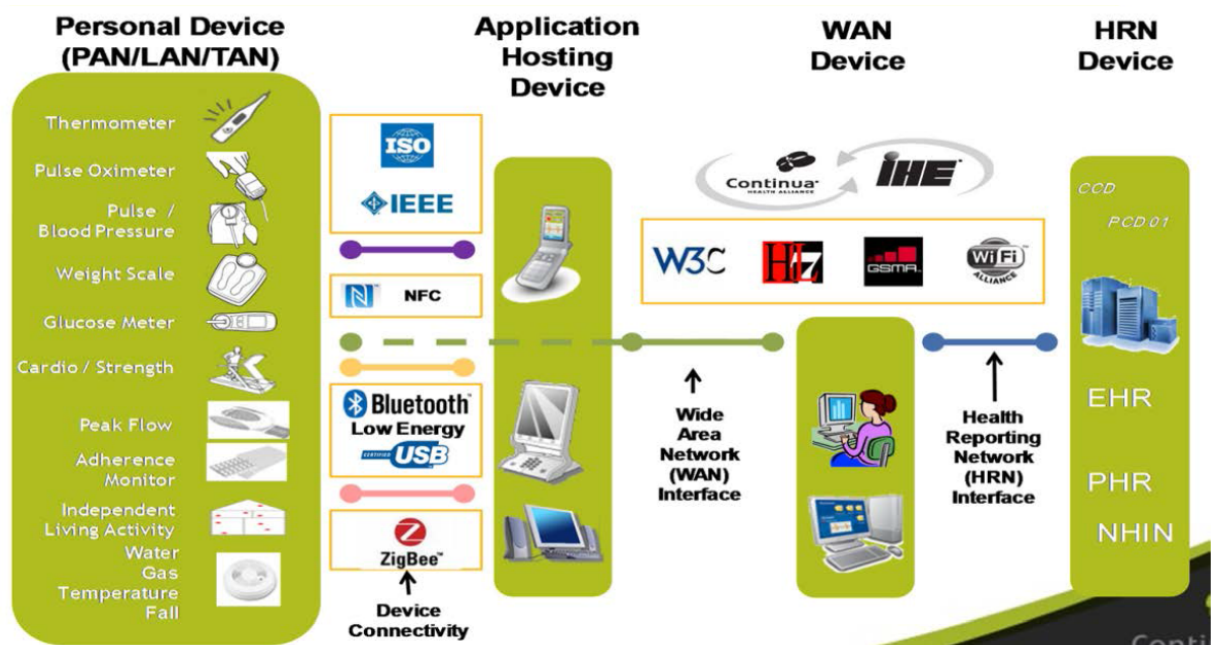


Figure 1: Continua Health Alliance Architecture

One of the standards is HL7 Personal Healthcare Monitoring Report (PHMR). The PHMR standard is used for communication between the WAN device and HRN Device.

This document does not describe the use of standards in the Personal Device and the Application Hosting Device.

## 1.3 Audience

The audience for this document is software developers and other implementers of Personal Healthcare Monitoring (PHM) systems interfacing with Electronic Health Record (EHR) systems, Electronic Medical Record (EMR) systems, Personal Health Record (PHR) systems, and national health information exchange networks who wish to create and/or process PHMR documents created according to this specification.

## 1.4 Approach

Overall, the approach for the Danish PHMR profile 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 RIM defined in the CDA R2 Refined Message Information Model (RMIM). Implementation Guides such as this and the CCD<sup>2</sup> 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.

<sup>1</sup> Reference Architecture for Collecting Health Data from Citizens. National eHealth Authority. June 2013.

<sup>2</sup> HL7 Implementation Guide: CDA Release 2 – Continuity of Care Document (CCD). April 01, 2007.

Wherever possible, the Danish PHMR reuses templates already set forth by the HL7 Continuity of Care Document (CCD) and the HL7 Personal Healthcare Monitoring Report (PHMR)<sup>3</sup>.

This PHMR DK profile adds constraints to HL7's Personal Healthcare Monitoring Report (PHMR) through conformance statements that further define and restrict the CCD and PHMR objects and the vocabulary sets for coded elements.

The structured body of the Danish PHMR is intended to be compatible with CCD, although there are some differences in the CDA Header, most notably the demographic specifications, which are adjusted for the use in Denmark.

It is important to note that not all areas of the international HL7 PHMR are included in this profile.

The codes for unambiguously representing measurement units in this profile are based on code systems which are used in other standards and profiles for the exchange of data in the eHealth sector in Denmark.

## 1.5 Use of Templates

Templates are collections of constraints that specify and validate agreed-to requirements for exchange. Collecting individual constraints and assigning a unique template identifier (`templateId`) to the collection establishes a shorthand mechanism for the instance creator to assert conformance to those constraints. The `templateId` itself carries no semantics. Validation errors against a template must not be construed as anything other than failure to meet the exact requirements of the template, and absence of a `templateId` need not be construed as failure to meet the constraints required by the template.

## 1.6 OID Representation

IN HL7 specifications an OID is represented as a sequence of non-negative integers separated by periods. They look like an IP address on steroids. For example, the OID for HL7 appears as 2.16.840.1.113883. HL7 provides a public available OID registry from which anyone can obtain their own use or look up OIDs used or assigned to others. This is available at <http://www.hl7.org/oid/index.cfm>.

The HL7 Implementation Guide for Unique Object Identifiers informative specification is available from the HL7 website at <http://www.hl7.org> and provides information on how to use OIDs inside CDA documents.

## 1.7 Conventions used in This Guide

This Implementation Guide is a conformance profile, as described in the Refinement and Localization section of the HL7 Version 3 standards. The base standard for this Implementation Guide is the HL7 Clinical Document Architecture, Release 2.0. As defined in that document, this Implementation Guide is both an annotation profile and a localization profile. Every aspect of the CDA R2 may not be described in this guide.

### 1.7.1 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" allows the use of nullFlavor unless the requirement is on an attribute or the use of nullFlavor is explicitly precluded.

---

<sup>3</sup> HL7 Implementation Guide for CDA Release 2.0. Personal Healthcare Monitoring Report (PHMR). (International Realm). Draft Standard for Trial Use. Release 1.1. October 2010.

## 1.7.2 Conformance Requirements

New constraints in the Danish PHMR are added by using the conformance identification identifier **CONF-PHMR-DK-XX**.

All conformance requirements are numbered sequentially and follow the specific profiling version.

## 1.7.3 Example XML code

XML examples **appear** in various figures in this document in a `fixed-width font`. Portions of the XML content may be omitted from the content for brevity marked by an ellipsis (...) as shown in the example below.

```
<ClinicalDocument xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  ...
</ClinicalDocument>
```

*Figure 2: XML code example*

## 1.7.4 XPath Notation

Instead of the traditional dotted notation used by HL7 to represent RIM classes, this document uses XPath notation in conformance statements and elsewhere to identify the XML elements and attributes within the CDA document instance to which various constraints are applied. The implicit context of these expressions is the root of the document. The purpose of using this notation is to provide a mechanism that will be familiar to developers for identifying parts of an XML document.

## 1.8 CDA

The HL7 **Clinical Document Architecture** (CDA) is an XML-based markup standard intended to specify the encoding, structure and semantics of clinical documents for exchange. The CDA standard doesn't specify how the documents should be transported.

CDA is a part of the HL7 version 3 standard and was developed using the HL7 Development Framework (HDF) and it is based on the HL7 Reference Information Model (RIM) and the HL7 Version 3 Data Types. CDA documents are persistent in nature.

### 1.8.1 Structure of a CDA Document

A CDA document is comprised of two parts.

The **document header** sets the context for the clinical document. It contains information such as when it was written, who wrote it, for what organisation, which patient it applies to, and the encounter for which it describes the healthcare services.

The **document body** contains the human readable narrative text. The body may also include machine-readable information called entries. The CDA standard has one restriction on the unstructured text. The format cannot be XML.



## 1.8.2 Levels of CDA

CDA includes the use of three levels. Each level introduced a higher degree of semantic interoperability into the exchange of the clinical documents.

At Level 1, the CDA provides a collection of metadata used to describe the clinical document, along with the human readable content in application specific or proprietary formats.

Level 2 introduces structures to convey the human readable content in a form like HTML, and to identify sections of that content using coded terms.

Finally, level 3 provides not only human readable semantics, but also machine-readable semantic content.

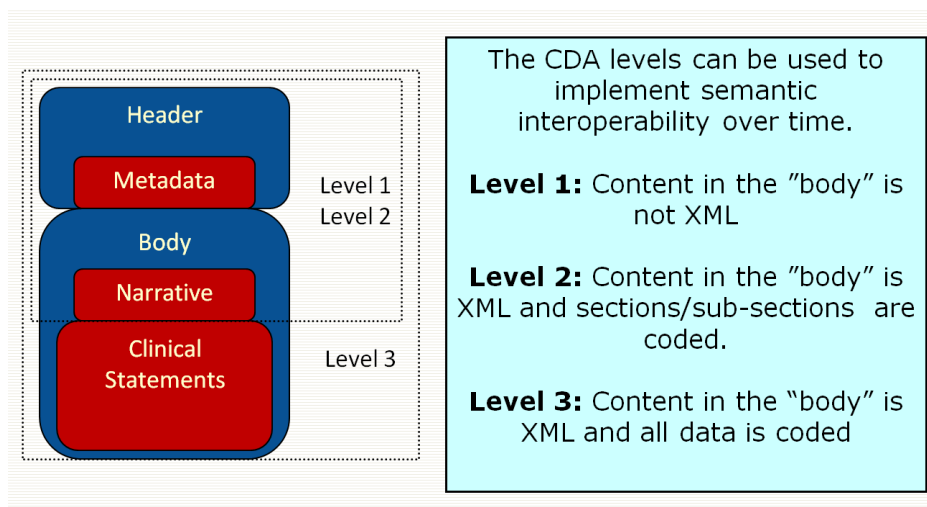


Figure 3: Levels of CDA

The Danish PHMR is level 3: Content in the "body" is XML and all data is coded.

## 1.8.3 Persistence

According to the CDA standard, persistence is a characteristic of a clinical document. A CDA document continues to exist in an unaltered state, for a period defined by regulatory requirements. Health care providers and provider organizations are required to retain documentation of care that has been provided for specific time periods.

## 1.8.4 Stewardship

Clinical documents are "maintained" by an organization entrusted with its care. This means that an organization must be able to produce the original of a clinical document, sometimes years after it was created.

The CDA format requires that the name of the organization be recorded as of the time the document was created. Over time, organizations may merge with other organizations, may be split off to other organizations. CDA does not require that the history of organizational changes be recorded and maintained. Instead, it assumes that knowledge of the original steward should be sufficient to locate any subsequent organization that would retain the original copy of the document.

The steward of a CDA document is known as its custodian. The CDA standard does not allow for individual persons to be stewards of documents, only organizations.

## 1.8.5 Potential for authentication

The potential for authentication of a clinical document refers to its ability to record or attest the signature of the legally responsible provider. This legal authentication attests to the completeness and accuracy of the clinical information and lends credibility to its content.

There may be different kinds of "signers" of a clinical document. Some signers are simply attesting that the content of the document appears as they wrote it. Others are signing the document to assert that not only is it true, correct and complete, but also that they accept legally responsible for the care described in it.

The CDA standard supports the ability of the different types of authenticators to be recorded in the CDA document. It distinguishes between the legal authenticator (the person taking legal responsibility for the document content), and other authenticators.

Legal authentication is recorded in a CDA document, a form that supports electronic signatures rather than digital signatures. When a paper document is signed, it is very clear that what is being signed is the information that appears on paper. When a CDA document records the signature of an authenticator, the standard does not make clear that it is the human readable content being authenticated. This is left to the local policy for implementation.

### 1.8.6 Human readability

Clinical documents are intended to communicate information between healthcare providers. Healthcare providers are humans so clinical documents must be human readable.

The CDA specifies that the content of the document consist of a mandatory textual part (which ensures human interpretation of the document and content) and optional structured parts (for software processing). The structured part relies on coding systems to represent concepts.

The human readability means that there must be a way to display the contents of the clinical document in a way that will allow a human to read it. This display can be through a separate application using proprietary formats such as a word processor, or it can be through the narrative format defined in the CDA standard.

## 1.9 Content of the Package

The following files comprise the package:

Filename	Description	Standards Applicability
PHMR-DK-v2.1.0	This Implementation Guide	Normative
DK-CDA-Header-v1.4	HL7 Implementation Guide for CDA Release 2.0. CDA Header (DK CDA Header). Release 1.4. October 29th 2019.	Normative
PHMR-Example-01	Oxygen saturation. Measured by the patient. Entered by the patient.	Informative
PHMR-Example-02	Oxygen saturation. Measured by the home nurse. Entered by the home nurse.	Informative
PHMR-Example-03	Sit-to-Stand Test (STS). Measured by the patient. Entered by the patient.	Informative
PHMR-Example-04	Blood pressure measurement with both systolic and diastolic blood pressure, embedded under the same organizer in separate component elements.	Informative

**Table 1 Content of the Package**

## 2 DOCUMENT HEADER TEMPLATE

All generic Header information is described in the document: HL7 Implementation Guide for CDA Release 2.0 CDA Header, (DK CDA Header), release 1.4, October 29<sup>th</sup>, 2019.

Additional constraints to the CDA header information to this CDA are described in this paragraph.

### 2.1 PHMR DK specific header information

#### 2.1.1 ClinicalDocument/templateId

Two `templateId` are used in the PHMR DK header:

The first is the HL7 PHMR template "2.16.840.1.113883.10.20.9".

The second is MedCom `templateId` for PHMR DK is "1.2.208.184.11.1".

1. **SHALL** contain exactly one [1..1] `templateId` (CONF-PHMR-DK- 1) such that it:
  - A. **SHALL** contain exactly one [1..1] `@root="2.16.840.1.113883.10.20.9"` (CONF-PHMR-DK- 2)
2. **SHALL** contain exactly one [1..1] `templateId` (CONF-PHMR-DK- 3) such that it:
  - a. **SHALL** contain exactly one [1..1] `@root="1.2.208.184.11.1"` (CONF-PHMR-DK- 4)

```
<!-- Required: conforms to the DSTU -->
<templateId root="2.16.840.1.113883.10.20.9"/>
<!-- Danish PHMR Template -->
<templateId root="1.2.208.184.11.1"/>
```

Figure 4. PHMR ClinicalDocument/templateId example

#### 2.1.2 ClinicalDocument/id

The `id` is a globally unique identifier for the document and specifies information about for the assigning authority that built the document.

1. **SHALL** contain exactly one [1..1] `id` (CONF-PHMR-DK- 5) such that it:
  - a. **SHALL** contain exactly one [1..1] `@extension` as an UUID version 4 (CONF-PHMR-DK- 6)
  - b. **SHALL** contain exactly one [1..1] `@root` with the OID for the system or organisation responsible for issuing the `id` (CONF-PHMR-DK- 7)
  - c. **SHALL** contain exactly one [1..1] `@assigningAuthorityName` for the system or organisation responsible for issuing the `id` (CONF-PHMR-DK- 8)

```
<!-- id for the organisation building the PHMR -->
<id
  extension="d68f4e35-6576-414e-9db4-0a0962dabf66"
  root="1.2.3.4.5"
  assigningAuthorityName="Some organisation"/>
```

Figure 5. PHMR ClinicalDocument/id example

#### 2.1.3 ClinicalDocument/code

The `code` for a PHMR DK document is adopted from LOINC and has a value of "53576-5".

1. **SHALL** contain exactly one [1..1] `code` (CONF-PHMR-DK- 9) such that it:
  - a. **SHALL** contain exactly one [1..1] `@code="53576-5"` (CONF-PHMR-DK- 10)
  - b. **SHALL** contain exactly one [1..1] `@codeSystem="2.16.840.1.113883.6.1"` (CONF-PHMR-DK- 11)
  - c. **SHALL** contain exactly one [1..1] `@codeSystemName="LOINC"` (CONF-PHMR-DK- 12)
  - d. **SHALL** contain exactly one [1..1] `@displayName="Personal Health Monitoring Report"` (CONF-PHMR-DK- 13)

```
<code
  code="53576-5"
  codeSystem="2.16.840.1.113883.6.1"
  codeSystemName="LOINC"
  displayName="Personal Health Monitoring Report"/>
```

Figure 6. PHMR ClinicalDocument/code example.

## 2.1.4 ClinicalDocument/title

The title text shall describe the heading for the PHMR document and always set to “Hjemmemålinger”.

```
<title>Hjemmemålinger</title>
```

Figure 7. PHMR ClinicalDocument/title example.

## 2.1.5 ClinicalDocument/effectiveTime

The effectiveTime element specifies the creation time of the document.

```
<effectiveTime value="20250227101010+0100"/>
```

Figure 8. PHMR ClinicalDocument/effectiveTime example.

## 2.1.6 ClinicalDocument/recordTarget

The recordTarget records the patient whose health information (in the context of this IG, patient responses to a set of questions (or patient reported outcome measure) asked through the Questionnaire Form Definition Document) is described by the clinical document; each recordTarget must contain at least one patientRole element.

1. **SHALL** contain exactly one [1..1] recordTarget (CONF:18).
  - a. Such recordTargets **SHALL** contain exactly one [1..1] patientRole (CONF:19).
    - i. This patientRole **SHALL** contain exactly one [1..1] id (CONF-DK: 1).
    - ii. This patientRole **SHALL** contain exactly one [1..1] addr (CONF:21).
    - iii. This patientRole **SHALL** contain at least one [1..1] telecom (CONF:22).
    - iv. This patientRole **SHALL** contain exactly one [1..1] patient (CONF:23).
      1. This patient **SHALL** contain exactly one [1..1] name (CONF:24).
      2. This patient **SHALL** contain exactly one [1..1] administrativeGenderCode (CONF:25).
      3. This patient **SHALL** contain exactly one [1..1] birthTime (CONF:25).
        - a. **SHALL** be precise to year (CONF:27).
        - b. **SHALL** be precise to month (CONF-DK: 2).
        - c. **SHALL** be precise to day (CONF-DK: 3).
        - d. hhMMSS and offset from UTC **SHALL** be set to “000000+0000” (CONF-DK: 4).

```
<recordTarget contextControlCode="OP" typeCode="RCT">
  <patientRole classCode="PAT">
    <id
      assigningAuthorityName="CPR"
      extension="2512489996"
      root="1.2.208.176.1.2"/>
    <addr use="H">
      <streetAddressLine>Skovvejen 12</streetAddressLine>
      <streetAddressLine>Landet</streetAddressLine>
      <postalCode>5700</postalCode>
      <city>Svendborg</city>
      <country>Danmark</country>
    </addr>
    <telecom use="H" value="tel:65123456"/>
    <telecom use="WP" value="mailto:nab@udkantsdanmark.dk"/>
    <patient classCode="PSN" determinerCode="INSTANCE">
      <name>
        <given>Nancy</given>
        <given>Ann</given>
        <family>Berggren</family>
      </name>
      <administrativeGenderCode
        code="F"
        codeSystem="2.16.840.1.113883.5.1"
        codeSystemName="HL7"/>
      <birthTime value="19481225000000+0000"/>
    </patient>
  </patientRole>
</recordTarget>
```

Figure 9: DK realm Questionnaire Response recordTarget example

## 2.1.7 ClinicalDocument/author

In the context of PHMR DK, the author represents the person or organization responsible for maintaining the measurements in the Personal Health Monitoring Report.

Often by home monitoring the author is the patient, but the author can in some cases also be a healthcare provider collects or monitors personal health data, such as a clinician.

If the author is a health care provider further information shall be provided for the represented organisation.

1. **SHALL** contain exactly one [1..1] `author` (CONF-PHMR-DK- 14) such that it:
  - a. **SHALL** contain exactly one [1..1] `@typecode="AUT"` (CONF-PHMR-DK- 15)
  - b. **SHALL** contain exactly one [1..1] `@contextControlCode="OP"` (CONF-PHMR-DK- 16)
2. **SHALL** contain exactly one [1..1] `time` (CONF-PHMR-DK- 17) such that it:
  - a. **SHALL** contain exactly one [1..1] `@value` for the time when the author completes and approve the measurements (CONF-PHMR-DK- 18)
3. **SHALL** contain exactly one [1..1] `assignedAuthor` (CONF-PHMR-DK- 19) such that it:
  - a. **SHALL** contain exactly one [1..1] `@classCode="ASSIGNED"` (CONF-PHMR-DK- 20)
4. This `assignedAuthor` **SHALL** contain exactly one [1..1] `id` (CONF-PHMR-DK- 21) such that it:
  - a. **SHALL** contain exactly one [1..1] `@root="1.2.208.176.1.2"` if the author is the patient (CONF-PHMR-DK- 22)
  - b. **SHALL** contain exactly one [1..1] `@root="1.2.208.176.1.1"` if the author is a health organization (CONF-PHMR-DK- 23)
5. Only if the author is the patient it **SHALL** contain exactly one [1..1] `code` (CONF-PHMR-DK- 24) such that it:
  - a. **SHALL** contain exactly one [1..1] `@code="SELF"` (CONF-PHMR-DK- 25)
  - b. **SHALL** contain exactly one [1..1] `@codeSystem="2.16.840.1.113883.5.111"` (CONF-PHMR-DK- 26)
  - c. **SHALL** contain exactly one [1..1] `@codeSystemName="HL7 code role"` (CONF-PHMR-DK- 27)
  - d. **SHALL** contain exactly one [1..1] `@displayName="Self"` (CONF-PHMR-DK- 28)
6. **SHALL** contain an `addr` for the author which complies with the DK CDA Header (CONF-PHMR-DK- 29)
7. **SHALL** contain a `telecom` for the author which complies with the DK CDA Header (CONF-PHMR-DK- 30)
8. **SHALL** contain an `assignedPerson` for the author which complies with the DK CDA Header (CONF-PHMR-DK- 31)
9. Only if the author is the patient it **SHALL** contain exactly one [1..1] `representedOrganisation` which complies with the DK CDA Header (CONF-PHMR-DK- 32)

```
<author typeCode="AUT" contextControlCode="OP">
  <!-- Time when the author completes and approves the measurement results -->
  <time value="20250130120000+0100"/>
  <assignedAuthor classCode="ASSIGNED">
    <!-- id, as a Danish CPR-number for the patient. The patient is author -->
    <id root="1.2.208.176.1.2" extension="0103660140" assigningAuthorityName="CPR"/>
    <!-- The patient is self-reporting the measurements -->
    <code code="SELF" displayName="Self" codeSystem="2.16.840.1.113883.5.111"
codeSystemName="HL7 Role code"/>
    <addr use="H">
      <streetAddressLine>Boltonvej 27</streetAddressLine>
      <postalCode>2300</postalCode>
      <city>København S</city>
    </addr>
    <assignedPerson classCode="PSN" determinerCode="INSTANCE">
      <name>
        <given>Frederikke</given>
        <family>Februar</family>
      </name>
    </assignedPerson>

    <!-- The representedOrganization is the healthcare organization that has responsibility
for the patient's treatment -->
    <representedOrganization classCode="ORG" determinerCode="INSTANCE">
      <id root="1.2.208.176.1.1" extension="1118261000016001" assigningAuthorityName="SOR"/>
      <name>Sundhedsteamet, Københavns Kommune</name>
      <telecom value="tel:12345678" use="WP"/>
    </representedOrganization>
  </assignedAuthor>
</author>
```

```

<telecom value="mailto:sundhed@testkommune.dk" use="WP"/>
<telecom value="http://www.testkommune.dk" use="WP"/>
<addr use="WP">
  <streetAddressLine>Sundholmsvej 18</streetAddressLine>
  <postalCode>2300</postalCode>
  <city>København S</city>
  <country>Danmark</country>
</addr>
</representedOrganization>
</assignedAuthor>
</author>

```

**Figure 10. PHMR ClinicalDocument/author (patient) example.**

```

<author typeCode="AUT" contextControlCode="OP">
  <!-- Time when the author completes and approves the measurement results -->
  <time value="20250130120000+0100"/>
  <assignedAuthor classCode="ASSIGNED">
    <id root="1.2.208.176.1.1" extension="1118261000016001" assigningAuthorityName="SOR"/>
    <addr use="WP">
      <streetAddressLine>Sundholmsvej 18</streetAddressLine>
      <postalCode>2300</postalCode>
      <city>København S</city>
      <country>Danmark</country>
    </addr>
    <telecom value="tel:12345678" use="WP"/>
    <telecom value="mailto:sundhed@testkommune.dk" use="WP"/>
    <telecom value="http://www.testkomune" use="WP"/>
    <assignedPerson classCode="PSN" determinerCode="INSTANCE">
      <name>
        <prefix>Sygeplejerske</prefix>
        <given>Ulle</given>
        <family>Andersen</family>
      </name>
    </assignedPerson>
  </assignedAuthor>
</author>

```

**Figure 11. PHMR ClinicalDocument/author (health provider) example.**

## 2.1.8 ClinicalDocument/dataEnterer

The `dataEnterer` element represents the person who transferred the content, written or dictated by someone else, into the clinical document. The guiding rule of thumb is that an `author` provides the content found within the header or body of the document, subject to their own interpretation, and the `dataEnterer` adds that information to the electronic system. In other words, a `dataEnterer` transfers information from one source to another (e.g., transcription from paper form to electronic system).

12. **MAY** contain zero or one [0..1] `dataEnterer` (CONF:45).
  - a. Such `dataEnterer`, if present, **SHALL** contain exactly one [1..1] `assignedEntity` (CONF:46).
    - i. This `assignedEntity` **SHALL** contain exactly one [1..1] `id` (CONF:47)
    - ii. This `assignedEntity` **SHALL** contain exactly one [1..1] `addr` (CONF:48)
    - iii. This `assignedEntity` **SHALL** contain exactly one [1..1] `telecom` (CONF:49)
    - iv. This `assignedEntity` **SHALL** contain exactly one [1..1] `assignedPerson` (CONF:50)
      1. This `assignedPerson` **SHALL** contain exactly one [1..1] `name` (CONF:51)
    - v. This `assignedEntity` **MAY** contain zero or one [0..1] `code` to encode the relationship of the person to the `recordTarget` (CONF:52)

```
<dataEnterer
  typeCode="ENT">
  <assignedEntity
    classCode="ASSIGNED">
    <id
      assigningAuthorityName="CPR"
      extension="2512484996"
      root="1.2.208.176.1.2"/>
    <addr
      use="H">
      <streetAddressLine>Byvej 12</streetAddressLine>
      <streetAddressLine>Svinget</streetAddressLine>
      <postalCode>5000</postalCode>
      <city>Odense C</city>
      <country>Danmark</country>
    </addr>
    <telecom
      use="H"
      value="tel:65123456"/>
    <telecom
      use="WP"
      value="mailto:aeb@udkantsdanmark.dk"/>
    <assignedPerson
      classCode="PSN"
      determinerCode="INSTANCE">
      <name>
        <given>Adam</given>
        <given>Everyman</given>
        <family>Berggren</family>
      </name>
    </assignedPerson>
  </assignedEntity>
</dataEnterer>
```

Figure 12: `dataEnterer` Example

### 2.1.9 ClinicalDocument/informant

The `informant` element is not used in this profile.



## 2.1.10 ClinicalDocument/custodian

The `custodian` element represents the organization that is in charge of maintaining the document (e.g. a remote disease management organization (DMO)). The custodian is the steward that is entrusted with the use and management of the document. Every CDA document has exactly one custodian.

13. **SHALL** contain exactly one [1..1] `custodian` (CONF:60).
  - a. This `custodian` **SHALL** contain exactly one [1..1] `assignedCustodian` (CONF:61).
    - i. This `assignedCustodian` **SHALL** contain exactly one [1..1] `representedCustodianOrganization` which may be the person when the document is not maintained by an organization (CONF:62).
      1. This `representedCustodianOrganization` **SHALL** contain at least one [1..\*] `id` (CONF:63).
      2. This `representedCustodianOrganization` **SHALL** contain exactly one [1..1] `name` (CONF:64).
      3. This `representedCustodianOrganization` **SHALL** contain exactly one [1..1] `telecom` (CONF:65).
        - a. This `telecom` **SHOULD** contain exactly one [1..1] `@use` (CONF:66).
      4. This `representedCustodianOrganization` **SHALL** contain exactly one [1..1] `addr` (CONF:67).

```
<custodian
  typeCode="CST">
  <assignedCustodian
    classCode="ASSIGNED">
    <representedCustodianOrganization
      classCode="ORG"
      determinerCode="INSTANCE">
      <id
        assigningAuthorityName="SOR"
        extension="368061000016003"
        root="1.2.208.176.1.1"/>
      <name>Aalborg Universitetshospital</name>
      <telecom
        use="WP"
        value="tel:97664800"/>
      <addr
        use="WP">
        <streetAddressLine>Lungemedicinsk afdeling</streetAddressLine>
        <streetAddressLine>Mølleparkvej 4</streetAddressLine>
        <postalCode>9000</postalCode>
        <city>Aalborg</city>
        <country>Danmark</country>
      </addr>
    </representedCustodianOrganization>
  </assignedCustodian>
</custodian>
```

Figure 13: Custodian example

### 2.1.11 ClinicalDocument/informationRecipient

The `informationRecipient` element is not used in this profile.

## 2.1.12 ClinicalDocument/legalAuthenticator

The `legalAuthenticator` element identifies the legal authenticator of the document and must be present if the document has been legally authenticated. Based on local practice, clinical documents may be released before legal authentication. This implies that a clinical document that does not contain this element has not been legally authenticated.

The act of legal authentication requires a certain privilege be granted to the legal authenticator depending upon local policy

1. **SHALL** contain exactly one [0..1] `legalAuthenticator` (CONF-PHMR-DK- 33) such that it:
  - a. **SHALL** contain exactly one [1..1] `@typeCode="LA"` (CONF-PHMR-DK- 34)
  - b. **SHALL** contain exactly one [1..1] `@contextControlCode="OP"` (CONF-PHMR-DK- 35)
2. This `legalAuthenticator` **SHALL** contain exactly one [1..1] `time` (CONF-PHMR-DK- 36) such that it:
  - a. **SHALL** contain exactly one [1..1] `@value` for the time when the legal authenticator completes and approve the measurements (CONF-PHMR-DK- 37)
3. This `legalAuthenticator` **SHALL** contain exactly one [1..1] `signatureCode` (CONF-PHMR-DK- 38) such that it:
  - a. **SHALL** contain `nullFlavor` (No signature required) (CONF-PHMR-DK- 39)
4. This `legalAuthenticator` **SHALL** contain exactly one [1..1] `assignedEntity` (CONF-PHMR-DK- 40) such that it:
  - a. **SHALL** contain exactly one [1..1] `@classCode="ASSIGNED"` (CONF-PHMR-DK- 41)
5. This `assignedEntity` **SHALL** contain exactly one [1..1] `id` (CONF-PHMR-DK- 42) such that it:
  - a. **SHALL** contain exactly one [1..1] `@root="1.2.208.176.1.1"` (CONF-PHMR-DK- 43)
6. This `assignedEntity` **SHALL** contain an `addr` for the author which complies with the DK CDA Header (CONF-PHMR-DK- 44)
7. This `assignedEntity` **SHALL** contain a `telecom` for the author which complies with the DK CDA Header (CONF-PHMR-DK- 45)
8. This `assignedEntity` **SHALL** contain an `assignedPerson` for the author which complies with the DK CDA Header (CONF-PHMR-DK- 46)

```
<legalAuthenticator typeCode="LA" contextControlCode="OP">
  <time value="20250130130000+0100"/>
  <signatureCode nullFlavor="NI"/>
  <assignedEntity classCode="ASSIGNED">
    <id root="1.2.208.176.1.1" extension="1118261000016001" assigningAuthorityName="SOR"/>
    <addr use="WP">
      <streetAddressLine>Sundholmsvej 18</streetAddressLine>
      <postalCode>2300</postalCode>
      <city>København S</city>
      <country>Danmark</country>
    </addr>
    <telecom value="tel:12345678" use="WP"/>
    <telecom value="mailto:sundhed@testkommune.dk" use="WP"/>
    <telecom value="http://www.testkommune.dk" use="WP"/>
    <assignedPerson classCode="PSN" determinerCode="INSTANCE">
      <name>
        <prefix>Læge</prefix>
        <given>Birthe</given>
        <family>Jensen</family>
      </name>
    </assignedPerson>
  </assignedEntity>
</legalAuthenticator>
```

Figure 14. PHMR ClinicalDocument/legalAuthenticator example

## 2.2 ClinicalDocument/documentationOf

The ClinicalDocument/documentationOf is used to describe the main healthcare event or service that the document is about. It can define the who, what and where of the healthcare service being documented.

### 2.2.1 Start- and stoptime for the measurements

The main activity being described by a PHMR is the monitoring of a patient over a period. This is shown by setting the value of and indicating the duration over which the person's health was monitored.

1. **SHALL** contain exactly one [1..1] documentationOf (CONF-PHMR-DK- 47) such that it:
  - a. **SHALL** contain exactly one [1..1] @typecode="DOC" (CONF-PHMR-DK- 48)
2. This documentationOf **SHALL** contain exactly one [1..1] serviceEvent (CONF-PHMR-DK- 49) such that it:
  - a. **SHALL** contain exactly one [1..1] @classCode="MPROT" (CONF-PHMR-DK- 50)
  - b. **SHALL** contain exactly one [1..1] @moodCode="EVN" (CONF-PHMR-DK- 51)
3. This serviceEvent **SHALL** contain exactly one [1..1] effectiveTime (CONF-PHMR-DK- 52) such that it:
  - a. **SHALL** contain exactly one [1..1] low (CONF-PHMR-DK- 53)
    - i. @value the date/time for first performed measurement (CONF-PHMR-DK- 54)
  - b. **SHALL** contain exactly one [1..1] high (CONF-PHMR-DK- 55)
    - i. @value the date/time for last performed measurement (CONF-PHMR-DK- 56)

```
<documentationOf typeCode="DOC">
  <serviceEvent classCode="MPROT" moodCode="EVN">
    <effectiveTime>
      <low value="20250228120000+0100"/>
      <high value="20250228150000+0100"/>
    </effectiveTime>
  </serviceEvent>
</documentationOf>
```

Figure 15. PHMR ClinicalDocument/documentationOf (start-stop of the measurements) example.

### 2.2.2 PHMR DK version

The ClinicalDocument/documentationOf is also used to specify the CDA profile identification and version.

1. **SHALL** contain exactly one [1..1] documentationOf (CONF-PHMR-DK- 57) such that it:
  - a. **SHALL** contain exactly one [1..1] @typecode="DOC" (CONF-PHMR-DK- 58)
2. This documentationOf **SHALL** contain exactly one [1..1] serviceEvent (CONF-PHMR-DK- 59) such that it:
  - a. **SHALL** contain exactly one [1..1] @classCode="MPROT" (CONF-PHMR-DK- 60)
  - b. **SHALL** contain exactly one [1..1] @moodCode="EVN" (CONF-PHMR-DK- 61)
3. This serviceEvent **SHALL** contain exactly one [1..1] templateId="1.2.208.184.10.1.10" (CONF-PHMR-DK- 62)
4. This serviceEvent **SHALL** contain exactly one [1..1] id (CONF-PHMR-DK- 63) such that it:
  - a. **SHALL** contain exactly one [1..1] @root="1.2.208.184.100.10" (CONF-PHMR-DK- 64)
  - b. **SHALL** contain exactly one [1..1] @extension="phmr-v2.1" (CONF-PHMR-DK- 65)
  - c. **SHALL** contain exactly one [1..1] @assigningAuthorityName="MedCom" (CONF-PHMR-DK- 66)

```
<documentationOf typeCode="DOC">
  <serviceEvent classCode="MPROT" moodCode="EVN">
    <templateId root="1.2.208.184.10.1.10"/>
    <id root="1.2.208.184.100.10" extension="phmr-v2.1" assigningAuthorityName="MedCom"/>
  </serviceEvent>
</documentationOf>
```

Figure 16. PHMR ClinicalDocument/documentationOf (PHMR DK version) example.

### 2.2.3 Code(s) for measurements in the document

The ClinicalDocument/documentationOf is used to specify the type of measurement(s) (codes) which are in the document.

- `xPath:/ClinicalDocument/component/structuredBody/component/section/entry/organizer/component/observation/code)`
- 1. **SHALL** contain at least [1..\*] `documentationOf` (CONF-PHMR-DK- 67) such that it:
  - a. **SHALL** contain exactly one [1..1] `@typeCode="DOC"` (CONF-PHMR-DK- 68)
- 2. This `documentationOf` **SHALL** contain exactly one [1..1] `serviceEvent` (CONF-PHMR-DK- 69) such that it:
  - a. **SHALL** contain exactly one [1..1] `@classCode="MPROT"` (CONF-PHMR-DK- 70)
  - b. **SHALL** contain exactly one [1..1] `@moodCode="EVN"` (CONF-PHMR-DK- 71)
- 3. This `serviceEvent` **SHALL** contain exactly one [1..1] `code` (CONF-PHMR-DK- 72) such that it:
  - a. **SHALL** have exactly one [1..1] `@code` selected from "MedCom/SDS XDS Metadata ValueSet", Tab = DK\_IHE\_EventCodeLists\_DE"<sup>4</sup> (CONF-PHMR-DK- 73)
  - b. **SHALL** contain exactly one [1..1]
    - i. `@codeSystem="1.2.208.176.2.1"` for NPU and DNK codes (CONF-PHMR-DK- 74)
    - ii. `@codeSystem="1.2.208.184.100.1"` for MCS codes (CONF-PHMR-DK- 75)
  - c. **SHALL** contain exactly one [1..1] `@displayName` selected from "MedCom/SDS XDS Metadata ValueSet", Tab = DK\_IHE\_EventCodeLists\_DE" (CONF-PHMR-DK- 76)

```
<!-- Code(s) for the used measurement in the CDA-body -->
<documentationOf typeCode="DOC">
  <serviceEvent classCode="MPROT" moodCode="EVN">
    <code code="NPU03011" codeSystem="1.2.208.176.2.1" displayName="O2 sat; Hb(aB)"/>
  </serviceEvent>
</documentationOf>
<documentationOf typeCode="DOC">
  <serviceEvent classCode="MPROT" moodCode="EVN">
    <code code="MCS88050" codeSystem="1.2.208.176.2.1" displayName="Rejse sætte sig
testen;Pt"/>
  </serviceEvent>
</documentationOf>
```

Figure 17. PHMR ClinicalDocument/documentationOf (measurement(s) codes in the document) example.

<sup>4</sup> [DK-IHE Metadata-Common Code systems-Value sets.xlsx](#)

### 3 DOCUMENT-LEVEL TEMPLATE

The Personal Health Monitoring Report (PHMR) document-level template is a universal CDA template. The basic CDA constraints are not repeated if they are not further constrained.

The document-level constrains the high-level structure that applies to the CDA Body for the PHMR document.

XPath	Card	Req.	Null-able	CONF#	Fixed Value
/ClinicalDocument/component					
component	1..1	<b>SHALL</b>	No	CONF-PHMR-77	
@typeCode	1..1	<b>SHALL</b>	No	CONF-PHMR-78	COMP
@contextconductionInd	1..1	<b>SHALL</b>	No	CONF-PHMR-79	true
structuredBody	1..1	<b>SHALL</b>	No	CONF-PHMR-80	
@classCode	1..1	<b>SHALL</b>	No	CONF-PHMR-81	DOCBODY
@moodCode	1..1	<b>SHALL</b>	No	CONF-PHMR-82	EVN
component	1..2	<b>SHALL</b>	No	CONF-PHMR-83	
@contextconductionInd	1..1	<b>SHALL</b>	No	CONF-PHMR-84	true
@typeCode	1..1	<b>SHALL</b>	No	CONF-PHMR-85	COMP
section	1..1	<b>SHALL</b>	No	CONF-PHMR-86	
@classCode	1..1	<b>SHALL</b>	No	CONF-PHMR-87	DOCSECT
@moodcode	1..1	<b>SHALL</b>	No	CONF-PHMR-88	EVN

**Table 2 PHMR Document-level Constraints Overview**

1. The CDA body **SHALL** contain exactly one [1..1] component (CONF-PHMR-DK- 77) such that it:
  - a. **SHALL** contain exactly one [1..1] @typeCode="COMP" (CONF-PHMR-DK- 78)
  - b. **SHALL** contain exactly one [1..1] @contextconductionInd="true" (CONF-PHMR-DK- 79)
2. This component **SHALL** contain exactly one [1..1] structuredBody (CONF-PHMR-DK- 80) such that it:
  - a. **SHALL** contain exactly one [1..1] @classCode="DOCBODY" (CONF-PHMR-DK- 81)
  - b. **SHALL** contain exactly one [1..1] @moodCode="EVN" (CONF-PHMR-DK- 82)
3. This structuredBody **SHALL** contain at least one [1..2] component (CONF-PHMR-DK- 83) such that it:
  - a. **SHALL** contain exactly one [1..1] @contextconductionInd="true" (CONF-PHMR-DK- 84)
  - b. **SHALL** contain exactly one [1..1] @typecode="COMP" (CONF-PHMR-DK- 85)
4. This component **SHALL** contain exactly one [1..1] section (CONF-PHMR-DK- 86) such that it:
  - a. **SHALL** contain exactly one [1..1] @classCode="DOCSECT" (CONF-PHMR-DK- 87)
  - b. **SHALL** contain exactly one [1..1] @moodCode="EVN" (CONF-PHMR-DK- 88)

```

<component typeCode="COMP" contextConductionInd="true">
  <structuredBody classCode="DOCBODY" moodCode="EVN">
    <!--Vital Signs-->
    <component contextConductionInd="true" typeCode="COMP">
      <section classCode="DOCSECT" moodCode="EVN">
        ...
      </section>
    </component>
  </structuredBody>
</component>

<!--Results-->
<component contextConductionInd="true" typeCode="COMP">
  <section classCode="DOCSECT" moodCode="EVN">
    ...
  </section>
</component>
</structuredBody>
</component>

```

**Figure 18. PHMR document-level example.**

## 4 SECTION-LEVEL TEMPLATE

The section-level template is used to group Vital Signs measurements and Results measurements.

In CCD, all sections are optional. This document constrains CCD by adding some section requirements and providing guidance on which sections are recommended for use with personal healthcare monitoring reports and how they should be used.

The following table summarizes the required sections within this profile:

Section	LOINC code	Required (R)/Optional (O)
Vital Signs	8716-3	R (either Vital Signs or Results is required)
Purpose	48764-5	O (not used in the PHMR DK profile)
Medications	10160-0	O (not used in the PHMR DK profile)
Results	30954-2	R (either Vital Signs or Results is required)
Medical Equipment	46264-8	O (not used in the PHMR DK profile)

**Table 3 Section Cardinality**

In this profile all other CCD sections are not allowed.

The ordering of sections is not constrained by this specification.

The content of optional section in the PHMR (International Realm), October 2011 has not been included in the PHMR DK profile

The content of the optional section will be considered based on requirements from new use cases.

XPath	Card	Req.	Nullable	CONF#	Fixed Value
/ClinicalDocument/component/structuredBody/component/section					
section	1..1	<b>SHALL</b>	No	CONF-PHMR-89	
@classCode	1..1	<b>SHALL</b>	No	CONF-PHMR-90	DOCSET
@moodCode	1..1	<b>SHALL</b>	No	CONF-PHMR-91	EVN
templateId	1..1	<b>SHALL</b>	No	CONF-PHMR-92	2.16.840.1.113883.10.20.1.16 or 2.16.840.1.113883.10.20.1.14
code	1..1	<b>SHALL</b>	No	CONF-PHMR-93 CONF-PHMR-94	
@code	1..1	<b>SHALL</b>	No	CONF-PHMR-95	8716-3 or 30954-2
@codeSystem	1..1	<b>SHALL</b>	No	CONF-PHMR-96	
@displayname	1..1	<b>SHALL</b>	No	CONF-PHMR-97	2.16.840.1.113883.6.1
@codeSystemName	1..1	<b>SHALL</b>	No	CONF-PHMR-98	Vital Signs or Results
title	1..1	<b>SHALL</b>	No	CONF-PHMR-99	LOINC
				CONF-PHMR-100	
				CONF-PHMR-101 CONF-PHMR-102	Vital Signs or Results
				CONF-PHMR-103	
text	1..1	<b>SHALL</b>	No	CONF-PHMR-104	
entry	1..*	<b>SHALL</b>	No	CONF-PHMR-105	

**Table 4 PHMR section-level Constraints Overview**

- SHALL** contain exactly one [1..1] section (CONF-PHMR-DK- 89) such that it:
  - SHALL** contain exactly one [1..1] @classCode="DOCSET" (CONF-PHMR-DK- 90)
  - SHALL** contain exactly one [1..1] @moodCode="EVN" (CONF-PHMR-DK- 91)
- This section **SHALL** contain exactly one [1..1] templateId (CONF-PHMR-DK- 92) such that:
  - The templateId **SHALL** have @root="2.16.840.1.113883.10.20.1.16" for Vital Signs Observations (CONF-PHMR-DK- 93)
  - The templateId **SHALL** have @root="2.16.840.1.113883.10.20.1.14" for Results Observations
- This section **SHALL** contain exactly one [1..1] code (CONF-PHMR-DK- 94) such that it:
  - SHALL** have exactly one [1..1]:
    - @code="8716-3" for Vital Signs Observations (CONF-PHMR-DK- 95)
    - @code="30954-2" for Results Observations (CONF-PHMR-DK- 96)
  - SHALL** contain exactly one [1..1] @codeSystem="2.16.840.1.113883.6.1" (CONF-PHMR-DK- 97)

- c. **SHALL** have exactly one [1..1]:
      - i. @displayName="Vital Signs" for Vital Signs Observations (CONF-PHMR-DK- 98)
      - ii. @displayName="Results" for Results Observations (CONF-PHMR-DK- 99)
    - d. **SHALL** contain exactly one [1..1] @codeSystemName="LOINC" (CONF-PHMR-DK- 100)
  4. This section **SHALL** contain exactly one [1..1] title (CONF-PHMR-DK- 101)
    - a. This title **SHALL** be "Vital Signs" for Vital Signs Observations (CONF-PHMR-DK- 102)
    - b. This title **SHALL** be "Results" for Results Observations (CONF-PHMR-DK- 103)
  5. This section **SHALL** contain exactly one [1..1] text (CONF-PHMR-DK- 104) providing a human-readable narrative representation of the structured content compliant with MedCom, HL7 Implementation Guide for CDA Release 2, Implementation Guideline: Narrative Block, Release 1.0, May 6<sup>th</sup>, 2021.
  6. This section **SHALL** contain at least one [1..\*] entry (CONF-PHMR-DK- 105)

```
<section classCode="DOCSECT" moodCode="EVN">
  <!-- HL7 PHMR Vital Signs Section template ID-->
  <templateId root="2.16.840.1.113883.10.20.1.16"/>
  <code code="8716-3" codeSystem="2.16.840.1.113883.6.1" displayName="Vital signs"
codeSystemName="LOINC"/>
  <title>Vital Signs</title>
  <text>
    ...
  </text>
  <!-- Measurement(s) -->
  <entry contextConductionInd="true" typeCode="COMP">
    ...
  </entry>

  <!-- Measurement(s) -->
  <entry contextConductionInd="true" typeCode="COMP">
    ...
  </entry>

  <!-- Measurement(s) -->
  <entry contextConductionInd="true" typeCode="COMP">
    ...
  </entry>
</section>
```

**Figure 19 PHMR section-level example | Vital Signs**

```
<section classCode="DOCSECT" moodCode="EVN">
  <!-- HL7 PHMR Results Section template ID-->
  <templateId root="2.16.840.1.113883.10.20.1.14"/>
  <code code="30954-2" codeSystem="2.16.840.1.113883.6.1" displayName="Results"
codeSystemName="LOINC"/>
  <title>Results</title>
  <text>
    ...
  </text>
  <!-- Measurement(s) -->
  <entry contextConductionInd="true" typeCode="COMP">
    ...
  </entry>

  <!-- Measurement(s) -->
  <entry contextConductionInd="true" typeCode="COMP">
    ...
  </entry>

  <!-- Measurement(s) -->
  <entry contextConductionInd="true" typeCode="COMP">
    ...
  </entry>
</section>
```

**Figure 20 PHMR section-level example | Results**



## 5 ENTRY-LEVEL TEMPLATES

The entry-level template specifies the measurements for Vital Signs and Results.

If the following values are present in the PHMR, they **SHOULD** be recorded in the Vital Signs section:

- Blood pressure
- Temperature
- O<sub>2</sub> saturation
- Respiratory rate
- Pulse

All other values **SHOULD** be recorded in the Results section.

There is one uniq effectiveTime timestamp for each organizer, as multiple measurements within an organizer are taken at the same time. For example, systolic and diastolic blood pressure.

XPath	Card	Req.	Nullable	CONF#	Fixed Value
/ClinicalDocument/component/structuredBody/component/section/entry					
entry	1..*	<b>SHALL</b>	No	CONF-PHMR-106	
@contextConductionInd	1..1	<b>SHALL</b>	No	CONF-PHMR-107	true
@typeCode	1..1	<b>SHALL</b>	No	CONF-PHMR-108	COMP
organizer	1..1	<b>SHALL</b>	No	CONF-PHMR-109	
@classCode	1..1	<b>SHALL</b>	No	CONF-PHMR-110	CLUSTER
@moodCode	1..1	<b>SHALL</b>	No	CONF-PHMR-111	EVN
templateId	1..1	<b>SHALL</b>	No	CONF-PHMR-112	
@root	1..1	<b>SHALL</b>	No	CONF-PHMR-113	2.16.840.1.113883.10.20.1.35
statusCode	1..1	<b>SHALL</b>	No	CONF-PHMR-114	
@code	1..1	<b>SHALL</b>	No	CONF-PHMR-115	completed
effectiveTime	1..1	<b>SHALL</b>	No	CONF-PHMR-116	
@value	1..1	<b>SHALL</b>	No	CONF-PHMR-117	
component	1..*	<b>SHALL</b>	No	CONF-PHMR-118	
@contextConductionInd	1..1	<b>SHALL</b>	No	CONF-PHMR-119	true
@typeCode	1..1	<b>SHALL</b>	No	CONF-PHMR-120	COMP
observation	1..1	<b>SHALL</b>	No	CONF-PHMR-121	
@classCode	1..1	<b>SHALL</b>	No	CONF-PHMR-122	OBS
@moodCode	1..1	<b>SHALL</b>	No	CONF-PHMR-123	EVN
templateId	1..1	<b>SHALL</b>	No	CONF-PHMR-124	
@root	1..1	<b>SHALL</b>	No	CONF-PHMR-125	2.16.840.1.113883.10.20.9.8
id	1..1	<b>SHALL</b>	No	CONF-PHMR-126	
@root	1..1	<b>SHALL</b>	No	CONF-PHMR-127	
@extension	1..1	<b>SHALL</b>	No	CONF-PHMR-128	
@assigningAuthorityName	1..1	<b>SHALL</b>	No	CONF-PHMR-129	
code	1..1	<b>SHALL</b>	No	CONF-PHMR-130	
@code	1..1	<b>SHALL</b>	No	CONF-PHMR-131	
@codeSystem	1..1	<b>SHALL</b>	No	CONF-PHMR-132 CONF-PHMR-133	1.2.208.176.2.1 1.2.208.184.100.1
@codeSystemName	1..1	<b>SHALL</b>	No	CONF-PHMR-134 CONF-PHMR-135	NPU Terminologien MedCom Message Codes
@displayName	1..1	<b>SHALL</b>	No	CONF-PHMR-136	
value	1..1	<b>SHALL</b>	No	CONF-PHMR-137	
@xsi:type	1..1	<b>SHALL</b>	No	CONF-PHMR-138	PQ
@value	1..1	<b>SHALL SHOULD</b>	No	CONF-PHMR-139 CONF-PHMR-140	
@unit	0..1	<b>SHOULD</b>	No	CONF-PHMR-141 CONF-PHMR-142	
methodCode	2..2	<b>SHALL</b>	No	CONF-PHMR-143	
@code	1..1	<b>SHALL</b>	No	CONF-PHMR-144 CONF-PHMR-145 CONF-PHMR-146	
@codeSystem	1..1	<b>SHALL</b>	No	CONF-PHMR-147	1.2.208.184.100.1
@codeSystemName	1..1	<b>SHALL</b>	No	CONF-PHMR-148	MedCom Message Codes
@displayName	1..1	<b>SHALL</b>	No	CONF-PHMR-149	

**Table 5 PHMR entry-level Constraints Overview**

1. **SHALL** contain at least [1..\*] `entry` (CONF-PHMR-DK- 106) such that it:
  - a. **SHALL** contain exactly one [1..1] `@contextConductionInd="true"` (CONF-PHMR-DK- 107)
  - b. **SHALL** contain exactly one [1..1] `@typeCode="COMP"` (CONF-PHMR-DK- 108)
2. This `entry` **SHALL** contain exactly one [1..1] `organizer` (CONF-PHMR-DK- 109) such that it:
  - a. **SHALL** contain exactly one [1..1] `@classCode="CLUSTER"` (CONF-PHMR-DK- 110)
  - b. **SHALL** contain exactly one [1..1] `@modCode="EVN"` (CONF-PHMR-DK- 111)
3. This `organizer` **SHALL** contain exactly one [1..1] `templateId` (CONF-PHMR-DK- 112) such that:
  - a. The `templateId` **SHALL** have `@root="2.16.840.1.113883.10.20.1.35"` (CONF-PHMR-DK-113)
4. This `organizer` **SHALL** contain exactly one [1..1] `statusCode` (CONF-PHMR-DK-114) such that it:
  - a. **SHALL** contain exactly one [1..1] `@code="completed"` (CONF-PHMR-DK-115)
5. This `organizer` **SHALL** contain exactly one [1..1] `effectiveTime` (CONF-PHMR-DK- 116) such that it:
  - a. **SHALL** contain exactly one [1..1] `@value` representing the time for measurements contained inside the organizer element (CONF-PHMR-DK- 117)
6. This `organizer` **SHALL** contain exactly one [1..1] `component` (CONF-PHMR-DK-118)
  - a. **SHALL** contain exactly one [1..1] `@contextConductionInd="true"` (CONF-PHMR-DK- 119)
  - b. **SHALL** contain exactly one [1..1] `@typeCode="COMP"` (CONF-PHMR-DK-120)
7. This `component` **SHALL** contain exactly one [1..1] `observation` (CONF-PHMR-DK- 121) such that it:
  - a. **SHALL** contain exactly one [1..1] `@classCode="OSB"` (CONF-PHMR-DK- 122)
  - b. **SHALL** contain exactly one [1..1] `@modCode="EVN"` (CONF-PHMR-DK- 123)
8. This `observation` **SHALL** contain exactly one [1..1] `templateId` (CONF-PHMR-DK- 124) such that:
  - a. The `templateId` **SHALL** have `@root="2.16.840.1.113883.10.20.9.8"` for Numerical (CONF-PHMR-DK- 125)
9. **SHALL** contain exactly one [1..1] `id` (CONF-PHMR-DK- 126) such that it:
  - a. **SHALL** contain exactly one [1..1] `@root` with the OID for the system or organisation responsible for issuing the `id` and that stores the measurement (CONF-PHMR-DK- 127)
  - b. **SHALL** contain exactly one [1..1] `@extension` with a local unique id for the measurement (CONF-PHMR-DK- 128)
  - c. **SHALL** contain exactly one [1..1] `@assigningAuthorityName` that corresponds to the OID for the system or organisation responsible for issuing the `id` and that stores the measurement (CONF-PHMR-DK- 129)
10. **SHALL** contain exactly one [1..1] `code` (CONF-PHMR-DK- 130) such that it:
  - a. **SHALL** have exactly one [1..1] `@code` selected from "MedCom/SDS XDS Metadata ValueSet. Tab = DK\_IHE\_EventCodeLists\_DE"<sup>5</sup> (CONF-PHMR-DK- 131)
  - a. **SHALL** contain exactly one [1..1]
    - i. `@codeSystem="1.2.208.176.2.1"` for NPU and DNK codes (CONF-PHMR-DK- 132)
    - ii. `@codeSystem="1.2.208.184.100.1"` for MCS codes (CONF-PHMR-DK- 133)
  - b. **SHALL** have exactly one [1..1]
    - i. `@CodeSystemName="NPU Terminologien"` for NPU and DNK codes (CONF-PHMR-DK- 134)
    - ii. `@CodeSystemName="MedCom Message Codes"` for MCS codes (CONF-PHMR-DK- 135)
  - c. **SHALL** contain exactly one [1..1] `@displayName` selected from "MedCom/SDS XDS Metadata ValueSet, Tab = DK\_IHE\_EventCodeLists\_DE" (CONF-PHMR-DK- 136)
11. **SHALL** contain exactly one [1..1] `value` (CONF-PHMR-DK- 137) such that it:
  - a. **SHALL** contain exactly one [1..1] `@xsi:type="PQ"` (CONF-PHMR-DK- 138)
  - b. **SHALL** contain exactly one [1..1] `@value` with the value for the measurement (CONF-PHMR-DK- 139)

<sup>5</sup> [DK-IHE Metadata-Common Code systems-Value sets.xlsx](#)

- i. The number of decimal places **SHOULD** be specified according to good clinic practice (CONF-PHMR-DK- 140)
  - C. **SHOULD** contain exactly one [0..1] @unit (CONF-PHMR-DK- 141)
    - i. The unit for the measurement **SHALL** be derived from Hjemmemålinger/Klinikmålinger - MedCom (column=Enhed)<sup>6</sup>for the specific NPU, DNK or MCS code (CONF-PHMR-DK- 142)
- 12. **SHALL** contain exactly two [2..2] methodCode (CONF-PHMR-DK- 143) such that it:
  - a. **SHALL** have exactly one [1..1] @code selected from “MedCom Message Codes” (CONF-PHMR-DK- 144) such that
    - i. @code for methodCode [1] **SHALL** specify the transfer or the performer of the measurement (CONF-PHMR-DK- 145)
    - ii. @code for methodCode [2] **SHALL** specify who typed in the measurement (CONF-PHMR-DK- 146)
  - b. **SHALL** contain exactly one [1..1] @codeSystem=“1.2.208.184.100.1” (CONF-PHMR-DK- 147)
  - c. **SHALL** contain exactly one [1..1] @codeSystemName=“MedCom Message Codes” (CONF-PHMR-DK- 148)
  - d. **SHALL** contain exactly one [1..1] @displayName related to @code in the “MedCom Message Codes” (CONF-PHMR-DK- 149)

---

<sup>6</sup> [Hjemmemålinger/Klinikmålinger - MedCom](#)

```

<entry contextConductionInd="true" typeCode="COMP">
  <organizer classCode="CLUSTER" moodCode="EVN">
    <templateId root="2.16.840.1.113883.10.20.1.35"/>
    <statusCode code="completed"/>
    <effectiveTime value="20250228120000+0100"/>
    <!-- Systolic blood pressure measurement -->
    <component contextConductionInd="true" typeCode="COMP">
      <observation classCode="OBS" moodCode="EVN">
        <!-- HL7 PHMR Numeric Observation template ID -->
        <templateId root="2.16.840.1.113883.10.20.9.8"/>
        <!-- id for the healthcare organization and local id for the measurement -->
        <id
          assigningAuthorityName="Some organization"
          extension="organization internal unique id"
          root="1.2.4.5"/>
        <code
          code="DNK05472"
          codeSystem="1.2.208.176.2.1"
          codeSystemName="NPU terminologien"
          displayName="Blodtryk systolisk;Arm"/>
        <value
          xsi:type="PQ"
          value="120"
          unit="mmHg"/>
        <methodCode
          code="POT"
          codeSystem="1.2.208.184.100.1"
          codeSystemName="MedCom Message Codes"
          displayName="Målt af borger"/>
        <methodCode
          code="TPD"
          codeSystem="1.2.208.184.100.1"
          codeSystemName="MedCom Message Codes"
          displayName="Indtastet af borger"/>
      </observation>
    </component>
    <!-- Diastolic blood pressure measurement -->
    <component contextConductionInd="true" typeCode="COMP">
      <observation classCode="OBS" moodCode="EVN">
        <!-- HL7 PHMR Numeric Observation template ID -->
        <templateId root="2.16.840.1.113883.10.20.9.8"/>
        <!-- id for the healthcare organization and local id for the measurement -->
        <id
          assigningAuthorityName="Some organization"
          extension="organization internal unique id"
          root="1.2.4.5"/>
        <code
          code="DNK05473"
          codeSystem="1.2.208.176.2.1"
          codeSystemName="NPU terminologien"
          displayName="Blodtryk diastolisk;Arm"/>
        <value
          xsi:type="PQ"
          value="80"
          unit="mmHg"/>
        <methodCode
          code="POT"
          codeSystem="1.2.208.184.100.1"
          codeSystemName="MedCom Message Codes"
          displayName="Målt af borger"/>
        <methodCode
          code="TPD"
          codeSystem="1.2.208.184.100.1"
          codeSystemName="MedCom Message Codes"
          displayName="Indtastet af borger"/>
      </observation>
    </component>
  </organizer>
</entry>

```

**Figure 21. PHMR entry-level example – Two measurements performed at the same time, for this instance blood pressure**

```

<entry contextConductionInd="true" typeCode="COMP">
  <organizer classCode="CLUSTER" moodCode="EVN">
    <!-- PHMR Result Vital Signs Organizer template ID -->
    <templateId root="2.16.840.1.113883.10.20.1.35"/>
    <statusCode code="completed"/>
    <effectiveTime value="20250228120000+0100"/>
    <!-- Systolic blood pressure measurement -->
    <component contextConductionInd="true" typeCode="COMP">
      <observation classCode="OBS" moodCode="EVN">
        <!-- HL7 PHMR Numeric Observation template ID -->
        <templateId root="2.16.840.1.113883.10.20.9.8"/>
        <!-- id for the healthcare organization and local id for the measurement -->
        <id
          assigningAuthorityName="Some organization"
          extension="organization internal unique id"
          root="1.2.4.5"/>
        <code
          code="DNK05472"
          codeSystem="1.2.208.176.2.1"
          codeSystemName="NPU terminologien"
          displayName="Blodtryk systolisk;Arm"/>
        <value
          xsi:type="PQ"
          value="120"
          unit="mmHg"/>
        <methodCode
          code="POT"
          codeSystem="1.2.208.184.100.1"
          codeSystemName="MedCom Message Codes"
          displayName="Målt af borger"/>
        <methodCode
          code="TPD"
          codeSystem="1.2.208.184.100.1"
          codeSystemName="MedCom Message Codes"
          displayName="Indtastet af borger"/>
      </observation>
    </component>
  </organizer>
</entry>
<entry contextConductionInd="true" typeCode="COMP">
  <organizer classCode="CLUSTER" moodCode="EVN">
    <!-- PHMR Result Vital Signs Organizer template ID -->
    <templateId root="2.16.840.1.113883.10.20.1.35"/>
    <statusCode code="completed"/>
    <effectiveTime value="20250228130000+0100"/>
    <!-- Diastolic blood pressure measurement -->
    <component contextConductionInd="true" typeCode="COMP">
      <observation classCode="OBS" moodCode="EVN">
        <!-- HL7 PHMR Numeric Observation template ID -->
        <templateId root="2.16.840.1.113883.10.20.9.8"/>
        <!-- id for the healthcare organization and local id for the measurement -->
        <id
          assigningAuthorityName="Some organization"
          extension="organization internal unique id"
          root="1.2.4.5"/>
        <code
          code="DNK05473"
          codeSystem="1.2.208.176.2.1"
          codeSystemName="NPU terminologien"
          displayName="Blodtryk diastolisk;Arm"/>
        <value
          xsi:type="PQ"
          value="80"
          unit="mmHg"/>
        <methodCode
          code="POT"
          codeSystem="1.2.208.184.100.1"
          codeSystemName="MedCom Message Codes"
          displayName="Målt af borger"/>
        <methodCode
          code="TPD"
          codeSystem="1.2.208.184.100.1"
          codeSystemName="MedCom Message Codes"
          displayName="Indtastet af borger"/>
      </observation>
    </component>
  </organizer>
</entry>

```

**Figure 22. PHMR entry-level example – Two measurements performed at separate times, for this instance, blood pressure**