

Common Drug Codes for India (Terminology Integrated Package) [Developer Preview]

Release Date: November 22, 2019

Introduction

Drugs (medicinal products) are one of the key data points captured and referred for continuity of care of an individual. In order for the drugs information to be identified, stored, referred, and exchanged between different clinical, reporting, stock, supply chain, dispensation systems, it is important to have common drug codes across those systems.

Lack of common drug codes across different systems and healthcare setups invariably introduce local maps, formats and naming conventions leading to input errors, missing information, incorrect identification and other problems that surface due to lack of unique identities and diverging naming methodologies. This makes exchange of health data a difficult and error-prone activity.

For a country rapidly digitizing its information systems and especially adopting digital systems in healthcare information management, it is important that this key piece of information is codified and made available for use across all system. Different system should be able to use the same codes with slightly different additional information to meet its purposes.

National Resource Centre for EHR Standards (NRCeS), a program of Ministry of Health and Family Welfare (MoHFW), Government of India is providing these Common Drug Codes for India for use across healthcare records, supply and pharmacy systems.

Purpose

Common Drug Codes for India (Terminology Integrated Package) is a set of files that integrate with SNOMED CT® Global Medical Terminology files and content for use in any data entry, analysis, or record exchange systems that adhere to MoHFW notified *Electronic Health Record Standards for India 2016* guidelines.

The package provides listing of the concepts, descriptions, and relationships to complement the international content of the SNOMED CT® International Release for use in India. The package, provided as a *National Extension*, builds on substances, combinations, medicinal products (generics) already present in SNOMED CT® International Release and adds several of these to cover drugs available under various health programs in India.

With Terminology Integrated Package, users of SNOMED CT® International Release can reap the benefits of having fully integrated, consistent, terminology base that can be used by application(s) already using SNOMET CT® without having to develop or code a new infrastructure for handling drug codes.

The Extensions are a mechanism to extend SNOMED CT® for specialized terminology needs such as medicine to match requirements of different clinical specialties / domains. The purpose of this Extension includes:

- Enable standardized coding of medicinal products for clinical care
- Enable linkages to terminology and use in application/system for:
 - Clinical Documentation
 - Data Retrieval
 - Data Analytics
 - Reporting
 - ePrescription
 - Stock management
 - Supply Change management

Scope

This release of Common Drug Codes for India (Terminology Integrated Package) includes generic (clinical drug), supplier, and branded medicine concepts which when used along with SNOMET CT® International Release covers all medicines, except devices, surgical implants, and combi packs, from:

- National List of Essential Medicines (NLEM) 2015
- Pradhan Mantri Jan-Aushadhi Yojana
- Affordable Medicines and Reliable Implants for Treatment (AMRIT) programme

The concepts have been modeled based on *SNOMED International Medicinal Product Hierarchy - Editorial Guidelines* and *SNOMED CT Drug Model for supporting National Extension v1.0*. The International Drug Model follows ISO IDMP Standards based modeling (dose form, RoA, UoP, medicinal product, etc.). For details on the Model refer **Annexure**.

This is a **Developer Preview** release containing additional concepts covering Suppliers, Brand and Supplier combination, Clinical Drug, and Branded Medicines to familiarize affiliates and health IT implementors with the format and model of the national drug extension. This release package is distributed for **Development, Review, Integration, Testing and Demonstration** purposes only. ***It may NOT be used in production clinical systems or in clinical settings until a production release is available.***

Release Summary

This extension includes Generics (*Clinical drug*) and respective Brands (*Real Clinical Drug*) covered under 03 National programs for direct usage in health applications. The current extension covers both single ingredient and multi-ingredient (up to five active ingredient) Clinical Drugs in terms of composition.

The summary of the content coverage is provided as below:

Concept Type	Count
Supplier (Manufacturer)	1858
Product Name (trade or brand name)	15785
Clinical drug (Generic Medicine)	620
Real Clinical Drug (Branded Medicine)	14524

This Extension along with SNOMED CT International Edition offers total Generic **6284** and **14524** Branded Medicines.

This Extension must be used together with the referenced July 2019 SNOMED CT International Edition release.

In July 2019 International Edition, the Stated Relationship file is present but have inactivated records. This file will be removed in future releases. The Stated Relationship file is replaced with the new OWL Expression refset files. Similarly, the Common Drug Codes for India (Terminology Integrated Package) also provides OWL Expression refset files and Stated Relationship files (with inactivated records). The Inferred Relationship file continues to follow RF2 format as earlier. SNOMED CT to OWL conversion and classification has been done through `snomed-owl-toolkit` available at: <https://github.com/IHTSDO/snomed-owl-toolkit>

This release aims to familiarize affiliates and SNOMED CT implementors to the format and model of the national drug extension. In evidence of any material error, change or correction you are requested to immediately report it at nrc-help@cdac.in.

NRCeS provides a continuous support and consulting services to assist Indian affiliates in understanding, implementing and using SNOMED CT. For any support or assistance, please email at nrc-help@cdac.in.

Get Release Files

Common Drug Codes for India (Terminology Integrated Package) are available to Affiliate Licensees through Member Licensing and Distribution Service (MLDS) and accessed online here:

<https://www.nrces.in/services/national-releases>

Common Drug Codes for India (Terminology Integrated Package) is available for use under terms provided in *SNOMED CT Affiliate License*.

Acknowledgement & Contributions

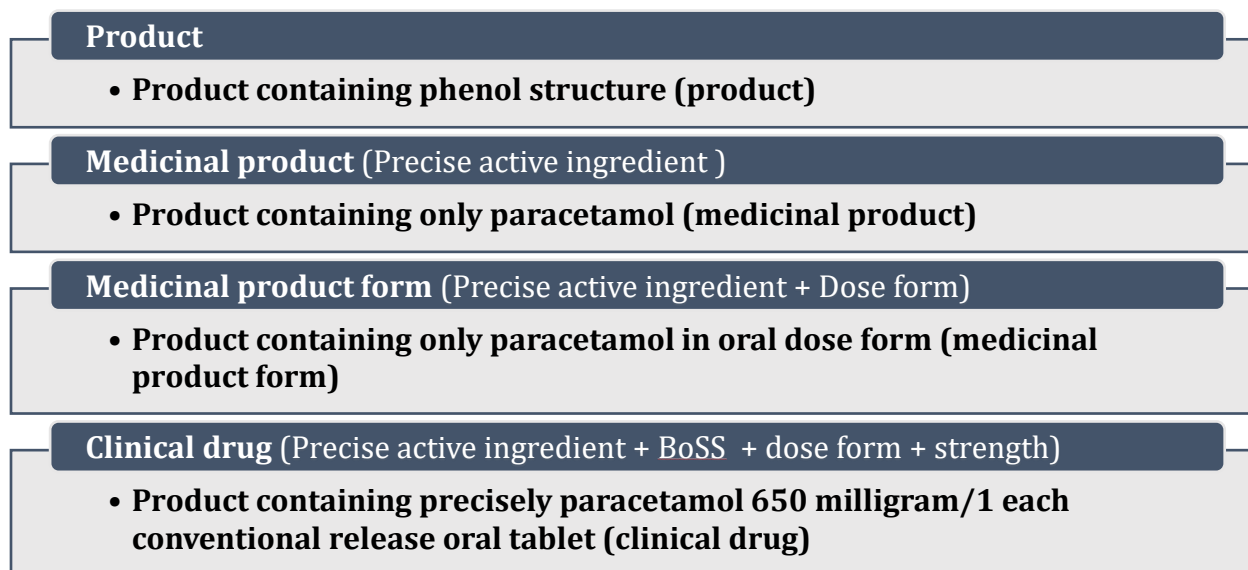
This Extension includes drug information corpus contributed by *All India Institute of Medical Sciences (AIIMS)*, New Delhi; *1MG Technologies Private Limited*, Gurgaon, Haryana; and *Center for Development of Advanced Computing (C-DAC)*- Noida Centre.

Computer Facility, All India Institute of Medical Sciences (AIIMS), New Delhi facilitated the content review and validation for correctness and completeness.

Annexure

Drug Model

The Clinical Drug concepts are modeled based on active ingredients, dose form, package container, and concentration. With each attribute defined, different classes with different semantic tags are placed under 373873005 | Pharmaceutical / biologic product (product) | hierarchy. The figure with an example of modeling various classes is given below:



SNOMED CT International Drug Model Example

This extension includes Generic medicines i.e. *Clinical drugs* that are part of 03 National Programs of India but do not appear in SNOMED CT International Release (20190731). The generic medicines having presentation strength provided in above-mentioned National Programs are also modeled in the current extension. The international release, as per the editorial guide, will include International Non-proprietary Names (INNs) / generics.

The National Drug Extension Model provided by SNOMED International includes following classes:

Packaged Clinical Drug (PCD) – Represents a *Clinical drug* with packaging information.

Product Name – Represents the trade or brand name only.

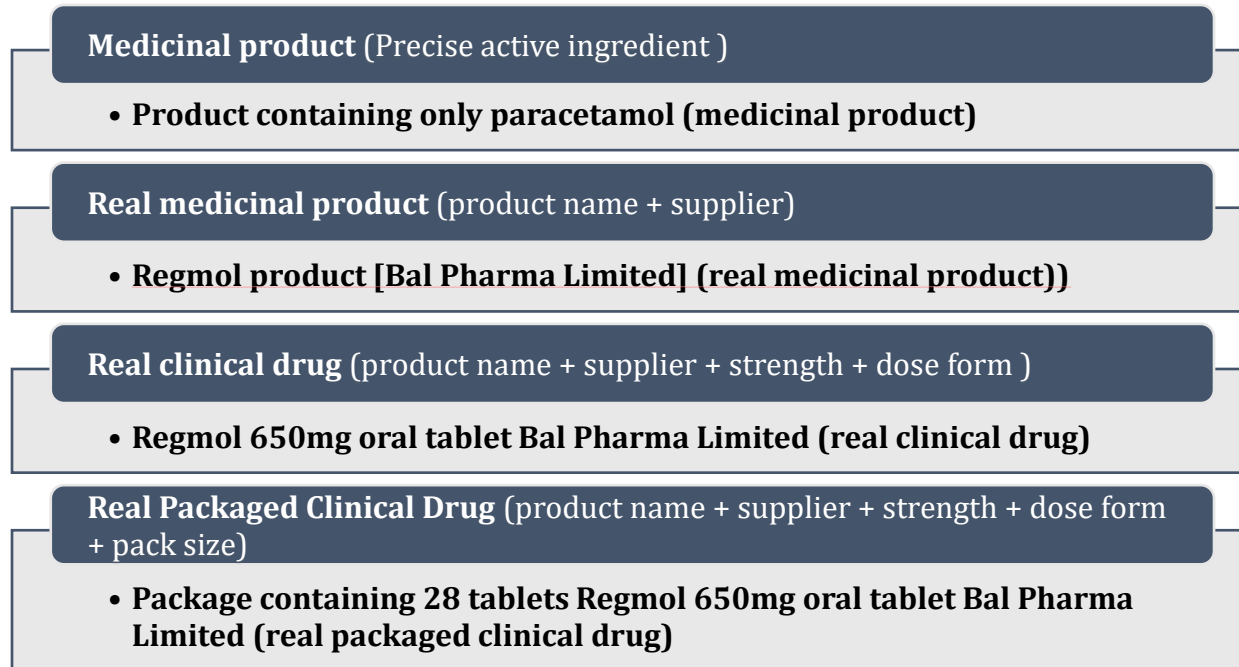
Supplier – Represents a name of supplier or manufacturer only.

Real Medicinal Product (RMP) - Represents a product marketed by a single organization (supplier) under a single name (which may be a trade or brand name) containing the same set of active ingredient substances as a *Medicinal product*.

Real Clinical Drug (RCD) - Represents a product marketed by a single organization (supplier) under a single name (which may be a trade or brand name) containing the same set of active ingredient substances in the same strength formulated within a single dose form as a *Clinical drug*.

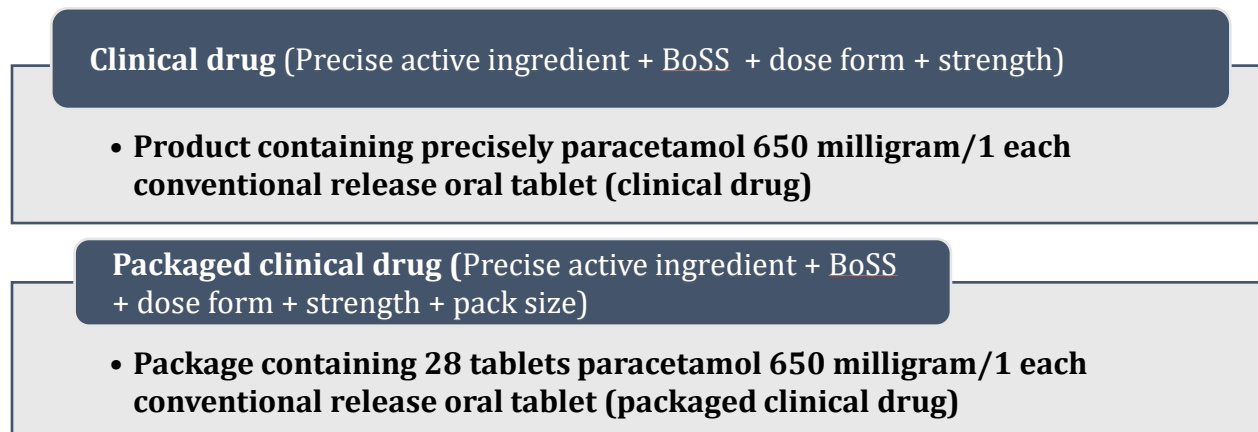
Real Packaged Clinical Drug (RPCD) – Represents *Real Clinical Drug* with its packaging information.

The figure with an example of modeling classes for branded medicines in this extension is shown below:



SNOMED CT Drug Model for National Extension: Example for Branded Medicines

The figure with an example of modeling classes for generic medicines in the National Extension is shown below:



SNOMED CT Drug Model for National Extension: Example for Generic Medicines

The release also includes *Clinical drug* and *Real Clinical Drug* with presentation strength and concentration strength.

The current release does not include *PCD* and *RPCD* concepts and may be modeled in future.