



Content User Guide

CA Element Set Foundation

January 2023



Overview

CA Element Set Foundation contains a collection of elements (a.k.a. “value sets”) in what is referred to in Symedical as an element set. Elements are lists of terms and their associated codes from one or more code systems that describe clinical concepts across condition/diagnosis, medication, laboratory, procedure, and other domains. Elements in the CA Element Set Foundation package are clinically curated in accordance with Clinical Architecture’s editorial policy and are designed to be used for research, analytics, clinical decision support, and a variety of other use cases.

Elements are viewed, authored, and maintained in Element Set Manager which may require licensure, and CA Element Set Foundation may require a content subscription.

Content Summary

General Information

The CA Element Set Foundation package can be subscribed to in the Subscription Portal under the Content Marketplace tab. It is a Core Element Set package that contains a single element set called “CA Elements” which has the following supporting structures and dependencies:

- CA Elements (Core Catalog)
- CA Elements (Core Content Model)
- Content Model Subsets: there are currently more than 3,000 content model subsets that are prefixed with “CA -” for easy identification

The CA Element Set Foundation package is updated quarterly in January, April, July, and October which are timed to follow biannual updates of SNOMED CT US Edition in March and September.

Element Features

There are currently more than 2,400 elements in the “CA Elements” element set. Each element contains the following codes and attributes:

- Source Code: alphanumeric identifier
- Unique Code: same as Source Code
- Element Name: alphanumeric name that describes the general concept of the element
- Term Type: domain of the element; constrained to the following options:
 - DRUG
 - DISORDER
 - GENERAL
 - LAB
 - PROCEDURE
- Condition Chronicity: This attribute is used to identify acute and/or chronic conditions. Attribute values are populated for every element and are listed as follows:
 - Acute: applies to elements where all expansion terms represent acute conditions

- Chronic: applies to elements where all expansion terms represent chronic conditions
- Both: applies to elements with expansion terms that represent a mixture of acute and chronic conditions. In some cases, any one expansion term may represent both acute and chronic conditions (e.g., acute exacerbation of chronic obstructive pulmonary disease).
- Not Applicable: applies to elements where expansion terms do not represent conditions (e.g., labs, medications, vital signs, observations)
- Grouper: binary indicator of whether the element is the union of other elements in the same element set
- Retired: binary indicator of whether or not the element is retired

Elements have terminology bindings that are based on United States Core Data for Interoperability (<https://www.healthit.gov/isa/united-states-core-data-interoperability-uscdi>) recommendations. Accordingly, the “CA Elements” element set is configured with the following code systems:

Code System	Element Usage
CDC - Race and Ethnicity	Race and ethnicity
CDC - Vaccine Administered (CVX)	Vaccines
ICD-10-CM	Conditions
ICD-10-PCS	Procedures
ICD-9-CM Diagnosis	Conditions (legacy)
ICD-9-CM Procedure	Procedures (legacy)
LOINC	Labs and observations
LOINC Answers	Lab results
MED-RT	Drug classes
NDFRT	Drugs and drug classes (legacy)
NDFRT FDA Classes	Drugs and drug classes (legacy)
NDFRT VA Classes	Drugs and drug classes (legacy)
RxNorm	Drugs
SNOMED CT US Edition	Conditions, procedures, observations, drug classes, and other clinical domains

As noted above, the CA Elements element set supports selected legacy code systems. Note that due to licensing requirements, Current Procedural Terminology (CPT) is excluded from CA Elements, but custom elements with bindings to CPT may be authored locally.

Each element contains terminology bindings to one or more of the above code systems. Element *definitions* are either individually selected terms (a.k.a. extensional definitions) or rules that leverage hierarchies, ontologies, and/or attributes to define collections of terms (a.k.a. intensional definitions). Element *expansions* are the resultant complete list of members that represent the union of all element definitions.

Element definitions are derived using one of the following sources for non-grouper elements:

- Term: definitions can include catalog terms in any configured code system, with the

- option to include descendants and/or members depending on the code system
- Catalog: definitions can include any catalog in its entirety
- Content Model Subset: definitions can include content model subsets to leverage lexical rules, hierarchies, ontologies, attributes, and other features of Content Model Subset Designer; these are used extensively in the CA Elements element set

For grouper elements, reference definitions include one or more elements. Terms, catalogs, and content model subsets cannot be used as definitions in grouper elements.

The General tab contains information in the following 3 sections:

- Rationale: free text description of the element; it may include a short description along with specific inclusion and/or exclusion criteria depending on the clinical complexity of the element concept
- Lexical Bindings: generally reserved for use in conjunction with Inference Manager, lexical bindings allow external data to resolve against lexical criteria specified in this section; this feature is not used in CA Elements
- Allowed Canonical Domains: reserved for use in conjunction with Inference Manager, elements can be assigned to one or more canonical domains which, when specified, constrains Inference Manager element resolution to the specified canonical domains; each canonical domain has specific characteristics as defined by Clinical Architecture's patient data model.

The Usages tab displays content artifacts (e.g., inferences, content models) in the same Symedical environment where elements are used.

The Value Set Properties tab contains additional attributes (Name, Version, OID, Effective start date, and Effective end date) that support certain value set maintenance needs for certain use cases. These attributes are not populated in the CA Elements element set.

Support

For additional guidance on Element Set Manager and Content Model Subset Designer functionality, refer to the appropriate Symedical User Guide. Please contact your client support representative if you have any questions or feedback.