OntarioMD

ELECTRONIC MEDICAL RECORDS

EMR – CHRONIC DISEASE MANAGEMENT SPECIFICATION

Version 4.2

FINAL

Date: April 1, 2015

Ontario
eHealth Ontario

TABLE OF CONTENTS

GLOSSARY

TERM	MEANING
CDA	Canadian Diabetes Association
CDM	Chronic Disease Management
COPD	Chronic Obstructive Pulmonary Disease
CPP	Cumulative Patient Profile
CPSO	The College of Physicians and Surgeons of Ontario
Data Dictionary	The collection of discrete data elements including their definition and relationships and referenced by Ontario EMR Requirements Repository.
EMR Offering	A specific software version of an EMR product and the services and support for that particular product, all as more particularly described in the EMR Certification Agreement.
M	Mandatory requirement. An EMR Offering must have this function or provide this service.
MOHLTC	Ministry Of Health and Long-Term Care
MRP	Most Responsible Provider The attending physician who is primarily responsible for the day-to-day care of patient. In absence, the covering healthcare provider will fulfill the MRP role.
N/A	Not Available
OntarioMD	OntarioMD Inc.
Ontario EMR Requirements Repository	The collection of functional requirements and discrete data elements published by OntarioMD; includes new, existing and retired requirements.
Provider	A person who provides healthcare services to patients.
SOAP	Subjective, Objective, Assessment, and Plan. The SOAP note is a format for documenting patient encounters.
W	Weighted requirement. The EMR Offering will receive a point value if the requirement is met.

1. INTRODUCTION

1.1 SCOPE OF CHRONIC DISEASE MANAGEMENT

This specification is one of several Ontario EMR Specifications that define functional and non-functional requirements for an EMR Offering in Ontario. Each specification focuses on a particular component, functionality or interoperability and will be updated over time as new requirements and/or enhancements are introduced.

This "EMR-Chronic Disease Management Specification" is intended to inform EMR vendors on minimum requirements for incorporating chronic disease management (CDM) functionality into their EMR Offerings for the following five chronic diseases:

- Diabetes
- Asthma
- Heart Failure
- COPD
- Hypertension

It is not the intent of the "EMR-Chronic Disease Management Specification" to define best practices in patient care but rather to establish a minimum set of requirements based on clinical guidelines published by organizations representing a particular chronic disease (e.g: Canadian Diabetes Association in the case of diabetes).

This "EMR-Chronic Disease Management Specification" defines:

- Requirements to support implementation and management of chronic disease flowsheets.
- Requirements to support out-of-box views and ad-hoc reporting
- The minimum out-of-box care elements to be tracked for each individual chronic disease
- Care elements that include:
  - Definition of the care element
  - Default treatment target
  - Default treatment requirements
  - Default unit of measure

These requirements complement existing requirements defined in the Core EMR Specification – Section 1: Baseline Requirements

1.2 ACTORS AND WORKFLOW DESCRIPTION FOR EMR-CDM SPECIFICATION

Not applicable.

2. SPECIFICATION TRACEABILITY

2.1 HIGHLIGHTS OF CHANGES

Ontario EMR Specification v4.1 – Appendix C was used as the basis to create this specification.

TYPE	# of Requirements v 4.1	# of Requirements v 4.2
New Requirements	0	4
Updated Requirements	1	13
Previous Requirements	17	6
Retired Requirements	0	0
Total Number of Requirements	18	23

* **NOTE**: Due to splitting and/or merging requirements defined in the previous specification, the "Total Number of Requirements" in the most current version is not to be calculated based on the "Total Number of Requirements" in the previous specification version.

2.2 RELATED DOCUMENTS AND REFERENCES

The following table lists all documents related to, or referenced by EMR-CDM Specification.

DOCUMENT NAME	VERSION	DATE	PUBLISHING ORGANIZATION	LINK
Core EMR Specification Section 1: EMR Baseline Requirements	v4.2	1-Apr-2015	OntarioMD	https://www.ontariomd.ca/portal/server.pt/community/ontario_emr_specifications/current_emr_specifications
CDM Change Log	v4.2	1-Apr-2015	OntarioMD	https://www.ontariomd.ca/portal/server.pt/community/ontario_emr_specifications/current_emr_specifications
Data Dictionary & Mapping	v4.2	1-Apr-2015	OntarioMD	https://www.ontariomd.ca/portal/server.pt/community/ontario_emr_specifications/current_emr_specifications
EMR Code Tables	v4.2	1-Apr-2015	OMD	https://www.ontariomd.ca/portal/server.pt/community/ontario_emr_specifications/current_emr_specifications
Diabetes Management Incentive	N/A	Aug-2009	MOHLTC	N/A
Heart Failure Management Incentive	N/A	Apr-2008	MOHLTC	N/A

OntarioMD will periodically review and update the above list. It is essential that implementers keep current regarding any changes to these specifications.

3. CDM - FUNCTIONAL REQUIREMENTS

This specification defines requirements to be implemented into the EMR Offerings in order to support management of the chronic diseases that are in-scope for this specification.

For the purposes of this section, the following terms and abbreviations are defined and shall be applied to all tables in this section:

Scoring: **M** = Mandatory criteria
W = Weighted criteria

Status: **N** = New requirement for this EMR Specification
P = Previous requirement from EMR-Specification v4.1
U = Updated from a previous EMR Specification v4.1
R = Retired from previous EMR Specification v4.1

OMD #: unique identifier that identifies each requirement within *Ontario EMR Requirements Repository*

OMD #	REQUIREMENT	GUIDELINES	W/M	Status
CDM01.01	Provides the ability to capture dated entries for Diabetes care elements, as described in section 4.1 – Diabetes Care Elements.	At a minimum, each care element must be defined by the following attributes: - name of the care element - date of recording/collecting the care element value - value of the care element	M	P
CDM01.02	Provides the ability to capture dated entries for Asthma care elements, as described in section 4.2 – Asthma Care Elements.	At a minimum, each care element must be defined by the following attributes: - name of the care element - date of recording/collecting the care element value - value of the care element	M	P
CDM01.03	Provides the ability to capture dated entries for Heart Failure care elements, as described in section 4.3 – Heart Failure Care Elements.	At a minimum, each care element must be defined by the following attributes: - name of the care element - date of recording/collecting the care element value - value of the care element	M	P
CDM01.04	Provides the ability to capture dated entries for COPD care elements, as described in section 4.4 – COPD Care Elements.	At a minimum, each care element must be defined by the following attributes: - name of the care element - date of recording/collecting the care element value - value of the care element	M	P
CDM01.05	Provides the ability to capture dated entries for Hypertension care elements, as described in section 4.5 – Hypertension Care Elements.	At a minimum, each care element must be defined by the following attributes: - name of the care element - date of recording/collecting the care element value - value of the care element	M	P

OMD #	REQUIREMENT	GUIDELINES	W/M	Status
CDM01.06	Provide the initial out-of-the-box chronic disease flowsheets including the initial set-up for the treatment target and treatment intervals as described in section 4 - CDM Care Elements.	The initial out-of-box flowsheet must include: - the name of the care element - the date associated with the care element - the value associated with the care element The flowsheets must: - allow tracking of the dated care elements over time - allow the selection of a date-range for which dated care elements to be displayed - must be printable	M	U
CDM01.07	Allows for the construction of custom-defined chronic disease flowsheets at the clinic level.	All characteristics of the "initial out-of-box chronic disease flowsheets" apply to the "custom CDM flowsheets". At a minimum, the user must be able to add and/or remove: - care elements (refer to section 4 - CDM Care Elements) - Lab Results (e.g. urine tests, O2 saturation) downloaded or manually entered in the EMR - medications (name and dosage) The custom-defined flowsheet must be available for further re-use.	M	N
CDM01.08	Allows for the construction of custom-defined chronic disease flowsheets at the provider level.	All characteristics of the "initial out-of-box chronic disease flowsheets" apply to the "custom CDM flowsheets". At a minimum, the user must be able to add and/or remove: - care elements (refer to section 4 - CDM Care Elements) - Lab Results (e.g. urine tests, O2 saturation) downloaded or manually entered in the EMR - medications (name and dosage) Provider's set-up takes precedence over clinic's set-up. The custom-defined flowsheet must be available for further re-use.	M	U
CDM01.09	Allows for the construction of custom-defined chronic disease flowsheets at the patient level.	All characteristics of the "initial out-of-box chronic disease flowsheets" apply to the "custom CDM flowsheets". At a minimum, the user must be able to add and/or remove: - care elements (refer to section 4 - CDM Care Elements) - Lab Results (e.g. urine tests, O2 saturation) downloaded or manually entered in the EMR - medications (name and dosage) Patient’s set-up takes precedence over provider’s set-up. The custom-defined flowsheet must be available for further re-use.	M	U

OMD #	REQUIREMENT	GUIDELINES	W/M	Status
CDM01.10	Provide a mechanism to modify the treatment targets and treatment intervals for each care element in the initial out-of-box chronic disease flowsheets.	At minimum, the treatment target must be customizable based on patient gender. In order for this requirement to be met this must be user-administered and does not require an EMR vendor to attend the process.	M	N
CDM01.11	Provides the ability for the user to set-up and modify the treatment targets and treatment intervals for chronic disease care elements clinic level.	Must apply to care elements in "custom-defined" chronic disease flowsheets. At the minimum, the treatment target must be customizable based on patient gender. In order for this requirement to be met this must be user-administered and does not require an EMR vendor to attend the process.	M	N
CDM01.12	Provides the ability for the user to setup and modify the treatment targets and treatment intervals for chronic disease care elements at the provider level.	Must apply to care elements in "custom-defined" chronic disease flowsheets. At the minimum, the treatment target must be customizable based on patient gender. In order for this requirement to be met this must be user-administered and does not require an EMR vendor to attend the process. Custom settings at the provider level take precedence over clinic's set-up.	M	U
CDM01.13	Provides the ability for the user to setup and modify the treatment targets and treatment intervals for chronic disease care elements at the patient level.	Must apply to care elements in "custom-defined" chronic disease flowsheets. At the minimum, the treatment target must be customizable based on patient gender. In order for this requirement to be met this must be user-administered and does not require an EMR vendor to attend the process. Custom settings on a patient level take precedence over provider's set-up.	M	U
CDM01.14	Provides visual alert(s) to the user when recorded chronic disease care elements for a patient are outside of treatment target or treatment interval.	Must apply to care elements in the "initial out-of-box" and "custom-defined" chronic disease flowsheets. The alert(s) are based on the treatment targets and treatment intervals as set-up for each of the care elements in the corresponding flowsheet. The visual alert(s) are integrated into the flowsheet and applies to all care elements over time. Requiring user to execute additional steps is not an accepted solution. Following implementations are not an accepted solution: - pop-up alerts - creating a task	M	U
CDM01.15	Provides the ability to associate co-morbid conditions from the patient's problem list with diabetes, asthma, COPD, heart failure, or hypertension diagnoses.	Co-morbid conditions list must be clearly viewable any time within the "initial out-of-box" and "custom-defined" chronic disease flowsheet view. Adding the co-morbid condition as a care element is not an accepted solution.	W	U
CDM01.16	Data entered from any of the chronic disease flowsheets automatically populates the "progress note" for the current encounter.	Requiring user to re-enter data will not meet the requirement.	M	U

OMD #	REQUIREMENT	GUIDELINES	W/M	Status
CDM01.17	Chronic disease care element information entered from EMR data fields automatically creates the appropriate dated entry/entries in each of the chronic disease flowsheets where these care elements are tracked.	At a minimum applies to care elements recorded: - in the SOAP / Progress Notes - Lab Results - vital signs (generic care elements) - medication (name and dosage) For information regarding the date associated with a specific care element refer to section 4 – CDM Care Elements.	M	U
CDM01.18	Provides the ability to view all care elements and their dated entries for a selected chronic disease that are outside of: - treatment target - treatment interval	At a minimum must support: • Out of range treatment target view – display only those care elements and the values that are outside of treatment target • out of range treatment interval - displaying only those care elements and the values that are outside of treatment interval The functionality must be available from within the selected flowsheet. Requiring the user to navigate outside the flowsheet in order to access the functionality is not an acceptable solution.	M	U
CDM01.19	Provides the ability to view all care elements and their dated values for a selected chronic disease by a selected number of previous dated entries.	At a minimum must support: • latest result view – display only latest entry for all care elements in a selected flowsheet • last two results view - display only the last two results recorded for each of care elements in the selected flowsheet • last three results view - display only the last three results recorded for each of care elements in the selected flowsheet The functionality must be available from within the selected flowsheet. Requiring the user to navigate outside the flowsheet in order to access the functionality is not an acceptable solution. The EMR user must be able to print the "view".	M	U
CDM01.20	Provide the ability to view and select care elements and their dated entries for a selected chronic disease : - by a selected number of previous dated entries - over a selected time span	At a minimum must support: • latest result view – display only latest entry for selected care elements in the selected flowsheet • last two results view - display only the last two results recorded for selected care elements in the selected flowsheet • last three results view - display only the last three results recorded forselected care elements in the selected flowsheet • time span view - display the dated entries recorded for the selected care elements in the selected flowsheet for the selected time span The functionality must be available from within the selected flowsheet. Requiring the user to navigate outside the flowsheet in order to access the functionality is not an acceptable solution. The EMR user must be able to print the "view".	M	U

OMD #	REQUIREMENT	GUIDELINES	W/M	Status
CDM01.21	Supports the construction of ad hoc reports for chronic disease care elements and dated entries: - across the entire patient population contained within the EMR - across one or more cohorts	At a minimum, the user must be able to: - select the date range for dated entries - select the reported fields (care elements) - allow for filtering based on Boolean logic At the minimum, the report must display: - the name of the patient - the name of the care element - the value of the dated entry In order for this requirement to be met: - must be user-administered and does not require an EMR vendor to attend the process - able to search the entire EMR patient population without vendor intervention	M	U
CDM01.22	System provides chronic disease management flowsheets Diabetes and Heart Failure per the effective MOHLTC incentive guidelines.	At a minimum, the Diabetes flowsheets must include: - Lipids, cholesterol, HgbA1C, blood pressure, weight and body mass index (BMI), and medication dosage - Discussion and offer of preventive measures including vascular protection, influenza and pneumococcal vaccination - Documentation of health promotion counselling and patient self-management support - ACR (albumin to creatinine ratio) - Discussion and offer of referral for dilated eye examination - Documentation regarding foot examination and neurologic examination At a minimum, the Heart Failure flowsheets must include: - Comprehensive physical examination - Laboratory monitoring of: Na+, K+, serum creatinine and eGFR - Patient education for modifiable risk factor reduction and self-management - Pharmacologic management for appropriate use of first-line, symptom relief and preventive medications Refer to MOHLTC incentive guidelines.	M	P
CDM01.23	Provide a mechanism to manage the display of the care elements in the chronic disease flowsheets.	At a minimum, the system must allow: - grouping of selected care elements under custom created "category" - order the care elements within the "category"	W	N

4. CDM - CARE ELEMENTS

The tables below define the care elements to be captured by an EMR Offerings related to each of the chronic diseases that are in-scope for this specification.

This is not a comprehensive list of all care elements to be tracked with respect to a chronic disease, but an initial setup for EMR users to get started in tracking against a particular chronic disease.

These tables are also not meant to define the display of the care elements within the EMR. Vendors are expected to leverage their existing user interfaces or workflows to best accommodate the capture of dated entries.

Where initial setup treatment target or initial setup treatment interval is indicated as N/A, this means there is no initial setup target or interval. However, users are expected to have the ability to create their own targets or intervals, if desired.

Vendors are expected to leverage their existing user interface and system workflow in order to best provide this functionality to their users.

For the purposes of this section, the following terms and abbreviations are defined and shall be applied to all tables in this section:

DE#:	unique identifier that identifies each discrete data element within *Ontario EMR Requirements Repository*
CDM#:	unique identifier that identifies each care elements within this specification
Initial Setup - Treatment Target:	the default set-up for the Treatment Target
Initial Setup - Treatment Interval:	the default set-up for the Treatment Interval
Status:	**N** = New care element for this EMR Specification
	P = Previous care element from EMR-Specification v 4.1
	U = Updated care element from a previous EMR Specification v4.1
	R = Retired care element from previous EMR Specification v4.1
YEAR:	the year the care element became part of the *Ontario EMR Requirements Repository*
UM:	Unit of Measure
COPD	Chronic Obstructive Pulmonary Disease
HT:	Hypertension
HF:	Heart Failure

CARE ELEMENTS - TERMINOLOGY

Care Element means a discrete piece of information related to a chronic disease.

Care Elements are characterized by one or more of the following attributes:

- Care Element Name
- Care Element Value

  - numeric value (e.g. HbA1c=4%; BMI=16 kg/m²)
  - non-numeric value (e.g. Smoking Status [Yes/No]);
    - the care elements with non-numeric value are flagged by **"[ ]"** and
    - assumes that the patient has been asked and provided an answer regarding the status of a care element
  - no value (e.g.: Diabetes Education, ECG); the care elements with no values can be translated to "YES" in the flowsheets to indicate that the service was provided
  - etc.
- Care Element Date:
  - the date the specimen has been collected for lab test results (e.g. HbA1c=4%)
  - the date the test has been performed for non-lab tests (e.g. ECG)
  - the Start Date for a medications
  - the date the immunization has been provided
  - the date a service has been performed by the physician that does not require the provider inquiring the patient (e.g. Diabetes Education)
  - the date a service has been performed by the physician that does require an answer to be provided by the patient (e.g. Smoking Status)
  - the date a service has been performed by the physician that does require the provider to execute certain procedures/measurements (e.g. BMI)
  - etc.
- Treatment Target
- Treatment Interval

Chronic disease care elements are not currently standardized, and vendors may implement as consistent with their product.

Comparison of dated entries from different sources (e.g. from different labs) may require some logic which must be managed by the vendor.

Treatment Target:

- refers to the recommended treatment goal associated with the care element
- based on evidence-based guidelines for chronic disease care elements
- differences in treatment targets may exist due to factors such as:
  - type of chronic disease: BP (< 130/80 mmHg) in Diabetes versus BP (< 140/90 mmHg) in Hypertension
  - gender: ACR test (male < 2.0 mg/mmol versus female < 2.8 mg/mmol)
  - age
  - etc.

A treatment target can be defined by:

- a numeric value
  - HbA1c <= 7.0%); values that are greater than 7% are considered outside the treatment target
  - # Of Hypoglycemic Episodes = 0 (zero); values greater than 0 are considered outside the treatment target
  - BMI 18.5 - 24.9 kg/m²; values that are less than 18.5 or greater than 24.9 are considered outside the treatment target
- a non-numeric value
  - Self-Monitoring BG = YES; values that are “NO” are considered outside the treatment target

Treatment Interval

- refers to the recommended time interval for testing, monitoring or recording a care element
- based on evidence-based guidelines for chronic disease care elements
- differences in treatment targets may exist due to factors such as
  - type of chronic disease: BP (3 mths) in Diabetes versus BP (N/A) in Hypertension
  - etc.

CDM Flowsheet – a tri-dimensional representation (Care Element Name, Care Element Date, Care Element Value) of the selected care elements for a particular chronic disease

4.1 DIABETES – CARE ELEMENTS

Referenced Sources: *MOHLTC - Diabetes Management Incentive, GAC Guidelines, BC CDM Physician Toolkit.*

DE #	CDM #	CARE ELEMENT	DEFINITION	Initial Setup Treatment Target	Initial Setup Treatment Interval	Status
LAB VALUES						
N/A	1	HBA1c	Records the value of the HBA1c test. UM: % Alternate Name: Glycosylated Hemoglobin	<= 7.0%	3 months	P
N/A	2	Date - HBA1c	The date the specimen has been collected.			N
N/A	3	FPG	Records the value of the FPG test. UM: mmol/L Alternate Name: Fasting Plasma Glucose	4 - 7 mmol/L	3 months	P
N/A	4	Date - FPG	The date the specimen has been collected.			N
N/A	5	2 hr PC BG	Records the value of the 2 hr PC BG test. UM: mmol/L	5 - 10 mmol/L	3 months	P
N/A	6	Date - 2 hr PC BG	The date the specimen has been collected			N
N/A	7	LDL-C	Records the value of the LDL-C test. UM: mmol/L	<= 2.0 mmol/L	Annual	P
N/A	8	Date - LDL-C	The date the specimen has been collected.			N
N/A	9	HDL-C	Records the value of the HDL-C test. UM: mmol/L	N/A	Annual	P
N/A	10	Date - HDL-C	The date the specimen has been collected.			N
N/A	11	TC:HDL-C Ratio	Records the value of the TC: HDL-C Ratio test. UM: mmol/L	< 4.0	Annual	P
N/A	12	Date - TC:HDL-C Ratio	The date the specimen has been collected.			N
N/A	13	Triglycerides	Records the value of the Triglycerides test. UM: mmol/L	< 2.0 mmol/L	Annual	P
N/A	14	Date - Triglycerides	The date the specimen has been collected.			N
N/A	15	ACR	Records the value of the ACR test. UM: mg/mmol Alternate Name: Albumin to Creatinine Ratio	M < 2.0 mg/mmol F < 2.8 mg/mmol	Annual	P
N/A	16	Date - ACR	The date the specimen has been collected.			N

DE #	CDM #	CARE ELEMENT	DEFINITION	Initial Setup Treatment Target	Initial Setup Treatment Interval	Status
N/A	17	eGFR	Records the value of the eGFR test. UM: ml/min/1.73m²	N/A	Annual	P
N/A	18	Date - eGFR	The date the specimen has been collected.			N
N/A	19	Urinary Microalbumin Screen	Records the value of the Urinary Microalbumin test. UM: mg/L	N/A	N/A	P
N/A	20	Date - Urinary Microalbumin Screen	The date the specimen has been collected.			N
CLINICAL DOCUMENTATION						
N/A	21	Influenza Vaccine	Records whether the Influenza Vaccine has been administered.	N/A	Annual	P
N/A	22	Date - Influenza Vaccine	Date the Influenza Vaccine has been administered.			N
N/A	23	Pneumococcal Vaccine	Records whether the Pneumococcal Vaccine has been administered.	N/A	N/A	P
N/A	24	Date - Pneumococcal Vaccine	Date the Influenza Vaccine has been administered.			N
GENERIC CARE ELEMENTS						
DE16.001	25	Blood Pressure	The blood pressure as measured by the provider. UM: mmHg Blood pressure is out of target if either systolic or diastolic BP is out of target.	< 130/80 mmHg	3 months	P
DE16.002	26	Date - Blood Pressure	Date the blood pressure has been measured by the provider.			N
DE16.005	27	Height	The height as measured by the provider. UM: cm	N/A	N/A	P
DE16.006	28	Date - Height	Date height has been measured by the provider.			N
DE16.007	29	Weight	The weight as measured by the provider. UM: kg	N/A	N/A	P
DE16.008	30	Date - Weight	Date weight has been measured by the provider.			N
DE16.009	31	BMI	The Body Mass Index automatically calculated by the EMR system, based on the Height and Weight recorded by the provider. UM: kg/m²	18.5 - 24.9 kg/m²	3 months	U
DE16.010	32	Date - BMI	Date the BMI has been recorded by the provider.			N
DE16.011	33	Waist Circumference	The waist circumference as measured by the provider. UM: cm	M <102 cm F < 88 cm	3 months	P

DE #	CDM #	CARE ELEMENT	DEFINITION	Initial Setup Treatment Target	Initial Setup Treatment Interval	Status
DE16.012	34	Date - Waist Circumference	Date the waist circumference has been measured by the provider.			N
DE16.013	35	Smoking Status *(Yes/No)*	Records whether the patient is currently smoking or not. Default values are not accepted. Smoking Status recorded in the Risk Factor must flow in all the flowsheets where the data element is used, based on the recorded date.	N/A	N/A	P
DE16.014	36	Date - Smoking Status	Date the "smoking status" has been reported by the patient.			N
DE16.015	37	Smoking Packs/Day	The number of packs per day smoked as reported by the patient. It is assumed that 1 pack=20 cigarettes.	N/A	N/A	U
DE16.016	38	Date - Smoking Packs/Day	Date the patient reported the number of packs/day is smoking.			N
DE16.019	39	Erectile Function *(Normal/Abnormal)*	Records whether the "Erectile Function" is normal or abnormal. Default values are not accepted.	N/A	Annual	U
DE16.020	40	Date - Erectile Function	Date the patient reported that the "erectile function" is normal or abnormal.			N
NON-GENERIC CARE ELEMENTS						
DE16.057	41	Self-Monitoring BG *(Yes/No)*	Records whether the patient has been self-monitoring his/her blood glucose level or not. Default values are not accepted.	yes	3 months	P
DE16.058	42	Date - Self Monitoring BG	Date the "Self-Monitoring BG" has been reported by the patient.			N
DE16.059	43	# Of Hypoglycemic Episodes (since last assessed)	The number of hypoglycemic episodes since last assessed as reported by the patient.	0	3 months	P
DE16.060	44	Date - # Of Hypoglycemic Episodes	Date the patient reported the number of hypoglycemic episodes.			N
DE16.061	45	Dilated Eye Exam *(Yes/No)*	Records whether the patient has been completed the "Dilated Eye Exam" test. Default values are not accepted. Alternative name: Retinal Exam	N/A	Annual	P

DE #	CDM #	CARE ELEMENT	DEFINITION	Initial Setup Treatment Target	Initial Setup Treatment Interval	Status
DE16.062	46	Date - Dilated Eye Exam	Date the "Dilated Eye Exam" has been performed.			N
DE16.063	47	Foot Examination *(Normal/Abnormal)*	Records whether the result of the "Foot Examination" performed by the provider is normal or abnormal. Default values are not accepted.	N/A	Annual	U
DE16.064	48	Foot Examination *[Indicate Findings]*	Records the findings of the "Foot Examination".	N/A	Annual	N
DE16.065	49	Date - Foot Examination	Date the "Foot examination" has been performed by the provider.			N
DE16.066	50	Neurological Examination *(Normal/Abnormal):* - 10-g monofilament - 128 Hz tuning fork D1	Records whether the result of the "Neurological Examination" performed by the provider is normal or abnormal. Default values are not accepted.	N/A	Annual	P
DE16.067	51	Neurological Examination - *[Indicate Findings]*	Records the findings of the "Neurological Examination".	N/A	Annual	N
DE16.068	52	Date - Neurological Examination	Date the "Neurological Examination" has been performed by the provider.			P
DE16.069	53	Fasting Glucose Monitor / Lab Result Comparison *(Calibrated Yes/No).*	Records whether patient reported that the "Fasting Glucose Monitor / Lab Result" is calibrated or not (Yes - is calibrated, NO - is not calibrated). Default values are not accepted.	N/A	Annual	P
DE16.070	54	Date - Fasting Glucose Monitor / Lab Result Comparison	Date the patient reported that the "Fasting Glucose Monitor / Lab Result" is calibrated or not.			N
DE16.071	55	ASA Use *(Yes/No)*	Records whether the provider has recommended ASA use (ASA 81mg daily use).	N/A	N/A	P
DE16.072	56	Date - ASA Use	Date the "ASA Use" has been recommended by the provider.			N
DE16.073	57	ECG *(Yes/No)*	Records whether the ECG test has been performed. Alternate Name: Electrocardiogram	N/A	Biennial	P
DE16.074	58	Date - ECG	The date the ECG test has been performed.			N
DE16.075	59	Diabetes - Motivational Counselling Completed - Smoking Cessation - Nutrition - Exercise - Other	Records whether the "Diabetes-Motivational Counselling" has been completed by the provider. Each item must be independently identifiable.	N/A	3 months	P

DE #	CDM #	CARE ELEMENT	DEFINITION	Initial Setup Treatment Target	Initial Setup Treatment Interval	Status
DE16.076	60	Date - Diabetes Motivational Counselling	Date the "Diabetes Motivational Counselling" has been completed by the provider.			N
DE16.077	61	Diabetes - Education - Diabetes - Nutrition (lipids) - Nutrition (diabetes)	Records whether the "Diabetes-Education" has been completed by the provider. Default values are not accepted.	N/A	Annual	P
DE16.078	62	Date - Diabetes Education	Date the "Diabetes Education" has been completed by the provider.			N
DE16.079	63	Diabetes - Collaborative Self-Management Goals *[Indicate Goal]*	Records patient goals as recorded by the provider.	N/A	3 months	P
DE16.080	64	Date - Diabetes Collaborative Self-Management Goals	Date the "Diabetes - Collaborative Self-Management Goals" has been recorded by the provider.			N
DE16.081	65	Diabetes - Self Management Challenges *[Indicate Challenge]*	Records patient challenges as recorded by the provider.	N/A	3 months	P
DE16.082	66	Date - Diabetes Self-Management Challenges	Date the "Diabetes - Self-Management Challenges" has been recorded by the provider.			N
DE16.083	67	Psychosocial Screening *(Yes/No)*	Records whether the "psychosocial screening" has been performed by the provider.	N/A	N/A	P
DE16.084	68	Date - Psychosocial Screening	Date the "Psychosocial Screening" has been performed by the provider.			N

4.2 ASTHMA- CARE ELEMENTS

Referenced Sources included: *Lung Association Asthma Care Map for Primary Care.*

DE #	CDM #	CARE ELEMENT	DEFINITION	Initial Setup Treatment Target	Initial Setup Treatment Interval	Status
CLINICAL DOCUMENTATION						
GENERIC CARE ELEMENTS						
DE16.021	1	FEV1 (before puff) -(personal best of 3)	Forced Expiratory Volume -the volume of air that has been exhaled by the patient at the end of the first second of forced expiration.	N/A	N/A	U
DE16.022	2	Date - FEV1 (before puff)	Date the "FEV1 (before puff)" has been measured.			N
DE16.023	3	FVC (before puff)	Forced Vital Capacity - the volume of air that has been forcibly and maximally exhaled out by the patient until no more can be expired.	N/A	N/A	N
DE16.024	4	Date - FVC (before puff)	Date the "FVC (before puff)" has been measured.			N
DE16.025	5	FEV1% (before puff)	The ratio of FEV1 to FVC calculated for the patient. Alternate Name: FEV1 / FVC ratio	N/A	N/A	N
DE16.026	6	Date - FEV1% (before puff)	Date the "FEV1% (before puff)" has been measured.			N
DE16.027	7	FEV1 predicted	The FEV1 calculated in the population with similar characteristics (e.g. height, age, sex, race, weight, etc.).	N/A	N/A	N
DE16.028	8	Date - FEV1 predicted	Date the "FEV1" predicted has been measured.			N
DE16.029	9	FVC predicted	Forced Vital Capacity predicted - calculated in the population with similar characteristics (height, age, sex, and sometimes race and weight).	N/A	N/A	N
DE16.030	10	Date - FVC predicted (before puff)	Date the "FVC" predicted has been measured.			N
DE16.031	11	FEV1% predicted	The ratio of FEV1 predicted to FVC predicted, calculated in the population with similar characteristics (height, age, sex, and sometimes race and weight). Alternate Name: FEV1 / FVC predicted ratio	N/A	N/A	N
DE16.032	12	Date - FEV1% predicted	Date the "FEV1% predicted" has been measured.			N
DE16.033	13	FEV1% of predicted (before puff)	FEV1% (before puff) of the patient divided by the average FEV1% predicted in the population with similar characteristics (e.g. height, age, sex, race, weight, etc.). Alternate Name: FEV1 ratio (before puff)	N/A	N/A	U
DE16.034	14	Date - FEV1% of predicted (before puff)	Date the "FEV1% of predicted (before puff)" has been measured.			N
DE16.035	15	FVC ratio (before puff)	FVC actual (before puff) / FVC predicted	N/A	N/A	N

DE #	CDM #	CARE ELEMENT	DEFINITION	Initial Setup Treatment Target	Initial Setup Treatment Interval	Status
DE16.036	16	Date - FVC ratio (before puff)	Date the "FVC ratio (before puff)" has been measured.			N
DE16.037	17	FEV1 / FVC ratio (before puff)	FEV1 / FVC (before puff) actual divided by FEV1 / FVC predicted	N/A	N/A	N
DE16.038	18	Date - FEV1/FVC ratio (before puff)	Date the "FEV1/FVC ratio (before puff)" has been measured.			N
DE16.039	19	PEF personal (before puff) - (best of 3)	Peak Expiratory Flow (or PEFR)- the maximal flow (or speed) achieved during the maximally forced expiration initiated at full inspiration.	N/A	N/A	U
DE16.040	20	Date - PEF personal (before puff)	Date the "PEF personal (before puff)" has been measured.			N
DE16.041	21	FEV1 (after puff) -(personal best of 3)	Forced Expiratory Volume -the volume of air that has been exhaled by the patient at the end of the first second of forced expiration.	N/A	N/A	U
DE16.042	22	Date - FEV1 (after puff)	Date the "FEV1 (after puff)" has been measured.			N
DE16.043	23	FVC (after puff)	Forced Vital Capacity - the volume of air that has been forcibly and maximally exhaled out by the patient until no more can be expired.	N/A	N/A	N
DE16.044	24	Date - FVC (after puff)	Date the "FVC (after puff)" has been measured.			N
DE16.045	25	FEV1% (after puff)	The ratio of FEV1 to FVC calculated for the patient. Alternate Name: FEV1 / FVC ratio	N/A	N/A	N
DE16.046	26	Date - FEV1% (after puff)	Date the "FEV1% (after puff)" has been measured.			N
DE16.047	27	FEV1% of predicted (after puff)	FEV1% (after puff) of the patient divided by the average FEV1% predicted in the population with similar characteristics (e.g. height, age, sex, race, weight, etc.). Alternate Name: FEV1 ratio (after puff)	N/A	N/A	U
DE16.048	28	Date - FEV1% of predicted (after puff)	Date the "FEV1% of predicted (after puff)" has been measured.			N
DE16.049	29	FVC ratio (after puff)	FVC actual (after puff) / FVC predicted	N/A	N/A	N
DE16.050	30	Date - FVC ratio (after puff)	Date the "FVC ratio (after puff)" has been measured.			N
DE16.051	31	FEV1 / FVC ratio (after puff)	FEV1 / FVC (after puff) actual divided by FEV1 / FVC predicted.	N/A	N/A	N
DE16.052	32	Date - FEV1/FVC ratio (after puff)	Date the "FEV1/FVC ratio (after puff)" has been measured.			N
DE16.053	33	PEF personal (after puff) - (best of 3)	Peak Expiratory Flow (or PEFR)- the maximal flow (or speed) achieved during the maximally forced expiration initiated at full inspiration.	N/A	N/A	U
DE16.054	34	Date - PEF personal (after puff)	Date the "PEF personal (after puff)" has been measured.			N
NON-GENERIC CARE ELEMENTS						

DE #	CDM #	CARE ELEMENT	DEFINITION	Initial Setup Treatment Target	Initial Setup Treatment Interval	Status
DE16.085	35	Spirometry Test *(Yes/No)*	Records whether the "Spirometry Test" has been performed by the provider. Default values are not accepted.	N/A	N/A	P
DE16.086	36	Date - Spirometry Test	Date the "Spirometry Test" has been performed by the provider.			N
DE16.087	37	Asthma - Symptoms *[frequency/week]*: - dyspnea, - cough, - wheeze, - chest tightness, - night time symptoms	The number of each individual "Asthma Symptoms" per week as reported by the patient. Each item must be independently identifiable and have its own "treatment target" and "treatment interval". Displaying each item as a care element within the flowsheet is not an accepted solution.	DY: < 4 days/wk CO: < 4 days/wk WH: < 4 days/wk CT: < 4 days/wk NTS: (0)	N/A	P
DE16.088	38	Date -Asthma Symptoms	Date the "Asthma-Symptoms" have been recorded.			N
DE16.089	39	Asthma - # Of Exacerbations Requiring Clinical Evaluation (since last assessment)	The number of exacerbations since the last assessment requiring clinical evaluations reported by the patient.	0	N/A	P
DE16.090	40	Date - Asthma # Of Exacerbations Requiring Clinical Evaluation	Date the "Asthma - # Of Exacerbations Requiring Clinical Evaluation" and has been recorded by the provider.			N
DE16.091	41	Asthma - School/Work Absence (since last assessment)	Records whether patient missed school/work since the last assessment.	N/A	N/A	P
DE16.092	42	Asthma - # Of School/Work Absence (since last assessment)	Records the number of times the patient reported as missing school/work due to asthma since the last assessment.	0	N/A	N
DE16.093	43	Date - Asthma # Of School/Work Absence	Date the "Asthma # Of School/Work Absence" has been recorded by the provider.			N
DE16.094	44	Asthma - Limits Physical Activity (*Yes/No)*	Records whether asthma limits patient physical activity or not. Defaulted values are not accepted.	NO	N/A	P
DE16.095	45	Date - Asthma Limits Physical Activity	Date "Asthma Limits Physical Activity" has been recorded by the provider.			N
DE16.096	46	Asthma - Reliever Use *[frequency/week]*	Records the number of times the asthma reliever has been used per week as reported by the patient.	< 4 doses/week or < 2 times/week	N/A	P
DE16.097	47	Date - Asthma Reliever Use	Date the "Asthma Reliever Use " has been recorded by the provider			N
DE16.098	48	Asthma - Action Plan *(Provided / Revised / Reviewed)*	Records whether the educational document has been provided to the patient, revised or reviewed. Default values are not accepted.	N/A	N/A	P

DE #	CDM #	CARE ELEMENT	DEFINITION	Initial Setup Treatment Target	Initial Setup Treatment Interval	Status
DE16.099	49	Date - Asthma Action Plan	Date the "Asthma Action Plan" has been provided, revised or reviewed.			N
DE16.100	50	Asthma - Medication Review	Records whether medication adherence for the Asthma purpose has been discussed with the patient. Default values are not accepted.	N/A	N/A	P
DE16.101	51	Date - Asthma Medication Review	Date the "Asthma Medication Review" has been performed by the provider.	N/A	N/A	N
DE16.102	52	Asthma - Smoking Cessation Discussed	Records whether smoking cessation has been discussed with the patient. Default values are not accepted.	YES	N/A	P
DE16.103	53	Date - Asthma Smoking Cessation Discussed	Date the "Asthma Smoking Cessation" has been discussed with the patient.			N
DE16.104	54	Asthma - Optimal Device Technique Review	Records whether the optimal device technique has been reviewed by the provider.	N/A	N/A	P
DE16.105	55	Date - Asthma Optimal Device Technique Review	Date the "Asthma Optimal Device Technique Review" has been recorded by the provider.			N
DE16.106	56	Asthma - Education Referral	Records to whether the patient has been referred to an asthma educator (e.g. respiratory therapist, nurse). Default values are not accepted.	N/A	N/A	P
DE16.107	57	Date - Asthma Education Referral	Date the patient has been referred to an asthma educator.			N
DE16.108	58	Asthma/COPD- Specialist Referral	Records whether the patient has been referred to a "respirologist" or "allergist". Default values are not accepted.	N/A	N/A	P
DE16.109	59	Date -Asthma/COPD- Specialist Referral	Date the patient has been referred to the "respirologist".			N
DE16.110	60	Asthma - Environmental Control	Records whether "Asthma - Environmental Control" has been reviewed by the provider	N/A	N/A	P
DE16.111	61	Date - Asthma Environmental Control	Date the "Asthma - Environmental Control" has been recorded by the provider.			N
DE16.112	62	Asthma - Coping Strategies	Records whether "Asthma - Coping Strategies" have been reviewed by the provider	N/A	N/A	P
DE16.113	63	Date - Asthma Coping Strategies	Date the "Asthma Coping Strategies" has been recorded by the provider.			N
DE16.114	64	Asthma - Trigger Avoidance	Records whether "Asthma - Trigger Avoidance" has been reviewed by the provider	N/A	N/A	P
DE16.115	65	Date - Asthma Trigger Avoidance	Date the "Asthma Trigger Avoidance" has been recorded by the provider.			N

DE #	CDM #	CARE ELEMENT	DEFINITION	Initial Setup Treatment Target	Initial Setup Treatment Interval	Status
DE16.116	66	Asthma - Definition Review	Records whether the "Asthma Definition" has been reviewed by the provider. Default values are not accepted.	N/A	N/A	P
DE16.117	67	Date - Asthma Definition Review	Date the "Asthma - # Of Definition Review" has been recorded by the provider.			N

4.3 HEART FAILURE - CARE ELEMENTS

Referenced Sources: *MOHLTC - Heart Failure Incentive*

DE #	CDM #	CARE ELEMENT	DEFINITION	Initial Setup Treatment Target	Initial Setup Treatment Interval	Status
LAB VALUES						
N/A	1	eGFR	Records the value of the eGFR test. UM: ml/min/1.73m²	Caution if < 60 mL/min	N/A	P
N/A	2	Date - eGFR	The date the specimen has been collected.			N
N/A	3	Na+	Records the value of the Na+ test. UM: mmol/L Alternate Name: Serum Sodium	N/A	N/A	P
N/A	4	Date - Na+	The date the specimen has been collected.			N
N/A	5	K+	Records the value of the K+ test. UM: mmol/L Alternate Name: Serum Potassium	N/A	N/A	P
N/A	6	Date - K+	The date the specimen has been collected.			N
N/A	7	Serum Creatinine	Records the value of the Serum Creatine test. UM: umol/L	M: < 110 umol/L F: < 90 umol/L	N/A	P
N/A	8	Date - Serum Creatinine	The date the specimen has been collected.			N
CLINICAL DOCUMENTATION						
GENERIC CARE ELEMENTS						
DE16.001	9	Blood Pressure	The blood pressure as measured by the provider. UM: mmHg Blood pressure is out of target if either systolic or diastolic BP is out of target.	N/A	N/A	P
DE16.002	10	Date - Blood Pressure	Date the blood pressure has been measured by the provider.			N
DE16.003	11	Heart Rate	The hearth rate as measured by the provider. UM: bpm (beats per minute)	N/A	N/A	P
DE16.004	12	Date - Heart Rate	Date the hearth rate has been measured by the provider.			N
NON-GENERIC CARE ELEMENTS						
DE16.071	13	ASA Use *(Yes/No)*	Records whether the provider has recommended ASA use (ASA 81mg daily use).	N/A	N/A	P

DE #	CDM #	CARE ELEMENT	DEFINITION	Initial Setup Treatment Target	Initial Setup Treatment Interval	Status
DE16.072	14	Date - ASA Use	Date the "ASA Use" has been recommended by the provider.			N
DE16.118	15	NYHA Functional Capacity Classification: - Class I – no symptoms; - Class II – symptoms with ordinary activity; - Class III – symptoms with less than ordinary activity; - Class IV – symptoms at rest	The NYHA classification for the patient as recorded by the provider. Each item must be independently identifiable.	N/A	N/A	P
DE16.119	16	Date - NYHA Functional Capacity	Date the "NYHA Functional Capacity" has been measured / classified.			N
DE16.120	17	Pitting Edema *(Yes/No)*	Records whether the patient has pitting edema or not. Default values are not accepted.	N/A	N/A	p
DE16.121	18	Pitting Edema *[Indicate Location]*	Records pitting edema location.	N/A	N/A	P
DE16.122	19	Date - Pitting Edema	Date the patient has been identified as having "pitting edema".			N
DE16.123	20	Lung Crackles *(Yes/No)*	Records whether the patient has lung crackles or not. Default values are not accepted.	N/A	N/A	U
DE16.124	21	Lung Crackles *[Indicate Location]*	Records the location of the lung crackles.	N/A	N/A	U
DE16.125	22	Date - Lung Crackles	Date the patient has been identified as having "lung crackles".			N
DE16.126	23	Wheezing *(Yes/No)*	Records whether the patient is wheezing or not. Default values are not accepted.	N/A	N/A	U
DE16.127	24	Wheezing *[Indicate Location]*	Records the location of wheezing.	N/A	N/A	U
DE16.128	25	Date - Wheezing	Date the patient has been identified as "wheezing".			N
DE16.129	26	JVP Elevation *(Yes/No)*	Records whether the patient has jugular venous pressure elevated or not (yes -elevated, no- not elevated). Default values are not accepted.	N/A	N/A	P
DE16.130	27	Date - JVP Elevation	Date the "JVP" has been measured.			N

DE #	CDM #	CARE ELEMENT	DEFINITION	Initial Setup Treatment Target	Initial Setup Treatment Interval	Status
DE16.131	28	HF - Symptoms *(frequency/week):* - Fatigue, - Dizziness - Syncope, - Dyspnea on Exertion, - Dyspnea at Rest, - Orthopnea, - Paroxysmal Nocturnal Dyspnea	Records symptoms of the "Hearth Failure" as reported by the patient. Each symptom must be independently identifiable.	N/A	N/A	U
DE16.132	29	Date - Heart Failure Symptoms	Date the "Heart Failure Symptoms" has been recorded by the provider.			N
DE16.133	30	HF - # ER Visits (since last assessment)	Records the number of ER (Emergency Room) visits since last assessment as reported by the patient.	0	N/A	P
DE16.134	31	Date - HF # ER Visits	Date the "HF # ER Visits" has been recorded by the provider.			N
DE16.135	32	HF - Medication Review	Records whether medication adherence for Heart Failure purpose has been discussed with the patient. Default values are not accepted.	N/A	N/A	N
DE16.136	33	HF - Signs of Pharmacological Intolerance *[Indicate Intolerance]*	Records medications intolerance as reported by the patient. Refers to intolerance for all medications prescribed for the purpose of "Heart Failure" chronic disease management.	N/A	N/A	P
DE16.137	34	Date - HF Medication Review	Date the patient's medication adherence for HF has been reviewed and the signs of pharmaceutical intolerance have been recorded.			N
DE16.138	35	HF - Target Modifiable Risk Factors: - Hypertension - Smoking - Diabetes - Overweight/Obesity - Hyperlipidemia	Records whether Hearth Failure - Target Modifiable Risk Factors" has been reviewed by the provider. Each item must be independently identifiable. Default values are not accepted.	N/A	N/A	P
DE16.139	35	Date - Hearth Failure Target Modifiable Risk Factors	Date the "Hearth Failure Target Modifiable Risk Factors" has been recorded by the provider.			N
DE16.140	37	HF - Collaborative Self-Management Goals *[Indicate Goal]*	Records patient goals as recorded by the provider.	N/A	N/A	P
DE16.141	38	Date - HF Collaborative Self-Management Goals	Date the "Collaborative Self-Management Goals" has been recorded by the provider.			N
DE16.142	39	HF - Self Management Challenge *[Indicate Challenge]*	Records patient challenges as recorded by the provider.	N/A	N/A	P

DE #	CDM #	CARE ELEMENT	DEFINITION	Initial Setup Treatment Target	Initial Setup Treatment Interval	Status
DE16.143	40	Date - HF Self-Management Challenge	Date the "HF Self-Management Challenge" has been recorded by the provider.			N
DE16.144	41	HF Education - Medication Review - Salt/Fluid Balance - Daily Weight Monitoring - Exercise	Record whether "HF Education" has been reviewed has been reviewed by the provider. Each item must be independently identifiable. Default values are not accepted.	N/A	N/A	P
DE16.145	42	Date -HF Education	Date the "HF Education" has been recorded by the provider.			N

4.4 COPD – CARE ELEMENTS

Referenced Sources: *GAC Guidelines, BC CDM Toolkit*

DE #	CDM #	CARE ELEMENT	DEFINITION	Initial Setup Treatment Target	Initial Setup Treatment Interval	Status
CLINICAL DOCUMENTATION						
N/A	1	Influenza Vaccine	Records whether the Influenza Vaccine has been administered.	N/A	Annual	P
N/A	2	Date - Influenza Vaccine	Date the Influenza Vaccine has been administered.			N
N/A	3	Pneumococcal Vaccine	Records whether the Pneumococcal Vaccine has been administered.	N/A	N/A	P
N/A	4	Date - Pneumococcal Vaccine	Date the Influenza Vaccine has been administered.			N
GENERIC CARE ELEMENTS						
DE16.009	5	BMI	The Body Mass Index automatically calculated by the EMR system, based on the Height and Weight recorded by the provider. UM: kg/m^2	=< 27 kg/m^2	N/A	U
DE16.010	6	Date - BMI	Date the BMI has been recorded by the provider.	N/A	N/A	N
DE16.013	7	Smoking Status (Yes/No)	Records whether the patient is currently smoking or not. Default values are not accepted. Smoking Status recorded in the Risk Factor must flow in all the flowsheet where the data element is used, based on the recorded date.			U
DE16.014	8	Date - Smoking Status	Date the "smoking status" has been reported by the patient.			N
DE16.021	9	FEV1 (before puff) -(personal best of 3)	Forced Expiratory Volume -the volume of air that has been exhaled by the patient at the end of the first second of forced expiration.	N/A	N/A	U
DE16.022	10	Date - FEV1 (before puff)	Date the "FEV1 (before puff)" has been measured.			N
DE16.023	11	FVC (before puff)	Forced Vital Capacity - the volume of air that has been forcibly and maximally exhaled out by the patient until no more can be expired.	N/A	N/A	N
DE16.024	12	Date - FVC (before puff)	Date the "FVC (before puff)" has been measured.			N
DE16.025	13	FEV1% (before puff)	The ratio of FEV1 to FVC calculated for the patient. Alternate Name: FEV1 / FVC ratio	N/A	N/A	N

DE #	CDM #	CARE ELEMENT	DEFINITION	Initial Setup Treatment Target	Initial Setup Treatment Interval	Status
DE16.026	14	Date - FEV1% (before puff)	Date the "FEV1% (before puff)" has been measured.			N
DE16.027	15	FEV1 predicted	The **FEV1** calculated in the population with similar characteristics (e.g. height, age, sex, race, weight, etc.)	N/A	N/A	N
DE16.028	16	Date - FEV1 predicted	Date the "FEV1" predicted has been measured.			N
DE16.029	17	FVC predicted	Forced Vital Capacity predicted - calculated in the population with similar characteristics (height, age, sex, and sometimes race and weight).	N/A	N/A	N
DE16.030	18	Date - FVC predicted (before puff)	Date the "FVC" predicted has been measured.			N
DE16.031	19	**FEV1% predicted**	The ratio of FEV1 predicted to FVC predicted, calculated in the population with similar characteristics (height, age, sex, and sometimes race and weight). Alternate Name: FEV1 / FVC predicted ratio	N/A	N/A	N
DE16.032	20	**Date - FEV1% predicted**	Date the "FEV1% predicted" has been measured.			N
DE16.033	21	FEV1% of predicted (before puff)	**FEV1% (before puff) of the patient divided by** the average **FEV1% predicted** in the population with similar characteristics (e.g. height, age, sex, race, weight, etc.). Alternate Name: FEV1 ratio (before puff)	N/A	N/A	U
DE16.034	22	Date - FEV1% of predicted (before puff)	Date the "FEV1% of predicted (before puff)" has been measured.			N
DE16.035	23	FVC ratio (before puff)	FVC actual (before puff) / FVC predicted	N/A	N/A	N
DE16.036	24	Date - FVC ratio (before puff)	Date the "FVC ratio (before puff)" has been measured.			N
DE16.037	25	FEV1 / FVC ratio (before puff)	FEV1 / FVC (before puff) actual **divided by** FEV1 / FVC predicted	N/A	N/A	N
DE16.038	26	Date - FEV1/FVC ratio (before puff)	Date the "FEV1/FVC ratio (before puff)" has been measured.			N
DE16.039	27	PEF personal (before puff) - (best of 3)	Peak Expiratory Flow (or PEFR) - the maximal flow (or speed) achieved during the maximally forced expiration initiated at full inspiration.	N/A	N/A	U
DE16.040	28	Date - PEF personal (before puff)	Date the "PEF personal (before puff)" has been measured.			N
DE16.041	29	FEV1 (after puff) -(personal best of 3)	Forced Expiratory Volume -the volume of air that has been exhaled by the patient at the end of the first second of forced expiration.	N/A	N/A	U
DE16.042	30	Date - FEV1 (after puff)	Date the "FEV1 (after puff)" has been measured.			N
DE16.043	31	FVC (after puff)	Forced Vital Capacity - the volume of air that has been forcibly and maximally exhaled out by the patient until no more can be expired.	N/A	N/A	N

DE #	CDM #	CARE ELEMENT	DEFINITION	Initial Setup Treatment Target	Initial Setup Treatment Interval	Status
DE16.044	32	Date - FVC (after puff)	Date the "FVC (after puff)" has been measured.			N
DE16.045	33	FEV1% (after puff)	The ratio of FEV1 to FVC calculated for the patient. Alternate Name: FEV1 / FVC ratio	N/A	N/A	N
DE16.046	34	Date - FEV1% (after puff)	Date the "FEV1% (after puff)" has been measured.			N
DE16.047	35	FEV1% of predicted (after puff)	**FEV1% (after puff) of the patient divided by** the average **FEV1% predicted** in the population with similar characteristics (e.g. height, age, sex, race, weight, etc.). Alternate Name: FEV1 ratio (after puff)	N/A	N/A	U
DE16.048	36	Date - FEV1% of predicted (after puff)	Date the "FEV1% of predicted (after puff)" has been measured.			N
DE16.049	37	FVC ratio (after puff)	FVC actual (after puff) / FVC predicted	N/A	N/A	N
DE16.050	38	Date - FVC ratio (after puff)	Date the "FVC ratio (after puff)" has been measured.			N
DE16.051	39	FEV1 / FVC ratio (after puff)	FEV1 / FVC (after puff) actual divided by FEV1 / FVC predicted.	N/A	N/A	N
DE16.052	40	Date - FEV1/FVC ratio (after puff)	Date the "FEV1/FVC ratio (after puff)" has been measured.			N
DE16.053	41	PEF personal (after puff) - (best of 3)	Peak Expiratory Flow (or PEFR)- the maximal flow (or speed) achieved during the maximally forced expiration initiated at full inspiration.	N/A	N/A	U
DE16.054	42	Date - PEF personal (after puff)	Date the "PEF personal (after puff)" has been measured.			N
DE16.055	43	O_2 Saturation	Records the "O_2 Saturation" as measured by the provider or received from laboratory. UM: %	N/A	N/A	P
DE16.056	44	Date - O2 Saturation	Date the O2 Saturation has been measured.			N
NON-GENERIC CARE ELEMENTS						
DE16.085	45	Spirometry Test *(Yes/No)*	Records whether the "Spirometry Test" has been performed by the provider. Default values are not accepted.	N/A	N/A	P
DE16.086	46	Date - Spirometry Test	Date the "Spirometry Test" has been performed by the provider.			N
DE16.108	47	Asthma/COPD- Specialist Referral	Records whether the patient has been referred to a "respirologist" or "allergist". Default values are not accepted.	N/A	N/A	P
DE16.109	48	Date -Asthma/COPD- Specialist Referral	Date the patient has been referred to the "respirologist".			N

DE #	CDM #	CARE ELEMENT	DEFINITION	Initial Setup Treatment Target	Initial Setup Treatment Interval	Status
DE16.146	49	COPD Classification: - Mild: FEV1 >= 80% predicted; - Moderate:50% <= FEV1 < 80% predicted; - Severe:30% <= FEV1 < 50% predicted; - Very Severe : FEV1 < 30% predicted	The COPD classification based on the spirometry results (FEV1) before the puff was administered to the patient. Each item must be independently identifiable. Default values are not accepted.	N/A	N/A	P
DE16.147	50	Date - COPD Classification	Date the "COPD Classification" has been recorded.			N
DE16.148	51	COPD - Date of Last Exacerbation	Records the date of the last COPD exacerbation as reported by the patient.	N/A	N/A	P
DE16.149	52	Date - COPD Last Exacerbation	Date the "COPD - Date of Last Exacerbation" has been recorded by the provider.			N
DE16.150	53	COPD - # of Exacerbations (since last assessment)	The number of exacerbations due to COPD since last visit, as reported by the patient.	N/A	N/A	N
DE16.151	54	Date - # of Exacerbations	Date the "COPD - # of Exacerbations" has been recorded by the provider.			N
DE16.152	55	COPD - Need for Supplemental O_2 Review	Records whether need for supplemental O2 has been reviewed by the provider. Default values are not accepted.	N/A	Annual	P
DE16.153	56	Date - COPD Need for Supplemental O2 Review.	Date the "COPD Need for Supplemental O2 Review" has been recorded by the provider.			N
DE16.154	57	COPD - Need for Nocturnal Ventilation Support - Review	Records whether need for nocturnal ventilated support has been reviewed by the provider. Default values are not accepted.	N/A	Annual	P
DE16.155	58	Date - COPD Need for Nocturnal Ventilated Support Review	Date the "COPD Need for Nocturnal Ventilated Support Review" has been recorded by the provider.			N
DE16.156	59	ABG Test - Recommended *(Yes/ Not Applicable)*	Records whether the" ABG Test" has been recommended or is not applicable. Each item must be independently identifiable. Default values are not accepted. Alternate Name: Arterial Blood Gas	N/A	N/A	P
DE16.157	60	Date - ABG Test Recommended	Date the "ABG Test" has been recommended or recorded as "not applicable"			N
DE16.158	61	COPD - Medication Review	Records whether medication adherence for COPD purpose has been discussed with the patient. Default values are not accepted.	N/A	6 months	P

DE #	CDM #	CARE ELEMENT	DEFINITION	Initial Setup Treatment Target	Initial Setup Treatment Interval	Status
DE16.159	62	Date - COPD Medication Review	Date the patient's medication adherence for COPD has been reviewed by the provider.			N
DE16.160	63	Review pathophysiology, prognosis, treatment with patient	Records whether the pathophysiology, prognosis, treatment has been reviewed by the provider. Default values are not accepted.	N/A	6 months	P
DE16.161	64	Date - COPD Review pathophysiology	Date the "Review pathophysiology" has been recorded by the provider.			N
DE16.162	65	COPD - Smoking Cessation Discussed	Records whether smoking cessation has been discussed with the patient. Default values are not accepted.	N/A	N/A	P
DE16.163	66	Date - COPD Smoking Cessation Discussed	Date the "COPD Smoking Cessation" has been discussed with the patient.			N
DE16.164	67	Smoking Cessation Program - Referral	Records whether the patient has been referred to a "Smoking Cessation Program". Default values are not accepted.	N/A	N/A	P
DE16.165	68	Date -Smoking Cessation Program Referral	Date the patient has been referred to a "smoking cessation program".			N
DE16.166	69	COPD -Pulmonary Rehabilitation Referral	Records whether the patient has been referred to a "pulmonary rehabilitation program". Default values are not accepted.	N/A	N/A	P
DE16.167	70	Date - COPD Pulmonary Rehabilitation Referral	Date the patient has been referred to the "respiratory therapist".			N
DE16.168	71	COPD - Exacerbation Plan *(Provided / Revised / Reviewed)*	Records whether the exacerbation plan document has been *provided* to the patient, *revised* or *reviewed.* Default values are not accepted.	N/A	6 months	P
DE16.169	72	Date - COPD Exacerbation Plan	Date the "COPD Exacerbation Plan" has been provided, revised or reviewed.			N
DE16.170	73	COPD - Collaborative Self-Management Goals *[Indicate Goal]*	Records patient goals as recorded by the provider.	N/A	6 months	U
DE16.171	74	Date - COPD Collaborative Self-Management Goals	Date the "COPD Collaborative Self-Management Goals" has been recorded by the provider.			N

DE #	CDM #	CARE ELEMENT	DEFINITION	Initial Setup Treatment Target	Initial Setup Treatment Interval	Status
DE16.172	75	COPD -Provide patient education materials	Records whether education materials for COPD have been provided to the patient. Default values are not accepted.	N/A	N/A	P
DE16.173	76	Date - COPD Provide patient education materials	Date the "COPD Provide patient education materials" has been recorded by the provider.			N

4.5 HYPERTENSION - CARE ELEMENTS

Referenced Sources: *GAC Guidelines, BC CDM Toolkit, JNC 7, CHEP 2007*

DE #	CDM #	CARE ELEMENT	DEFINITION	Initial Setup Treatment Target	Initial Setup Treatment Interval	Status
LAB VALUES						
N/A	1	FPG	Records the value of the FPG test. UM: mmol/L Alternate Name: Fasting Plasma Glucose	<= 6.0 mmol/L	N/A	P
N/A	2	Date - FPG	The date the specimen has been collected.			N
N/A	3	LDL-C	Records the value of the LDL-C test. UM: mmol/L	< 3.5 mmol/L	N/A	P
N/A	4	Date - LDL-C	The date the specimen has been collected.			N
N/A	5	TC:HDL-C Ratio	Records the value of the TC:HDL-C Ratio test. UM: mmol/L	< 5.0	N/A	P
N/A	6	Date - TC:HDL-C Ratio	The date the specimen has been collected.			N
N/A	7	Triglycerides	Records the value of the Triglycerides test. UM: mmol/L	N/A	N/A	P
N/A	8	Date - Triglycerides	The date the specimen has been collected.			N
N/A	9	eGFR	Records the value of the eGFR test. UM: ml/min/1.73m²	N/A	Annual	P
N/A	10	Date - eGFR	The date the specimen has been collected.			N
N/A	11	Urinary Microalbumin Screen	Records the value of the Urinary Microalbumin test. UM: mg/L	Male < 2.0 Female < 2.8	Biennial	P
N/A	12	Date - Urinary Microalbumin Screen	The date the specimen has been collected.			N
CLINICAL DOCUMENTATION						
GENERIC CARE ELEMENTS						
DE16.001	13	Blood Pressure	The blood pressure as measured by the provider. Blood pressure is out of target if either systolic or diastolic BP is out of target. UM: mmHg	=< 140/90 mmHg	N/A	P
DE16.002	14	Date - Blood Pressure	Date the blood pressure has been measured by the provider.			N
DE16.005	15	Height	The height as measured by the provider. UM: cm	N/A	N/A	P
DE16.006	16	Date - Height	Date height has been measured by the provider.			N

DE #	CDM #	CARE ELEMENT	DEFINITION	Initial Setup Treatment Target	Initial Setup Treatment Interval	Status
DE16.007	17	Weight	The weight as measured by the provider. UM: kg	N/A	N/A	P
DE16.008	18	Date - Weight	Date weight has been measured by the provider.			N
DE16.009	19	BMI	The Body Mass Index automatically calculated by the EMR system, based on the Height and Weight recorded by the provider. UM: kg/m^2	18.5 - 24.9 kg/m^2	N/A	U
DE16.010	20	Date - BMI	Date the BMI has been recorded by the provider.			N
DE16.011	21	Waist Circumference	The waist circumference as measured by the provider.	M: < 100 cm F: < 90 cm	N/A	P
DE16.012	22	Date - Waist Circumference	Date the waist circumference has been measured by the provider.			N
DE16.013	23	Smoking Status *(Yes/No)*	Records whether the patient is currently smoking or not. Default values are not accepted. Smoking Status recorded in the Risk Factor must flow in all the flowsheet where the data element is used, based on the recorded date.	N/A	N/A	P
DE16.014	24	Date - Smoking Status	Date the "smoking status" has been reported by the patient.			N
DE16.015	25	Smoking Packs/Day	The number of packs per day smoked as reported by the patient. It is assumed that 1 pack=20 cigarettes.	N/A	N/A	U
DE16.016	26	Date - Smoking Packs/Day	Date the patient reported the number of packs/day is smoking.			N
DE16.017	27	Alcohol Use *(# drinks/week)*	The number of drinks equivalents per week as reported by the patient.	M > 14 drinks/wk F: > 8 drinks/wk	N/A	P
DE16.018	28	Date - Alcohol Use	Date the patient reported the number of drinks/week.			N
NON-GENERIC CARE ELEMENTS						
DE16.174	29	10 Year CAD Risk (Framingham)	The value of the "10 Year CAD Risk (Framingham) " as recorded by the provider. UM: %	N/A	N/A	P
DE16.175	30	Date - 0 Year CAD Risk (Framingham)	Date the "10 Year CAD Risk (Framingham)" has been calculated / measured.			N

DE #	CDM #	CARE ELEMENT	DEFINITION	Initial Setup Treatment Target	Initial Setup Treatment Interval	Status
DE16.176	31	HT - Medication Review	Records whether medication adherence for Hypertension purpose has been discussed with the patient. Default values are not accepted.	N/A	N/A	P
DE16.177	32	Date - HT Medication Review	Date the patient's medication adherence for HT has been reviewed by the provider.			N
DE16.178	33	Hypertension - Exercise Reviewed	Records whether "Hypertension Exercise" has been reviewed by the provider. Default values are not accepted.	N/A	N/A	P
DE16.179	34	Date - Hypertension Exercise Reviewed	Date the "Hypertension Exercise Review" has been completed by the provider.			N
DE16.180	35	HT- Collaborative Self-Management Goals *[Indicate Goal]*	Records patient goals as recorded by the provider.	N/A	N/A	P
DE16.181	36	Date - HT Collaborative Self-Management Goals	Date the "HT Collaborative Self-Management Goals" has been recorded by the provider.			N
DE16.182	37	HT - Self Management Challenge *[Indicate Challenge]*	Records patient challenges as recorded by the provider.	N/A	N/A	P
DE16.183	38	Date - HT Self-Management Challenge	Date the "HT Self-Management Challenge" has been recorded by the provider.			N
DE16.184	39	HY - Salt Intake Reviewed	Records whether the salt intake has been reviewed by the provider.	N/A	N/A	P
DE16.185	40	Date - Salt Intake Reviewed	Date the "Salt Intake Reviewed" has been recorded by the provider.			N

5. RETIRED REQUIREMENTS / CARE ELEMENTS

For the purposes of this section, the following terms and abbreviations are defined and shall be applied to all tables in this section:

Scoring: **M** = Mandatory criteria
W = Weighted criteria

Status: **N** = New requirement for EMR Specification
P = Previous requirement from EMR-Specification v4.1
U = Updated from a previous EMR Specification v4.1
R = Retired from previous EMR Specification v4.1

OMD #: unique identifier that identifies each requirement within *Ontario EMR Requirements Repository*

CDM # unique identifier that identifies each care elements within the *EMR-CDM Specification*

YEAR: the year the requirement became part of the *Ontario EMR Requirements Repository*

YEAR Retired: the year the requirement was retired from the *Ontario EMR Requirements Repository*

5.1 RETIRED CDM - FUNCTIONAL REQUIREMENTS

Following functional requirements have been retired from the EMR-CDM Specification.

Refer to Ontario EMR Specification v4.1 – Appendix C for complete information about the following retired requirements.

OMD #	REQUIREMENT	GUIDELINES	M/W	Status	YEAR	YEAR Retired	Reason for Retirement
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

5.2 RETIRED CDM - CARE ELEMENTS

Following care elements have been retired from the EMR-CDM Specification.

Refer to Ontario EMR Specification v4.1 - Appendix C for complete information about the following retired CDM care elements.

CDM #	CARE ELEMENT	DEFINITION	YEAR	YEAR Retired	Reason for Retirement
N/A	N/A	N/A	N/A		N/A

6. AMENDED CDM FUNCTIONAL REQUIREMENTS / CARE ELEMENTS

6.1 DATE AMENDED: N/A