Test protocol for a

ConditionList

The test protocol relates to the following standard:

|  |  |  |  |
| --- | --- | --- | --- |
| Standard’s name ENG | Standard’s name DK | **Version** | **Type** |
| Standard: ConditionList | Diagnoseoversigt | 1.0.0 | HL7 FHIR  |

|  |
| --- |
| **Versioning** |
| **Version** | **Initials** | **Date** | **Description** |
| **1.0** | **TMS, RCH, SKS** | **2024-11-15** | **First version of test protocol** |
|  |  |  |  |

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# Introduction

This is a test protocol for Receiving a ConditionList.

All documentation concerning ConditionList and Governance (see [Background material](#_Baggrundsmaterialer_1)) will be the subject of testing, and the test protocol will be continuously updated to reflect the requirements in the best way possible.

Versioning of the test protocol will follow the major- and minor-version of the standard but may have a patch version that is different from the standard’s patch-version.

The ConditionList is a FHIR document that will be shared over the national service platform (NSP) for document exchange. The vendor should expect to be tested in the IHE-XDS-metadata, to ensure that the document is requested and retrieved correctly. A link to the IHE-XDS-metadata test protocol can be found under [Background materials](#_Background_materials).

Throughout this test protocol, the term ‘Diagnosis Card’ will be used. It refers to the diagnosis selected by the patient’s general practitioner in the GP’s system. The diagnosis being shared will be exchanged using the ConditionList standard and can be viewed by citizens and healthcare professionals in the shared diagnosis overview.

## Purpose

The test protocol forms the basis for the tests, which must ensure that SUT complies with the established rules and requirements for the standard. The test protocol also forms the basis for the self-test that vendor carries out prior to a live test.

## Prerequisites for live test

Testing is performed by both the Danish Health Data Agency (Danish: Sundhedsdatastyrelsen) and MedCom. A description of the entire setup, can be found on NSPOP, see [Background materials](#_Background_materials).

The following prerequisites must be met prior to the live test:

1. The vendor has read the following standard documentation:
	* [Clinical guidelines for application](#_Baggrundsmaterialer_1)
	* [Use cases](#_Baggrundsmaterialer_1)
	* [Implementation Guide](#_Baggrundsmaterialer_1)
	* [Governance](#_Baggrundsmaterialer_1)
	* And other relevant materials, cf. the [background material](#_Baggrundsmaterialer_1).
2. The vendor has performed [self-test](#_Dokumentation_af_egentest), approved by MedCom.
3. The vendor has created the [relevant test persons](#_Testeksempler_og_testpersoner) in system under test (SUT). Please note that one of these test persons must be a citizen without relevant cases in the SUT’s case complex, i.e. a citizen who does not have an active case within the areas that give legal authority to receive a ConditionList (see [clinical guidelines for application](#_Baggrundsmaterialer_2)). This could be a citizen who only receives assistive technology
4. The vendor uses the same version of SUT during self-test and live test.
5. Approval requires that the SUT is approved for sending FHIR-Acknowledgement (DK: Kvittering).

## Documentation of self-test

**Self-test**

**Prior to the test, the vendor must have performed self-test, including successfully completed TouchStone self-tests, which are approved by MedCom.**

The self-test is documented by the vendor completing this test protocol.

For self-tests, only the following column must be completed by the vendor:

* [Current result]: is filled in with the results of the self-test and relevant descriptions.

Other columns are reserved for MedCom.

**During the self-test the vendor must document the test results by saving relevant files and screen dumps, and subsequently send these in a combined ZIP file (together with the completed test protocol) to** **fhir@medcom.dk****.**

Alle filer og skærmdumps skal navngives med:

* Standard name
* The number of the relevant test step
* Consecutive letter
* File type

Eksempel: ConditionList \_3.4\_A.xml or ConditionList\_2.2\_B.png

## Background materials

| **Name** | **Version[[1]](#footnote-2)** | **Link/reference** | **Description** |
| --- | --- | --- | --- |
| ConditionList Dokumentations site |  | <https://medcomdk.github.io/dk-medcom-conditionlist/> | Documentation site with references to all relevant documentation, including:* Clinical guidelines for application
* Use cases
* Technical specifications
 |
| Implementation Guide | 1.0.X | <https://medcomfhir.dk/ig/conditionlist/>  |  |
| FHIR Documents | 1.0.X | <http://medcomfhir.dk/ig/document> |  |
| IHE-XDS-metadata test protocols |  | <https://svn.medcom.dk/svn/releases/Standarder/IHE/Testprotokol/>  |  |
| NSPOP testing |  | <https://svn.medcom.dk/svn/releases/Standarder/IHE/Testprotokol/>   |  |
| SOP for MedCom’s test and certification |  | <http://svn.medcom.dk/svn/qms/Offentlig/SOPer/SOP-7.2-MedComs%20test%20og%20certificering_godkendelse.docx>  | Description of test and certification of MedCom standards and other tests courses. |

## Test examples and test persons

|  |  |  |
| --- | --- | --- |
| **Name** | **Link/reference** | **Description** |
| Test examples /FHIR example files | <https://medcomfhir.dk/ig/conditionlist/assets/ExampleFiles.zip> | Includes test examples and an overview of all these. |
| Overview of the test persons | <https://www.medcom.dk/opslag/koder-tabeller-ydere/tabeller/nationale-test-cpr-numre> | Overview of national test personal identification number (DK:CPR-nummer), that can be used during test. **Note:** During test and certification, the vendor must be able to use any of the test persons on the list.  |

## Test tool

|  |  |  |
| --- | --- | --- |
| **Navne** | **Link/reference** | **Description** |
| FHIR-server with MedCom profiles | <https://fhir.medcom.dk/>  | Public server that validates against MedCom's FHIR profiles. It is permitted to use the server for testing the upload/download of FHIR resources. |

## Test Result

The result for each test step is categorised based on the table below:

| **Marking** | **F1** | **F2** | **F3** | **F4** | **Ok** | **Not relevant** |
| --- | --- | --- | --- | --- | --- | --- |
| **Evaluation** | **Critical** | **Serious** | **Significant**  | **Less significant** | **Approved**  | **Not an error** |

To get the test and certification approved, the test protocol must consist exclusively of [F4] as well as [OK] results. All [F1], [F2] and [F3] must, therefore, be fixed prior to final approval.

Approval requires that SUT is approved for receiving FHIR Acknowledgement (DK: Kvittering)

For further information, please read [MedCom’s test og certification](#_Baggrundsmaterialer_2).

# Vendor, system under test (SUT) and test result information

## Information about the vendor

This table must be completed by **the vendor** prior to the test.

|  |  |
| --- | --- |
| Company | Completed by vendor |
| Address | Completed by vendor |
| Contact person  | Completed by vendor |
| Telephone | Completed by vendor |
| E-mail | Completed by vendor |

## Information about system under test (SUT)

This table must be completed by **the vendor** prior to the test.

|  |  |
| --- | --- |
| System | Completed by vendor |
| Version | Completed by vendor |
| Description | Completed by vendor |
| Test type | [ ]  Self-test[ ]  Final test/certification |

## Information about the test result

Note: This table must be completed by MedCom when the test has been completed.

|  |  |
| --- | --- |
| Test date | 2022-12-31 |
| Test location |  |
| Approved  | [ ]  Yes[ ]  No |
| Remarks | Completed by MedCom |
| Carried out by | The name of the fsdMedCom responsible (initials) for this test |

# The test

This section describes the requirements which SUT must meet before final approval.

The test is divided into three sections:

1. Test of requirements for content and flow/workflows, including received receipts
2. Test of technical requirements

Test participants will be asked to complete tests as described in the tables.

## Documentation of the test

**Documentation of the test**

As valid documentation, the test participant or test manager must document completion by continuous screen dumps (.png/.jpeg) and/or files/log files (.xml/.json). **Before the test, it is agreed who is responsible for this.**

The following applies:

* The files must be viewable in a standard tool and must not require further processing by MedCom
* All files and screen dumps must be named with:
	+ Standard name
	+ The number of the relevant test step
	+ Consecutive letter
	+ File type

Example: \_3.4\_A.xml or \_2.2\_B.png

If the vendor has documented the test themselves, the files must be sent in a ZIP file to fhir@medcom.dk.

## Test of requirements for content and flow/workflows

The purpose of these tests is to ensure that the standard is implemented with a satisfactory quality, i.e. that implementation meets the business requirements for flow and content as described in the [clinical guidelines for application](#_Baggrundsmaterialer)  and [use case-material](#_Baggrundsmaterialer)s. These test steps are predominantly targeted testing of the user interface.

The table below reflects the use cases that are tested in relation to content and flow/workflows. The table also shows which example files must be loaded in connection with each test step. An overview of the [example fil](#_Testeksempler_og_testpersoner)es can be found in [Appendix I](#BilagI).

|  |  |  |  |
| --- | --- | --- | --- |
| [**Use case**](#_Baggrundsmaterialer_2) | **Description** | **Section** | **Example file** |
| R1(1) | See diagnosis overview (Loads one diagnosis to the Diagnosis Card) | [[3.3.1](#_R1(1):_See_diagnosis)] | [TestExample\_R1(1)] |
| R1(2) | See diagnosis overview (Loads multiple diagnoses to the Diagnosis Card) | [[3.3.2](#_R1(2):_See_diagnosis)] | [TestExample\_R1(2)] |
| R1(3) | See diagnosis overview (Updates one existing diagnosis in the Diagnosis Card) | [[3.3.3](#_R1(3):_See_diagnosis)] | [TestExample\_R1(3)] |
| R1(4) | See diagnosis overview (Updates multiple existing diagnosis in the Diagnosis Card) | [[3.3.4](#_R1(4):_See_diagnosis)] | [TestExample\_R1(4)] |
| R1(5) | See diagnosis overview (One diagnosis is in the Diagnosis Card is deleted) | [[3.3.5](#_R1(5):_See_diagnosis)] | [TestExample\_R1(5)] |
| R1.A1 | No diagnosis in the diagnosis summary | [[3.3.6](#_R1.A1:_No_diagnosis)] |  |

*Tabel 1: Overview table of use cases, being tested*

### R1(1): See diagnosis overview (Loads one diagnosis to the condition overview)

| **Test step #** | **Action** | **Test data** | **Expected result** | **Actual result** | **MedCom assessment** |
| --- | --- | --- | --- | --- | --- |
|  | Load a ConditionList test example | [TestExample\_R1(1)] | ConditionList test example is loaded. |  | Choose |
|  | Demonstrate that the user has access to the patient’s condition overview. |  | The user has access to the patient’s condition overview. |  | Choose |
|  | Demonstrate that it is the correct patient information visualized.  |  | It is the correct patient being visualized.  |  |  |
|  | Demonstrate that it is the right organization visualized.  |  | It is the correct organization being visualized.  |  |  |
|  | Demonstrate that the system visualizes the diagnosis (no. 1, Modermærkekræft) with the following data (considered a maximum example of a diagnosis)): * Diagnosis status = current (DA: Aktuel)
* Date and time of registration (DA: Registreringsdato)
* ICPC2 and SKS-D codes
* A text (DA: diagnosetekst) (a text exists for each, both the ICPC-2 and the SKS-D code)
* Diagnosis type = encounter-diagnosis (DA: kontaktdiagnose)
* Date and time of diagnosis onset (DA: debutdato)
* Date and time of abatement (DA: afslutningsdato)
* clinicalStatus = resolved
* A note (DA: tillægstekst)
 |  | The listed information is visualized for a new diagnosis in the patient’s Diagnosis Card  |  | Choose |
|  | Demonstrate that it is only the correct data being visualized, including last updated time (Composition.Date) and time of bundle assemblement (Bundle.Timestamp).  |  | It is only the information in the test file, which is visualized in the user interface including including last updated time (Composition.Date) and time of bundle assemblement (Bundle.Timestamp). |  | Choose |
|  | Save relevant screenshots and send to MedCom.  |  | All relevant screenshots are saved and send to MedCom. |  | Choose |

### R1(2): See diagnosis overview (Loads multiple diagnoses to the condition overview)

| **Test step #** | **Action** | **Test data** | **Expected result** | **Actual result** | **MedCom assessment** |
| --- | --- | --- | --- | --- | --- |
|  | Load a ConditionList test example | [TestExample\_R1(2)] | ConditionList test example is loaded. |  | Choose |
|  | Demonstrate that the user has access to the patient’s condition overview. |  |  |  | Choose |
|  | Demonstrate that it is the correct patient information visualized. |  | It is the correct patient being visualized.  |  |  |
|  | Demonstrate that it is the right organization visualized. |  | Demonstrate that it is the right organization visualized. |  |  |
|  | Demonstrate that the system visualizes the diagnosis (no. 2, Essential Hypertension) with the following data: * ICPC2 and SKS-D codes
* A text (DA: diagnosetekst)
* Diagnosis status = resolved (DA: Relevant)
* Diagnosis type (category:type) = Problem-list-item (DA: forløbsdiagnose)
* Date and time of registration (DA: Registreringsdato)
 |  | The listed information is visualized for a new diagnosis in the patient’s Diagnosis Card. |  | Choose |
|  | Demonstrate that the system visualizes the diagnosis (no. 3, Astma) with the following data (considered a minimum example): * ICPC2 and SKS-D codes
* A text (DA: diagnosetekst)
* Diagnosis status (category:status) = resolved (DA: Relevant)
* Date and time of registration (DA: Registreringsdato)

Note: More information is included for this diagnosis, which should not be displayed. |  | The listed information is visualized for a new diagnosis in the patient’s Diagnosis Card.Make sure that it is the text: *“Patienten er diagnosticeret astma med lejlighedsvise anfald, kontrolleret gennem medicinsk behandling og inhalator ved behov.”* And not *”Astma”* |  | Choose |
|  | Save relevant screenshots and send to MedCom. |  | All relevant screenshots are saved and send to MedCom. |  | Choose |

### R1(3): See diagnosis overview (Updates one existing diagnosis in the condition overview)

| **Test step #** | **Action** | **Test data** | **Expected result** | **Actual result** | **MedCom assessment** |
| --- | --- | --- | --- | --- | --- |
|  | Load a ConditionList test example | [TestExample\_R1(3)] | ConditionList test example is loaded. |  | Choose |
|  | Demonstrate that the user has access to the patient’s condition overview. |  |  |  | Choose |
|  | Demonstrate that it is the correct patient information visualized. |  | It is the correct patient being visualized.  |  |  |
|  | Demonstrate that it is the right organization visualized. |  | Demonstrate that it is the right organization visualized. |  |  |
|  | Demonstrate that the diagnosis status in diagnosis no. 1 (Modermærkekræft) is updated from current (DA: Aktuel) to resolved (DA: Relevant). |  | Diagnosis status has been updated correctly.  |  | Choose |
|  | Demonstrate that updated time (Composition.date) and time of bundle assemblement (Bundle.timestamp) are displayed to the user. |  | Updated timestamps are displayed to the user. |  | Choose |
|  | Save relevant screenshots and send to MedCom. |  | All relevant screenshots are saved and send to MedCom. |  | Choose |

### R1(4): See diagnosis overview (Updates multiple existing diagnosis in the condition overview)

| **Test step #** | **Action** | **Test data** | **Expected result** | **Actual result** | **MedCom assessment** |
| --- | --- | --- | --- | --- | --- |
|  | Load a ConditionList test example | [TestExample\_R1(4)] | ConditionList test example is loaded. |  | Choose |
|  | Demonstrate that the user has access to the patient’s condition overview. |  |  |  | Choose |
|  | Demonstrate that the following diagnosis elements is updated:Diagnosis no. 1(from Modermærkekræft to Type 2 diabetes): * ICPC2 code
* Diagnosis status (category:status) = current (DA: Relevant)
* A text (DA: diagnosetekst)
* Date and time of diagnosis onset (DA: debutdato)
* Date and time of registration in the users own system (DA: Registreringsdato)
* Date and time of abatement (DA: afslutningsdato)
* A note (DA: tillægstekst)

Diagnosis no. 2 (from Essential Hypertension to Hyperlipidæmi): * SKS-D code
* Diagnosis status (category:status)
* Diagnosis type (category:type)
* Date and time of registration in the users own system (DA: Registreringsdato)
 |  | All elements are updated correctly.  |  | Choose |
|  | Demonstrate that updated time (composition.date) and time of bundle assemblement (bundle.timestamp) has been updated correctly when comparing teststep [3.2.4.4](#_R1:_See_diagnosis) and [3.2.3.6](#_R1:_See_diagnosis_1). |  | Composition.date and bundle.timestamp have been updated correctly.  |  | Choose |
|  | Save relevant screenshots and files.  |  | Relevant screenshots and files are saved.  |  | Choose |

### R1(5): See diagnosis overview (One diagnosis is in the condition overview is deleted)

| **Test step #** | **Action** | **Test data** | **Expected result** | **Actual result** | **MedCom assessment** |
| --- | --- | --- | --- | --- | --- |
|  | Load a ConditionList test example | [TestExample\_R1(5)] | ConditionList test example is loaded. |  | Choose |
|  | Demonstrate that the user has access to the patient’s condition overview. |  |  |  | Choose |
|  | Demonstrate that diagnosis no. 1(Type 2 diabetes) is deleted.  |  | Diagnosis no. 1 is gone.  |  | Choose |
|  | Save relevant screenshots and files. |  | Relevant screenshots and files are saved.  |  | Choose |

### R1.A1: No diagnosis in the diagnosis summary

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Test step #** | **Action** | **Test data** | **Expected result** | **Actual result** | **MedCom assessment** |
|  | Load a patient, with no diagnosis card. |  | Insert expected result |  | Choose |
|  | Demonstrate that the user does not have access to the patient’s condition overview. |  | Insert expected result |  | Choose |

###

## Test of general technical requirements

The purpose of these test steps is to ensure that the technical receipt of is implemented with satisfactory quality, i.e. supports governance for message communication at a general level, as well as governance for ConditionList as described in 1.4

### Receiving an invalid document

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Test step #** | **Action** | **Test data**  | **Expected results** | **Actual result** | **MedCom assessment** |
|  | Load an invalid document where the diagnosis status is not available.  | [[TestExample\_invalid] | Test example is loaded |  | Choose |
|  | Demonstrate that the system “acts” when receiving an invalid document.  | Indsæt filnavn | The system is not able to load the document. |  | Choose |

### Document format

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Test step #** | **Action** | **Test data**  | **Expected results** | **Actual result** | **MedCom assessment** |
|  | Demonstrate that SUT can visualize JSON files  | Indsæt filnavn | SUT can visualize JSON files.  |  | Choose |

### Documents with missing content or other code systems

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Test step #** | **Action** | **Test data**  | **Expected results** | **Actual result** | **MedCom assessment** |
|  | Load the ConditionList example. | [TestExample\_MissingContent (1)] | ConditionList test example is loaded. |  |  |
|  | Demonstrate that SUT visualizes the diagnosis (no. 4) from the diagnosis only including:* Diagnosis status (category:status)
* Date and time of registration (DA: Registreringsdato)
 |  | The status and date and time of registration is visualized.  |  |  |
|  | Load the ConditionList example. | [TestExample\_MissingContent (2)] | ConditionList test example is loaded. |  |  |
|  | Demonstrate that diagnosis no. 4 (Akut bihulebetændelse) is updated to contain:* An ICPC-2 code without display value
* A text (DA: diagnosetekst)
* Diagnosis status (category:status)
* Date and time of registration (DA: Registreringsdato)
 |  | SUT visualizes the updates correctly.  |  |  |
|  | Load the ConditionList example. | [TestExample\_MissingContent (3)] | ConditionList test example is loaded. |  |  |
|  | Demonstrate that diagnosis no. 4 (Akut bihulebetændelse) is updated to ONLY contain:* A text (DA: diagnosetekst)
* Date and time of diagnosis onset (DA: debutdato)
* Diagnosis status (category:status)
* Date and time of registration (DA: Registreringsdato)
 |  | SUT visualizes the updates correctly. |  |  |
|  | Load the ConditionList example. | [TestExample\_MissingContent (4)] | ConditionList test example is loaded. |  |  |
|  | Demonstrate that diagnosis no. 4 (SNOMED #A04) is updated to ONLY contain:* A code from another system (SNOMED-CT)
* Diagnosis status (category:status)
* Date and time of registration (DA: Registreringsdato)
 |  | SUT visualizes the updates correctly. |  |  |
|  | Save relevant screenshots and files. |  | Relevant screenshots and files are saved.  |  |  |

### Document with two identical ICPC2 codes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Test step #** | **Action** | **Test data**  | **Expected results** | **Actual result** | **MedCom assessment** |
|  | Load the ConditionList with two identical ICPC2 codes example. | [TestExample\_IdenticalICPC2Codes] | ConditionList test example is loaded. |  |  |
|  | Demonstrate what happens, when there are two diagnoses with the same ICPC2 code being mapped to two different SKS codes |  | The two diagnoses are loaded and visualized separately.  |  |  |

1. X expresses patch-level versioning, which includes minor fixes that are backward compatible. [↑](#footnote-ref-2)