Editorial Guide on Hong Kong Clinical Terminology Table – Drugs (Medication Terminology Table)

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The Government of the Hong Kong Special Administrative Region

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Document Summary

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Amendment History

Version No.	Summary of Changes	Date
1.0	Original version	01 Jan 2013
1.1	Updated format. Chapter 6.12 Multi-ingredient products with combined strength expression – added exception rules to allow combined strength expression for certain antimicrobial agents. Chapter 6.13 Multi-component Products : updated expression rules on multiple-component products. Updated product descriptions rules to allow use of drug names enlisted in the Poisons List as preferred descriptions where applicable.	05 Jan 2015
1.2	Updated format. Chapter 3.1.2.4 HKMTT Relationship (Linkage) Concepts – added new relationship types (“Has simple form” and “simple form of” to support maintenance of simplified virtual therapeutic moiety (sVTM).	01 Jan 2018

	Chapter 4.2 Virtual Therapeutic Moiety (VTM) – added definition of simplified VTM and exception rules, with technical specifications including attributable associations. Chapter 5.2 Qualifier Concept : Route – updated definitions on Route to support dose instruction standard in HKMTT Chapter 5.6 Qualifier Concept : Base Unit - updated definitions on Base Unit to support dose instruction standard in HKMTT Chapter 5.7 Qualifier Concept : Prescribing Dose Unit - updated definitions on Prescribing Dose Unit to support dose instruction standard in HKMTT Chapter 5.8 Qualifier Concept : Dispensing Dose Unit - updated definitions on Dispensing Dose Unit to support dose instruction standard in HKMTT 5.13 Linkage Concept: Relationship (Linkage) Concepts – updated MTT relationship types to include “has simple form” and “Simple form of” relationships to support maintenance of simplified virtual therapeutic moiety. 5.13.3 MTT Relationship List – updated relationship list to include new association types between VTM to support maintenance of sVTM. 5.14 Qualifier Concept : Frequency – addition of new qualifier concept to support dose instruction components. 5.15 Qualifier Concept : Unit of Time – addition of new qualifier concept to support dose instruction components. Chapter 6.2.1 Ingredient Naming Conventions – additional information added to describe naming conventions of isotopes.	

	6.3.1 General Strength Expression Rules – updated rules regarding strength expression on products with strength or volume in a range. 6.5.3 MTT Dose Form List – updated with new dose forms 6.13 Appendix L – Frequency – list of HKMTT frequency concepts to support dose instruction components. 6.14 Appendix M – Unit of Time – list of HKMTT Unit of Time concepts to support dose instruction components.	
1.3	Amendment on the Name of Bureau from Food and Health Bureau to Health Bureau	01 Jul 2022
1.4	Change of eHealth logo	10 May 2024

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1 INTRODUCTION

1.1 FOREWORD

1.1.1 In July 2007, the Steering Committee on eHR Sharing was established to develop the electronic health record (eHR). The HKCTT has been being built to support the interoperability of eHR. In fact, standard terminology is the foundation for supporting the development of an interoperable electronic health record (eHR) and it ensures the shared health data can be accurately interpreted, and thus can be reused to improve care delivery and optimize workflow. Standard terminology also supports disease surveillance to improve population health; generates medical knowledge to facilitate decision support and health services planning.

1.1.2 Hong Kong Medication Terminology table (HKMTT) is part of the HKCTT, and is required for support of the management of medication information because inconsistent or incomplete information not only results in inefficiency and unnecessary expense, but can also have an adverse impact on clinical care.

1.2 WHAT IS HONG KONG MEDICATION TERMINOLOGY

1.2.1 HKMTT is a compilation of identifying descriptions with coding of individual drugs registered under the Pharmacy and Poison Board, which contains information of pharmaceutical product and their components including dosage form and strength.

1.2.2 The specifications of HKMTT are as follows:

- robust and sustainable;
- data should support recording of prescription and dispensing from healthcare sector;
- The schema should be in the form of a logical and navigable hierarchies, allowing the submission of drug data at various levels of granularity;
- The core HKMTT tables are supported by supporting information tables (i.e. the Qualifier tables, see later notes) that must also be constructed in the same manner;
- The HKMTT table should be designed in such a way that it is interoperable with other international standards (i.e. SNOMED-CT, Australian NEHTA AMT)

1.3 HKMTT DEVELOPMENT PROCESS [1][2][3][4]

1.3.1 The entire developmental approach has taken reference on previous works by the following organizations:

- SNOMED CT User Guide (Current Version), International Health Terminology Standard Development Organization (IHTSDO);

- Compendium of Pharmaceutical Products, the Department of Health, HKSAR Government;
- The design of the data model has taken reference with modifications on the UK Dictionary of Medicines and Devices (dm+d) developed by the UK NHS Connecting for Health, Australian Medicines terminology developed by Australian National E-Health Transition Authority (nehta)

1.3.2 The HKMTT was developed and has undergone review and refinements by the eHR Information Standard Domain Group for Drug Records, with modifications in response to feedback from and consultation with members of the group, comprising of representatives from the Department of Health HKSAR, public hospitals, private hospitals, professional bodies and the eHealth Record Office.

1.3.3 The development of product and qualifier concepts in shall include the following 4-phase approach:-

- Phase 1: the initial concept model design, formal definition of data set and the co-production of standardized essential data elements between the Department of Health and eHealth Record Office;
- Phase 2: preparation, verification and import of essential data of registered pharmaceutical product by the Department of Health and its processing by the eHealth Record Office;
- Phase 3: mapping of the initial standardization data to SNOMED-CT;
- Phase 4: Technical development of the DH-CPP to MTT Co-Production Interface and the eHR Information Architecture Management System

1.4 PURPOSE OF THIS DOCUMENT

This document is developed by the eHealth Record Office HKSAR Government, to describe the scope, use, technical structures, governance, and maintenance of developing the HKMTT. This document specifies the Editorial Rules for MTT which focuses on the naming conventions and specific representation rules associated with all concept description types in the HKMTT data model and the related auxiliary qualifier concepts.

1.5 GOVERNANCE OF HKMTT

1.5.1 eHR Information Standard Coordinating Group (eHR IS CG)

The eHR IS CG prioritizes the development of health information standards, and has the following functions:

- Approve standards & subsequent updates as recommended by domain groups
- Initiate & coordinate activities required for the standards lifecycle, e.g.
- Need of standards for a particular domain area
- Establishment of domain groups

- Harmonize different standards
- Represent HKSAR in liaison with standards development organizations on areas relating to health information standards as appropriate

1.5.2 eHR Information Standard Domain Group on Drug Record (eHR IS DG on Drug Record)

The eHR IS DG on Drug Record is accountable to the eHR IS CG. It is responsible for:

- To develop information standards on drug record to facilitates the sharing of drug data to the eHR
- To develop and refine the standard dataset for drug orders / dispensing transactions
- To define & refine the standards on adverse drug reaction records, including the appropriate standard terminology sets
- To define the scope of drug terminology table
- To define requirements of the standard drug terminology
- To develop and refine standard drug terminology with reference to international terminology
- To provide oversight for management of the drug terminology
- To develop, endorse and maintain the editorial policy for drug terminology table
- To identify implementation issues and propose solutions
- To report to eHR IS CG

1.5.3 HKMTT Content Management Team

The HKMTT Content Management Team defines the Editorial Policies / rules to ensure accurate and consistent building up and maintenance of medication terminology table to support its usage in eHealth Record contents. It is responsible for introducing and the implementation of any editorial changes with resultant changes in schema or table structure, to meet ongoing new requirements in MTT data maintenance; to identify issues and propose solutions to the eHR IS DG on Drug Record.

1.6 ACKNOWLEDGEMENTS

1.6.1 The eHealth Record Office would like to acknowledge the continuing contributions and support by the following organizations:

- Chairman and Members of the eHR Information Standard Domain Group (Drug Record)
- The Department of Health, HKSAR Government

1.6.2 Special thanks for the Department of Health Drug Office and representatives of the following three pharmaceutical industry associations (names in alphabetic

order) in November 2010, for their gracious support in providing information update to drug database, which were very much appreciated:

- Hong Kong Association of the Pharmaceutical Industry
- Hong Kong Pharmaceutical Manufacturers Association Limited
- The Pharmaceutical Distributors Association of Hong Kong

2 HKMTT MODEL

2.1 THE HONG KONG MEDICATION TERMINOLOGY TABLE (HKMTT)

2.1.1 The HKMTT has 8 core concept tables, namely the:

- Virtual Therapeutic Moiety (VTM)
- Routed Virtual Therapeutic Moiety (VTM+Route)
- Virtual Therapeutic Moiety Routed Dose Form (VTM+Route+Form)
- Virtual Medicinal Product (VMP)
- Trade Names (TradeName)
- Routed Trade Name (TradeName+Route)
- Trade Name Routed Dose Form (TradeName+Route+Form)
- Actual Medicinal Product (AMP)

2.1.2 These concepts are illustrated in the diagram below:

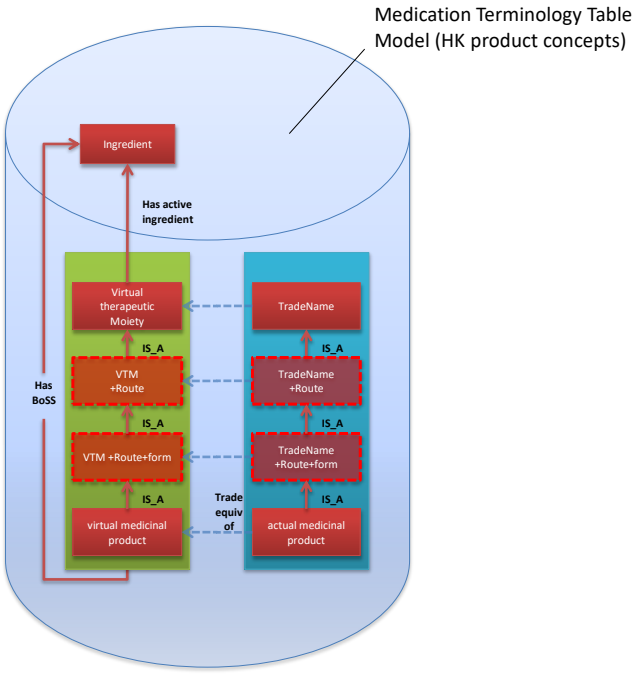

Figure 1 – The HKMTT Concept Model

2.1.3 Each of these entries represents a concept level that carries with its distinct set of information. In addition to these 8 concept tables, the core MTT is supported by a series of Qualifier and Substance Concept Tables, which carry structured information as building blocks for MTT concepts.

2.1.4 The MTT allocates unique identifiers (ConceptIDs) for each entry of the 8 core concepts mentioned above, as well as the supporting qualifiers and substances

concepts. These are stored at the Hong Kong eHR's local namespace and cross-mapped to SNOMED-CT.

2.1.5 Some major principles:

- ConceptID never changes – only its contents may be updated; this will secure interoperability through it unique conceptID;
- Concepts are represented by a unique human-readable term (i.e. the Fully Specified Names, FSN);
- Concept's specificity is dependent on the amount of details it represents – and the more details a particular concept carries, the more "granular" it is said to be;
- Multiple levels of granularity enables coding of drug data at the appropriate levels of details that is relevant to clinical practice;
- Each concept level is designed and maintained for clinical relevancy;
- Each concept must have defined relationships with other concepts, creating a structured, well-defined hierarchy of drug-product concepts;
- Concepts may carry a set of other information that is relevant to that particular concept type;
- The MTT core concept hierarchy would allow machine-readable query and communications between drug systems of participant institutions, hence achieving interoperability.

2.2 THE QUALIFIERS AND SUBSTANCE CONCEPT TABLES

2.2.1 In addition to the 8 core MTT concepts as specified above, there requires a comprehensive series of supporting qualifiers and substance tables, to allow "look-up" of structurally coded concepts be referenced within the core concept tables for various purposes.

2.2.2 Some major principles:

- All concepts within these qualifier or substance concept tables would be coded into unique identifiers;
- and within each respective concept tables, the concepts should not be tired to hierarchic position or other contexts;
- The unique codes should not be reused after a particular term has retired, become obsolete or is being superseded by another concept;
- All updates and modifications to these concept tables should be subjected to version control;
- At initial stage of the eHR project, cross-referencing with SNOMED-CT may not be necessary, but these tables should be designed and developed in such a way that it allows for modification and interfacing with SNOMED-CT.
- Referral to section 5 for requirements and rules on various qualifier and substance concept tables;
- Referring to the Appendices for qualifier concepts currently included.

3 THE HKMTT COMPONENTS

3.1 HKMTT MODEL COMPONENTS

3.1.1 Concepts

In the context of this document, a product "concept" is a clinical meaning identified by a unique numeric identifier (ConceptID) that remains unchanged once created. Each concept is represented by a unique human-readable Fully Specified Name (FSN) and a Preferred Term (PT). The concepts are formally defined in terms of their relationships with other concepts. These "logical definitions" give explicit meaning which a computer can process and build query upon. Every concept also has its own set of other human-readable terms.

3.1.2 HKMTT Concepts

The HKMTT includes the following concept types:

3.1.2.1 Product Concepts

These concepts are used to identify products, including both proprietary and non-proprietary (generic) representations at various levels of granularity. These concepts form the two arms of the HKMTT, with relationships defined between their corresponding trade-generic concepts. Refer to Section 4.1 to 4.9 for full details of the concepts representation and population methods.

3.1.2.2 Substance Concepts

These concepts represent the active ingredient(s) within a pharmaceutical product. Refer to Section 5.1 for details of the concepts representation and population methods.

3.1.2.3 Qualifier Concepts

These are concepts used to represent the structural element data used to construct various part of product concepts. For instance, "Dose form" concepts are representations of pharmaceutical forms of a drug product; whereas "route" defines the list of route of administration concepts that a pharmaceutical product is approved for. Qualifier concepts also include other atomic data used to construct product concepts, such as qualifier concepts. Refer to Section 5.2 to 5.15 for details of the concepts representation and population methods.

3.1.2.4 HKMTT Relationship (Linkage) Concepts

These are concepts defined to represent the relationships between concepts – e.g. these can be IS_A relationship between product concepts, or

has_active_ingredient relationship between a generic drug and a substance concept.

i. Relationships

- The HKMTT will use SNOMED CT relationships, which link concepts within SNOMED CT, where the linkage concept is available.
- HKMTT concepts are linked via such linkage (or relationship) concepts as defined in section 5.13 "Linkage Concept: MTT Relationships". Each of the main eight level concepts has at least one IS_A relationship to a supertype concept.
- IS_A relationship and defining attribute relationships are known as the "defining characteristics" of SNOMED CT concepts. They are considered defining because they are used to logically represent a concept by establishing its relationships with other concepts. This is accomplished by establishing IS_A relationships with one or more defining concepts and modeling the difference with those supertype concepts through defining attributes.

ii. HKMTT relationships (Linkage)

The HKMTT will include the following relationships to:

- Define a relationship between concepts
- Add attributable information to a concept

The HKMTT Relationship types include

Name
IS_A
Has_active_ingredient
Has_allergen_group
Has_base_unit
Has_BoSS
Has_cross_sensitivity_group
Has_dispensing_dose_unit
Has_dose_form
Has_ingredient_strength_unit
Has_ingredient_unit_of_measure
Has_legal_classification
Has_manufacturer

Has_route
Has_therapeutic_classification
Has_prescribing_dose_unit
Is_trade_equiv_of VTM
Is_trade_equiv_of VTM+route
Is_trade_equiv_of VTM+Route+Form
Is_trade_equiv_of VMP
Is_equiv_to_SCT
Has simple form
Simple form of

3.2 DESCRIPTIONS

3.2.1 The HKMTT has a defined way to represent concept descriptions. A single concept may also be associated with multiple descriptions, similar to SNOMED CT concept descriptions that HKMTT concept descriptions include a Fully Specified Names (FSN), a Preferred Term (PT) and an Alias name.

3.2.2 The HKMTT also has additional description types that allow more information of a particular drug product to be added to a concept, represented using relationships or attributes, from a qualifier concept to an HKMTT product concept.

3.2.3 HKMTT Description types

All HKMTT concepts will have the following descriptions (as per SNOMED CT):

- Fully Specified Name (FSN)
- Preferred Term (PT)

3.2.3.1 In MTT these descriptions are to be constructed using the core and Qualifier concepts. Varying combination of such concepts will be utilized to make up the constituents of each concept, depending on the level of granularity. Refer to the following sections for full details on the representations and populating of these concepts:

Concept	Reference
Virtual Therapeutic Moiety (VTM)	See section 4.2
Routed Virtual Therapeutic Moiety (VTM+Route)	See section 4.3
Virtual Therapeutic Moiety Routed Dose Form (VTM+Route+Form)	See section 4.4
Virtual Medicinal Product (VMP)	See section 4.5

Trade Names (TradeName)	See section 4.6
Routed Trade Name (TradeName+Route)	See section 4.7
Routed Trade Name Dose Form (TradeName+Route+Form)	See section 4.8
Actual Medicinal Product (AMP)	See section 4.9

4 THE HKMTT COMPONENTS

The HKMTT has conceptually been designed to encompass eight distinct "product" concepts, each containing a set of attributes, and each involves in a defined relationships (or associations, in technical point of view) with concepts (see section 5.13 for more information on MTT relationships). As described in section 3, the 8 levels product concepts are:

- Virtual Therapeutic Moiety (VTM)
- Routed Virtual Therapeutic Moiety (VTM+Route)
- Virtual Therapeutic Moiety Routed Dose Form (VTM+Route+Form)
- Virtual Medicinal Product (VMP)
- Trade Names (TradeName)
- Routed Trade Name (TradeName+Route)
- Trade Name Routed Dose Form (TradeName+Route+Form)
- Actual Medicinal Product (AMP)

4.1 PRODUCT TYPES

Pharmaceutical products included in the initial set of HKMTT is defined as all medicinal preparations that is regulated and registered by the Department of Health, HKSAR Government, under the regulation of the Pharmacy and Poisons Ordinance (Cap. 138). These preparations will carry a defined set of attributes that confers varying level of granularities, including the following critical data:

- HK Registration number
- Product name
- Proposed trade name
- Route of administration
- Dose Form
- Multiple component grouping information
- Ingredient substance(s) and their corresponding strength per unit of measure
- PRLS Certificate holder
- Manufacturer and address
- PRLS Legal classification

The above data elements will be input into the concept table, via which the varying combination of these concepts will be used to create the 8-level concepts of different granularities.

4.1.1 Single ingredient products

4.1.1.1 Single ingredient products refer to pharmaceutical products which contains only one active ingredient per each ingredient unit of measure.

4.1.1.2 Examples (FSNs) of single ingredient products:

- VTM: atenolol

- VMP: atenolol oral tablet 100 mg
- AMP: Tenormin (atenolol) oral tablet 100 mg

4.1.2 Multi-ingredient products

4.1.2.1 A multi-ingredient product contains two or more active ingredients compounded in a single unit of measure and cannot be separated.

4.1.2.2 Examples (FSNs) of multi-ingredient products:

- VTM: atenolol + chlorthalidone
- VMP: atenolol 100 mg + chlorthalidone 25 mg oral tablet
- AMP: Tenoretic (atenolol 100 mg + chlorthalidone 25 mg) oral tablet

4.2 VIRTUAL THERAPEUTIC MOIETY (VTM)

4.2.1 Virtual Therapeutic Moiety Definition

4.2.1.1 A *Virtual Therapeutic Moiety (VTM)* is the abstract representation of the active ingredient(s) or substance(s), which when formulated as a single medicinal product, and is intended for use in the treatment or prevent disease in human.

4.2.1.2 *Virtual Therapeutic Moiety (VTM)* is the abstract conceptual representation of the material defining the prescriber's therapeutic intent, without taking into the account of more product specific information such as the dose formulation, route of administration and strength.

For example:

- aspirin
- ibuprofen
- paracetamol
- salbutamol

4.2.1.3 Multi-ingredient drugs (e.g.) would be populated by including all individual active ingredients. The full name of an ingredient (including its salt where clinical relevant or significant) will be used in all cases. The description of the multi-ingredient drug and the order by which they are expressed would be decided by the MTT editorial team on case-by-case basis.

4.2.1.4 The Virtual Therapeutic Moiety name will derive from information on the contained active ingredient concepts, with the following knowledge or rules incorporated:

- The precise active ingredient (with salt) will be specified, where this is clinical significant or relevant, unless otherwise specified as exception;
- The virtual therapeutic moiety defines a group of products, which contain ingredient substances with the same active entity.
- All virtual therapeutic moiety will have a "has_active_ingredient" relationship with their active ingredient

4.2.1.5 Where a Virtual Therapeutic Moiety exists as a simple basic form (without salt or ester information), it is referred to as a "simplified Virtual Therapeutic Moiety (sVTM)" it may relate to one or more salt, ester or derivative forms of the Virtual Therapeutic Moiety:

- The simple Virtual Therapeutic Moiety (sVTM) relates to a more simple form will have a "has simple form" relationship with the salt/ester form
- The target salt/ester Virtual Therapeutic Moiety will have a "simple form of" relationship with sVTM

4.2.1.6 Construction of simplified VTM should exclude products containing the following substances:

- Allergen extracts
- Albumin
- Coagulation factors, fibrinogens, and thrombin
- Immunoglobulins
- Plasma proteins
- Minerals and trace elements
- Monoclonal antibodies
- Interferons

4.2.1.7 Construction of simplified VTM for vaccines should allow differentiation by:

- Serotypes / multi-valency
- Vaccine strains

4.2.1.8 Associations

i. **Ascending association:**
No ascending association

ii. **Descending association:**

- *Routed Virtual Therapeutic Moiety (VTM+Route)* **IS_A** *Virtual Therapeutic Moiety (VTM)*
(A single VTM may be associated with one or multiple entities of VTM+Route)

iii. **Attributable association:**

- *Virtual Therapeutic Moiety (VTM)* **Has active ingredient** *substance*
- *Virtual Therapeutic Moiety (VTM)* **Is_equiv_to_SCT** *SNOMED CT identifier (product)*
- Where the Virtual Therapeutic Moiety (VTM) exists as a basic form and relates to one or more salt/ester VTM *: Virtual Therapeutic Moiety (VTM)* **has simple form** *Virtual Therapeutic Moiety (VTM); OR*
- Where the Virtual Therapeutic Moiety (VTM) exists as a salt/ester form and relates to a target simple VTM *: Virtual Therapeutic Moiety (VTM)* **simple form of** *Virtual Therapeutic Moiety (VTM)*

Attributes

Attribute	**Properties**
Virtual Therapeutic Moiety (VTM) conceptID	MTT identifier

SNOMED CT ConceptID	SNOMED CT Identifier
Virtual Therapeutic Moiety (VTM) Fully specified name	String
Virtual Therapeutic Moiety (VTM) preferred term	string
Virtual Therapeutic Moiety (VTM) Alias name(s)	String (multiple entries)
Ingredient (multiple entries)	MTT identifier : **substance (multiple entries)**
Ingredient description	Ingredient substance PT from **substance** concept (multiple entries)
Has simple form, OR simple form of	MTT identifier : **product**
Virtual Therapeutic Moiety (VTM) preferred term	eHR Description of the target VTM term
Allergy check flag [Y/N]	Y/N
Concept stage	MTT concept stage
Suspend	Y/N
Last update by	userID
Last update date	dd-mmm-yyyy

4.2.2 Virtual Therapeutic Moiety Descriptions

4.2.2.1 Virtual Therapeutic Moiety "Fully Specified Name" Definition

The Fully Specified Name of a Virtual Therapeutic Moiety follows the syntax:
VTM FSN = "Ingredient_details"

The components are described as:

Description Component	Definition
Ingredient_Details	Ingredient_details is the alphabetical list of active ingredient's preferred term. For multi-ingredient products, the VTM should be made up of the Preferred Terms of each listed ingredients, separated by a "+" sign and grouped together to form the "Ingredient_Details", which will subsequently be included as part of the VTM's FSN (see VTM-FSN-7).

4.2.2.2 Virtual Therapeutic Moiety "Fully Specified Name" Rules

Rule ID	Description
MTT-VTM-FSN-1	All rules in "Fully Specified Name definition and Rules" apply Capitalisation rules as defined in Appendix apply.
MTT-VTM-FSN-2	The Virtual Therapeutic Moiety name will be derived from the International Non-proprietary Names (INN), followed by other approved or clinically intuitive names. In cases where the drug name enlisted in the Poisons List Regulations (Cap 138B) differs from the recommended INN, the name used in the Poisons List Regulations would be the preferred description.
MTT-VTM-FSN-3	The Virtual Medicinal Product name will be derived from the actual active ingredients. The full name of an ingredient (including the salt) will be used in all case
MTT-VTM-FSN-4	The Virtual Medicinal Product Name will include all active ingredients for each multi-ingredient preparation or component of a multi-component product.
MTT-VTM-FSN-5	The Virtual Medicinal Product name will include all "inert substance" where inactive/inert ingredients are part of the multi-component products or diluents provided for the preparation of the actual administrable form of a product.
MTT-VTM-FSN-6	The identification of all active ingredients is available from the Virtual Medicinal Product (VTM) "has_active_ingredient" relationship with Ingredient (substance).

MTT-VTM-FSN-7	The sequence of active ingredients should be arranged on a case-by-case basis with considerations on: - clinical significance of the ingredient in the medicinal compound; - when one or more ingredients has no inherent action in its own right; - local anaesthetic agents are listed in all topical preparations, including those for oral/buccal use, followed by all other ingredients in a logical order based on editorial team's discretion, based on the above editorial principles; This rule applies to all naming of all concepts within MTT where ingredients should be listed in the generic drug name.

4.2.2.3 Virtual Therapeutic Moiety "Preferred Term" Definitions

The Preferred Term of a Virtual Therapeutic Moiety follows the syntax:
VTM PT = "Ingredient_details"

The components are described as:

Description Component	Definition
Ingredient_Details	Ingredient_details is the alphabetical list of active ingredient's preferred term. For multi-ingredient products, the VTM should be made up of the Preferred Terms of each listed ingredients, separated by a "+" sign and grouped together to form the "Ingredient_Details", which will subsequently be included as part of the VTM's FSN (see VTM-PT-7).

4.2.2.4 Virtual Therapeutic Moiety "Preferred Term" Rules

Rule ID	Description
MTT-VTM-PT-1	All rules in "Preferred Term definition and Rules" apply Capitalisation rules as defined in apply.
MTT-VTM-PT-2	The Virtual Medicinal Product preferred term will be derived from the International Non-proprietary Names (INN), followed by other approved or clinically intuitive names. In cases where the drug name enlisted in the Poisons List Regulations (Cap 138B) differs from the recommended INN, the name used in the Poisons List Regulations would be the preferred description.
MTT-VTM-PT-3	The Virtual Medicinal Product Preferred Term will include up to three active ingredients per product; for Virtual Medicinal Products with more than three active ingredients, the MTT editorial team would attempt to create a clinically intuitive description on an individual basis, with an exception:
MTT-VTM-PT-4	The Virtual Medicinal Product name will be derived from the actual active ingredients. The full name of an ingredient (including the salt) will be used in all case

MTT-VTM-PT-5	The Virtual Medicinal Product Name will include all active ingredients for each multi-ingredient preparation or component of a multi-component product.
MTT-VTM-PT-6	The Virtual Medicinal Product name will include all "inert substance" where inactive/inert ingredients are part of the multi-component products or diluents provided for the preparation of the actual administrable form of a product.
MTT-VTM-PT-7	The identification of all active ingredients is available from the Virtual Medicinal Product (VTM) "has_active_ingredient" relationship with Ingredient (substance).
MTT-VTM-PT-8	The sequence of active ingredients should be arranged on a case-by-case basis with considerations on: - clinical significance of the ingredient in the medicinal compound; - when one or more ingredients has no inherent action in its own right; - local anaesthetic agents are listed in all topical preparations, including those for oral/buccal use, followed by all other ingredients in a logical order based on editorial team's discretion, based on the above editorial principles; This rule applies to all naming of all concepts within MTT where ingredients should be listed in the generic drug name.

4.2.2.5 Virtual Therapeutic Moiety “Alias Name” Rules

Rule ID	Description
MTT-VTM-AN-1	All rules in "Alias name definition and Rules" apply Capitalisation rules as defined in Appendix apply.
MTT-VTM-AN-2	The entry of Alias names would be optional and only be populated when it is clinically relevant; it should be constructed in the way that it does not impact the product being safely identified.

4.3 ROUTED VIRTUAL THERAPEUTIC MOIETY (VTM + ROUTE)

4.3.1 Routed Virtual Therapeutic Moiety Definition

4.3.1.1 A *Routed Virtual Therapeutic Moiety (VTM+Route)* is the abstract concept representing the administrable route of administration form for a given virtual therapeutic moiety. An entry of VTM may be associated with zero to many entries of VTM+route concepts

4.3.1.2 Associations

i. **Ascending association:**

- *Routed Virtual Therapeutic Moiety (VTM+Route)* **IS_A** *Virtual Therapeutic Moiety (VTM)*

ii. **Descending association:**

- *Virtual Therapeutic Moiety Routed Dose Form (VTM+Route+Form)* **IS_A** *Routed Virtual Therapeutic Moiety (VTM+Route)*

iii. **Attributable association:**

- *Routed Virtual Therapeutic Moiety (VTM+Route)* **Has route** route *of administration*
- *Routed Virtual Therapeutic Moiety (VTM+Route)* **Is_equiv_to_SCT** *SNOMED CT identifier (product)*

Attributes

Attribute	**Properties**
Routed Virtual Therapeutic Moiety (VTM+Route) conceptID	MTT identifier
SNOMED CT ConceptID	SNOMED CT Identifier
Routed Virtual Therapeutic Moiety Fully specified name	String
Routed Virtual Therapeutic Moiety Preferred term	String
Virtual Therapeutic Moiety (VTM) preferred term	Copy VTM preferred term from AMP
Virtual Therapeutic Moiety (VTM) shortname	Copy VTM shortname from AMP
Virtual Therapeutic Moiety (VTM) Alias name	Copy VTM aliasname from AMP (multiple entries)
Route	MTT Identifier : **Route**
Route description	Route preferred term from **Route** concept
Ingredient (multiple entries)	MTT identifier : **substance (multiple entries)**

Ingredient description	Ingredient substance PT from **substance** concept (multiple entries)
Allergy check flag [Y/N]	Y/N
Concept stage	MTT concept stage
Suspend	Y/N
Last update by	userID
Last update date	dd-mmm-yyyy

4.3.2 Routed Virtual Therapeutic Moiety Descriptions

4.3.2.1 Routed Virtual Therapeutic Moiety "Fully Specified Name" Definition

The Fully Specified Name of a Routed Virtual Therapeutic Moiety follows the syntax:

i. *Single ingredient VTM+R:*
VTM+R FSN = "Ingredient_details" + "route"

ii. *Multi-ingredient VMP:*
VTM+R FSN = "Ingredient_details" + "Ingredient_strength" + "ingredient_details_2" + "ingredient strength" + "route"

The components are described as:

Description Component	Definition
Ingredient_Details	Ingredient_details is the alphabetical list of active ingredient's preferred term. For multi-ingredient products, the VMP should be made up of the Preferred Terms of each listed ingredients, separated by a "+" sign and grouped together to form the "Ingredient_Details", which will subsequently be included as part of the VMP's FSN.
route	The preferred term of the route of administration a generic product. The Route (i.e. route of administration) is a concept pre-defined in the Qualifier concept table; it is the representation of the place or on the body where a medicinal product is introduced in order to achieve desired therapeutic effect (see Qualifier Concept – Appendix 5.2 Route of administration).

4.3.2.2 Routed Virtual Therapeutic Moiety "Fully Specified Name" Rules

Rule ID	Description

MTT-VTMR-FSN-1	All rules in "Fully Specified Name definition and Rules" apply Capitalisation rules as defined in Appendix apply.
MTT- VTMR -FSN-2	The Routed Virtual Therapeutic Moiety name will be derived from the base or salt of the active ingredients, as defined in VTM FSN and PT.
MTT- VTMR -FSN-3	The Routed Virtual Therapeutic Moiety name will be derived from the actual active ingredients. The full name of an ingredient (including the salt) will be used in all case
MTT- VTMR -FSN-4	Route The route of administration will include information on how the product should be used, as specified in the product's insert.
MTT- VTMR -FSN-5	The sequence of active ingredients should be arranged on a case-by-case basis with considerations on: - clinical significance of the ingredient in the medicinal compound; - when one or more ingredients has no inherent action in its own right; - local anaesthetic agents are listed in all topical preparations, including those for oral/buccal use, followed by all other ingredients in a logical order based on editorial team's discretion, based on the above editorial principles; This rule applies to all naming of all concepts within MTT where ingredients should be listed in the generic drug name.

4.3.2.3 Routed Virtual Therapeutic Moiety “Preferred Term” Definition

Depending on whether the product concept is a single or multiple ingredient product, the Fully Specified Name of a Routed Virtual Therapeutic Moiety follows the syntax:

i. *Single ingredient VMP:*
VTM+R PT = “Ingredient_details” + “route”

ii. *Multi-ingredient VMP:*
VTM+R PT = “Ingredient_details_1” + “ingredient_details_2” + “route”

The components are described as:

Description Component	**Definition**
Ingredient_Details	Ingredient_details is the alphabetical list of active ingredient's preferred term. For multi-ingredient products, the VMP should be made up of the Preferred Terms of each listed ingredients, separated by a "+" sign and grouped together to form the "Ingredient_Details", which will subsequently be included as part of the VMP's FSN.

route	The preferred term of the route of administration a generic product. The Route (i.e. route of administration) is a concept pre-defined in the qualifier concept table; it is the representation of the place or on the body where a medicinal product is introduced in order to achieve desired therapeutic effect (see Qualifier Concept – Appendix 5.2 Route of administration).

4.3.2.4 Routed Virtual Therapeutic Moiety "Preferred Term" Rules

Rule ID	Description
MTT- VTMR -PT-1	All rules in "Preferred Term definition and Rules" apply Capitalisation rules as defined in Appendix A apply.
MTT- VTMR -PT-2	The Routed Virtual Therapeutic Moiety preferred term will be derived from the base or salt of the active ingredients, as defined in VTM PT.
MTT- VTMR -PT-3	The Routed Virtual Therapeutic Moiety preferred term will be derived from the actual active ingredients. The full name of an ingredient (including the salt) will be used in all case
MTT- VTMR -PT-4	Route: The route of administration will include information on how the product should be used, as specified in the product's insert.
MTT- VTMR -PT-5	The sequence of active ingredients should be arranged on a case-by-case basis with considerations on: - clinical significance of the ingredient in the medicinal compound; - when one or more ingredients has no inherent action in its own right; - local anaesthetic agents are listed in all topical preparations, including those for oral/buccal use, followed by all other ingredients in a logical order based on editorial team's discretion, based on the above editorial principles; This rule applies to all naming of all concepts within MTT where ingredients should be listed in the generic drug name.

4.4 VIRTUAL THERAPEUTIC MOIETY ROUTED DOSE FORM (VTM + ROUTE + FORM)

4.4.1 Virtual Therapeutic Moiety Route Dose Form Definition

4.4.1.1 A *Virtual Therapeutic Moiety Routed Dose Form (VTM+Route+Form)* is the abstract concept representing the available dose form for a given virtual therapeutic moiety that is intended to be given via a route as specified.

4.4.1.2 Associations

i. **Ascending association:**

- *Virtual Therapeutic Moiety Routed Dose Form (VTM+Route+Form)* **IS_A** *Routed Virtual Therapeutic Moiety (VTM+Route)*

ii. **Descending association:**

- *Virtual Medicinal Product (VMP)* **IS_A** *Virtual Therapeutic Moiety Routed Dose Form (VTM+Route+Form)*

iii. **Attributable association:**

- *Virtual Therapeutic Moiety Routed Dose Form (VTM+Route+Form)* **Is_equiv_to_SCT** *SNOMED CT identifier*
- *Virtual Therapeutic Moiety Routed Dose Form (VTM+Route+Form)* **Has dose form** *dose form*

Attributes

Attribute	**Properties**
Virtual Therapeutic Moiety (VTM) Routed Dose Form ConceptID	MTT identifier
SNOMED CT ConceptID	SNOMED CT Identifier
Virtual Therapeutic Moiety Routed Dose Form Fully Specified Name	String
Virtual Therapeutic Moiety Routed Dose Form Preferred Term	String
Virtual Therapeutic Moiety (VTM) preferred term	Copy VTM preferred term from AMP
Virtual Therapeutic Moiety (VTM) Alias name	Copy VTM alias name from AMP (multiple entries)
Route	MTT Identifier : **Route**
Route description	Route preferred term from **Route** concept
Dose form	MTT identifier : **Dose form**
Dose Form description	Dose form description from Dose form concept

Attribute	Properties
Dose form level extra information	Copy "Dose form level extra information" from **AMP** concept
Ingredient (multiple entries)	MTT identifier : **Ingredient substance (multiple entries)**
Ingredient description	Ingredient substance PT from **Ingredient substance** concept (multiple entries)
Allergy check flag [Y/N]	Y/N
IS_A VTM+Route	MTT identifier : **VTM+Route**
VTM+Route description	VTM+Route description from **VTM+Route** concept
Concept stage	[TBC] MTT concept stage
Suspend	Y/N
Last update by	userID
Last update date	dd-mmm-yyyy

4.4.2 Virtual Therapeutic Moiety Route Dose Form Descriptions

Depending on whether the product concept is a single or multiple ingredient product, the Fully Specified Name of a Virtual Therapeutic Moiety Routed Dose Form follows the syntax:

i. *Single ingredient VTM+R+F:*
VTM+R+F FSN = “Ingredient_details” + “route” + “Dose Form“

ii. *Multi-ingredient VTM+R+F:*
VTM+R+F FSN = “Ingredient_details_1” + “ingredient_details_2” + “route” + “Dose Form“

The components are described as:

Description Component	Definition
Ingredient_Details	Ingredient_details is the alphabetical list of active ingredient's preferred term. For multi-ingredient products, the VMP should be made up of the Preferred Terms of each listed ingredients, separated by a "+" sign and grouped together to form the "Ingredient_Details", which will subsequently be included as part of the VMP's FSN.
Route	The preferred term of the route of administration a generic product. The Route (i.e. route of administration) is a concept pre-defined in the qualifier concept table; it is the representation of the place or on the body where a medicinal product is introduced in order to achieve desired therapeutic effect (see Qualifier Concept – Appendix 5.2 Route of administration).

dose form	The dose form is a concept in the qualifier table used to represent the orderable pharmaceutical form of a VMP or AMP from which the concept derives (see Qualifier Concept – Appendix 5.3 - Dose Form).

4.4.2.1 Virtual Therapeutic Moiety Routed Dose Form "Fully Specified Name" Rules

Rule ID	Description
MTT-VTMF -FSN-1	All rules in "Fully Specified Name definition and Rules" apply Capitalisation rules as defined in Appendix apply.
MTT- VTMF -FSN-2	The VMP name will be derived from the base or salt of the active ingredients, as defined in VTM FSN and PT.
MTT- VTMF -FSN-3	The Virtual Medicinal Product name will be derived from the actual active ingredients. The full name of an ingredient (including the salt) will be used in all case
MTT- VTMF -FSN-4	Route The route of administration will include information on how the product should be used, as specified in the product's insert.
MTT- VTMF -FSN-5	Dose Form The dose form is derived from the Qualifier Table. The form expressed is the parent form. The dose form will be expressed as a singular form (tablet, capsule, cream)
MTT- VTMF -FSN-6	The sequence of active ingredients should be arranged on a case-by-case basis with considerations on: - clinical significance of the ingredient in the medicinal compound; - when one or more ingredients has no inherent action in its own right; - local anaesthetic agents are listed in all topical preparations, including those for oral/buccal use, followed by all other ingredients in a logical order based on editorial team's discretion, based on the above editorial principles; This rule applies to all naming of all concepts within MTT where ingredients should be listed in the generic drug name.

4.4.2.2 Virtual Therapeutic Moiety Routed Dose Form "Preferred Term" Definition

Depending on whether the product concept is a single or multiple ingredient product, the Fully Specified Name of a Virtual Therapeutic Moiety Routed Dose Form follows the syntax:

i. *Single ingredient VTM+R+F:*

VTM+R+F PT = “Ingredient_details” + “route” + “Dose Form“

ii. *Multi-ingredient VTM+R+F:*
VTM+R+F PT = “Ingredient_details_1” + “ingredient_details_2” + “route” + “Dose Form“

The components are described as:

Description Component	Definition
Ingredient_Details	Ingredient_details is the alphabetical list of active ingredient's preferred term. For multi-ingredient products, the VMP should be made up of the Preferred Terms of each listed ingredients, separated by a "+" sign and grouped together to form the "Ingredient_Details", which will subsequently be included as part of the VMP's FSN.
Ingredient strength*	The amount of the active ingredient in each dose form; for multi-ingredient products, ingredient strength value and unit should follow their respective ingredient details, such that the description tells the amount of each active ingredient per the unit dose form.
route	The preferred term of the route of administration a generic product. The Route (i.e. route of administration) is a concept pre-defined in the qualifier concept table; it is the representation of the place or on the body where a medicinal product is introduced in order to achieve desired therapeutic effect (see Qualifier Concept – Appendix 5.2 Route of administration).
dose form	The dose form is a concept in the qualifier table used to represent the orderable pharmaceutical form of a VMP or AMP from which the concept derives (see Qualifier Concept – Appendix 5.3 - Dose Form).

4.4.2.3 Virtual Therapeutic Moiety Routed Dose Form “Preferred Term” Rules

Rule ID	Description
MTT- VTMF -PT-1	All rules in "Preferred Term definition and Rules" apply Capitalisation rules as defined in Appendix apply.
MTT- VTMF -PT-2	The VMP PT will be derived from the base or salt of the active ingredients, as defined in VTM PT.
MTT- VTMF -PT-3	The Virtual Medicinal Product PT will be derived from the actual active ingredients. The full name of an ingredient (including the salt) will be used in all case

MTT- VTMF -PT-4	Route: The route of administration will include information on how the product should be used, as specified in the product's insert.
MTT- VTMF -PT-5	Dose Form: The dose form is derived from the Qualifier Table. The form expressed is the parent form. The dose form will be expressed as a singular form (tablet, capsule, cream)
MTT- VTMF -PT-6	The sequence of active ingredients should be arranged on a case-by-case basis with considerations on: - clinical significance of the ingredient in the medicinal compound; - when one or more ingredients has no inherent action in its own right; - local anaesthetic agents are listed in all topical preparations, including those for oral/buccal use, followed by all other ingredients in a logical order based on editorial team's discretion, based on the above editorial principles; This rule applies to all naming of all concepts within MTT where ingredients should be listed in the generic drug name.

4.5 VIRTUAL MEDICINAL PRODUCT (VMP)

4.5.1 Virtual Medicinal Product Definition

4.5.1.1 A *Virtual Medicinal Product (VMP)* is the abstract concept representing the properties of one or more clinical equivalent Trade Products (*Actual Medicinal Products (AMP)*). The VMP describes a generic product without supplier or trade name information. Equivalent AMPs are defined as those product with the same base active ingredient (with or without the salt, whichever is therapeutically significant), same strength, dose form, and administrable unit type (i.e. same combination of dose unit concepts associated), and being quantitatively bioequivalent.

4.5.1.2 A new VMP will be created for each different strength of a registered pharmaceutical product. If an existing generic product has a change of ingredient, such that it does not conform to the ingredients of the original VMP, then a new VMP will be created for the new product. The existing VMP may have its status changed if no bioequivalent AMP exists. In addition, all VMP concepts will have relationships to all of their active ingredients, as identified by the "has_active_ingredient" relationship.

4.5.1.3 Drug VMPs will usually follow the format of Drug Name + Route + Dose Form + Strength. Examples of VMP concepts FSNs and PTs:

Fully Specified Name	Preferred Term
cefalexin oral capsule 250 mg	cefalexin oral capsule 250 mg
calcium carbonate oral chewable tablet 1 g	calcium carbonate oral chewable tablet 1 g
betamethasone (as valerate) topical cream 0.1 %	betamethasone (as valerate) topical cream 0.1 %
venlafaxine (as hydrochloride) oral modified-release capsule 150 mg	venlafaxine (as hydrochloride) oral modified-release capsule 150 mg
prednisolone (as sodium metasulfobenzoate) rectal foam 20 mg / 1 application	prednisolone (as sodium metasulfobenzoate) rectal foam 20 mg / 1 application
povidone iodine topical solution 10 %	povidone iodine topical solution 10 %
dimenhydrinate oral syrup 15 mg / 5 mL	dimenhydrinate oral syrup 15 mg / 5 mL
acyclovir oral tablet 200 mg	acyclovir oral tablet 200 mg

4.5.1.4 Other additional information will be maintained as either at dose form level extra information, or strength level extra information (see below).

4.5.1.5 Dose Form Level Extra Information

These include the "free-ness" information (such as sugar-free, preservative-free or alcohol-free products) and other related property that is conferred by the dose form. Dose form level extra information may also include the supplied physical form of certain products, as a supplementary information to dose form. Specific examples include insulin products, for which additional information on the actual supplied form can be included as dose form level extra information (refer to Chapter 6.2.4 on exception details for insulin products.)

Examples of preferred terms for products with such properties:

Dose form level extra information	Preferred term
CFC-free	salbutamol (as sulfate) inhalation pressurised inhalation (CFC-free) 100 microgram / actuation
	beclomethasone dipropionate inhalation pressurised inhalation (CFC-free) 250 microgram / actuation
	beclomethasone dipropionate inhalation pressurised inhalation (CFC-free) 50 microgram / actuation
	beclomethasone dipropionate inhalation pressurised inhalation (CFC-free) 100 microgram / actuation
	beclomethasone dipropionate inhalation pressurised inhalation (CFC-free) 250 microgram / actuation
	ipratropium bromide inhalation pressurised inhalation (CFC-free) 20 microgram / actuation
Preservative-free	adrenaline (as acid tartrate) parenteral injection (preservative-free) 1:1000
	adrenaline (as acid tartrate) parenteral injection (preservative-free) 1:1000
Sugar-free	acetylcysteine oral granules (sugar-free) 100 mg / sachet
	acetylcysteine oral granules (sugar-free) 200 mg / sachet
	benzydamine hydrochloride buccal lozenge (sugar-free) 3mg
	colestyramine oral granules (sugar-free) 4 g / sachet
polacrilex	nicotine buccal chewing gum (polacrilex) 2 mg
	nicotine buccal chewing gum (polacrilex) 4 mg
	nicotine buccal chewing gum (polacrilex) 2 mg
	nicotine buccal chewing gum (polacrilex) 2 mg
	nicotine buccal chewing gum (polacrilex) 2 mg
cartridge	insulin aspart subcutaneous solution for injection (cartridge) 100 international unit / mL (3 mL)
pen	insulin detemir subcutaneous solution for injection (pen) 100 international unit / mL (3 mL)
vial	insulin isophane human subcutaneous suspension for injection (vial) 100 international unit / mL (10 mL)

4.5.1.6 Strength Level Extra Information

Some products are available in a range of flavours or colours – these will be maintained as strength level extra information. The default method for expressing strength of parenteral product is the express the total quantity of drug in the total volume; in exceptional cases where injectable product strength expressed without the total volume, this information may be maintained as strength level extra information (a specific example is insulin products - refer to Appendix K section 6.12.2 on exception details for insulin products.)

Strength level extra information	**Preferred Term**
Flavours	nicotine buccal chewing gum (polacrilex) 2 mg (fruit)
	psyllium hydrophilic mucilloid fiber oral granules 3.4 g / dose (orange)
	nicotine buccal chewing gum (polacrilex) 2 mg (freshmint)
	nicotine buccal chewing gum (polacrilex) 2 mg (mint)
Colours	aspirin oral tablet 80 mg (orange)
	chlorhexidine acetate topical irrigation solution 0.02 % (blue)

4.5.1.7 Combination Products

For VMPs which contains multiple ingredients, the VTM will be maintained in a manner where each active ingredients (within the same VTM component) will be maintained as ""ingredient_name_1" + "ingredient_name_2" + {"Ingredient_name_n""; in VMP, products of varying amount of these active substances will have the ingredient strengths added adjacent to the corresponding ingredient names (see below for details).

4.5.1.8 Associations

i. **Ascending association:**
   - *Virtual Medicinal Product (VMP)* **IS_A** *Virtual Therapeutic Moiety Routed Dose Form (VTM+Route+Form) concept*

ii. **Descending association:**
   - No descending association

iii. **Attributable association:**
   - *Virtual Medicinal Product (VMP)* **Is equiv to SCT** *SNOMED CT identifier*
   - *Virtual Medicinal Product (VMP)* **Has active ingredient** *substance*
   - *Virtual Medicinal Product (VMP)* **Has BoSS** *substance*

- *Virtual Medicinal Product (VMP)* **Has ingredient unit of measure** *unit of measure*
- *Virtual Medicinal Product (VMP)* **Has base unit** *base unit*
- *Virtual Medicinal Product (VMP)* **Has dispensing dose unit** *dispensing dose unit*
- *Virtual Medicinal Product (VMP)* **Has prescribing dose unit** *prescribing dose unit concept*
- *Virtual Medicinal Product (VMP)* **Has therapeutic classification** *therapeutic classification concept*

Attributes

Attribute	**Properties**
Virtual Medicinal Product (VMP) conceptID	MTT identifier
SNOMED CT ConceptID	SNOMED CT Identifier
VMP Fully specified name	"VTM preferred term" "Route" "DoseForm" "Strength"
VMP Preferred term	"VTM preferred term" "Route" "DoseForm" "Strength"
VMP Shortname	"VTM shortname" "Route" "DoseForm" "Strength"
Virtual Therapeutic Moiety (VTM) preferred term	String
Virtual Therapeutic Moiety (VTM) shortname	String
Virtual Therapeutic Moiety (VTM) Alias name	String (multiple entries)
Route	MTT Identifier : **Route**
Route description	Route preferred term from **Route** concept
Dose form	MTT identifier : **Dose form**
Dose form description	Doseform_PT from **Dose form**
Dose form level extra information	Copy "Dose form level extra information" from **AMP** concept
Strength	Copy "strength" from **AMP** concept
Strength level Extra Information	Copy "Strength level extra information" from **AMP** concept
Ingredient	MTT identifier : **Ingredient substance (multiple entries)**
Ingredient description	Ingredient substance PT from **Ingredient substance** concept (multiple entries)
Allergy check flag [Y/N]	Y/N
Dose unit group (per BoSS)	MTT identifier : **Ingredient substance (multiple entries)**

Attribute	Properties
Ingredient strength value (per BoSS)	numerical (multiple entries)
Ingredient strength unit (per Boss)	MTT identifier : **Ingredient strength unit (multiple entries)**
Ingredient unit of measure value	numerical
Ingredient unit of measure unit	MTT identifier : **Ingredient Unit of measure**
Ingredient unit of measure description	**Ingredient unit of measure** description from **Ingredient unit of measure** concept
Base unit	MTT identifier : **Base Unit**
Base unit description	Base Unit PT description from **Base unit** concept
Prescribing dose unit	MTT Identifier : **Prescribing dose unit**
Prescribing dose unit description	Prescribing dose unit preferred term from **Prescribing dose unit** concept
Dispensing dose unit	MTT Identifier : **Dispensing dose unit**
Dispensing dose unit description	Dispensing dose unit preferred term from **Prescribing dose unit** concept
Therapeutic Classification	MTT Identifier : **Therapeutic classifications**
Therapeutic Classification Description	Therapeutic classifications preferred term from **Therapeutic Classification** concept
IS_A VTM+Route+Form	MTT identifier : **VTM+Route+Form**
VTM+Route+Form description	VTM+Route+Form preferred term from **VTM+Route+Form** concept
Supporting documents (Product insert / master formula)	
Suspend	Y/N
Concept Stage	[TBC] MTT concept stage
Last update by	userID
Last update date	dd-mmm-yyyy

4.5.2 Virtual Medicinal Product Descriptions

4.5.2.1 Virtual Medicinal Product "Fully Specified Name" Definition

Depending on whether the product concept is a single or multiple ingredient product, the Fully Specified Name of a Virtual Medicinal Product follows the syntax:

i. *Single ingredient VMP:*
VMP FSN = "Ingredient_details" + "route" + "Dose Form" + "strength"

ii. *Multi-ingredient VMP:*
VMP FSN = "Ingredient_details_1" + "Ingredient_strength_1" + "ingredient_details_2" + "ingredient strength_2" + "route" + "Dose Form"

The components are described as:

Description Component	Definition
Ingredient_Details	Ingredient_details is the list of active ingredient's preferred term. For multi-ingredient products, the VMP should be made up of the Preferred Terms of each listed ingredients, separated by a "+" sign and grouped together to form the "Ingredient_Details", which will subsequently be included as part of the VMP's FSN.
Ingredient strength*	The amount of the active ingredient in each dose form; for multi-ingredient products, ingredient strength value and unit should follow their respective ingredient details, such that the description tells the amount of each active ingredient per the unit dose form.
route	The preferred term of the route of administration a generic product. The Route (i.e. route of administration) is a concept pre-defined in the qualifier concept table; it is the representation of the place or on the body where a medicinal product is introduced in order to achieve desired therapeutic effect (see Qualifier Concept – Appendix 5.2 Route of administration).
dose form	The dose form is a concept in the qualifier table used to represent the orderable pharmaceutical form of a VMP or AMP from which the concept derives (see Qualifier Concept – Appendix 5.3 - Dose Form).
strength*	The expression of strength of the unit dose form (not individual component. For multiple ingredient products, each ingredient_details will have their own corresponding strength next to the ingredient name; for single ingredient products, the strength will follow the dose form.

4.5.2.2 Virtual Medicinal Product "Fully Specified Name" Rules

Rule ID	Description
MTT-VMP-FSN-1	All rules in "Fully Specified Name definition and Rules" apply Capitalisation rules as defined in "Appendix A – Capitalization" apply.
MTT-VMP-FSN-2	The VMP name will be derived from the base or salt of the active ingredients, as defined in VTM FSN and PT.

MTT-VMP-FSN-3	The Virtual Medicinal Product name will be derived from the actual active ingredients. The full name of an ingredient (including the salt) will be used in all case
MTT-VMP-FSN-4	Route The route of administration will include information on how the product should be used, as specified in the product's insert.
MTT-VMP-FSN-5	Dose Form The dose form is derived from the Qualifier Table. The form expressed is the parent form. The dose form will be expressed as a singular form (tablet, capsule, cream)
MTT-VMP-FSN-6	Strength expression The VMP FSN will include strength expression (if available). The strength expression general rules and strength expression for specific dose form rules is outlined in section 3.2
MTT-VMP-FSN-7	The sequence of active ingredients should be arranged on a case-by-case basis with considerations on: - clinical significance of the ingredient in the medicinal compound; - when one or more ingredients has no inherent action in its own right; - local anaesthetic agents are listed in all topical preparations, including those for oral/buccal use, followed by all other ingredients in a logical order based on editorial team's discretion, based on the above editorial principles; This rule applies to all naming of all concepts within MTT where ingredients should be listed in the generic drug name.

4.5.2.3 Virtual Medicinal Product "Preferred Term" Definition

Depending on whether the product concept is a single or multiple ingredient products, the Fully Specified Name of a Virtual Medicinal Product follows the syntax:

i. *Single ingredient VMP:*
VMP PT= "Ingredient_details" + "route" + "Dose Form" + "strength"

ii. *Multi-ingredient VMP:*
VMP PT = "Ingredient_details_1" + "Ingredient_strength_1" + "ingredient_details_2" + "ingredient strength_2" + "route" + "Dose Form"

The components are described as:

Description Component	**Definition**

Ingredient_Details	Ingredient_details is the list of active ingredient's preferred term. For multi-ingredient products, the VMP should be made up of the Preferred Terms of each listed ingredients, separated by a "+" sign and grouped together to form the "Ingredient_Details", which will subsequently be included as part of the VMP's FSN.
Ingredient strength*	The amount of the active ingredient in each dose form; for multi-ingredient products, ingredient strength value and unit should follow their respective ingredient details, such that the description tells the amount of each active ingredient per the unit dose form.
route	The preferred term of the route of administration a generic product. The Route (i.e. route of administration) is a concept pre-defined in the Qualifier concept table; it is the representation of the place or on the body where a medicinal product is introduced in order to achieve desired therapeutic effect (see Qualifier Concept – Appendix 5.2 Route of administration).
dose form	The dose form is a concept in the qualifier table used to represent the orderable pharmaceutical form of a VMP or AMP from which the concept derives (see Qualifier Concept – Appendix 5.3 - Dose Form).
strength*	The expression of strength of the unit dose form (not individual component. For multiple ingredient products, each ingredient_details will have their own corresponding strength next to the ingredient name; for single ingredient products, the strength will follow the dose form.

4.5.2.4 Virtual Medicinal Product "Preferred Term" Rules

Rule ID	Description
MTT-VMP-PT-1	All rules in "Preferred Term definition and Rules" apply Capitalisation rules as defined in Appendix apply.
MTT-VMP-PT-2	The VMP PT will be derived from the base or salt of the active ingredients, as defined in VTM PT.
MTT-VMP-PT-3	The Virtual Medicinal Product PT will be derived from the actual active ingredients. The full name of an ingredient (including the salt) will be used in all case
MTT-VMP-PT-4	Route: The route of administration will include information on how the product should be used, as specified in the product's insert.
MTT-VMP-PT-5	Dose Form: The dose form is derived from the Qualifier Table. The form expressed is the parent form. The dose form will be expressed as a singular form (tablet, capsule, cream)

MTT-VMP-PT-6	Strength expression: The VMP PT will include strength expression (if available). The strength expression general rules and strength expression for specific dose form rules is outlined in section 3.2
MTT-VMP-PT-7	The sequence of active ingredients should be arranged on a case-by-case basis with considerations on: - clinical significance of the ingredient in the medicinal compound; - when one or more ingredients has no inherent action in its own right; - local anaesthetic agents are listed in all topical preparations, including those for oral/buccal use, followed by all other ingredients in a logical order based on editorial team's discretion, based on the above editorial principles; This rule applies to all naming of all concepts within MTT where ingredients should be listed in the generic drug name.

4.6 Trade Name (TradeName)

4.6.1 Trade Name Definition

4.6.1.1 A Trade Name represents the product brand name or the grouping of products into a "family" of trade products with the same description, for either single ingredient products that contain the same base of an active ingredient or components of multi-ingredient products which contain the same combination of bases of the active substances.

4.6.1.2 Associations

i. **Ascending association:**

- No ascending association

ii. Descending association:

- *Routed Trade Name (TradeName+Route)* **IS_A** *Trade Name (TradeName)*
  (A single Trade Name may be associated with one or multiple entities of Routed Trade Names)

iii. Attributable association:

- *Trade Name (TradeName)* **is trade equiv of** *Virtual Therapeutic Moiety (VTM)*

Attributes

Attribute	**Properties**
TradeName concept ID	MTT identifier
TradeName preferred term	"TradeName" "("VTM preferred term")"
TradeName fully specified name	"TradeName" "("VTM preferred term")"
Virtual Therapeutic Moiety (VTM) preferred term	Copy VTM preferred term from AMP
Virtual Therapeutic Moiety (VTM) Alias name	Copy VTM alias name from AMP
Virtual Therapeutic Moiety (VTM) shortname	Copy VTM preferred term from AMP
Generic product indicator [Y/N]	Y/N
Ingredient (multiple entries)	MTT identifier : **substance (multiple entries)**
Ingredient description	substance PT from **substance** concept (multiple entries)
Allergy check flag [Y/N]	Y/N
Is_trade_equiv_of VTM conceptID	MTT Identifier : **VTM**
VTM description	VTM+Route preferred term from **VTM** concept

Concept stage	MTT concept stage
Suspend	Y/N
Last update by	userID
Last update date	dd-mmm-yyyy

4.6.2 Trade Name Descriptions

4.6.2.1 Trade Name "Fully Specified Name" Definition

Depending on (i) whether the product concept is a single or multiple ingredient product; and (ii) proprietary or non-proprietary (generic), the Fully Specified Name of a Trade Name follows the syntax:

i. *Single ingredient TN, Proprietary product:*
TN FSN = "TradeName" + "(""Ingredient_details"")"

ii. *Single ingredient TN, Non-proprietary product:*
TN FSN = "TradeName"

iii. *Multi-ingredient TN, Proprietary product:*
TN FSN = "TradeName" + "(""Ingredient_details_1" + "ingredient_details_2"")"

iv. *Multi- ingredient TN, Non-proprietary product:*
TN FSN = "TradeName"

The components are described as:

Description Component	**Definition**
TradeName	TradeName is a product brand name shared by product concepts containing the same active ingredients or components of multi-component products. In the case of generic drug products, the tradename will be populated by including the VTM (single ingredients) or set of VTMs with their corresponding strength, followed by the manufacturer's name in bracket. In which case since such product's generic name has already been expressed in the "tradename", there need not to include the VTM as part of the AMP's full description.
Ingredient_Details	Ingredient_details is the list of active ingredient's preferred term. For multi-ingredient products, the VMP should be made up of the Preferred Terms of each listed ingredients, separated by a "+" sign and grouped together to form the "Ingredient_Details", which will subsequently be included as part of the VMP's FSN.

4.6.2.2 Trade Name "Fully Specified Name" Rules

Rule ID	Description
MTT-TN-FSN-1	All rules in "Fully Specified Name definition and Rules" apply Capitalisation rules as defined in "Appendix A – Capitalization" apply.
MTT-TN-FSN-2	The VMP name will be derived from the base or salt of the active ingredients, as defined in VTM FSN and PT.
MTT-TN-FSN-3	The Virtual Medicinal Product name will be derived from the actual active ingredients. The full name of an ingredient (including the salt) will be used in all case
MTT-TN-FSN-5	The sequence of active ingredients should be arranged on a case-by-case basis with considerations on: - clinical significance of the ingredient in the medicinal compound; - when one or more ingredients has no inherent action in its own right; - local anaesthetic agents are listed in all topical preparations, including those for oral/buccal use, followed by all other ingredients in a logical order based on editorial team's discretion, based on the above editorial principles; This rule applies to all naming of all concepts within MTT where ingredients should be listed in the generic drug name.

4.6.2.3 Trade Name "Preferred Term" Definition

Depending on whether the product concept is a single or multiple ingredient product, the Fully Preferred Term of a Trade Name follows the syntax:

i. *Single ingredient TN, Proprietary product:*
TN PT = "TradeName" + "(""Ingredient_details"")"

ii. *Single ingredient TN, Non-proprietary product:*
TN PT = "TradeName"

iii. *Multi-ingredient TN, Proprietary product:*
TN PT = "TradeName" + "(""Ingredient_details_1" + "ingredient_details_2"")"

iv. *Multi- ingredient TN, Non-proprietary product:*
TN PT = "TradeName"

The components are described as:

Description Component	Definition

TradeName	TradeName is a product brand name shared by product concepts containing the same active ingredients or components of multi-component products. In the case of generic drug products, the tradename will be populated by including the VTM (single ingredients) or set of VTMs with their corresponding strength, followed by the manufacturer's name in bracket. In which case since such product's generic name has already been expressed in the "tradename", there need not to include the VTM as part of the AMP's full description.
Ingredient_Details	Ingredient_details is the list of active ingredient's preferred term. For multi-ingredient products, the VMP should be made up of the Preferred Terms of each listed ingredients, separated by a "+" sign and grouped together to form the "Ingredient_Details", which will subsequently be included as part of the VMP's FSN.

4.6.2.4 Trade Name "Preferred Term" Rules

Rule ID	Description
MTT-TN-PT-1	All rules in "Preferred Term definition and Rules" apply Capitalisation rules as defined in Appendix apply.
MTT-TN-PT-2	The AMP PT will be derived from the base or salt of the active ingredients, as defined in VTM PT.
MTT-TN-PT-3	The Virtual Medicinal Product PT will be derived from the actual active ingredients. The full name of an ingredient (including the salt) will be used in all case
MTT- TN -PT-5	The sequence of active ingredients should be arranged on a case-by-case basis with considerations on: - clinical significance of the ingredient in the medicinal compound; - when one or more ingredients has no inherent action in its own right; - local anaesthetic agents are listed in all topical preparations, including those for oral/buccal use, followed by all other ingredients in a logical order based on editorial team's discretion, based on the above editorial principles; This rule applies to all naming of all concepts within MTT where ingredients should be listed in the generic drug name.

4.7 ROUTED TRADE NAME (TRADE NAME + ROUTE)

4.7.1 Routed Trade Name Definition

A *Routed Trade Name (TradeName+Route)* is the abstract concept representing the administrable route of administration form for a given *TradeName* concept.

4.7.2 Associations

i. **Ascending association:**

- *Routed Trade Name (TradeName+Route)* **IS_A** *Trade Name (TradeName)*

ii. **Descending association:**

- *Routed Trade Name Dose Form (TradeName+Route+Form)* **IS_A** *Routed Trade Name (TradeName+Route)*

iii. **Attributable association:**

- *Routed Trade Name (TradeName+Route)* **Is trade equiv of** *Routed Virtual Therapeutic Moiety (VTM+Route)*

Attributes

Attribute	**Properties**
Routed TradeName conceptID	MTT identifier
Routed TradeName fully specified name	"TradeName" "("VTM preferred term")" "Route"
Routed TradeName preferred term	"TradeName" "("VTM preferred term")" "Route"
Virtual Therapeutic Moiety (VTM) preferred term	Copy VTM preferred term from AMP
Virtual Therapeutic Moiety (VTM) shortname	Copy VTM shortname from AMP
Virtual Therapeutic Moiety (VTM) Alias name	Copy VTM alias name from AMP (multiple entries)
Ingredient (multiple entries)	MTT identifier : **substance (multiple entries)**
Ingredient description	Ingredient substance PT from **substance** concept (multiple entries)
Allergy check flag [Y/N]	Y/N
Is_trade_equiv_of VTM+Route conceptID	MTT Identifier : **VTM+Route**
VTM+Route description	VTM+Route preferred term from **VTM+Route** concept
Route	MTT Identifier : **Route**
Route description	Route preferred term from **Route** concept
IS_A TradeName	MTT identifier : **TradeName**

TradeName description	TradeName preferred term from **TradeName** concept
Generic product indicator [Y/N]	Y/N
Suspend	Y/N
Concept stage	MTT concept stage
Last update by	userID
Last update date	dd-mmm-yyyy

4.7.3 Routed Trade Name Descriptions

4.7.3.1 Routed Trade Name "Fully Specified Name" Definition

Depending on (i) whether the product concept is a single or multiple ingredient product; and (ii) proprietary or non-proprietary (generic), the Fully Specified Name of a Routed Trade Name follows the syntax:

i. *Single ingredient TN+R, Proprietary product:*
TN+R FSN = "TradeName" + "(""Ingredient_details"")" + "route"

ii. *Single ingredient TN+R, Non-proprietary product:*
TN+R FSN = "TradeName" + "route"

iii. *Multi-ingredient TN+R, Proprietary product:*
TN+R FSN = "TradeName" + "(""Ingredient_details_1" + "ingredient_details_2"")" + "route"

iv. *Multi- ingredient TN+R, Non-proprietary product:*
TN+R FSN = "TradeName" + "route"

The components are described as:

Description Component	**Definition**
TradeName	TradeName is a product brand name shared by product concepts containing the same active ingredients or components of multi-component products. In the case of generic drug products, the tradename will be populated by including the VTM (single ingredients) or set of VTMs with their corresponding strength, followed by the manufacturer's name in bracket. In which case since such product's generic name has already been expressed in the "tradename", there need not to include the VTM as part of the AMP's full description.

Ingredient_Details	Ingredient_details is the list of active ingredient's preferred term. For multi-ingredient products, the VMP should be made up of the Preferred Terms of each listed ingredients, separated by a "+" sign and grouped together to form the "Ingredient_Details", which will subsequently be included as part of the VMP's FSN.
route	The preferred term of the route of administration a generic product. The Route (i.e. route of administration) is a concept pre-defined in the Qualifier concept table; it is the representation of the place or on the body where a medicinal product is introduced in order to achieve desired therapeutic effect (see Qualifier Concept – Appendix 5.2 Route of administration).

4.7.3.2 Routed Trade Name "Fully Specified Name" Rules

Rule ID	Description
MTT-TNR-FSN-1	All rules in "Fully Specified Name definition and Rules" apply Capitalisation rules as defined in "Appendix A – Capitalization" apply.
MTT-TNR-FSN-2	The VMP name will be derived from the base or salt of the active ingredients, as defined in VTM FSN and PT.
MTT-TNR -FSN-3	The Virtual Medicinal Product name will be derived from the actual active ingredients. The full name of an ingredient (including the salt) will be used in all case
MTT-TNR -FSN-4	Route The route of administration will include information on how the product should be used, as specified in the product's insert.
MTT-TNR -FSN-5	The sequence of active ingredients should be arranged on a case-by-case basis with considerations on: - clinical significance of the ingredient in the medicinal compound; - when one or more ingredients has no inherent action in its own right; - local anaesthetic agents are listed in all topical preparations, including those for oral/buccal use, followed by all other ingredients in a logical order based on editorial team's discretion, based on the above editorial principles; This rule applies to all naming of all concepts within MTT where ingredients should be listed in the generic drug name.

4.7.3.3 Routed Trade Name "Preferred Term" Definition

Depending on whether the product concept is a single or multiple ingredient product, the Fully Preferred Term of a Routed Trade Name follows the syntax:

i. *Single ingredient TN+R, Proprietary product:*

TN+R PT = “TradeName” + “(““Ingredient_details””)” + “route”

ii. *Single ingredient TN+R, Non-proprietary product:*
TN+R PT = “TradeName” + “route”

iii. *Multi-ingredient TN+R, Proprietary product:*
TN+R PT = “TradeName” + “(““Ingredient_details_1” + “ingredient_details_2””)” + “route”

iv. *Multi- ingredient TN+R, Non-proprietary product:*
TN+R PT = “TradeName” + “route”

The components are described as:

Description Component	Definition
TradeName	TradeName is a product brand name shared by product concepts containing the same active ingredients or components of multi-component products. In the case of generic drug products, the tradename will be populated by including the VTM (single ingredients) or set of VTMs with their corresponding strength, followed by the manufacturer’s name in bracket. In which case since such product’s generic name has already been expressed in the “tradename”, there need not to include the VTM as part of the AMP’s full description.
Ingredient_Details	Ingredient_details is the list of active ingredient's preferred term. For multi-ingredient products, the VMP should be made up of the Preferred Terms of each listed ingredients, separated by a "+" sign and grouped together to form the "Ingredient_Details", which will subsequently be included as part of the VMP's FSN.
route	The preferred term of the route of administration a generic product. The Route (i.e. route of administration) is a concept pre-defined in the Qualifier concept table; it is the representation of the place or on the body where a medicinal product is introduced in order to achieve desired therapeutic effect (see Qualifier Concept – Appendix 5.2 Route of administration).

4.7.3.4 Routed Trade Name “Preferred Term” Rules

Rule ID	Description
MTT-TNR-PT-1	All rules in "Preferred Term definition and Rules" apply Capitalisation rules as defined in Appendix apply.
MTT-TNR -PT-2	The AMP PT will be derived from the base or salt of the active ingredients, as defined in VTM PT.

MTT-TNR-PT-3	The Virtual Medicinal Product PT will be derived from the actual active ingredients. The full name of an ingredient (including the salt) will be used in all case
MTT-TNR-PT-4	Route: The route of administration will include information on how the product should be used, as specified in the product's insert.
MTT- TNR -PT-5	The sequence of active ingredients should be arranged on a case-by-case basis with considerations on: - clinical significance of the ingredient in the medicinal compound; - when one or more ingredients has no inherent action in its own right; - local anaesthetic agents are listed in all topical preparations, including those for oral/buccal use, followed by all other ingredients in a logical order based on editorial team's discretion, based on the above editorial principles; This rule applies to all naming of all concepts within MTT where ingredients should be listed in the generic drug name.

4.8 ROUTED TRADE NAME DOSE FORM (TRADENAME + ROUTE + FORM)

4.8.1 Routed Trade Name Dose Form Definition

A *Routed Trade Name Dose Form (TradeName+Route+Form)* is the abstract concept representing the available dose form for a given trade name, that is intended to be given via a route as specified.

4.8.2 Associations

i. **Ascending association:**

- *Routed Trade Name Dose Form (TradeName+Route+Form)* **IS_A** *Routed Trade Name (TradeName+Route)*

ii. **Descending association:**

- *Actual Medicinal Product (AMP)* **IS_A** Routed *Trade Name Dose Form (TradeName+Route+Form)*

iii. **Attributable association:**

- *Routed Trade Name Dose Form (TradeName+Route+Form)* **Is trade equiv of** *Virtual Therapeutic Moiety Routed Dose Form (VTM+Route+Form)*

Attributes

Attribute	**Properties**
TradeName Routed Dose Form (TradeName+Route+Form) conceptID	MTT identifier
TradeName Routed Dose Form Fully specified name	"TradeName" "("VTM")" "Route" "DoseForm"
TradeName Routed Dose Form Preferred term	"TradeName" "("VTM")" "Route" "DoseForm"
TradeName Routed Dose Form Shortname	"TradeName" "("VTM shortname")" "Route" "DoseForm"
Virtual Therapeutic Moiety (VTM) preferred term	Copy VTM preferred term from AMP
Virtual Therapeutic Moiety (VTM) shortname	Copy VTM shortname from AMP
Virtual Therapeutic Moiety (VTM) Alias name	Copy VTM alias name from AMP (multiple entries)
Ingredient (multiple entries)	MTT identifier : **Ingredient substance (multiple entries)**
Ingredient description	Ingredient substance PT from **Ingredient substance** concept (multiple entries)
Allergy check flag [Y/N]	Y/N
Generic product indicator [Y/N]	Y/N

Attribute	Properties
is_trade_equiv_of VTM+Route+Form conceptID	MTT identifier : **VTM+Route+Form**
is_trade_equiv_of VTM+Route+Form description	VTM+Route+Form description from **VTM+Route+Form** concept
Route	MTT Identifier : **Route**
Route description	Route description from **Route** concept
Dose form	MTT identifier : **Dose form**
Dose Form description	Dose form description from Dose form concept
Dose form level extra information	Copy "Dose form level extra information" from **AMP** concept
IS_A TradeName+Route	MTT identifier : **TradeName+Route**
TradeName+Route description	TradeName+Route description from **TradeName+Route** concept
Concept Stage	[TBC] MTT concept stage
Suspend	Y/N
Last update by	userID
Last update date	dd-mmm-yyyy

4.8.3 Routed Trade Name Dose Form Descriptions

4.8.3.1 Routed Trade Name Dose Form "Fully Specified Name" Definition

Depending on (i) whether the product concept is a single or multiple ingredient product; and (ii) proprietary or non-proprietary (generic), the Fully Specified Name of a Routed Trade Name Dose Form follows the syntax:

i. *Single ingredient TN+R+F, Proprietary product:*
TN+R+F FSN = "TradeName" + "(""Ingredient_details"")" + "route" + "Dose Form" + "strength"

ii. *Single ingredient TN+R+F, Non-proprietary product:*
TN+R+F FSN = "TradeName" + "route" + "Dose Form" + "strength"

iii. *Multi-ingredient TN+R+F, Proprietary product:*
TN+R+F FSN = "TradeName" + "(""Ingredient_details_1" + "Ingredient_strength_1" + "ingredient_details_2" + "ingredient strength_2"")" + "route" + "Dose Form"

iv. *Multi- ingredient TN+R+F, Non-proprietary product:*
TN+R+F FSN = "TradeName" + + "route" + "Dose Form" + "strength"

The components are described as:

Description Component	Definition
TradeName	TradeName is a product brand name shared by product concepts containing the same active ingredients or components of multi-component products. In the case of generic drug products, the tradename will be populated by including the VTM (single ingredients) or set of VTMs with their corresponding strength, followed by the manufacturer's name in bracket. In which case since such product's generic name has already been expressed in the "tradename", there need not to include the VTM as part of the AMP's full description.
Ingredient_Details	Ingredient_details is the list of active ingredient's preferred term. For multi-ingredient products, the VMP should be made up of the Preferred Terms of each listed ingredients, separated by a "+" sign and grouped together to form the "Ingredient_Details", which will subsequently be included as part of the VMP's FSN.
Ingredient strength*	The amount of the active ingredient in each dose form; for multi-ingredient products, ingredient strength value and unit should follow their respective ingredient details, such that the description tells the amount of each active ingredient per the unit dose form.
route	The preferred term of the route of administration a generic product. The Route (i.e. route of administration) is a concept pre-defined in the Qualifier concept table; it is the representation of the place or on the body where a medicinal product is introduced in order to achieve desired therapeutic effect (see Qualifier Concept – Appendix 5.2 Route of administration).
dose form	The dose form is a concept in the qualifier table used to represent the orderable pharmaceutical form of a VMP or AMP from which the concept derives (see Qualifier Concept – Appendix 5.3 - Dose Form).

4.8.3.2 Routed Trade Name Dose Form "Fully Specified Name" Rules

Rule ID	Description
MTT-TNRF-FSN-1	All rules in "Fully Specified Name definition and Rules" apply Capitalisation rules as defined in "Appendix A – Capitalization" apply.
MTT-TNRF-FSN-2	The VMP name will be derived from the base or salt of the active ingredients, as defined in VTM FSN and PT.
MTT-TNRF-FSN-3	The Virtual Medicinal Product name will be derived from the actual active ingredients. The full name of an ingredient (including the salt) will be used in all case

MTT-TNRF-FSN-4	Route The route of administration will include information on how the product should be used, as specified in the product's insert.
MTT-TNRF-FSN-5	Dose Form The dose form is derived from the Qualifier Table. The form expressed is the parent form. The dose form will be expressed as a singular form (tablet, capsule, cream)
MTT-TNRF-FSN-7	The sequence of active ingredients should be arranged on a case-by-case basis with considerations on: - clinical significance of the ingredient in the medicinal compound; - when one or more ingredients has no inherent action in its own right; - local anaesthetic agents are listed in all topical preparations, including those for oral/buccal use, followed by all other ingredients in a logical order based on editorial team's discretion, based on the above editorial principles; This rule applies to all naming of all concepts within MTT where ingredients should be listed in the generic drug name.

4.8.3.3 Routed Trade Name Dose Form "Preferred Term" Definition

Depending on whether the product concept is a single or multiple ingredient product, the Fully Preferred Term of a Routed Trade Name Dose Form follows the syntax:

i. *Single ingredient TN+R+F, Proprietary product:*
TN+R+F PT = "TradeName" + "(""Ingredient_details"")" + "route" + "Dose Form" + "strength"

ii. *Single ingredient TN+R+F, Non-proprietary product:*
TN+R+F PT = "TradeName" + "route" + "Dose Form" + "strength"

iii. *Multi-ingredient TN+R+F, Proprietary product:*
TN+R+F PT= "TradeName" + "(""Ingredient_details_1" + "Ingredient_strength_1" + "ingredient_details_2" + "ingredient strength_2"")" + "route" + "Dose Form"

iv. *Multi- ingredient TN+R+F, Non-proprietary product:*
TN+R+F PT = "TradeName" + "route" + "Dose Form" +"strength"

The components are described as:

Description Component	Definition
TradeName	TradeName is a product brand name shared by product concepts containing the same active ingredients or components of multi-component products. In the case of generic drug products, the tradename will be populated by including the VTM (single ingredients) or set of VTMs with their corresponding strength, followed by the manufacturer's name in bracket. In which case since such product's generic name has already been expressed in the "tradename", there need not to include the VTM as part of the AMP's full description.
Ingredient_Details	Ingredient_details is the list of active ingredient's preferred term. For multi-ingredient products, the VMP should be made up of the Preferred Terms of each listed ingredients, separated by a "+" sign and grouped together to form the "Ingredient_Details", which will subsequently be included as part of the VMP's FSN.
Ingredient strength*	The amount of the active ingredient in each dose form; for multi-ingredient products, ingredient strength value and unit should follow their respective ingredient details, such that the description tells the amount of each active ingredient per the unit dose form.
Route	The preferred term of the route of administration a generic product. The Route (i.e. route of administration) is a concept pre-defined in the Qualifier concept table; it is the representation of the place or on the body where a medicinal product is introduced in order to achieve desired therapeutic effect (see Qualifier Concept – Appendix 5.2 Route of administration).
dose form	The dose form is a concept in the qualifier table used to represent the orderable pharmaceutical form of a VMP or AMP from which the concept derives (see Qualifier Concept – Appendix 5.3 - Dose Form).

4.8.3.4 Routed Trade Name Dose Form "Preferred Term" Rules

Rule ID	Description
MTT-TNRF-PT-1	All rules in "Preferred Term definition and Rules" apply Capitalisation rules as defined in Appendix apply.
MTT-TNRF-PT-2	The AMP PT will be derived from the base or salt of the active ingredients, as defined in VTM PT.
MTT-TNRF-PT-3	The Virtual Medicinal Product PT will be derived from the actual active ingredients. The full name of an ingredient (including the salt) will be used in all case

MTT-TNRF-PT-4	Route: The route of administration will include information on how the product should be used, as specified in the product's insert.
MTT- TNRF -PT-5	Dose Form: The dose form is derived from the Qualifier Table. The form expressed is the parent form. The dose form will be expressed as a singular form (tablet, capsule, cream)
MTT- TNRF -PT-6	The sequence of active ingredients should be arranged on a case-by-case basis with considerations on: - clinical significance of the ingredient in the medicinal compound; - when one or more ingredients has no inherent action in its own right; - local anaesthetic agents are listed in all topical preparations, including those for oral/buccal use, followed by all other ingredients in a logical order based on editorial team's discretion, based on the above editorial principles; This rule applies to all naming of all concepts within MTT where ingredients should be listed in the generic drug name.

4.9 ACTUAL MEDICINAL PRODUCT (AMP)

4.9.1 Actual Medicinal Product Definition

An *Actual Medicinal Product (AMP)* represents a single dose unit of a finished dose form (unless the product is presented as a continuous dosage form such as liquid or cream), and which contains a specified amount of an ingredient substance, and is grouped under a particular *TradeName* concept.

4.9.2 Associations

i. **Ascending association:**

- *Actual Medicinal Product (AMP)* **IS_A** *Routed Trade Name Dose Form (TradeName+Route+Form)*

ii. **Descending association:**

- No descending association

iii. **Attributable association:**

- *Actual Medicinal Product (AMP)* **Is trade equiv of** *Virtual Medicinal Product (VMP)*
- *Actual Medicinal Product (AMP)* **Has manufacturer** *manufacturer*
- *Actual Medicinal Product (AMP)* **Has legal classification** *legal classification*

Attributes

Attribute	**Properties**
Actual Medicinal Product (AMP) conceptID	MTT identifier
AMP Fully specified name	"TradeName" "("VTM")" "Route" "DoseForm" "Strength"
AMP Preferred term	"TradeName" "("VTM")" "Route" "DoseForm" "Strength"
AMP Shortname	"TradeName" "("VTM shortname")" "Route" "DoseForm" "Strength"
TradeName	String
Virtual Therapeutic Moiety (VTM) preferred term	String
Virtual Therapeutic Moiety (VTM) shortname	String
Virtual Therapeutic Moiety (VTM) Aliasname	String (multiple entries)
Route	MTT Identifier : **Route**
Route description	Route preferred term from **Route** concept
Dose form	MTT identifier : **Dose form**

Attribute	Properties
Dose form description	Doseform_PT from **Dose form**
Strength	String
Ingredient	MTT identifier : **Ingredient substance (multiple entries)**
Ingredient description	Ingredient substance PT from **Ingredient substance** concept (multiple entries)
Dose unit group (per BoSS)	numerical (multiple entries)
Ingredient strength value (per BoSS)	numerical (multiple entries)
Ingredient strength unit (per Boss)	MTT identifier : **Ingredient strength unit (multiple entries)**
Ingredient unit of measure value	numerical
Ingredient unit of measure unit	MTT identifier : **Ingredient Unit of measure**
Ingredient unit of measure description	**Ingredient unit of measure** description from **Ingredient unit of measure** concept
Base unit	MTT identifier : **Base Unit**
Base unit description	Base Unit preferred term from **Base unit** concept
Prescribing dose unit	MTT Identifier : **Prescribing dose unit**
Prescribing dose unit description	Prescribing dose unit preferred term from **Prescribing dose unit** concept
Dispensing dose unit	MTT Identifier : **Dispensing dose unit**
Dispensing dose unit description	Dispensing dose unit preferred term from **Prescribing dose unit** concept
Therapeutic Classification	MTT Identifier : **Therapeutic classifications**
Therapeutic Classification Description	Therapeutic classifications preferred term from **Therapeutic Classification** concept
Strength level Extra Information	String
Dose form level extra information	String
IS_A TradeName+Route+Form	MTT identifier : **TradeName+Route+Form**
TradeName+Route+Form description	TradeName+Route+Form preferred term from **TradeName+Route+Form** concept
is_trade_equiv_of VMP	MTT identifier : **VMP**
HK Registration no	String
Legal classification	MTT identifier : Legal Classification
Manufacturer	MTT identifier : **Manufacturer**
Manufacturer description	Manufacturer description from **Manufacturer** concept
Certificate holder	String

Attribute	Properties
Certificate holder description	String
Suspend	Y/N
Concept Stage	[TBC] MTT concept stage
Last update by	userID
Last update date	dd-mmm-yyyy
Supporting documents (Product insert / master formula)	Multi-format file type
Generic product indicator [Y/N]	Y/N
Allergy check flag [Y/N]	Y/N

4.9.3 Actual Medicinal Product Descriptions

4.9.3.1 Actual Medicinal Product "Fully Specified Name" Definition

Depending on (i) whether the product concept is a single or multiple ingredient product; and (ii) proprietary or non-proprietary (generic), the Fully Specified Name of an Actual Medicinal Product follows the syntax:

i. *Single ingredient AMP, Proprietary product:*
AMP FSN = "TradeName" + "(""Ingredient_details"")" + "route" + "Dose Form" + "strength"

ii. *Single ingredient AMP, Non-proprietary product:*
AMP FSN = "TradeName" + "route" + "Dose Form" + "strength"

iii. *Multi-ingredient AMP, Proprietary product:*
AMP FSN = "TradeName" + "(""Ingredient_details_1" + "Ingredient_strength_1" + "ingredient_details_2" + "ingredient strength_2"")" + "route" + "Dose Form"

iv. *Multi- ingredient AMP, Non-proprietary product:*
AMP FSN = "TradeName" + + "route" + "Dose Form" + "strength"

The components are described as:

Description Component	Definition
TradeName	TradeName is a product brand name shared by product concepts containing the same active ingredients or components of multi-component products. In the case of generic drug products, the tradename will be populated by including the VTM (single ingredients) or set of VTMs with their corresponding strength, followed by the manufacturer's name in bracket. In which case since such product's generic name has already been

	expressed in the "tradename", there need not to include the VTM as part of the AMP's full description.
Ingredient_Details	Ingredient_details is the list of active ingredient's preferred term. For multi-ingredient products, the VMP should be made up of the Preferred Terms of each listed ingredients, separated by a "+" sign and grouped together to form the "Ingredient_Details", which will subsequently be included as part of the VMP's FSN.
Ingredient strength*	The amount of the active ingredient in each dose form; for multi-ingredient products, ingredient strength value and unit should follow their respective ingredient details, such that the description tells the amount of each active ingredient per the unit dose form.
Route	The preferred term of the route of administration a generic product. The Route (i.e. route of administration) is a concept pre-defined in the Qualifier concept table; it is the representation of the place or on the body where a medicinal product is introduced in order to achieve desired therapeutic effect (see Qualifier Concept – Appendix 5.2 Route of administration).
dose form	The dose form is a concept in the qualifier table used to represent the orderable pharmaceutical form of a VMP or AMP from which the concept derives (see Qualifier Concept – Appendix 5.3 - Dose Form).
strength*	The expression of strength of the unit dose form (not individual component. For multiple ingredient products, each ingredient_details will have their own corresponding strength next to the ingredient name; for single ingredient products, the strength will follow the dose form.

4.9.3.2 Actual Medicinal Product "Fully Specified Name" Rules

Rule ID	Description
MTT-AMP-FSN-1	All rules in "Fully Specified Name definition and Rules" apply Capitalisation rules as defined in "Appendix A – Capitalisation" apply.
MTT-AMP-FSN-2	The VMP name will be derived from the base or salt of the active ingredients, as defined in VTM FSN and PT.
MTT-AMP-FSN-3	The Virtual Medicinal Product name will be derived from the actual active ingredients. The full name of an ingredient (including the salt) will be used in all case
MTT-AMP-FSN-4	Route The route of administration will include information on how the product should be used, as specified in the product's insert.

MTT-AMP-FSN-5	Dose Form The dose form is derived from the Qualifier Table. The form expressed is the parent form. The dose form will be expressed as a singular form (tablet, capsule, cream)
MTT-AMP-FSN-6	Strength expression The VMP FSN will include strength expression (if available). The strength expression general rules and strength expression for specific dose form rules is outlined in section 3.2
MTT-AMP-FSN-7	The sequence of active ingredients should be arranged on a case-by-case basis with considerations on: - clinical significance of the ingredient in the medicinal compound; - when one or more ingredients has no inherent action in its own right; - local anaesthetic agents are listed in all topical preparations, including those for oral/buccal use, followed by all other ingredients in a logical order based on editorial team's discretion, based on the above editorial principles; This rule applies to all naming of all concepts within MTT where ingredients should be listed in the generic drug name.

4.9.3.3 Actual Medicinal Product "Preferred Term" Definition

Depending on whether the product concept is a single or multiple ingredient product, the Fully Preferred Term of an Actual Medicinal Product follows the syntax:

i. *Single ingredient AMP, Proprietary product:*
AMP PT = "TradeName" + "(""Ingredient_details"")" + "route" + "Dose Form" + "strength"

ii. *Single ingredient AMP, Non-proprietary product:*
AMP PT = "TradeName" + "route" + "Dose Form" + "strength"

iii. *Multi-ingredient AMP, Proprietary product:*
AMP PT= "TradeName" + "(""Ingredient_details_1" + "Ingredient_strength_1" + "ingredient_details_2" + "ingredient strength_2"")" + "route" + "Dose Form"

iv. *Multi- ingredient AMP, Non-proprietary product:*
AMP PT = "TradeName" + "route" + "Dose Form" +"strength"

The components are described as:

Description Component	**Definition**

TradeName	TradeName is a product brand name shared by product concepts containing the same active ingredients or components of multi-component products. In the case of generic drug products, the tradename will be populated by including the VTM (single ingredients) or set of VTMs with their corresponding strength, followed by the manufacturer's name in bracket. In which case since such product's generic name has already been expressed in the "tradename", there need not to include the VTM as part of the AMP's full description.
Ingredient_Details	Ingredient_details is the list of active ingredient's preferred term. For multi-ingredient products, the VMP should be made up of the Preferred Terms of each listed ingredients, separated by a "+" sign and grouped together to form the "Ingredient_Details", which will subsequently be included as part of the VMP's FSN.
Ingredient strength*	The amount of the active ingredient in each dose form; for multi-ingredient products, ingredient strength value and unit should follow their respective ingredient details, such that the description tells the amount of each active ingredient per the unit dose form.
Route	The preferred term of the route of administration a generic product. The Route (i.e. route of administration) is a concept pre-defined in the Qualifier concept table; it is the representation of the place or on the body where a medicinal product is introduced in order to achieve desired therapeutic effect (see Qualifier Concept – Appendix 5.2 Route of administration).
dose form	The dose form is a concept in the qualifier table used to represent the orderable pharmaceutical form of a VMP or AMP from which the concept derives (see Qualifier Concept – Appendix 5.3 - Dose Form).
strength*	The expression of strength of the unit dose form (not individual component. For multiple ingredient products, each ingredient_details will have their own corresponding strength next to the ingredient name; for single ingredient products, the strength will follow the dose form.

4.9.3.4 Actual Medicinal Product "Preferred Term" Rules

Rule ID	Description
MTT-AMP-PT-1	All rules in "Preferred Term definition and Rules" apply Capitalisation rules as defined in Appendix apply.
MTT-AMP-PT-2	The AMP PT will be derived from the base or salt of the active ingredients, as defined in VTM PT.

MTT-AMP-PT-3	The Virtual Medicinal Product PT will be derived from the actual active ingredients. The full name of an ingredient (including the salt) will be used in all case
MTT-AMP-PT-4	Route: The route of administration will include information on how the product should be used, as specified in the product's insert.
MTT-AMP-PT-5	Dose Form: The dose form is derived from the Qualifier Table. The form expressed is the parent form. The dose form will be expressed as a singular form (tablet, capsule, cream)
MTT-AMP-PT-6	Strength expression: The VMP PT will include strength expression (if available). The strength expression general rules and strength expression for specific dose form rules is outlined in section 3.2
MTT-AMP-PT-7	The sequence of active ingredients should be arranged on a case-by-case basis with considerations on: - clinical significance of the ingredient in the medicinal compound; - when one or more ingredients has no inherent action in its own right; - local anaesthetic agents are listed in all topical preparations, including those for oral/buccal use, followed by all other ingredients in a logical order based on editorial team's discretion, based on the above editorial principles; This rule applies to all naming of all concepts within MTT where ingredients should be listed in the generic drug name.

5 QUALIFER CONCEPTS

5.1 SUBSTANCE CONCEPT: ACTIVE INGREDIENT

5.1.1 Ingredient Substance Definition

These are concepts that represent the chemical entities that may act as ingredients of medicinal products:

- Complete substances that act as actual active ingredients of medicinal products
- Basis of strength substance (BoSS) relationship that may or may not exist for a given virtual medicinal product
- Only active ingredients are listed in HKMTT as ingredients; excipients are not included.

5.1.2 Associations

i. **Ascending associations**

- *Active ingredient* **Is a base ingredient** *base ingredient*
- *Active ingredient* **Has allergen group** *Allergen group*

ii. **Descending associations**

- *Virtual Therapeutic Moiety* **has active ingredient** active *ingredient*

Attributes

Input Method	**Attribute**	**Properties**
System gen	Ingredient substance concept ID	MTT Identifier
User input	Ingredient substance preferred term	String
System gen	Ingredient substance fully specified name	"Ingredient substance preferred term"
Source table	Base Ingredient	MTT identifier : **Base Ingredient**
User input	Base ingredient descriptions [multiple entries]	Base Ingredient preferred term from **Base Ingredient** concept
User input	Allergen group (multiple entries)	MTT identifier : **Allergen group**
Source table	Allergen group descriptions (multiple entries)	Allergen group preferred term from **Allergen Group** concept
User input	Suspend	Y/N
User input	Concept Stage	[TBC] MTT concept stage
System gen	Last update by	userID
System gen	Last update date	dd-mmm-yyyy

5.1.3 Active Ingredient Descriptions

5.1.3.1 Active Ingredient "Fully Specified Name" Definition

The Fully Specified Name of an Active Ingredient concept follows the syntax:

i. Active Ingredient FSN = "Substance"

The components are described as:

Description Component	Definition
Substance_PT	The term used to describe the "ingredient substance"

5.1.3.2 Active Ingredient "Fully Specified Name" Rules

Rule ID	Description
MTT-ING-FSN-1	All rules in "Fully Specified Name definition and Rules" apply Capitalisation rules as defined in "Appendix A – Capitalisation" apply.

5.1.3.3 Active Ingredient "Preferred Term" Definition

The Preferred Term of a Substance concept follows the syntax:

i. Ingredient Substance PT = "Substance"

The components are described as:

Description Component	Definition
Substance	The term used to describe the "ingredient substance"

5.1.3.4 Active Ingredient "Preferred Term" Rules

Rule ID	Description
MTT-ING-PT-1	All rules in "Preferred Term definition and Rules" apply Capitalisation rules as defined in Appendix apply.

5.2 QUALIFIER CONCEPT: ROUTE

5.2.1 Route Definition

i.e. Route of administration. This concept allows for trade products (AMPs) sharing a common set of routes of administration to be grouped together. AMPs grouped under this concept may not necessarily share the set of active ingredient (and strength); hence this concept allows grouping of therapeutically non-identical products, which could be administered via the same method, under the same "trade family".

The *Route of medication administration* code table on *eHR Prescribing Record* and *eHR Dispensing Record* data set would refer to selective route concepts on HKCTT.

5.2.2 Associations

i. **Ascending association:**

- No ascending association

ii. **Descending association:**

- *Routed Virtual Therapeutic Moiety (VTM+Route)* **has route** *Route*
- *Routed Trade Name (TradeName+Route)* **has route** *Route*

Attributes

Input Method	**Attribute**	**Properties**
System gen	Route concept ID	MTT identifier
User input	Route preferred term	String
System gen	Route fully specified name	"Route preferred term" "("Route")"
User input	Suspend	Y/N
User input	Concept Stage	[TBC] MTT concept stage
System gen	Last update by	userID
System gen	Last update date	dd-mmm-yyyy

5.2.3 Route of administration Descriptions

See Section 6.4 "Appendix D – Route" for list of defined route of administration that are currently maintained and used as structural data for product concepts.

5.2.3.1 Route of administration "Fully Specified Name" Definition

The Fully Specified Name of a Route of Administration concept follows the syntax:

i. Route FSN = “Route”

The components are described as:

Description Component	Definition
Route	The term used to describe the “Route of administration”

5.2.3.2 Route of administration “Fully Specified Name” Rules

Rule ID	Description
MTT-RT-FSN-1	All rules in "Fully Specified Name definition and Rules" apply Capitalisation rules as defined in “Appendix A – Capitalisation” apply.

5.2.3.3 Route of administration ”Preferred Term” Definition

The Preferred Term of a Route concept follows the syntax:

i. Route PT = “Route”

The components are described as:

Description Component	Definition
Route	The term used to describe the “Route of administration”

5.2.3.4 Route of administration “Preferred Term” Rules

Rule ID	Description
MTT-RT-PT-1	All rules in "Preferred Term definition and Rules" apply Capitalisation rules as defined in Appendix apply.

5.3 QUALIFIER CONCEPT: DOSE FORMS

5.3.1 Dose Form Definition

This qualifier concepts describes the dose formulation, such as capsules, tablets, injections. The dose form is referred to as the manufactured dose form in which the product is manufactured and transported.

5.3.2 Associations

i. **Ascending association:**

- No ascending association

ii. **Descending association:**

- *Routed Dose Form Virtual Therapeutic Moiety (VTM+Route+Form)* **has dose form** *Dose form*
- *Routed Dose Form TradeName (TradeName+Route+Form)* **has dose form** *Dose form*

Attributes

Input Method	**Attribute**	**Properties**
System gen	Dose form concept ID	MTT identifier
User input	Dose form preferred term	String
System gen	Dose form fully specified name	"Dose form preferred term" "("Dose form")"
User input	Suspend	Y/N
User input	Concept Stage	[TBC] MTT concept stage
System gen	Last update by	userID
System gen	Last update date	dd-mmm-yyyy

5.3.3 Dose Form Descriptions

See Section 6.5 “Appendix E – Dose Form” for list of defined Dose Forms that are currently maintained and used as structural data for product concepts.

5.3.3.1 Dose Form “Fully Specified Name” Definition

The Fully Specified Name of a Dose Form concept follows the syntax:

i. Dose Form FSN = “Dose Form”

The components are described as:

Description Component	Definition
Dose Form	The term used to describe the “Dose Form”

5.3.3.2 Dose Form “Fully Specified Name” Rules

Rule ID	Description
MTT-DF-FSN-1	All rules in "Fully Specified Name definition and Rules" apply Capitalisation rules as defined in “Appendix A – Capitalisation” apply.

5.3.3.3 Dose Form ”Preferred Term” Definition

The Preferred Term of a Dose Form concept follows the syntax:

i. Dose Form PT = “Dose Form”

The components are described as:

Description Component	Definition
Dose Form	The term used to describe the “Dose Form”

5.3.3.4 Dose Form “Preferred Term” Rules

Rule ID	Description
MTT-DF-PT-1	All rules in "Preferred Term definition and Rules" apply Capitalisation rules as defined in Appendix apply.

5.4 QUALIFIER CONCEPT: INGREDIENT STRENGTH UNITS

5.4.1 Ingredient Strength Units Definition

Strength units are one of the unit of measures used to describe or measure quantities within the HKMTT. Strength unit represents amount of active drugs, in terms of the basis of substance strength of a particular ingredient substance, contained in a VMP.

5.4.2 Associations

i. **Ascending association:**

- No ascending association

ii. **Descending association:**

- *Virtual Medicinal Product (VMP)* **has ingredient strength unit** *ingredient strength unit*
- *Actual Medicinal Product (AMP)* **has ingredient strength unit** *ingredient strength unit*

Attributes

Input Method	**Attribute**	**Properties**
System gen	Ingredient strength unit concept ID	MTT identifier
User input	Ingredient strength unit preferred term	String
System gen	Ingredient strength unit fully specified name	"ingredient strength unit" "("ingredient strength unit")"
User input	Suspend	Y/N
User input	Concept Stage	[TBC] MTT concept stage
System gen	Last update by	userID
System gen	Last update date	dd-mmm-yyyy

5.4.3 Ingredient Strength Units Description

See Section 6.6 “Appendix F – Strength Unit” for list of defined strength units that are currently maintained and used as structural data for product concepts.

5.4.3.1 Ingredient Strength Units “Fully Specified Name” Definition

The Fully Specified Name of an Ingredient Strength Unit concept follows the syntax:

i. Ingredient Strength Unit FSN = “Ingredient Strength Unit”

The components are described as:

Description Component	Definition
Ingredient Strength Unit	The term used to describe the “Ingredient Strength Unit”.

5.4.3.2 Ingredient Strength Units “Fully Specified Name” Rules

Rule ID	Description
MTT-STU-FSN-1	All rules in "Fully Specified Name definition and Rules" apply Capitalisation rules as defined in “Appendix A – Capitalisation” apply.

5.4.3.3 Ingredient Strength Units ”Preferred Term” Definition

The Preferred Term of an Ingredient Strength Unit concept follows the syntax:

i. Ingredient Strength Unit PT = “Ingredient Strength Unit”

The components are described as:

Description Component	Definition
Ingredient Strength Unit	The term used to describe the “Ingredient Strength Unit”

5.4.3.4 Ingredient Strength Units “Preferred Term” Rules

Rule ID	Description
MTT-STU-PT-1	All rules in "Preferred Term definition and Rules" apply Capitalisation rules as defined in Appendix apply.

5.5 QUALIFIER CONCEPT: INGREDIENT UNIT OF MEASURE

5.5.1 Ingredient Unit of Measure Definition

Ingredient unit of measures are used to describe or measure quantities within the HKMTT. Dose units describe the quantitative amount of unit that is available in a single "unit of use". For example, an injection with unit of use in terms of a vial containing 5mL of an injectable fluid would be described to having 5 millilitres of dose unit.

5.5.2 Associations

i. **Ascending association:**

- No ascending association

ii. **Descending association:**

- *Virtual Medicinal Product (VMP)* **has ingredient unit of measure** *ingredient unit of measure*
- *Actual Medicinal Product (AMP)* **has ingredient unit of measure** *ingredient unit of measure*

Attributes

Input Method	Attribute	Properties
System gen	Ingredient unit of measure concept ID	MTT identifier
User input	Ingredient unit of measure preferred term	String
System gen	Ingredient unit of measure fully specified name	"ingredient unit of measure preferred term" "("ingredient unit of measure")"
User input	Suspend	Y/N
User input	Concept Stage	[TBC] MTT concept stage
System gen	Last update by	userID
System gen	Last update date	dd-mmm-yyyy

5.5.3 Ingredient Unit of Measure Description

See Section 6.7 "Appendix G – Units of Measure" for list of defined UOMs that are currently maintained and used as structural data for product concepts.

5.5.3.1 Ingredient Unit of Measure "Fully Specified Name" Definition

The Fully Specified Name of Ingredient Unit of Measure concept follows the syntax:

i. Ingredient Unit of Measure FSN = "Ingredient Unit of Measure"

The components are described as:

Description Component	Definition
Ingredient unit of measure	The term used to describe the “Ingredient unit of measure”.

5.5.3.2 Ingredient Unit of Measure “Fully Specified Name” Rules

Rule ID	Description
MTT-UOM-FSN-1	All rules in "Fully Specified Name definition and Rules" apply Capitalisation rules as defined in “Appendix A – Capitalisation” apply.

5.5.3.3 Ingredient Unit of Measure ”Preferred Term” Definition

The Preferred Term of an Ingredient Strength Unit concept follows the syntax:

i. Ingredient unit of measure PT = “Ingredient unit of measure”

The components are described as:

Description Component	Definition
Ingredient Strength Unit	The term used to describe the “Ingredient Unit of Measure”

5.5.3.4 Ingredient Unit of Measure “Preferred Term” Rules

Rule ID	Description
MTT-UOM-PT-1	All rules in "Preferred Term definition and Rules" apply Capitalisation rules as defined in Appendix apply.

5.6 QUALIFIER CONCEPT: BASE UNIT

5.6.1 Base Unit Definition

Base unit describes the actual administrable unit(s) for a particular drug. For example, a 20mg tablet will have an administrable unit of a single "1 tablet", whereas in the case of an injectable vial, each 5mL vial will have a unit of use as a single "1 vial".

The *Prescribed quantity unit* code table on *eHR Prescribing Record* data set would refer to Base units on HKCTT.

The *Dispensed quantity unit* code table on *eHR Dispensing Record* data set would refer to this Base units on HKCTT.

5.6.2 Associations

i. **Ascending association:**

- No ascending association

ii. **Descending association:**

- *Virtual Medicinal Product (VMP)* **has base unit** *Base unit*
- *Actual Medicinal Product (AMP)* **has base unit** *Base unit*

Attributes

Input Method	**Attribute**	**Properties**
System gen	Base Unit Concept ID	MTT identifier
System gen	Base Unit Fully Specified Name	"Base Unit preferred term" "("Base unit")"
User input	Base Unit preferred term	String
User input	Suspend	Y/N
User input	Concept Stage	[TBC] MTT concept stage
System gen	Last update by	userID
System gen	Last update date	dd-mmm-yyyy

5.6.3 Base Unit Description

See Section 6.8 "Appendix H – Base Unit" for list of defined base units that are currently maintained and used as structural data for product concepts.

5.6.3.1 Base Unit "Fully Specified Name" Definition

The Fully Specified Name of Base Unit concept follows the syntax:

i. Base Unit FSN = "base unit"

The components are described as:

Description Component	Definition
Ingredient unit of measure	The term used to describe the "Base Unit"

5.6.3.2 Base Unit "Fully Specified Name" Rules

Rule ID	Description
MTT-BU-FSN-1	All rules in "Fully Specified Name definition and Rules" apply Capitalisation rules as defined in "Appendix A – Capitalisation" apply.

5.6.3.3 Base Unit "Preferred Term" Definition

The Preferred Term of a base Unit concept follows the syntax:

i. Base Unit PT = "Base Unit"

The components are described as:

Description Component	Definition
Ingredient Strength Unit	The term used to describe the "Base Unit"

5.6.3.4 Base Unit "Preferred Term" Rules

Rule ID	Description
MTT-BU-PT-1	All rules in "Preferred Term definition and Rules" apply Capitalisation rules as defined in Appendix apply.

5.7 QUALIFIER CONCEPT: PRESCRIBING DOSE UNIT

5.7.1 Prescribing Dose Unit Definition

A ***Prescribing dose unit*** describes the actual prescribable unit(s) for a particular drug. For example, a 20mg tablet will have a prescribable unit of a "mg".

The *Prescribed dose unit* code table on *eHR Prescribing Record* data set would refer to this Prescribed dose unit on HKCTT.

5.7.2 Associations

i. **Ascending association:**

- No ascending association

ii. **Descending association:**

- *Virtual Medicinal Product (VMP)* **has prescribing dose unit** *Prescribing dose unit*
- *Actual Medicinal Product (AMP)* **has prescribing dose unit** *Prescribing dose unit*

Attributes

Input Method	Attribute	Properties
System gen	Prescribing dose unit concept ID	MTT identifier
User input	Prescribing dose unit preferred term	String
System gen	Prescribing dose unit fully specified name	"prescribing dose unit preferred term" "("prescribing dose unit")"
User input	Suspend	Y/N
User input	Concept Stage	[TBC] MTT concept stage
System gen	Last update by	userID
System gen	Last update date	dd-mmm-yyyy

5.7.3 Prescribing Dose Unit Description

See Section 6.9 "Appendix I – Prescribing Dose Unit" for list of defined prescribing units that are currently maintained and used as structural data for product concepts.

5.7.3.1 Prescribing Dose Unit "Fully Specified Name" Definition

The Fully Specified Name of Base Unit concept follows the syntax:

i. Prescribing Dose Unit FSN = "Prescribing Dose Unit"

The components are described as:

Description Component	Definition
Prescribing Dose Unit	The term used to describe the “Prescribing Dose Unit”

5.7.3.2 Prescribing Dose Unit “Fully Specified Name” Rules

Rule ID	Description
MTT-PDU-FSN-1	All rules in "Fully Specified Name definition and Rules" apply Capitalisation rules as defined in “Appendix A – Capitalisation” apply.

5.7.3.3 Prescribing Dose Unit ”Preferred Term” Definition

The Preferred Term of a Prescribing Dose Unit concept follows the syntax:

i. Prescribing Dose Unit PT = “Prescribing Dose Unit”

The components are described as:

Description Component	Definition
Ingredient Strength Unit	The term used to describe the “Prescribing Unit”

5.7.3.4 Prescribing Dose Unit “Preferred Term” Rules

Rule ID	Description
MTT-PDU-PT-1	All rules in "Preferred Term definition and Rules" apply Capitalisation rules as defined in Appendix apply.

5.8 QUALIFIER CONCEPT: DISPENSING DOSE UNIT

5.8.1 Dispensing Dose Unit Definition

Dispensing dose unit describes the actual unit(s) that could physically be dispensed for a particular drug. For example, a 20mg tablet will have a dispensing unit of a single "1 tablet", whereas in the case of an injectable vial, each 5mL vial will have a unit of use as a single "1 vial".

The *Dispensed dose unit* code table on *eHR Dispensing Record* data set would refer to this Dispensing dose unit on HKCTT.

5.8.2 Associations

i. **Ascending association:**

- No ascending association

ii. **Descending association:**

- *Virtual Medicinal Product (VMP)* **has dispensing dose unit** *Dispensing dose unit*
- *Actual Medicinal Product (AMP)* **has dispensing dose unit** *Dispensing dose unit*

Attributes

Input Method	Attribute	Properties
System gen	Dispensing dose unit concept ID	MTT identifier
User input	Dispensing dose unit preferred term	String
System gen	Dispensing dose unit fully specified name	"dispensing dose unit preferred term" "("dispensing dose unit")"
User input	Suspend	Y/N
User input	Concept Stage	[TBC] MTT concept stage
System gen	Last update by	userID
System gen	Last update date	dd-mmm-yyyy

5.8.3 Dispensing Dose Unit Description

See Section 6.10 "Appendix J – Dispensing Dose Unit" for list of defined dispensing units that are currently maintained and used as structural data for product concepts.

5.8.3.1 Dispensing Dose Unit "Fully Specified Name" Definition

The Fully Specified Name of Dispensing Unit concept follows the syntax:

i. Dispensing Dose Unit FSN = “Dispensing Dose Unit”

The components are described as:

Description Component	Definition
Dispensing Dose Unit	The term used to describe the “Dispensing Dose Unit”

5.8.3.2 Dispensing Dose Unit “Fully Specified Name” Rules

Rule ID	Description
MTT-DDU-FSN-1	All rules in "Fully Specified Name definition and Rules" apply Capitalisation rules as defined in “Appendix A – Capitalisation” apply.

5.8.3.3 Dispensing Dose Unit ”Preferred Term” Definition

The Preferred Term of a Prescribing Dose Unit concept follows the syntax:

i. Dispensing Dose Unit PT = “Dispensing Dose Unit”

The components are described as:

Description Component	Definition
Dispensing Dose Unit	The term used to describe the “Dispensing Dose Unit”

5.8.3.4 Dispensing Dose Unit “Preferred Term” Rules

Rule ID	Description
MTT-DDU-PT-1	All rules in "Preferred Term definition and Rules" apply Capitalisation rules as defined in Appendix apply.

5.9 QUALIFIER CONCEPT: MANUFACTURER

5.9.1 Manufacturer Definition

Manufacturers are pharmaceutical manufacturers that are included as part of the product information for a given Actual Medicinal Product.

The short description of the manufacturer may be populated as part of the trade name for generic manufacturers, where the product may not necessary carry a trade name (e.g. the short name "(DBL)" for "adrenaline (as acid tartrate) (DBL) parenteral injection 1:1000"

5.9.1Associations

i. **Ascending association:**

- No ascending association

ii. **Descending association:**

- *Actual Medicinal Product (AMP)* **has manufacturer** *Manufacturer*

Attributes

Input Method	**Attribute**	**Properties**
System gen	Manufacturer concept ID	MTT identifier
User input	Manufacturer preferred term	String
System gen	Manufacturer fully specified name	"Manufacturer preferred term" "("Manufacturer")"
User input	Suspend	Y/N
User input	Concept Stage	[TBC] MTT concept stage
System gen	Last update by	userID
System gen	Last update date	dd-mmm-yyyy

5.9.2 Manufacturer Description

5.9.3.1 Manufacturer "Fully Specified Name" Definition

The Fully Specified Name of Manufacturer the syntax:

i. Manufacturer FSN = "Manufacturer"

The components are described as:

Description Component	**Definition**
Manufacturer	The term used to describe the "manufacturer"

5.9.3.2 Manufacturer "Fully Specified Name" Rules

Rule ID	Description
MTT-MAN-FSN-1	All rules in "Fully Specified Name definition and Rules" apply Capitalisation rules as defined in "Appendix A – Capitalisation" apply.

5.9.3.3 Manufacturer "Preferred Term" Definition

The Preferred Term of a manufacturer concept follows the syntax:

i. Manufacturer PT = "manufacturer"

The components are described as:

Description Component	Definition
Manufacturer	The term used to describe the "Manufacturer"

5.9.3.4 Manufacturer "Preferred Term" Rules

Rule ID	Description
MTT-MAN-PT-1	All rules in "Preferred Term definition and Rules" apply Capitalisation rules as defined in Appendix apply.

5.10 QUALIFIER CONCEPT: LEGAL CLASSIFICATIONS

5.10.1 Legal Classification Definition

Legal Classification is the legal classification of a pharmaceutical product, assigned by the Department of Health.

5.10.2 Associations

i. **Ascending association:**

- No ascending association

ii. **Descending association:**

- *Actual Medicinal Product (AMP)* **has legal classification** *legal classification*

Attributes

Input Method	Attribute	Properties
System gen	Legal classification Concept ID	MTT identifier
System gen	Legal classification Fully Specified Name	" Legal classification preferred term" "(" Legal classification ")"
User input	Legal classification preferred term	String
User input	Suspend	Y/N
User input	Concept Stage	[TBC] MTT concept stage
System gen	Last update by	userID
System gen	Last update date	dd-mmm-yyyy

5.10.3 Legal Classification Description

See Section 6.12 “Appendix L – Legal Classification” for list of defined legal classes that are currently maintained and used as structural data for product concepts.

5.10.3.1 Legal Classification “Fully Specified Name” Definition

The Fully Specified Name of Legal Classification the syntax:

i. Legal Classification FSN = “Legal Classification”

The components are described as:

Description Component	Definition
Legal classification	The term used to describe the “legal classification.”

5.10.3.2 Legal Classification “Fully Specified Name” Rules

Rule ID	Description
MTT-LC-FSN-1	All rules in "Fully Specified Name definition and Rules" apply Capitalisation rules as defined in “Appendix A – Capitalisation” apply.

5.10.3.3 Legal Classification ”Preferred Term” Definition

The Preferred Term of a legal classification concept follows the syntax:

i. Legal classification PT = “Legal classification”

The components are described as:

Description Component	Definition
Legal classification	The term used to describe the “legal classification”

5.10.3.4 Legal Classification “Preferred Term” Rules

Rule ID	Description
MTT-LC-PT-1	All rules in "Preferred Term definition and Rules" apply Capitalisation rules as defined in Appendix apply.

5.11 SUBSTANCE CONCEPT: ALLERGEN GROUP

5.11.1 Allergen Group Definition

Allergen group represents a patient's allergy to a group of chemically-related ingredients. It is either a group of chemically similar drugs known to have similar allergenic potential or to a single drug entity.

For example, the allergen group concept ID for Penicillin, Amoxicillin, and Piperacillin is the same, combining chemically similar drugs into one group. If a patient is allergic to penicillin, the potential exists for the patient to be allergic to all drugs with the same allergen group concept ID as penicillin. The allergen group can also be used for a single drug ingredient documented to have allergenic potential.

5.11.2 Associations

i. **Ascending association:**
- No ascending association

ii. **Descending association:**
- *Active Ingredient* **has allergen group** *Allergen group; or*
- *Base Ingredient* **has allergen group** *Allergen group*

Attributes

Input Method	Attribute	Properties
System gen	Allergen group concept ID	MTT identifier
User input	Allergen group preferred term	String
User input	Allergen group fully specified name	"Allergen group preferred term" "(Allergen group")"
System gen	Cross-sensitivity Group (multiple entries)	MTT identifier : Cross-sensitivity Group
Source table	Cross-sensitivity group description (multiple entries)	Cross-sensitivity group preferred term from **Cross-sensitivity group** concept
User input	Display in allergen list [Y/N]	Y/N
User input	Suspend	Y/N
User input	Concept Stage	[TBC] MTT concept stage
System gen	Last update by	userID
System gen	Last update date	dd-mmm-yyyy

5.11.3 Allergen Group Description

5.11.3.1 Allergen Group "Fully Specified Name" Definition

The Fully Specified Name of an Allergen Group follows the syntax:

i. Allergen Group FSN = “Allergen Group ”

The components are described as:

Description Component	Definition
Allergen group	The term used to describe the “allergen group”

5.11.3.2 Allergen Group “Fully Specified Name” Rules

Rule ID	Description
MTT-AGP-FSN-1	All rules in "Fully Specified Name definition and Rules" apply Capitalisation rules as defined in “Appendix A – Capitalisation” apply.

5.11.3.3 Allergen Group ”Preferred Term” Definition

The Preferred Term of an Allergen Group concept follows the syntax:

i. Allergen Group PT = “Allergen Group”

The components are described as:

Description Component	Definition
Allergen Group	The term used to describe the “Allergen Group”

5.11.3.4 Allergen Group “Preferred Term” Rules

Rule ID	Description
MTT-AGP-PT-1	All rules in "Preferred Term definition and Rules" apply Capitalisation rules as defined in Appendix apply.

5.12 SUBSTANCE CONCEPT: CROSS SENSITIVITY GROUP

5.12.1 Cross-sensitivity Group Definition:

Cross-sensitivity group represents a group of ingredients that exhibit a risk of cross-sensitive allergic reactions. Patients who are allergic to an ingredient that belongs to one specific allergen group might suffer a cross-sensitive allergic reaction to an ingredient that belongs to a different specific allergen group. The cross-sensitive allergen groups catch cases like this and provide a second layer of allergy screening. Drugs in cross- sensitivity group have shown some degree of cross-allergenicity, and are chemically related or structurally related to the primary allergen.

5.12.2 Associations

i. **Ascending association:**

- No ascending association

ii. **Descending association:**

- *Allergen group* **has cross-sensitivity group** *Cross-sensitivity group*

Attributes

Input Method	**Attribute**	**Properties**
System gen	Cross-sensitivity group concept ID	MTT identifier
User input	Cross-sensitivity group preferred term	String
User input	Cross-sensitivity group fully specified name	"Cross-sensitivity group preferred term" (semantic tag)
User input	Suspend	Y/N
User input	Concept Stage	[TBC] MTT concept stage
System gen	Last update by	userID
System gen	Last update date	dd-mmm-yyyy

5.12.3 Cross-sensitivity Description

5.12.3.1 Cross-sensitivity Group "Fully Specified Name" Definition

The Fully Specified Name of a Cross-sensitivity Group follows the syntax:

i. Cross-sensitivity Group FSN = "Cross-sensitivity Group"

The components are described as:

Description Component	**Definition**

Cross-sensitivity Group	The term used to describe the “cross-sensitivity group”

5.12.3.2 Cross-sensitivity Group “Fully Specified Name” Rules

Rule ID	Description
MTT-XGP-FSN-1	All rules in "Fully Specified Name definition and Rules" apply Capitalisation rules as defined in “Appendix A – Capitalisation” apply.

5.12.3.3 Cross-sensitivity Group ”Preferred Term” Definition

The Preferred Term of a Cross-sensitivity Group concept follows the syntax:

i. Cross-sensitivity Group PT = “Cross-sensitivity Group”

The components are described as:

Description Component	Definition
Cross-sensitivity Group	The term used to describe the “cross-sensitivity group”

5.12.3.4 Cross-sensitivity Group “Preferred Term” Rules

Rule ID	Description
MTT-XGP-PT-1	All rules in "Preferred Term definition and Rules" apply Capitalisation rules as defined in Appendix apply.

5.13 LINKAGE CONCEPT: RELATIONSHIP (LINKAGE) CONCEPTS

5.13.1 Qualifier concept: MTT Relationships Definition

Definition: Relationship (Linkage) concepts are used to identify the type of relationship being using within the MTT. The MTT will include SNOMED CT relationships and HKMTT relationships which are used to:

- Define relationship between concepts
- Add qualifier or substance information to a concept

MTT relationships include:

MTT Relationships	Relationship source
IS A	**SNOMED CT**
has active ingredient	**SNOMED CT**
route of administration	**SNOMED CT**
Is equiv to sct	**MTT**
Is trade equiv of	**MTT**
Has allergen group	**MTT**
Has base ingredient	**MTT**
Has base unit	**MTT**
Has boss	**MTT**
Has cross sensitivity group	**MTT**
Has dispensing dose unit	**MTT**
Has dose form	**MTT**
Has ingredient strength unit	**MTT**
Has ingredient unit of measure	**MTT**
Has manufacturer	**MTT**
Has prescribing dose unit	**MTT**
Has therapeutic classification	**MTT**
Has legal classification	**MTT**
Has simple form	**MTT**
Simple form of	**MTT**

5.13.2 Linkage concept: MTT Relationships Descriptions

5.13.2.1 Relationship Type “Fully Specified Name” Definition

The Fully Specified Name of a Relationship Type follows the syntax:

i. Relationship type FSN = “Relationship type”

The components are described as:

Description Component	**Definition**
Relationship type	The term used to describe the “relationship type”

5.13.2.2 Relationship Type “Fully Specified Name” Rules

Rule ID	**Description**
MTT-LIN-FSN-1	All rules in "Fully Specified Name definition and Rules" apply Capitalisation rules as defined in “Appendix A – Capitalisation” apply.

5.13.2.3 Relationship Type ”Preferred Term” Definition

The Preferred Term of a Relationship Type concept follows the syntax:

i. Relationship type PT = “Relationship type Group”

The components are described as:

Description Component	Definition
Relationship type	The term used to describe the “relationship type”

5.13.2.4 Relationship Type “Preferred Term” Rules

Rule ID	Description
MTT-LIN-PT-1	All rules in "Preferred Term definition and Rules" apply Capitalisation rules as defined in Appendix apply.

5.13.3 MTT Relationship List

Ref	Source concept	System-assigned relationships	Target concept	Type	Defining / Inferred
2	VTM	IS_A	Hong Kong Pharmaceutical Product	IS_A	Defining
3	VTM	IS_EQUIV_TO_SCT	SNOMED CT Identifier	Association	Defining
4	VTM	Has_active_ingredient	Substance	Attribute	Defining
5	VTM	Property : allergy check flag	n/a	Property	Defining
6	VTM	Has simple form	VTM	Association	Defining
7	VTM	Simple form of	VTM	Association	Defining
8	VTM+Route	IS_EQUIV_TO_SCT	SNOMED CT Identifier	Association	Defining
9	VTM+Route	IS_A	VTM	IS_A	Defining
10	VTM+Route	Has_Route	Route	Attribute	Defining
11	VTM+Route	Has_active_ingredient	Substance	Attribute	Inferred
12	VTM+Route	Property : allergy check flag	n/a	Property	Inferred
13	VTM+Route+Form	IS_EQUIV_TO_SCT	SNOMED CT Identifier	Association	Defining
14	VTM+Route+Form	Has_dose_form	Dose form	Attribute	Defining
15	VTM+Route+Form	IS_A	VTM+Route	IS_A	Defining
16	VTM+Route+Form	Property : Dose form level extra information	n/a	Property	Defining
17	VTM+Route+Form	Has_active_ingredient	Substance	Attribute	Inferred
18	VTM+Route+Form	Property : allergy check flag	n/a	Property	Inferred
20	VTM+Route+Form	Has_Route	Route	Attribute	Inferred

21	VMP	IS_EQUIV_TO_SCT	SNOMED CT Identifier	Association	Defining
22	VMP	per each has_active_ingredient	numerical (multiple entries)	Property	Defining
23	VMP	per each Ingredient has_BoSS relationship; has_ingredient_strength_unit	MTT identifier : Ingredient strength unit (multiple entries)	Attribute	Defining
24	VMP	Has_ingredient_unit_of_measure value	numerical (multiple entries)	Property	Defining
25	VMP	Has_ingredient_unit_of_measure	MTT identifier : Ingredient Unit of measure	Attribute	Defining
26	VMP	Has_prescribing_dose_unit	Prescribing dose unit	Attribute	Defining
27	VMP	Has_Base_unit	Base unit	Attribute	Defining
28	VMP	Has_dispensing_dose_unit	Dispensing dose unit	Attribute	Defining
29	VMP	IS_A	VTM+Route+Form	IS_A	Defining
30	VMP	Property : Strength level extra information	n/a	Property	Defining
31	VMP	Has_active_ingredient	Substance	Attribute	Inferred
32	VMP	Property : allergy check flag	n/a	Property	Inferred
33	VMP	Has_Route	Route	Attribute	Inferred
34	VMP	Has_dose_form	Dose form	Attribute	Inferred
35	VMP	Property : Dose form level extra information	n/a	Property	Inferred
36	TradeName	IS_A	Hong Kong Pharmaceutical Product	IS_A	Defining
37	TradeName	is_trade_equiv_of	VTM	Association	Defining
38	TradeName	Has_active_ingredient	substance	Attribute	Defining
39	TradeName	Property : Generic product indicator	n/a	Property	Defining

40	TradeName	Has_active_ingredient	Substance	Attribute	Defining
41	TradeName	Property : allergy check flag	n/a	Property	Defining
42	TradeName+Route	is_trade_equiv_of	VTM+Route	Association	Defining
43	TradeName+Route	Has_Route	Route	Attribute	Defining
44	TradeName+Route	IS_A	TradeName	IS_A	Defining
45	TradeName+Route	Has_active_ingredient	Substance	Attribute	Inferred
46	TradeName+Route	Property : allergy check flag	n/a	Property	Inferred
47	TradeName+Route	Property : Generic product indicator	n/a	Property	Inferred
48	TradeName+Route+Form	is_trade_equiv_of	VTM+Route+Form	Association	Defining
49	TradeName+Route+Form	Has_dose_form	Dose form	Attribute	Defining
50	TradeName+Route+Form	IS_A	MTT identifier : TradeName+Route	IS_A	Defining
51	TradeName+Route+Form	Property : Dose form level extra information	n/a	Property	Defining
52	TradeName+Route+Form	Has_active_ingredient	Substance	Attribute	Inferred
53	TradeName+Route+Form	Property : allergy check flag	n/a	Property	Inferred
54	TradeName+Route+Form	Property : Generic product indicator	n/a	Property	Inferred
55	TradeName+Route+Form	Has_Route	Route	Attribute	Inferred
56	AMP	Has_prescribing_dose_unit	Prescribing dose unit	Attribute	Inferred
57	AMP	Has_Base_unit	Base unit	Attribute	Inferred
58	AMP	Has_dispensing_dose_unit	Dispensing dose unit	Attribute	Inferred
59	AMP	Has_Manufacturer	Manufacturer	Attribute	Inferred

60	AMP	Has_legal_classification	Legal classification	Attribute	Inferred
61	AMP	Has_place_of_origin	Place	Attribute	Defining
62	AMP	Has_therapeutic_classification	Therapeutic classification	Attribute	Defining
63	AMP	Has_certificate_holder	Certificate holder	Attribute	Defining
64	AMP	IS_A	TradeName+Route+Form	IS_A	Defining
65	AMP	is_trade_equiv_of	VMP	Association	Defining
66	AMP	Property : strength level extra information	n/a	Property	Defining
67	AMP	Property : Hong Kong registration number	n/a	Property	Defining
68	AMP	Has_active_ingredient	Substance	Attribute	Inferred
69	AMP	Property : allergy check flag	n/a	Property	Inferred
70	AMP	Property : Generic product indicator	n/a	Property	Inferred
71	AMP	Has_Route	Route	Attribute	Inferred
72	AMP	Has_dose_form	Dose form	Attribute	Inferred
73	AMP	Property : Dose form level extra information	n/a	Property	Inferred
74	AMP	Has_route_of_administration	Route	Attribute	defining
75	Substance [sub-category="allergen group"]	Has_Cross_sensitivity_group	substance	Attribute	Inferred
76	Substance [sub-category="Active ingredient"]	IS_A Base Ingredient	substance (subcategory="base ingredient")	IS_A	Inferred
77	Substance [sub-category="Active ingredient" or "base ingredient"]	Has_Allergen_group	substance (subcategory="allergen group")	Attribute	Inferred

5.14 QUALIFIER CONCEPT: FREQUENCY

5.14.1 Frequency Definition

Frequency refers to the specified time intervals within which medications are to be administered, e.g. “three times daily” as a daily dosing pattern (daily frequency), or “once a month” as supplementary information to indicate the repeating pattern (supplementary frequency) of a daily frequency.

The *Frequency* code table on *eHR Prescribing Record* and *eHR Dispensing Record* data set would refer to selective Frequency concepts on HKCTT.

The *Supplementary Frequency* code table on *eHR Prescribing Record* and *eHR Dispensing Record* data set would refer to selective Frequency concepts on HKCTT.

5.14.2 Associations

i. **Ascending association:**

- No ascending association

ii. **Descending association:**

- No ascending association

Attributes

Input Method	Attribute	Properties
System gen	Frequency concept ID	MTT identifier
User input	Frequency preferred term	String
System gen	Frequency fully specified name	" Frequency preferred term "Frequency" (" Frequency")"
User input	Suspend	Y/N
User input	Concept Stage	MTT concept stage
System gen	Last update by	userID
System gen	Last update date	dd-mmm-yyyy

5.14.3Frequency Description

See Section 6.13 “Appendix L – Frequency” for list of defined dispensing units that are currently maintained and used as structural data for product concepts.

5.14.3.1 Dispensing “Fully Specified Name” Definition

The Fully Specified Name of Frequency concept follows the syntax:

i. Frequency FSN = “Dispensing Dose Unit”

The components are described as:

Description Component	Definition
Dispensing Dose Unit	The term used to describe the “Frequency”

5.14.3.2 Frequency “Fully Specified Name” Rules

Rule ID	Description
MTT-FRE-FSN-1	All rules in "Fully Specified Name definition and Rules" apply Capitalisation rules as defined in “Appendix A – Capitalisation” apply.

5.14.3.3 Frequency ”Preferred Term” Definition

The Preferred Term of a Frequency concept follows the syntax:

i. Frequency Dose Unit PT = “Frequency”

The components are described as:

Description Component	Definition
Frequency	The term used to describe the “Frequency”

5.14.3.4 Frequency “Preferred Term” Rules

Rule ID	Description
MTT-FRE-PT-1	All rules in "Preferred Term definition and Rules" apply Capitalisation rules as defined in Appendix apply.

5.15 QUALIFIER CONCEPT: UNIT OF TIME

5.15.1 Unit of Time Definition

Unit of time refers to a time period over which the overall course of therapy is to run. It describes the course duration unit explicitly, and may be inferred from the total number of doses represented in the dose instruction value.

The *Duration Unit* code table on *eHR Prescribing Record* and *eHR Dispensing Record* data set would refer to Unit of Time concepts on HKCTT.

5.15.2 Associations

i. **Ascending association:**

- No ascending association

ii. **Descending association:**

- No ascending association

Attributes

Input Method	Attribute	Properties
System gen	Unit of Time concept ID	MTT identifier
User input	Unit of Time preferred term	String
System gen	Unit of Time fully specified name	"Unit of Time" preferred term " Unit of Time " ("Unit of Time ")"
User input	Suspend	Y/N
User input	Concept Stage	MTT concept stage
System gen	Last update by	userID
System gen	Last update date	dd-mmm-yyyy

5.15.3Unit of Time Description

See Section 6.14 "Appendix M – Unit of Time" for list of defined Units of Time that are currently maintained and used as structural data for product concepts.

5.15.3.1 Unit of Time "Fully Specified Name" Definition

The Fully Specified Name of Unit of Time concept follows the syntax:

i. Unit of Time FSN = "Unit of Time"

The components are described as:

Description Component	Definition
Unit of Time	The term used to describe the “Unit of Time”

5.15.3.2 Unit of Time “Fully Specified Name” Rules

Rule ID	Description
MTT-UOT-FSN-1	All rules in "Fully Specified Name definition and Rules" apply Capitalisation rules as defined in “Appendix A – Capitalisation” apply.

5.15.3.3 Unit of Time ”Preferred Term” Definition

The Preferred Term of a Unit of Time concept follows the syntax:

i. Unit of Time Dose Unit PT = “Unit of Time”

The components are described as:

Description Component	Definition
Frequency	The term used to describe the “Unit of Time”

5.15.3.4 Unit of Time “Preferred Term” Rules

Rule ID	Description
MTT-FRE-PT-1	All rules in "Preferred Term definition and Rules" apply Capitalisation rules as defined in Appendix apply.

6 APPENDICES

Data tables contained in these Appendices may not be definitive. New entries may be added when required.

6.1 APPENDIX A – CAPITALISATION

6.1.1 Capitalisation Rules

RuleID	Description
MTT-APP-CAP-1	The first character of a description should be in lower case or an integer, applicable to all concept types including the Fully Specified Names, Preferred Terms, Synonyms or other descriptions, unless otherwise specified in as exceptions.
MTT-APP-CAP-2	Trade Names and where trade name appears in other descendent trade concepts will have each word in the name expressed as title case, including the dose form, where it appears as part of the trade name or its suffix.
MTT-APP-CAP-3	Each word in a hyphenated name will be expressed as title case (e.g. Enervon-C Plus)
MTT-APP-CAP-4	unique brand specific casing will be preserved as of that given by the manufacturers
MTT-APP-CAP-5	Articles and conjunctions such as "the", "and", and "with" will be in lower case
MTT-APP-CAP-6	Certain words, such as "plus" may be either in upper case or lower, depending on their use
MTT-APP-CAP-7	Full proper nouns will be expressed (e.g. Bacillus Calmette and Guerin) Abbreviated descriptions such as "BCG" would be maintained as the alias name, where applicable.
MTT-APP-CAP-8	Roman numerals will always be expressed in upper case (e.g. factor VIII, antithrombin III)
MTT-APP-CAP-9	Chemical elements will be expressed in upper case (e.g. for carbon - "C"), or mixture of upper and lower case (e.g. sodium - "Na") as it is specified by the International Union of Pure and Applied Chemistry (IUPAC) convention.
MTT-APP-CAP-10	Single letters following a substance name will be expressed in upper case (e.g. vitamin C, amphotericin B, hepatitis B)
MTT-APP-CAP-11	Scientific names used to describe an organism will be expressed in full names and upper or lower case according to convention (e.g. Haemophilus influenzae, Streptococcus aureus)
MTT-APP-CAP-12	Organic substance names Each name will be expressed in lower case and will have any digits or single letters preceded and followed immediately by a hyphen (e.g. methyl-2-methoxy-3-pyrazine) Chemical ring position will always be expressed in lower case (e.g. para-dicholorobenzene)
MTT-APP-CAP-13	Isomeric prefixes D, L, S, R, E or Z will be indicated using a capital letter followed by a hyphen. The name entity itself will be entirely in lower case (see above) (e.g. N-acetylcysteine, D-alpha tocopherol). The isomeric planar rotation (chirality) should be indicated in capital letters.

MTT-APP-CAP-14	Greek symbols will be expressed as the English spelling of the word, rather than using traditional Greek symbol (e.g. alpha for "α", beta for "β", gamma for "γ")

6.2 APPENDIX B – INGREDIENT NAMING CONVENTIONS

6.2.1 The Ingredient Naming Conventions

RuleID	Description
MTT-APP-ING-1	As described in previous sections, the FSN and PT of a Virtual Therapeutic Moiety (VTM) will be composed of the preferred terms of its active ingredient(s), including the salt.
MTT-APP-ING-2	It is considered that despite the physiological salt (or the modified form) does not materially affect the use of a compound, the name will however be represented with the salt regardless but in two different ways: In VTMs where a product's strength is expressed in terms of the whole compound (i.e. including the salt), the ingredient should be have the entire compound name as the preferred term (e.g. "lithium carbonate") If the product strength is expressed in terms of the base ingredient (i.e. excluding the salt), then the ingredient description should be expressed such that the base ingredient is expressed with its salt or ester contained within a bracket (e.g. "amoxicillin (as trihydrate)"). In case where product strength expressed in terms of the isotope, then the description should be expressed in terms of the isotope, followed by the salt or ester contained within a bracket (e.g. “iodine-131 (sodium iodide)”).
MTT-APP-ING-3	The active ingredient names will be derived from the International Non-proprietary Names (INN), followed by other approved or clinically intuitive names. In cases where the drug name enlisted in the Poisons List Regulations (Cap 138B) differs from the recommended INN, the name used in the Poisons List Regulations would be the preferred description.
MTT-APP-ING-4	Ingredients Ending in "-ate": Ingredients that end in "-ate" when available as a salt, shall be changed so that the base is represented by ending in "-ic acid" where appropriate. The current edition of Martindale : The Complete Drug Reference will be the reference source.
MTT-APP-ING-5	Clinically Significant Portion of Ingredient Name: Ingredients shall have the order of their name changed where necessary, so that the clinically significant part of the salt name is represented first (e.g. Ingredient name "calcium folinate" renamed to "folinate calcium".
MTT-APP-ING-6	Ingredient Minus Base Name: Sometimes "IngredientMinusBase" has been changed in order for the expression to make more sense in the context in which it is used. In these cases, IngredientMinusBase does not equal the salt component of the name minus the base component of the name, and is represented by a more intuitive name. This is often the case with modified salts, or salts where the base ingredient name has been modified as in: Ingredient name "
MTT-APP-ING-7	Insulins : Name for insulin will be modified to show the type of insulin as follows: Insulin Aspart / Insulin aspart protamine / insulin detemir / insulin glargine / insulin lispro / insulin lispro protamine / insulin isophane bovine / insulin isophane human / insulin neutral bovine / insulin neutral human

MTT-APP-ING-8	Virtual Medicinal Product Preferred Term Sequence of Active Ingredients: <this is a list of products where the sequence of ingredients is not alphabetical. These are exceptions based on: Clinical practice, one or more of the ingredients has no inherent action in its own right, or local anaesthetic agents in all topical preparations, including those for oral/buccal use, followed by all other ingredients in alphabetical order.> For vaccine products, the organisms names should start with lower cases, and for multi-ingredient vaccines, the names be separated by a "+" sign. The names need not be sorted by any orders, but subject to editorial decision based on its clinical significance and its common use in current practice. (e.g. diphtheria + tetanus + pertussis) note: the product strength of such items, which have the order of the active ingredients rearranged by this exception rule, should also be rearranged in the same order, so that the strengths are in the same order of the active ingredients.
MTT-APP-ING-9	Special properties of a substance, or in the case of vaccine products the organism, this information should follow the organism/substance name, separated by a <Space>. In cases where there is more than one special properties, each of these would be separated by an unbreakable space between them. (e.g. diphtheria + tetanus + pertussis acellular). Special property of a group of ingredients should be expressed after a comma (","). If a property that is a characteristic of the entire vaccine formulation, then such information should be added before the word vaccine. (e.g. "measles +mumps + rubella , live vaccine") where the special properties (e.g. conjugated, adsorbed) were used to describe the physical pharmaceutical formulation, these information need not be included as part of the VTM's preferred term. Information that is related to individual component's properties (such as split virion, attenuated, inactivated) should be included as part of the VTM's preferred term; taking reference to the names given by the manufacturer, and only clinical significant information would be added.
MTT-APP-ING-10	Products with more than 2 ingredients: All the ingredients should be listed EXCEPTION: influenza virus vaccines – the fully specified names will be maintained as specified above; the preferred term will be in expressed as “influenza virus vaccine”. Please refer to chapter 6.12.5 for details
MTT-APP-ING-11	Referring to rule -APP-ING-8 above, VMP and AMP for which the sequence of their active ingredients should not be alphabetical in the naming of its VTM, based on: - clinical significance of the ingredient in the medicinal compound; - one or more ingredients has no inherent action in its own right; - local anaesthetic agents are listed in all topical preparations, including those for oral/buccal use, followed by all other ingredients in a logical order

	based on editorial team's discretion, based on the above editorial principles; - this rule applies to all naming of all concepts within where ingredients should be listed in the generic drug name.
MTT-APP-ING-12	For compound preparations that have product strength expressed in terms of the total amount of therapeutic activity (e.g. elemental iron, elemental calcium), the ingredient(s) listed should preferably be expressed in terms of the amount of the whole compound (i.e. the salt) where available
MTT-APP-ING-13	Isotopes and nuclides should be named by the full element name, followed by a hyphen (i.e. "-") and the mass number (e.g. iodine-131, carbon-13, gallium-67, radium-226).

6.2.2 Clinically Significant Portion of Ingredient Name [5]

Ingredients will have the order of their name changed where necessary, so that the clinically significant part of the salt name is expressed first. The table below shows some of the example where the ingredient name is arranged to display the clinically significant portion:

Ingredient name	HK ingredient name
calcium folinate	folinate calcium
disodium etidronate	etidronate disodium
disodium pamidronate	pamidronate disodium
sodium cromoglycate	cromoglycate sodium
sodium fusidate	fusidate sodium
sodium valproate	valproate sodium
sodium alendronate	alendronate sodium
sodium citrate	citrate sodium
dipotassium clorazepate	clorazepate dipotassium
disodium clodronate	clodronate disodium
sodium docusate	docusate sodium
silver sulfadiazine	sulfadiazine silver
activated charcoal	charcoal-activated

6.2.3 Waters of Hydration

6.2.3.1 Waters of hydration shall be expressed for each ingredient where hydration is present. Where an ingredient is found to be anhydrous, this shall not be expressed. Lack of an expression of hydration assumes the ingredient to be anhydrous.

Where a salt is deemed to be clinically significant or clinically relevant, then any associated waters of hydration are also deemed to be significant or relevant.

6.2.3.2 Examples (FSNs):
VTM: ondansetron (as hydrochloride dihydrate)
VTM: ibandronic acid (as ibandronate sodium monohydrate)

6.2.4 Insulins

6.2.4.1 Insulin products shall be represented in a way that the word "insulin" should appear first in the VTMs. The source of origin of insulin should be specified in the VTM descriptions and concepts (e.g. human, porcine, and bovine) except for those insulin produced as human analogs by recombinant DNA technology. (refer to Appendix 6.2.13 for detailed information on the expression rules of insulin products).

6.2.4.2 Examples of human insulin analog products include (FSNs):
Insulin aspart
Insulin lispro
Insulin detemir
Insulin glargine

6.2.4.3 For other insulin preparations the sources of origin will have to be included, examples are (FSNs):
Insulin neutral human
Insulin isophane human
Insulin zinc suspension (soluble) bovine
Insulin protamine zinc bovine

6.3 APPENDIX C – STRENGTH EXPRESSIONS [9]

6.3.1 General Strength Expression Rules

RuleID	Description
MTT-APP-STR-1	The strength units will be consistent with the unit of measure reference set
MTT-APP-STR-2	The strength of an active ingredient should be expressed by a number between 1 and 999 metric units
MTT-APP-STR-3	For power for injections, the strength would be expressed in terms of the total amount of the active drug. Where there may be information provided as to the final volume after reconstitution in accordance to the product literature, the volume should be documented (currently in the remarks box) but this information would not be taken into the creation of the VMP's preferred term.
MTT-APP-STR-5	VMP and AMP for products where the product contains a single ingredient, the strength of such products should follow the dose form of the description, hence the following syntax should apply: "ingredient name" "route" "doseform" "strength" e.g. paracetamol oral tablet 500 mg
MTT-APP-STR-6	For naming the ***FSN and PT of VMP and AMP*** for multi-ingredient products, the strength of each of the component should be appended after each of the individual ingredient component, hence the following syntax should apply: "ingredient1" "strength1" + "ingredient2" "strength2" + "ingredient3" "strength3" "route "doseform" e.g. amlodipine (as besilate) 5 mg + valsartan 80 mg oral tablet This rule is also applicable to vaccine products where the same virus name may be used repeatedly in the VTM (but of different strains) e.g. for the vaccine with VTM: "diphtheria toxoid vaccine + tetanus toxoid vaccine + Bordetella pertussis, acellular pertussis toxoid vaccine + Bordetella pertussis, filamentous haemagglutinin vaccine + poliomyelitis virus type 1 inactivated vaccine + poliomyelitis virus type 2 inactivated vaccine + poliomyelitis virus type 3 inactivated vaccine" Each component should have their strength expressed immediately after the component description, i.e.: "diphtheria toxoid vaccine minimum **30 international unit / 0.5 mL** + tetanus toxoid vaccine minimum **40 international unit / 0.5 mL** + Bordetella pertussis, acellular pertussis toxoid vaccine minimum **25 microgram / 0.5 mL** + Bordetella pertussis, filamentous haemagglutinin vaccine minimum **25 microgram / 0.5 mL** + poliomyelitis virus type 1 inactivated vaccine minimum **40 D antigen unit / 0.5 mL** + poliomyelitis virus type 2 inactivated vaccine minimum **8 D antigen unit / 0.5 mL** + poliomyelitis virus type 3 inactivated vaccine minimum **32 D antigen unit / 0.5 mL** intramuscular prefilled syringe"

RuleID	Description
MTT-APP-STR-7	For naming the ***shortname descriptions of VMP and AMP*** for multi-ingredient products, the strength of each component should be appended after each of the individual component, hence the following syntax should apply: "shortname1" "strength1" + "shortname2" "strength2" "route" "doseform" In cases where the ingredient components are combined into a single description but with a varying amount, the strength should again but expressed by the shortname description, and each strength value should be separated by a comma (","), then followed by a common strength unit, i.e.: "shortname" "strengthvalue1 , strengthvalue2 , strengthvalue3" "strength unit" "route" "doseform", for example: diphtheria toxoid 30 international unit / 0.5 mL + tetanus toxoid 40 international unit / 0.5 mL + pertussis acellular **8 , 25 , 25 microgram** / 0.5 mL vaccine intramuscular prefilled syringe
MTT-APP-STR-8	For liquid dosage form, the strength would be expressed as the amount of active ingredients per unit volume. i.e. 100 mg / 5 mL In multi-ingredient products, as each of the ingredient component would be followed by its strength, hence: "ingredient1" "strengthvalue1 strength unit1" / "volumevalue1 volumeunit1" + "ingredient2" "strengthvalue2 strength unit2" / "volumevalue2 volumeunit2" "route" "doseform" For example: codeine phosphate 9 mg / 5 mL + ephedrine hydrochloride 6 mg / 5 mL + promethazine hydrochloride 3.6 mg / 5 mL oral syrup
MTT-APP-STR-9	Exception to the strength expression rules for multiple ingredient products: Multi- ingredient product with combined-strength expression In normal circumstances for naming the FSN and PT of VMP and AMP for multi-ingredient products, the strength of each of the component should be appended after each of the individual ingredient component; hence the following syntax should apply: "ingredient1" "strength1" + "ingredient2" "strength2" + "ingredient3" "strength3" "route "dose form" e.g. VMP: amlodipine (as besilate) 5 mg + valsartan 80 mg oral tablet However in some exceptions the combined strength of all ingredients is of more clinically significant values because the combined strength is used during prescribing, with the fact that the strengths and strength ratios of the ingredients are standardized for these items. Hence for these multi-ingredient products the combined strength is used as strength and appended as below (similar to single-ingredient products): "ingredient1" + "ingredient2" + "ingredient3" “route” “dose form” “strength” e.g. VTM: amoxicillin (as trihydrate) + clavulanate (as potassium) VMP: amoxicillin (as trihydrate) + clavulanate (as potassium) oral tablet 375 mg

RuleID	Description
	AMP: Augmentin (amoxicillin (as trihydrate) + clavulanate (as potassium)) oral tablet 375 mg where the ingredients for this product are amoxicillin (as trihydrate) 250 mg and clavulanate (as potassium) 125 mg
MTT-APP-STR-10	If the number of units is less than 1, the next lower unit level should be used (e.g. 500 micrograms should be used in preference to 0.5 mg); If the number of units is equal to or greater than 1000, the next higher unit level should be used (e.g. 2 g should be used in preference to 2000 mg). Therefore the units of strength may vary within a single products. e.g. Ceftriaxone may have powder for injection strengths of 500mg, 1 g and 2 g. exception: non-metric units such as CCID50 or TCID50 where it is practically not possible convert.
MTT-APP-STR-11	Where the trade name or suffix of a product implies a strength unit, this should be disregarded in the strength expression of the product, and the above rule applies.
MTT-APP-STR-12	Exceptions of the above: safety considerations will be taken into account when converting units. If dose titration is likely to occur across a range of products, then strength units for the product group will be reviewed on an individual basis, especially if titration involves the use of more than one strength unit.
MTT-APP-STR-13	Strengths of ingredients less than 1 microgram will be reviewed on an individual basis to ensure the represented strength reflects its use in clinical practice (e.g. alfacalcidol is expressed in 0.25 micrograms not 250 nanograms)
MTT-APP-STR-14	Large volume liquids such as oral solutions, parenteral infusions, irrigation fluids, haemodialysis solutions, peritoneal solutions will not be converted to "Litres" and will always be shown in millilitres ("mL")
MTT-APP-STR-15	Where the volume is less than 1 millilitre it will not be converted (as current clinical practice these values will not be expressed as microlitres)
MTT-APP-STR-16	Where the molar value is less than 1 micromole it will not be converted (as current clinical practice these values will not be expressed as nanomoles)
MTT-APP-STR-17	Where the unit of measure in an index of reactivity (IR) with a value less than 1, it will not be converted (as in current clinical practice these values cannot be converted)
MTT-APP-STR-18	A space should be inserted between the strength value and strength unit. This space must be a non-breaking space to ensure that the strength value and strength unit expressions are always kept together
MTT-APP-STR-19	Strength units should always be expressed as singular regardless of the strength value.
MTT-APP-STR-20	The percentage strength will not be qualified with the appropriate w/w or w/v
MTT-APP-STR-21	A strength expression is mandatory unless otherwise defined as an exception (e.g. Aqueous cream)

RuleID	Description
MTT-APP-STR-22	If the strength value or volume of a product is expressed in a range, the lower numerical value should be stated, followed by a hyphen "-" and then the upper numerical value and the unit that is common to express the two values (e.g. iodine-131 (as sodium iodide) oral capsule 37 - 5550 megabecquerel).
MTT-APP-STR-23	If the strength value or volume of a product is expressed with a lower limit only (i.e. no less than, contains equal to or greater than, more than) the strength or volume should be expressed with the word "minimum" followed by the strength or volume (e.g. rubella live vaccine attenuated vaccine minimum 1000 unit injection
MTT-APP-STR-25	For vaccine products, if the product is supplied as multi-dose vial and there exists more than one pack sizes (i.e. differing number of doses contained in the multi-dose vial), the strength should be expressed in "dose value" / "dose unit volume", e.g. 0.25 mg / 0.5 mL
MTT-APP-STR-26	An unbreakable <space> should be inserted before and after a separator symbol. Strength expression for a liquid dosage form: 400 mg / 5 mL Expression of special properties that should be applied to multi-ingredients in a product with multi-component:
MTT-APP-STR-27	If the strength unit is international unit, the full expression "international unit" should be used.
MTT-APP-STR-28	All rules in Appendix "Strength Expression Rules for Specific Dose Forms" apply.
MTT-APP-STR-29	In order to maintain VTM for those fluids and electrolytes without the strength (e.g. for the VMP "sodium chloride 5 % parenteral solution for infusion", its upstream parent VTM should be "sodium chloride" (NOT sodium chloride 5 %); therefore for entering the "VTM" value, "sodium chloride" should be entered, strength should be maintained as "5 %"; since under our current rule for single ingredient products, the strength will only be appended at the end of the product (VMP and AMP) description - for "IV fluids and eye/ear/nasal drops which contains electrolytes or salts, the strength needs to be appended after the "VTM" such that "sodium chloride 5 % parenteral solution for infusion" or "sodium chloride 0.9 % eye drops" can be more accurately expressed. The same principle should be applied to trade names of generic products where the trade name would be expressed as "sodium chloride (B Braun)" (HK-28240) and the resulting AMP should be expressed as "sodium chloride 5 % (B Braun) parenteral solution for infusion".

6.3.2 Strength Expression Rules for Specific Dosage Forms [6][7][8]

The following table summarises the editorial rules and exceptions for displaying strengths in various pharmaceutical dosage forms.

Dose forms	Rules
Solid unit dose forms **Examples:** **Tablet, buccal tablet, chewable tablet, dispersible tablet, effervescent tablet, modified-release tablet, soluble tablet, sublingual tablet, capsule, modified-release capsule, pessary, suppository, lozenge, pastille, chewing gum, oral lyophilisate, etc.**	The strength will be expressed as the amount per unit dose form. For example: amoxicillin (as trihydrate) oral capsule 500 mg allopurinol oral tablet 100 mg Baclofen oral tablet 10 mg azithromycin (as dehydrate) oral tablet 250 mg
Liquid unit dose forms – injections and intravenous infusions **Examples:** **ampoule, vial, pre-filled syringe, cartridge, bottle, bag, etc.**	The strength will be expressed as the total amount of active drug present, in terms of the following in the unit dose volume, for example: gentamcin sulfate parenteral injection 80 mg / 2 mL Exception: For dose forms that do not have an associated specific strength. water for injection will not have a specified strength, therefore should be expressed as: water for injection ampoules 10 mL
Liquid unit dose forms – others **multi-dose injections**	The strength will be expressed as the amount of active drug per mL This method will be used for insulins and other identified multi-dose injection dose forms where the intention is that only a proportion of the total dispensed quantity will be administered at any one time, for example: insulin aspart subcutaneous injection 100 international unit / mL
Liquid unit dose forms – large volume injections for large volume infusion fluids such as electrolyte replacement, nutritional therapy, plasma substitutes, etc.	The strength will be expressed as a percentage, for example: sodium chloride 0.9 % intravenous infusion bag
Liquid unit dose forms – **Multi-dose or single –dose eye / ear / nasal drops**	The strength will be expressed as percentage. Depending upon the product this can be % w/w, % w/v, % v/w, or % v/v. Occasional the strength may be expressed as the amount per mL where it is more clinical relevant. Mass per mL – mg / mL, microgram / mL Activity – unit / mL Exception:

Dose forms	Rules
	Some products such as physiological saline may have their strength expressed as part of the VTM (i.e. sodium chloride 0.9 % (product)); therefore do not require to express the strength. Examples: ofloxacin eye drops 3 mg / 1 mL diclofenac sodium eye drops 0.1 % prednisolone sodium phosphate eye drops (minims) 0.5 % Tarivid (ofloxacin) ear drops 3 mg / 1 mL Garamycin (gentamicin) eye and ear drops 0.3 % codeine hydrochloride eye and nasal drops 5 % Otrivin (xylometazoline hydrochloride) nasal drops 0.1 % Restasis (ciclosporin) ophthalmic emulsion 0.05 %
Liquid unit dose forms – Others **sachets of liquids, nebulizer liquid unit dose vials,**	The strength will be expressed as the total amount of active drug per total volume in a single dose unit; the amount may be expressed as weight or units of the active drug, for example: Weight: mg, microgram, g, nanogram, or Number of units – international units, units, million units budesonide inhalation nebulising solution 1 mg / 2 mL dornase alfa inhalation solution 1 mg / 1 mL diazepam rectal solution 10 mg / 2.5 mL
Continuous solid unit dose forms **Examples:** **granules, powder**	The strength will be expressed as the weight of the active drug per container. In some cases, the strength may be expressed as a percentage, in which case the weight of the active drug will be expressed together with the percentage. For example: testosterone base oral powder 25 g / sachet biotin oral powder 10 mg / sachet Biosorb (maize starch sterilisable) oral powder 1.5 g / packet sterculia granules 7 g / sachet
Continuous semi-solid preparations **Examples:** **cream, gel, ointment**	The strength will be expressed as percentage. Depending upon the product this can be % w/w, % w/v, % v/w, or % v/v. Occasional the strength may be expressed as the amount per gram where it is more clinical relevant. Mass per gram – mg / g, microgram / g Activity – unit / g

Dose forms	Rules
	Exception: Products such as aqueous cream do not require strength to be expressed. Examples: acyclovir topical cream 5 % 2 g acyclovir ophthalmic ointment 3 % 4.5 g diclofenac sodium topical gel 1 % 20 g betamethasone (as dipropionate) topical cream 0.05 % 15 g nystatin topical cream 100,000 unit / g tacrolimus topical ointment 0.1 % 30 g
Continuous liquid preparations – For oral use **Example:** **solutions, suspensions, emulsions, liquids**	The strength will be expressed as the amount of active drug per a stated unit volume, as it is represented on the product package / product literature. Examples: amoxicillin oral suspension 125 mg / 5 mL azithromycin oral suspension 200 mg / 5 mL erythromycin (as ethylsuccinate) oral syrup 125 mg / 5 mL where a powder for oral suspension is labeled in terms of the reconstituted form, the strength will be represented as the amount of active drug in the reconstituted dose volume, for example: amoxicillin oral powder for suspension 250 mg / 5 mL
Continuous solid preparations (non-unit dose form) – **granules, powder**	The strength will be expressed as a percentage but may be expressed as a weight per weight or weight per volume, for example: silver nitrate caustic pencil 95 % Metamucil (ispaghula husk) oral powder 3.4 g / 5.9 g

Dose forms	Rules
Patches **(transdermal patches)**	The strength will be expressed as the amount of active drug released over a stated period of time. The amount will usually be a weight (mg, microgram) and the time will depend on the clinical use of the product as specified on the product information. In general, a patch used for pain relief will often express the strength as the amount of drug released per hour, whereas a HRT patch is usually over 24 hours. Some nicotine patches are designed to be worn during day-time and for these preparations, express the strength over 16 hour period. For example: estradiol transdermal patch 25 microgram / 24 hours estradiol transdermal patch 100 microgram / 100 hours fentanyl transdermal patch 50 microgram / 1 hour glyceryl trinitrate transdermal patch 10 mg / 24 hours hyoscine hydrobromide transdermal patch 1 mg / 72 hours nicotine transdermal patch 10 mg / 16 hours rotigotine transdermal patch 4 mg / 24 hours
Inhalers and sprays **Example:** **metered-dose inhalers, sprays, dry powder inhalers, nasal spray, sublingual spray**	The strength will be expressed as the amount of drug per actuation. The amount will usually be expressed as the weight of active drug, for example: beclomethasone dipropionate inhaler (CFC-free) 50 microgram / actuation beclomethasone dipropionate breath actuated inhaler (CFC-free) 250 microgram / actuation
Pre-filled syringes / implants / vaginal rings / intra-uterine devices	The strength will be expressed as the amount of active drug per device or as the amount released over a stated period of time (i.e. mass / x hr), for example: goserelin (as acetate) implant pre-filled syringe 10.8 mg Mirena (levonorgestrel) intrauterine device 52 mg
Dry powder injections **(For products with unknown dilution volume)**	The strength will be expressed as the amount of active drug per vial. This will usually be a weight but may be expressed as a number of units Example: amoxicillin parenteral powder for solution for injection 500 mg / vial

Dose forms	Rules
Dry powder injections **(For products with final diluted volume as recommended by manufacturer)**	The strength will be expressed as the amount of active drug per final reconstituted volume. This is the volume after reconstitution of the powder as recommended by the manufacturer; this does not include any further dilution or manipulation of the volume. This will usually be a weight but may be expressed as a number of units. Example: Oxaliplatin parenteral powder for solution for injection 100 mg / 16.7 mL

6.3.3 Dual Representation

6.3.3.1 Dual representation of strength will be considered where clinical relevant. For example:

- Insulin products –
  - For multiple ingredient preparations, the combined overall strength (units per mL) of the multi-ingredient insulin preparations remain clinically significant as the ratios of the different insulin ingredients are standardized and the drugs are prescribed in terms of the combined strength; whereas the ratio of the ingredients remains a clinically important information. Therefore the strength expression for these multi-ingredient insulin preparations is modified to suit both purposes. (Refer to Chapter 6.12.3 for detailed strength expression rule on insulin products.)
- parenteral solutions containing electrolytes – the number of mmol of electrolytes will be stated as well as the amount of the salt (where possible);
- eye drops, creams and ointments – the percentage of active ingredient may be stated as well as the amount of active ingredient per unit measure.

6.4 APPENDIX D – ROUTE OF ADMINSTRATION [9][10][11][12]

6.4.1 The HKMTT routes will be referencing, and with their definitions extracted from the following standard terminologies:

- The Compendium of Pharmaceutical Products, Department of Health, HKSAR.
- UK NHS dm+d "Virtual Medicinal Product Route (List D) – the VMP route consists of European Directorate for the Quality of Medicines & Healthcare (EDQM) Standard terms.
- Australian TGA Approved Terminology for Medicines – Chapter 2 : Australian Approved Terms for Use in the Completion of Applications for the Registration or listing of Therapeutic Goods, section 6 – Routes of Administration
- US Food and Drug Administration (FDA) Centre for Drug Evaluation and Research (CDER) Data Standard Manual (Data Element #C-DRG-00301 Route of Administration)

Table - MTT Route List

Route of Administration	Definition
buccal	Buccal pertaining to the cheek cavity
dental	Dental Pertaining to the teeth or a tooth
ear	Administered into the ear
ear, eye and nasal	Administered into the eye or ear or in or within the nose
endotracheopulmonary	Administered via an endotracheal tube
epidural	Administered to the outside, upon, or over the dura mater
epidural and infiltration	Administered to the outside, upon, or over the dura mater
epidural and infiltration and intrathecal	Administered to the outside, upon, or over the dura mater, or introduced in the inside of, or into, the trachea
epilesional	Introduced directly to a lesion
external	Administration or use for outside of the body.
eye	Administered into the eye
eye and ear	Administered into the eye or ear
eye and ear and nasal	Administered into the eye, ear or in or within the nose
eye and nasal	Administered into the eye or in or within the nose
gastroenteral	Administration of a medicinal product to the stomach
haemodialysis	Clearance of the blood by means of a semi-permeable membrane
haemofiltration	Clearance of the blood by the use of positive pressure across a semi-permeable membrane and the use of replacement fluid

Route of Administration	Definition
infiltration	Infiltration is the diffusion or accumulation of medicinal substances in a tissue or skin.
inhalation	Taking into the lungs by breathing through the nasal or oral respiratory route for local or systemic effect
instillation	Dropping of a liquid on or into a body part.
intra-arterial	Within an artery or arteries
intra-articular	Within a joint or inside the cavity of a joint
intracatheter	Administered into or via an indwelling catheter
intracavernosal	Within the tissues of the corpus cavernosum penis, but not including urethral administration or application to the skin
intracervical	Administration of a medicinal product into the cervix uteri
intracisternal	Within or into a cistern
intradermal	Within the dermis
intradiscal	Into or within the fibrocartilage plates separating the articulating surfaces of bone
intraepidermal	Administration within the epidermis
intralesional	Introduced directly into a localised lesion
intramuscular	Within or into the substance of a muscle
intranasal	Administered into the nose
intraocular	Within the eyeball
intraperitoneal	Within the cavity of the peritoneum
intrapleural	Within the pleura or the cavity of the pleura
intrathecal	Administered through the theca of the spinal cord into the subarachnoid space, or within the spinal meninges
intratracheal	Introduced in the inside of, or into, the trachea
intrauterine	Within or inside the uterus
intravascular	Administered into the blood vessels
intravenous	Within or into a vein
intravesical	Within the urinary bladder, or within any other bladder
intravitreal	Within the vitreous cavity of the eye
miscellaneous	miscellaneous
mucosal	Applied to a mucous membrane
nasal	Administered into or within the nose

Route of Administration	Definition
ophthalmic	Administered into the eye
oral	Taken through the mouth into the gastrointestinal system
oral and intravenous	Taken through the mouth into the gastrointestinal system, or administered into a vein
oral and parenteral	Taken through the mouth into the gastrointestinal system, or administered parenterally
oral and rectal	Taken through the mouth into the gastrointestinal system, or inserted into the rectum
oral application	Applied in or within the mouth cavity for a local effect. Not meant to be swallowed. e.g. Mouth lotion/gel or mouth gargles, etc.
oromucosal	Administration of a medicinal product to the oral cavity to obtain a local or systemic effect. Oral use is excluded.
parenteral	Administration by means other than the gastrointestinal tract; usually involves piercing of skin or mucous membrane.
parenteral and inhalation	Administration by means other than the gastrointestinal tract; usually involves piercing of skin or mucous membrane, or by taking into the lungs by breathing through the nasal or oral respiratory route for local or systemic effect
periarticular	Administered in the cellular and fibrous tissues surrounding a joint
peritoneal	Within the cavity of the peritoneum
raw materials	Materials used for manufacturing, processing or repacking. Not for retail use.
rectal	Through the rectum
subconjunctival	Administered beneath the conjunctiva of the eye
subcutaneous	Administered beneath the skin
sublingual	Administered beneath the tongue for a systemic effect
submucosal	Administered or introduced beneath a mucous membrane
topical	Applied to a certain area of the skin for a localised effect
transdermal	Applied to the skin for a systemic effect by the diffusion or continuous absorption of the active ingredient through the skin
urethral	Administered through the urethra
vaginal	Applied into the vagina
buccal	Buccal pertaining to the cheek cavity
dental	Dental Pertaining to the teeth or a tooth
ear	Administered into the ear
ear, eye and nasal	Administered into the eye or ear or in or within the nose

Route of Administration	Definition
endotracheopulmonary	Administered via an endotracheal tube
epidural	Administered to the outside, upon, or over the dura mater
epidural and infiltration	Administered to the outside, upon, or over the dura mater
epidural and infiltration and intrathecal	Administered to the outside, upon, or over the dura mater, or introduced in the inside of, or into, the trachea
epilesional	Introduced directly to a lesion
external	Administration or use for outside of the body.
eye	Administered into the eye
eye and ear	Administered into the eye or ear
eye and ear and nasal	Administered into the eye, ear or in or within the nose
eye and nasal	Administered into the eye or in or within the nose
gastroenteral	Administration of a medicinal product to the stomach
haemodialysis	Clearance of the blood by means of a semi-permeable membrane
haemofiltration	Clearance of the blood by the use of positive pressure across a semi-permeable membrane and the use of replacement fluid
infiltration	Infiltration is the diffusion or accumulation of medicinal substances in a tissue or skin.
inhalation	Taking into the lungs by breathing through the nasal or oral respiratory route for local or systemic effect
instillation	Dropping of a liquid on or into a body part.
intra-arterial	Within an artery or arteries
intra-articular	Within a joint or inside the cavity of a joint
intracatheter	Administered into or via an indwelling catheter
intracavernosal	Within the tissues of the corpus cavernosum penis, but not including urethral administration or application to the skin
intracervical	Administration of a medicinal product into the cervix uteri
intracisternal	Within or into a cistern
intradermal	Within the dermis
intradiscal	Into or within the fibrocartilage plates separating the articulating surfaces of bone
intraepidermal	Administration within the epidermis
intralesional	Introduced directly into a localised lesion
intramuscular	Within or into the substance of a muscle
intranasal	Administered into the nose

Route of Administration	Definition
intraocular	Within the eyeball
intraperitoneal	Within the cavity of the peritoneum
intrapleural	Within the pleura or the cavity of the pleura
intrathecal	Administered through the theca of the spinal cord into the subarachnoid space, or within the spinal meninges
intratracheal	Introduced in the inside of, or into, the trachea
intrauterine	Within or inside the uterus
intravascular	Administered into the blood vessels
intravenous	Within or into a vein
intravesical	Within the urinary bladder, or within any other bladder
intravitreal	Within the vitreous cavity of the eye
miscellaneous	miscellaneous
mucosal	Applied to a mucous membrane
nasal	Administered into or within the nose
ophthalmic	Administered into the eye
oral	Taken through the mouth into the gastrointestinal system
oral and intravenous	Taken through the mouth into the gastrointestinal system, or administered into a vein
oral and parenteral	Taken through the mouth into the gastrointestinal system, or administered parenterally
oral and rectal	Taken through the mouth into the gastrointestinal system, or inserted into the rectum
oral application	Applied in or within the mouth cavity for a local effect. Not meant to be swallowed. e.g. Mouth lotion/gel or mouth gargles, etc.
oromucosal	Administration of a medicinal product to the oral cavity to obtain a local or systemic effect. Oral use is excluded.
parenteral	Administration by means other than the gastrointestinal tract; usually involves piercing of skin or mucous membrane.
parenteral and inhalation	Administration by means other than the gastrointestinal tract; usually involves piercing of skin or mucous membrane, or by taking into the lungs by breathing through the nasal or oral respiratory route for local or systemic effect
periarticular	Administered in the cellular and fibrous tissues surrounding a joint
peritoneal	Within the cavity of the peritoneum
raw materials	Materials used for manufacturing, processing or repacking. Not for retail use.

Route of Administration	Definition
rectal	Through the rectum
subconjunctival	Administered beneath the conjunctiva of the eye
subcutaneous	Administered beneath the skin
sublingual	Administered beneath the tongue for a systemic effect
submucosal	Administered or introduced beneath a mucous membrane
topical	Applied to a certain area of the skin for a localised effect
transdermal	Applied to the skin for a systemic effect by the diffusion or continuous absorption of the active ingredient through the skin
urethral	Administered through the urethra
vaginal	Applied into the vagina

*parenteral includes intra-arterial, intra-articular, intracavernosal, intracervical, intracisternal, intradermal, intradiscal, intraepidermal, intralesional, intramuscular, intrapleural, intrathecal, intratracheal, intravenous, intravesical, intravitreal.

6.5 APPENDIX E – DOSE FORM [13][14][15][16]

6.5.1 The HKMTT dose forms will be referencing, and with their definitions extracted from the following standard terminologies:

- The Compendium of Pharmaceutical Products, Department of Health, HKSAR
- UK NHS dm+d "Virtual Medicinal Product Form (List C) – the VMP form consists of European Directorate for the Quality of Medicines & Healthcare (EDQM) Standard terms. dm+d has made amendments to minimize multiplicity of terms or excluded terms where the pharmaceutical forms do not reflect the prescribed form.
- Australian NEHTA AMT Appendix VII – Form (section 10.7) – originally derived from the TGA Approved Dosage Forms, with additional forms added to allow specification of subtypes.
- US Food and Drug Administration (FDA) Centre for Drug Evaluation and Research (CDER) Data Standard Manual (Data Element #C-DRG-00201 Dosage Form)

6.5.2 The HKMTT Dose Forms are listed in the table below. In most cases a dose form requires the combined use of a specified route to allow the true pharmaceutical form be defined. For example, a tablet dosage form can be used via the buccal or oral route but the true prescribable pharmaceutical form would be "buccal tablet" and "oral tablet" respectively. In HKMTT, a route will be assigned to the AMPs, VMPs, VTM+R+F and TN+R+F, hence there need not be a route specified in the dosage form – MTT will assign dose forms according to the route specified.

6.5.3 For example, in the case of a tablet formulation that is intended to be ingested, the route will be "oral" and dose form will be "tablet", hence the route-dose form combination will become "oral tablet" (e.g. paracetamol **oral tablet** 500 mg).

Table - MTT Dose Form List

Route of administration	Dose Form	Definition
CAPSULES		
oral	chewable / dispersible tablet	A preparation containing one or more active ingredients in a gum base, to be chewed or dispersed to produce a solution for oral administration.
oral	capsule	A solid preparation with hard or soft shells of various shapes and capacities, usually containing a single dose of active ingredient(s). The capsule shells are made of gelatin or other substance. The contents of capsules may be solid, liquid or of a paste-like consistency. For oral administration, the shell is attacked by the digestive fluids and the contents are released. Capsules can also be formulated for use via a variety of administration routes (e.g. oromucosal, rectal, vaginal) to obtain a systemic or local effect for protective, therapeutic or prophylactic purposes.
oral	gastro-resistant capsule	Gastro-resistant (enteric coated) capsules are prepared in such a manner that the shell, or the pelletised contents are intended to resist the gastric fluid and to release their active ingredient(s) in the intestinal fluid.
oral	modified-release capsule	Modified-release capsules are prepared in such a manner that the contents or the shell or both contain special excipients or are prepared by a special process designed to modify the rate or the place at which the active ingredient(s) are released.
TABLETS		
oral	tablet	A solid preparation containing one or more active ingredients, usually a measured quantity, with or without suitable diluents in a wide variety of sizes, shapes and surface markings prepared by moulding or compression for oral, sublingual or other use.
oral	chewable tablet	A tablet with a palatable formulation designed to be chewed rather than swallowed whole.
oral	dispersible tablet	A tablet which rapidly produces a uniform dispersion in water and is intended to be dispersed prior to administration.
oral	effervescent tablet	A tablet generally containing acid substances and carbonates or bicarbonates which react rapidly in the presence of water to release carbon dioxide. It is intended

		to be dissolved or dispersed in water before administration.
oral	gastro-resistant tablet	Gastro-resistant tablets are delayed-release tablets that are intended to resist the gastric fluid and to release their active substance(s) in the intestinal fluid. Usually they are prepared from granules or particles already covered with a gastro-resistant coating or in certain cases by covering tablets with a gastro-resistant coating.
oral	modified-release tablet	A coated or uncoated tablet in which the rate or place of release of the active ingredients in the gastrointestinal tract has been modified.
oral	orodispersible tablet	Tablet to be placed in the mouth where it disperses rapidly before swallowing.
oral	soluble tablet	An uncoated tablet that is intended to be dissolved in water prior to administration. The solution produced may be slightly opalescent due to excipients used in the manufacture of the tablet.
GRANULES		
oral	Granules	A preparation of one or more active ingredients usually in the form of irregular particles 2mm to 4mm in diameter. Some granules are intended to be dissolved or dispersed in water before issuing or before taking; others are chewed or placed on the tongue and swallowed with a draught of water.
oral	effervescent granules	Granules which evolve carbon dioxide when added to water. They are intended to be dissolved or dispersed in water before administration.
oral	gastro-resistant granules	Gastro-resistant granules are delayed-release granules that are intended to resist the gastric fluid and to release the active substance(s) in the intestinal fluid. These properties are achieved by covering the granules with a gastro-resistant material (enteric-coated granules) or by other suitable means.
oral	modified-release granules	Granules in which the rate or place of release of active ingredients in the gastrointestinal tract has been modified.
POWDER		
oral	effervescent powder	Effervescent powders are presented as single-dose or multidose powders and generally contain acid substances and carbonates or hydrogen carbonates which react rapidly in the presence of water to release carbon dioxide. They are intended to be dissolved or dispersed in water before administration.
oral	lyophilisate	Freeze dried, fast releasing preparation to be placed on the tongue, or alternatively to be dissolved in water before administration.

oral	powder	A finely divided powder composed of, or containing one or more active ingredients for oral or nasogastric administration, generally with water. The dose is obtained either by measuring a volume of the powder or from an individual container e.g. sachet, paper tube or vial.
BUCCAL AND THROAT		
buccal	tablets	Tablet to be applied to the buccal cavity or to be sucked.
buccal	capsule	Capsule to be applied to the buccal cavity or to be sucked.
buccal	chewing gum	A preparation containing one or more active ingredients in a gum base, to be chewed and subsequently discarded.
buccal	gargle	Gargle is an aqueous solution used for gargling. The process of gargling is intended to bring the liquid into intimate contact with membranous lining of the throat. The term also covers solid and liquid preparations which have to be dissolved or reconstituted or diluted using a suitable liquid diluent before use.
buccal	irrigation solution	buccal irrigation solution is a liquid intended for external application to the buccal cavity.
buccal	liquid	
buccal	lozenge	A solid preparation, containing one or more active ingredients, usually in a flavoured base, which is intended to dissolve or disintegrate slowly in the mouth to effect a local action.
buccal	mouthwash	An aqueous solution of one or more active ingredients intended, usually after dilution with warm water, for use in contact with the mucous membranes of the oral cavity, in some cases including gargling.
buccal	pastille	A solid preparation containing one or more active ingredients incorporated in a mass of sweetened gum, glycerol, and gelatin base which is intended to be sucked.
dental	cord	
dental	toothpaste	A compound containing one or more active ingredients used with a toothbrush for cleaning and polishing the teeth.
dental	gel	A semi-solid preparation consisting of liquids gelled by means of suitable gelling agents. It is intended for use within the oral cavity.
or		
oral		
dental	lincture	A solution of one or more active ingredients which has been extracted into an alcoholic base for use in the oral cavity.
dental	liquid	A preparation usually consisting of a solution, a suspension or an emulsion of one or more active ingredients in a suitable vehicle. Dental liquids are intended to be used within the oral cavity.

dental	Drops	A preparation usually consisting of a solution, a suspension or an emulsion of one or more active ingredients in a suitable vehicle. Oral drops are intended to be swallowed either undiluted or after dilution.
dental	multiple component kit	A set of products containing more than one dosage forms intended for dental use.
oral **or** **dental**	paste	An oral paste is a semi-solid preparation that is much stiffer than ointments for application to the oral mucosa. It usually consists of finely ground insoluble powders dispersed in hydrocarbon or water-miscible bases.
Dental	powder	A finely divided powder composed of, or containing, one or more active ingredients to be reconstituted in the oral cavity.
dental	solution	A liquid preparation composed of or containing one or more active ingredients dissolved in a suitable vehicle.
dental	Strip	Dental strips are impregnated with an active substance intended for application inside the oral cavity. They are usually individually wrapped and sterile.
oral	Spray	A liquid preparation for application after dispersion with a spraying device, intended for administration within the oral cavity.
sublingual	Spray	A liquid preparation for application after dispersion with a spraying device, intended for administration under the tongue.
sublingual	tablet	An uncoated tablet designed to be placed under the tongue, where it is rapidly absorbed. It should not be swallowed whole.
EAR		
ear	drops	Ear drops are liquid single-dose or multidose preparations consisting of an aqueous or oily solution, suspension or emulsion intended for application to the external auditory meatus.
ear	Wash	A preparation intended to cleanse the skin or certain mucosal membranes or body cavities or canals. It is usually an aqueous solution with a pH within physiological limits. The term also covers solid and liquid preparations which have to be dissolved or reconstituted or diluted using a suitable liquid diluent before use.
ear	spray	Spray is solution, emulsion or suspension of one or more active substances in liquids intended for spraying into body cavities or canals. The preparation is supplied in containers with atomising devices or in pressurised containers fitted with a suitable adapter and with or without a metering dose valve.

EYE		
eye **or** **ophthalmic**	drops	A sterile solution, suspension or emulsion of one or more active ingredients intended for instillation into the conjunctival sac.
eye	gel	A semi-solid preparation usually consisting of a solution or dispersion in a suitable base, prepared with the aid of a suitable gelling agent, intended for application to the conjunctiva.
eye	irrigation solution	Eye irrigation solution is a liquid intended for external application to the eye.
eye	lotion	A sterile aqueous solution intended for use in washing or bathing the eye or for impregnating eye dressings. The term also covers solid and liquid preparations which have to be reconstituted or diluted using a suitable liquid diluent before use.
eye	ointment	A sterile semi-solid preparation of homogeneous appearance intended for application to the conjunctiva. It may contain one or more active ingredients dissolved or dispersed in a suitable base.
intraocular	injection	Intraocular injection is a liquid intended to be injection into the eye.
intraocular	irrigation solution	Intraocular irrigation solution is a liquid intended for external application to the eyeball.
intraocular	powder and solvent for solution for irrigation	A powder preparation composed of, or containing, active ingredients which when dispersed in a suitable manner, is intended to be administered as Intraocular irrigation solution.
Ophthalmic	emulsion	An ophthalmic emulsion is a sterile dispersion of an oily liquid in an aqueous liquid for instillation to the conjunctiva.
Ophthalmic	Insert	Ophthalmic insert is a sterile, solid or semi-solid preparation of suitable size and shape, designed to be inserted in the conjunctival sac, to produce an ocular effect. It generally consists of a reservoir of active substance embedded in a matrix or bounded by a rate-controlling membrane.
ophthalmic	strip	Ophthalmic strips are impregnated with an active substance intended for local application. They are usually individually wrapped and sterile.
Eye	emulsion	An eye emulsion is a sterile dispersion of an oily liquid in an aqueous liquid for instillation to the conjunctiva.
eye	suspension	An eye suspension is a sterile suspension of active substance in an aqueous liquid for instillation to the conjunctiva.
NASAL		
nasal	drops	A liquid preparation for instillation into the nostrils by means of a dropper.

nasal	ointment	Nasal ointment is a semi-solid preparation intended for nasal use, usually consisting of a solution or dispersion of one or more active ingredients in low proportions in a suitable base, usually non-aqueous.
nasal	powder for inhalation	A powder preparation composed of, or containing, active ingredients which when dispersed in a suitable manner is intended to be self-administered by inhalation via the nasal route for local or systemic effect. It is usually inhaled in controlled amounts.
nasal	solution	A liquid preparation composed of or containing one or more active ingredients dissolved in a suitable vehicle, intended for application to the nostrils.
nasal	spray	A liquid preparation for application after dispersion with a spraying device, intended for use via the nostrils.
INTERNAL LIQUID		
oral	drops	A preparation usually consisting of a solution, a suspension or an emulsion of one or more active ingredients in a suitable vehicle. Oral drops are intended to be swallowed either undiluted or after dilution.
oral	elixir	A clear, pleasantly flavoured, sweetened hydroalcoholic liquid containing dissolved medicinal agents; it is intended for oral use.
oral	emulsion	A dispersion of an oily liquid in an aqueous liquid either of which may contain dissolved solids, in which the aqueous liquid forms the continuous phase. Solids may be suspended in the emulsion.
oral	granules for suspension	Granules for oral suspensions are granules that may be dispersed to prepare oral liquids containing one or more active ingredients suspended in a suitable vehicle. Suspended solids may slowly separate on standing but are easily redispersed.
oral	gastroenteral liquid	Gastroenteral liquids are administered via the enteral route (oral, nasogastric, PEG, jejenostomy etc.) used either to provide sole nutrition or to supplement other food intake. The term covers emulsions, suspensions, and solutions provided for this use case.
oral	lincture	A solution of one or more active ingredients which has been extracted into an alcoholic base.
oral	liquid	A preparation usually consisting of a solution, a suspension or an emulsion of one or more active ingredients in a suitable vehicle. Oral liquids are intended to be swallowed either undiluted or after dilution.
oral	linctus	A liquid preparation composed of a syrup base in which may be dispersed one or more active ingredients; intended for oral use.

oral	powder for solution	A finely divided powder composed of, or containing, one or more active ingredients to be reconstituted in a suitable liquid for use as a liquid for oral administration.
oral	powder for suspension	A finely divided powder composed of, or containing, one or more active ingredients to be reconstituted in a suitable liquid for use as a suspension for oral administration.
oral	Solution	A liquid preparation composed of or containing one or more active ingredients dissolved in a suitable vehicle.
oral	syrup	A concentrated solution of sugar in water to which one or more active ingredients may be added.
oral	suspension	Oral suspensions are oral liquids containing one or more active ingredients suspended in a suitable vehicle. Suspended solids may slowly separate on standing but are easily redispersed.
INJECTIONS		
parenteral*	concentrate for solution for injection	A sterile solution which must be diluted with another sterile parenteral liquid in order to prepare an injection.
	concentrate for solution for injection and infusion	
parenteral*	concentrate and solvent for solution for injection	A concentrate and solvent for suspension for injection is a sterile solution containing the active substances to be distributed in its final container with a specified volume of a specific sterile solvent.
parenteral*	emulsion for injection	A sterile dispersion of an oily liquid in an aqueous liquid either of which may contain dissolved solids, in which the aqueous liquid forms the continuous phase. Solids may be suspended in the emulsion.
parenteral*	kit for radiopharmaceutical preparation	Radiopharmaceutical is any medicinal product which, when ready for use, contains one or more radionuclides (radioactive isotopes) included for a medicinal purpose. A kit usually consists of a sterile injection and solvent in lyophilized and sterile form.
parenteral*	powder for injection	A sterile, solid substance to be reconstituted in an appropriate sterile liquid before injection.
parenteral*	powder for suspension for injection	A powder for suspension for injection is a solid, sterile substance distributed in its final container and which, when shaken with the prescribed volume of a prescribed sterile liquid rapidly forms a uniform suspension. After suspension it conforms to the requirements for injections.
		Freeze-dried products for parenteral use are considered as powders for suspension for injection
parenteral*	solution for injection	

	solution for injection and infusion	A sterile, clear liquid preparation containing one or more active ingredients dissolved in one or more suitable solvents.
parenteral*	suspension for injection	A sterile liquid preparation containing one or more active ingredients dispersed as solid particles throughout a liquid phase in which the particles are not soluble. It may also contain dissolved active ingredients.
parenteral*	powder and solvent for suspension for injection	A powder and solvent for suspension for injection is a solid, sterile substance distributed in its final container with a specified volume of a specific sterile liquid or solvent. When shaken together it rapidly forms a suspension. After dissolution it complies with the requirements for injections.
		Freeze-dried products for parenteral use are considered as powder and solvent for suspension for injection
parenteral*	powder and solvent for solution for injection	A powder and solvent for solution for injection is a solid, sterile substance distributed in its final container with a specified volume of a specific sterile liquid or solvent. When shaken together it rapidly forms a clear solution. After dissolution it complies with the requirements for injections.
		Freeze-dried products for parenteral use are considered as powder and solvent for solution for injection
parenteral*	powder for solution for injection	A powder for solution for injection is a solid, sterile substance distributed in its final container and which, when shaken with the prescribed volume of a prescribed sterile liquid rapidly forms a clear solution. After dissolution it complies with the requirements for injections.
parenteral*	powder and solvent for concentrate for injection	A powder and solvent for concentrate for injection is a solid, sterile substance distributed in its final container with a specified volume of a specific sterile liquid or solvent. When shaken together it rapidly forms a suspension. After dissolution it must be further diluted with suitable diluents to prepare for an infusion fluid before injection.
parenteral*	auto-injectable cartridge	A device containing a solution for injection to be used with an auto-injectable syringe for the application of drugs.
parenteral*	pre-filled syringe	A prefilled syringe contains the exact dose for injection which allows the required dose to be delivered precisely.
INFUSION		
parenteral*	concentrate for solution for infusion	A sterile solution which must be diluted with another sterile parenteral liquid in order to prepare an infusion.

parenteral*	concentrate and solvent for solution for infusion	A concentrate and solvent for solution for infusion is a sterile liquid distributed in its final container with a specified volume of a specific sterile liquid or solvent. When shaken together it rapidly forms a clear solution. After dissolution it complies with the requirements for infusions.
parenteral*	concentrate for solution for injection and infusion	A sterile solution which must be diluted with another sterile parenteral liquid in order to prepare an injection or infusion.
parenteral*	solution for infusion	A sterile injection designed to be infused parenterally into the body.
parenteral*	solution for injection and infusion	A sterile solution to be injected or infused parenterally into the body.
parenteral*	suspension for infusion	A sterile suspension designed to be infused parenterally into the body.
parenteral*	emulsion for infusion	A sterile emulsion designed to be infused parenterally into the body.
parenteral*	powder for solution for infusion	A powder for solution for infusion is a solid, sterile substance distributed in its final container and which, when shaken with the prescribed volume of a prescribed sterile liquid rapidly forms a clear solution. After dissolution it complies with the requirements for infusions.
parenteral*	powder for suspension for infusion	A powder for suspension for infusion is a solid, sterile substance distributed in its final container and which, when shaken with the prescribed volume of a prescribed sterile liquid rapidly forms a suspension. After dissolution it complies with the requirements for infusions.
parenteral*	powder and solvent for solution for infusion	A powder and solvent for solution for infusion is a solid, sterile substance distributed in its final container with a specified volume of a specific sterile liquid or solvent. When shaken together it rapidly forms a clear solution. After dissolution it complies with the requirements for infusions.
parenteral*	powder and solvent for suspension for infusion	A powder and solvent for suspension for infusion is a solid, sterile substance distributed in its final container with a specified volume of a specific sterile liquid or solvent. When shaken together it rapidly forms a suspension. After dissolution it complies with the requirements for infusions.
parenteral*	Powder and solvent for concentrate for infusion	A powder and solvent for concentrate for infusion is a solid, sterile substance distributed in its final container with a specified volume of a specific sterile liquid or solvent. When shaken together it rapidly forms a suspension. After dissolution it must be further diluted

		with suitable diluents to prepare for an infusion fluid before infusion.
EXTERNAL		
external	bandage	A strip or roll of cloth or other material that may be wound around a part of the body in a variety of ways to secure a dressing, maintain pressure over a compress, or immobilise a limb or other part of the body.
external	Condom	Barrier contraceptive method that blocks the route of sperm from fertilizing the eye.
external	dressing	A piece or strip of gauze or other suitable fabric, impregnated with a liquid or a semi-solid preparation.
external	gauze	Sterile fabric material used to cover or protect wounds.
external	Irrigation solution	A solution, usually sterile, of one or more active ingredients intended for flushing or instilling followed by drainage (including peritoneal dialysis) of wounds, operation cavities, the vagina, the urinary system, or serous cavities such as abdominal and pleural cavities.
external	kit	A packaged collection of related material.
external	liquid	Liquid preparations are usually solutions, emulsions or suspensions containing one or more active substances in a suitable vehicle. They may, however, consist of liquid active substances used as such. The term also includes concentrates which have to be diluted with a suitable liquid before use.
external	medicated plaster	Medicated plasters are flexible preparations containing one or more active substances. They are intended to be applied to the skin. They are designed to maintain the active substance(s) in close contact with the skin such that these may be absorbed slowly or act as protective or keratolytic agents.
external	paste	Paste is a semi-solid preparation that is much stiffer than ointments. It usually consists of finely ground insoluble powders (at concentrations of 20% to 60%) dispersed in hydrocarbon or water-miscible bases.
external	Soap	A cleansing or emulsifying agent
external	solution	A liquid preparation containing one or more active substances in a suitable vehicle. They may, however, consist of liquid active substances used as such. The term also includes concentrates which have to be diluted with a suitable liquid before use.
external	solution for skin prick test	Solution for skin prick test is allergen product for cutaneous and transdermal diagnostic use.
external	stick	A solid preparation containing one or more active ingredients in stick form.

external	strip	A long narrow piece of solid material intended for use in testing, screening or assaying a biological substance.
external	wash	A liquid that is intended to be used as a cleansing agent for skin (include body wash, soap, bath oil, bath liquid etc.).
TOPICAL		
topical	application	A liquid or semi-solid application preparation containing one or more active ingredients intended for application to the skin.
topical	beads	A solid dosage form in the shape of a small ball, intended for topical use
topical	colloidion	Colloidion is a liquid usually containing pyroxylin in a mixture of ether and ethanol. It forms a flexible film at the site of application.
topical	Cream	A homogeneous, viscous or semisolid preparation, usually an emulsion, consisting of a solution or dispersion of one or more active ingredients in low proportions in a suitable base.
topical	Dressing	A piece or strip of gauze or other suitable fabric, impregnated with a liquid or a semi-solid preparation.
topical	emollient	A semi-solid preparation containing one or more active ingredients to be applied to skin in order to increase hydration.
topical	foam	A dispersion of gas in a liquid or solid creating a semi-solid substance
topical	gel	A gel that contains a high proportion of water, in combination with a drug substance and a thickening agent.
Topical	gel stick	A device for applying topical medication.
topical	irrigation solution	A solution, usually sterile, of one or more active ingredients intended for flushing or instilling followed by drainage (including peritoneal dialysis) of wounds, operation cavities, the vagina, the urinary system, or serous cavities such as abdominal and pleural cavities.
topical	jelly	A semi-solid preparation usually consisting of a solution or dispersion in a suitable base, prepared with the aid of a suitable gelling agent, intended for application to the skin.
topical	liniment	A liquid or semi-solid preparation for rubbing or application to the skin.
topical	Liquid	A liquid for topical use
topical	lotion	A liquid or semi-solid preparation composed of or containing one or more active ingredients usually intended to be applied to the unbroken skin without friction.
topical	Mask	A topical application for the face or as a bandage.
topical	medicated nail lacquer	Medicated liquid preparations of a variety of viscosities intended to be applied to the nails in order to obtain a local action.

topical	multiple component kit	A set of products containing more than one dosage forms intended for topical use.
topical	nail lacquer	Medicated liquid preparations of a variety of viscosities intended to be applied to the nails in order to obtain a local action.
topical	Ointment	A semi-solid preparation intended for topical use, usually consisting of a solution or dispersion of one or more active ingredients in low proportions in a suitable base, usually nonaqueous.
topical	Pad	A thin, cushion-like soft material used to fill, to give shape, or to protect against jarring, scraping, or other injury.
topical	Patch	Adhesive patch that is placed topically.
topical	Paint	A liquid preparation containing one or more active ingredients for application to broken skin or mucous surfaces.
topical	paste	
topical	powder	A solid formulation intended for direct application to the skin.
topical	soap	A cleansing and emulsifying agent
topical	Shampoo	A viscous liquid that is generally applied to wet hair, head and/or scalp areas. It is massaged in to form lather before being rinsed out.
topical	solution	A liquid preparation containing one or more active ingredients; it is applied to the skin.
topical	scalp solution	A liquid preparation containing one or more active ingredients; it is applied to the scalp areas.
topical	Spray	A liquid preparation for application after dispersion with a spraying device, intended for use on the skin.
topical	Swab	A wad of absorbent material usually wound around one end of a small stick and used especially for applying medication or for removing material from an area
topical	tincture	A solution of a medicinal substance in an alcoholic solvent for topical use.
topical	Wash	A preparation intended to cleanse the skin.
transdermal	patch	Transdermal patches are flexible pharmaceutical preparations of varying sizes, containing one or more active substances. They are intended to be applied to the unbroken skin in order to deliver the active substance(s) to the systemic circulation after passing through the skin barrier.
INHALATION		
inhalation	capsule	Capsule for inhalation is a solid preparation with hard shells of various shapes and capacities, usually containing a single dose of active ingredient(s). The content is intended to be inhaled.

inhalation	granules	A preparation of one or more active ingredients usually in the form of irregular particles 2mm to 4mm in diameter. Inhalation granules are intended to be administered via the respiratory route.
inhalation	nebulising solution	Liquid preparations for inhalation intended to be converted into aerosols by continuously operating nebulisers or metered-dose nebulisers are solutions, suspensions or emulsions. Liquid preparations for nebulisation in concentrated form for use in continuously operating nebulisers are diluted to be prescribed volume with the prescribed liquid before use. Liquids for nebulisation may also be prepared from powders or other forms of solids.
inhalation	powder	A powder preparation composed of, or containing, active ingredients which when dispersed in a suitable manner is intended to be self-administered by inhalation via the oral route for local or systemic effect. It is usually inhaled in controlled amounts.
inhalation	pressurised inhalation	A metered dose preparation usually consisting of a solution, suspension or emulsion of one or more active ingredients held under pressure with a suitable propellant or a suitable mixture of propellants. They are intended to be inhaled in controlled amounts and are delivered by the actuation of an appropriate metering valve.
inhalation	Liquid	A liquid preparation composed of, or containing active ingredient(s) which when vaporised or dispersed in a suitable manner (e.g. hand-actuated pump) is intended to release the constituents for inhalation.
inhalation	powder for solution	A powder formulation intended to be dispersed in suitable diluents before its administration as an inhalation solution.
inhalation	vapour	Inhalation vapour is solutions, dispersions or solid preparations intended to be converted into vapour. They are usually added to hot water and the vapour generated is inhaled, but may include products that are available as a vapour ready for inhalation.
RECTAL		
rectal	enema	A liquid preparation composed of, or containing, one or more active ingredients for rectal administration.
rectal	suppository	A solid preparation containing one or more active ingredients intended for rectal administration, usually as a single dose.
rectal	cream	Cream is a multiphase preparation consisting of lipophilic phase and an aqueous phase. Rectal cream is intended to be applied to the ano-rectal region.
rectal	ointment	Ointment is a semi-solid preparation consisting of a single-phase basis in which solids or liquids may be dispensed. Rectal ointment is intended to be applied to the ano-rectal region.

rectal	powder for suspension	A finely divided powder composed of, or containing, one or more active ingredients to be reconstituted in a suitable liquid for use as a suspension for rectal administration.
rectal	foam	Foam consists of large volumes of gas dispersed in a liquid and generally contains one or more active substances. It is usually formed at the time of administration from a liquid preparation in a pressurised container. Rectal foam is intended to be applied to the ano-rectal region.
rectal	solution	A liquid preparation containing one or more active ingredients intended for rectal administrations.
rectal	Suspension	Rectal suspensions are liquids containing one or more active ingredients suspended in a suitable vehicle intended for rectal administrations. Suspended solids may slowly separate on standing but are easily redispersed.
VAGINAL & URETHRAL		
intrauterine	Device	A device designed to be inserted into the uterus. It may contain an active medicament that is slowly released over a period of time.
urethral	cream	Cream for urethral applications
urethral	gel	Gel for urethral applications
urethral	irrigation solution	Urethral irrigation solution is a liquid intended for flushing of the urethra.
vaginal	cream	A homogeneous, viscous or semi-solid preparation, usually an emulsion, consisting of a solution or dispersion of one or more active ingredients in low proportions in a suitable base. Vaginal cream is intended to be applied to the skin or mucous membranes of the vagina for protective, therapeutic or prophylactic purposes.
vaginal	delivery system	A device designed to be inserted into the vagina. It may contain an active medicament that is slowly released over a period of time.
vaginal	effervescent tablet	Effervescent vaginal tablet is a solid preparation intended for vaginal use. Upon insertion, the active ingredient(s) is released by an effervescent-like reaction between the product and the vaginal fluids
vaginal	foam	Foam consists of large volumes of gas dispersed in a liquid and generally contains one or more active substances. It is usually formed at the time of administration from a liquid preparation in a pressurised container. Vaginal foam is intended to be applied to the vaginal area.
vaginal	gel	Gel is a semi-solid preparation usually consisting of a solution or dispersion in a suitable base, prepared with the aid of a suitable gelling agent. Vaginal gel is intended to be applied to the vaginal area.

vaginal	liquid	A liquid preparation composed of, or containing active ingredient(s) for vaginal use.
vaginal	multiple component kit	A set of products containing more than one dosage forms intended for vaginal use.
vaginal	ointment	Ointment is a semi-solid preparation consisting of a single-phase basis in which solids or liquids may be dispensed. Vaginal ointment is intended to be applied to the vaginal area.
vaginal	pessary	A solid preparation containing one or more active ingredients intended for vaginal administration.
OTHERS		
Epilesional	powder and solvent for fibrin sealant	A kit containing the two fibrin sealant components for reconstitution and application.
haemodialysis	solution for haemofiltration	A solution for use in haemofiltration.
haemodialysis	solution	A solution for use in dialysis by means of a dialyser.
haemofiltration	solution	A solution for use in haemofiltration.
intraperitoneal	dialysis solution	A solution for use in dialysis by means of a dialyser.
parenteral	implant	A sterile solid preparation containing one or more active ingredients for introduction or grafting into body tissue.
instillation	powder for reconstitution for instillation	Powder for reconstitution for instillation
Instillation	powder and solvent for solution for instillation	A powder and solvent for instillation is a solid, sterile substance distributed in its final container with a specified volume of a specific sterile liquid or solvent. When shaken together it rapidly forms a clear solution. After dissolution it complies with the requirements for instillation.
intracatheter	liquid	
intralesional	implant	A thin flat solid preparation containing one or more active ingredients. It is usually intended to disintegrate or dissolve rapidly in contact with the wound.
raw materials	raw materials	Materials used for manufacturing, processing or repacking. Not for retail use.
endotracheopulmonary	suspension	Endotracheopulmonary suspensions are liquids containing one or more active ingredients suspended in a suitable vehicle intended administrations via the endotracheopulmonary route.

*parenteral includes intra-arterial, intra-articular, intracavernosal, intracervical, intracisternal, intradermal, intradiscal, intraepidermal, intralesional, intramuscular, intrapleural, intrathecal, intratracheal, intravenous, intravesical, intravitreal.

6.6 APPENDIX F – STRENGTH UNIT [17][[18]

6.6.1 The HKMTT strength units will be referencing, and with their definitions extracted from the following standard terminologies:

- UK NHS dm+d "Units of Measure (List E)
- NEHTA AMT Editorial Rules V3.0 - appendix VI – units of measure

Table - MTT Strength Unit List

Description	Abbreviation
Area	
centimetre	cm
metre	m
millimetre	mm
square centimetre	cm2
Biological Units	
allergy unit	allergy unit
anti-Xa international unit	anti-Xa international unit
Antigenic Herpes simplex unit	AHU
D antigen unit	D antigen unit
Enzyme-Linked ImmunoSorbent Assay	ELISA unit
kallikrein inactivator unit	kallikrein inactivator unit
kallikrein inactivator unit/millilitre	kallikrein inactivator unit / mL
Kyowa unit	Kyowa unit
Kyowa unit/vial	Kyowa unit / vial
million unit	million unit
million unit/milligram	million unit / mg
million unit/millilitre	million unit / mL
pressor unit	pressor unit
unit	unit
unit/actuation	unit / actuation
unit/dose	unit / dose
unit/gram	unit / g
unit/milligram	unit / mg
unit/microgram	unit / microgram
unit/millilitre	unit / mL
unit/square centimetre	unit / cm2
unit/vial	unit / vial
Energy	

Description	Abbreviation
kilocalorie	kilocalorie
kilocalorie/millilitre	kilocalorie / mL
Expression of proportions	
%v/w	% v/w
%w/v	% w/v
%w/w	% w/w
parts per million	ppm
%v/v	% v/v
International units	
British Pharmacopoeia unit	BP unit
international unit	international unit
international unit/gram	international unit / g
international unit/milligram	international unit / mg
international/millilitre	international / mL
kilo international unit	kilo international unit
kilo international unit/millilitre	kilo international unit / mL
kilo international unit/vial	kilo international unit / vial
million international unit	million international unit
million international unit/millilitre	million international unit / mL
Pharmacopoeia Europe unit	Ph Eur unit
United States Pharmacopoeia unit	USP unit
Mass	
gram/actuation	g / actuation
gram/application	g / application
gram/dose	g / dose
gram/gram	g / g
gram/litre	g / L
gram/milliliter	g / mL
gram/pack	g / pack
gram/sachet	g / sachet
gram/vial	g / vial
gram	g
kilogram	kg
kilogram/litre	kg / L
milligram	mg

Description	Abbreviation
milligram iodine	mg iodine
milligram/hour	mg / hr
milligram/16 hours	mg / 16 hr
milligram/24 hours	mg / 24 hr
milligram/72 hours	mg / 72 hr
milligram/actuation	mg / actuation
milligram/application	mg / application
milligram/dose	mg / dose
milligram/gram	mg / g
milligram/kilogram	mg / kg
milligram/litre	mg / L
milligram/milligram	mg / mg
milligram/millilitre	mg / mL
milligram/sachet	mg / sachet
milligram/square centimetre	mg / cm2
milligram/vial	mg / vial
microgram	microgram
microgram haemagglutinin	microgram HA
microgram/24 hour	microgram / 24 hr
microgram/actuation	microgram / actuation
microgram/dose	microgram / dose
microgram/gram	microgram / g
microgram/litre	microgram / L
microgram/millilitre	microgram / mL
microgram/spray	microgram / spray
nanogram	nanogram
nanogram/gram	nanogram / g
nanogram/millilitre	nanogram / mL
ounce	ounce
Microbiological cultures	
billion organisms unit	billion organisms unit
billion vibrios	billion vibrios
cell culture infectious dose 50% unit	CCID50 unit
colony forming unit	colony forming unit
fluorescent focus unit	fluorescent focus unit

Description	Abbreviation
international opacity unit	international opacity unit
lethal dose 50% unit	LD50 unit
million cell culture infectious dose 50% unit	million CCID50 unit
million colony forming unit	million colony forming unit
million organisms unit	million organisms unit
mouse lethal dose 50% unit	mouse LD50 unit
organisms unit	organisms unit
plaque forming unit	plaque forming unit
thousand organisms unit	thousand organisms unit
tissue culture infectious dose 50% unit	TCID50 unit
tuberculin unit	tuberculin unit
tuberculin unit/milliliter	tuberculin / mL
Molecular equivalents	
micromole	micromole
micromole/litre	micromole / L
micromole/millilitre	micromole / mL
milliequivalent	mEq
milliequivalent/litre	mEq / L
milliequivalent/millitre	mEq / mL
milliosmol	milliosmol
milliosmol/litre	milliosmol / L
millimole	mmol
millimole/litre	mmol / L
millimole/millilitre	mmol / mL
mole/litre	mol / L
molar	molar
nanomole	Nmol
Physical Form	
bead	bead
pack	pack
Radioactivity	
gigabecquerel	gigabecquerel
gigabecquerel/mililitre	gigabecquerel / mL
kilobecquerel	kilobecquerel
kilobecquerel/millilitre	kilobecquerel / mL

Description	Abbreviation
megabecquerel	megabecquerel
megabecquerel/millilitre	megabecquerel / mL
millicurie	millicurie
microcurie	microcurie
Volume	
drop	drop
litre	L
litre/litre	L / L
microlitre	microlitre
microlitre/gram	microlitre / g
microlitre/litre	microlitre / L
microlitre/millilitre	microlitre / mL
millilitre	mL
millilitre/gram	mL / g
millilitre/kilogram	mL / kg
millilitre/litre	mL / L
millilitre/millilitre	mL / mL
nanolitre	nanolitre
nanolitre/millilitre	nanolitre / mL

6.7 APPENDIX G – UNITS OF MEASURE

6.7.1 The HKMTT Units of Measure will be referencing, and with their definitions extracted from the following standard terminologies:

- UK NHS dm+d "Units of Measure (List E)
- NEHTA AMT Editorial Rules V3.0 - appendix VII – units of measure

Table – MTT Units of Measure List

Concept Full Description	Short Description
actuation	actuation
ampoule	ampoule
application	application
applicator	applicator
applicatorful	applicatorful
bag	bag
bandage	bandage
billion organisms unit	billion organisms unit
billion vibrios	billion vibrios
box	box
British Pharmacopoeial unit	BP unit
can	can
capsule	capsule
cartridge	cartridge
centimetre	cm
component	component
cubic metre	cubic metre
cylinder	cylinder
D antigen unit	D antigen unit
device	device
disc	disc
dose	dose
dressing	dressing
drop	drop
enema	enema
fluorescent focus unit	fluorescent focus unit
gigabecquerel	gigabecquerel
gram/pack	g / pack
gram/sachet	g / sachet

kit	kit
kyowa unit/vial	kyowa unit / vial
litre/litre	L / L
microgram/actuation	microgram / actuation
micromole/litre	micromole / L
milligram/litre	mg / L
nanogram/millilitre	nanogram / mL
nanolitre	nanolitre
number	number
organisms unit	organisms unit
ounce	ounce
pad	pad
parts per million	ppm
pastille	pastille
pen	pen
pessary	pessary
piece	piece
pills	pills
plaque forming unit	plaque forming unit
pre-filled injection device	pre-filled injection device
pre-filled syringe	pre-filled syringe
pressor unit	pressor unit
roll	roll
sachet	sachet
spray	spray
square metre	m2
system	system
unit dose	unit dose
unit/actuation	unit / actuation
vial	vial
wafer	wafer

6.8 APPENDIX H – BASE UNIT

6.8.1 The HKMTT Base units will be referencing, and with their definitions extracted from the following standard terminologies:

- HKHA-PHS Base Unit Table

Table - MTT Base Unit List

Short Description	Concept Full Description
ampoule	ampoule
applicator	applicator
applicatorful	applicatorful
billion organisms unit	billion organisms unit
billion vibrios	billion vibrios
blister	blister
box	box
BP unit	British Pharmacopoeial unit
capsule	capsule
colony forming unit	colony forming unit
cubic metre	cubic metre
cylinder	cylinder
D antigen unit	D antigen unit
device	device
disc	disc
enema	enema
gigabecquerel	gigabecquerel
gum	gum
inch	inch
international unit / g	international unit/gram
kilobecquerel / mL	kilobecquerel/millilitre
kilocalorie / mL	kilocalorie/millilitre
kit	kit
kyowa unit / vial	kyowa unit/vial
L / L	litre/litre
lozenge	lozenge
megabecquerel	megabecquerel
micromole / L	micromole/litre
nanogram	nanogram
nanogram / mL	nanogram/millilitre

nanolitre	nanolitre
nanolitre / mL	nanolitre/millilitre
number	number
organisms unit	organisms unit
ounce	ounce
pad	pad
ppm	parts per million
pastille	pastille
pessary	pessary
Ph Eur unit	Pharmacopoeia Europe unit
piece	piece
pre-filled injection device	pre-filled injection device
pre-filled syringe	pre-filled syringe
pressor unit	pressor unit
roll	roll
sachet	sachet
spray	spray
m2	square metre
syringe	syringe
unit dose	unit dose
unit / g	unit/gram
unit / microgram	unit/microgram

6.9 APPENDIX I – PRESCRIBING DOSE UNIT

6.9.1 The HKMTT Prescribing Dose Units will be referencing, and with their definitions extracted from the following standard terminologies:

- HKHA Form Prescribing Dosage Units

Table – MTT Prescribing Dose Unit List

Short Description	Concept Full Description
5 mL spoonful	5 mL spoonful
actuation	actuation
ampoule	ampoule
antigenic Herpes simplex unit	antigenic Herpes simplex unit
anti-Xa international unit	anti-Xa international unit
application	application
applicator	applicator
applicatorful	applicatorful
billion organisms unit	billion organisms unit
billion vibrios	billion vibrios
BP unit	British Pharmacopoeial unit
capsule	capsule
cartridge	cartridge
colony forming unit	colony forming unit
cylinder	cylinder
D antigen unit	D antigen unit
disc	disc
dressing	dressing
fluorescent focus unit	fluorescent focus unit
gigabecquerel	gigabecquerel
g / vial	gram/vial
gum	gum
inch	inch
jar	jar
kilobecquerel / mL	kilobecquerel/millilitre
kg	kilogram
kyowa unit / vial	kyowa unit/vial
LD50 unit	lethal dose 50% unit
L / L	litre/litre
megabecquerel	megabecquerel

megabecquerel / mL	megabecquerel/millilitre
microgram / actuation	microgram/actuation
microlitre / g	microlitre/gram
microlitre / L	microlitre/litre
micromole / L	micromole/litre
mg / vial	milligram/vial
mL	millilitre
mm	millimetre
mmol / mL	millimole/millilitre
million unit / mL	million unit/millilitre
nanogram	nanogram
nanogram / g	nanogram/gram
nanogram / mL	nanogram/millilitre
nanolitre	nanolitre
nanolitre / mL	nanolitre/millilitre
organisms unit	organisms unit
ounce	ounce
pad	pad
ppm	parts per million
Ph Eur unit	Pharmacopoeia Europe unit
piece	piece
pills	pills
plaque forming unit	plaque forming unit
pre-filled injection device	pre-filled injection device
pre-filled syringe	pre-filled syringe
pressor unit	pressor unit
roll	roll
sachet	sachet
spray	spray
m2	square metre
strip	strip
syringe	syringe
unit dose	unit dose
unit / dose	unit/dose
unit / g	unit/gram

6.10 APPENDIX J – DISPENSING DOSE UNIT

6.10.1 The HKMTT Dispensing Dose Units will be referencing, and with their definitions extracted from the following standard terminologies:

- HKHA PHS Form Dispensing Dose Units

Table – MTT Dispensing Dose Unit List

Short Description	Concept Full Description
5 mL spoonful	5 mL spoonful
actuation	actuation
ampoule	ampoule
antigenic Herpes simplex unit	antigenic Herpes simplex unit
anti-Xa international unit	anti-Xa international unit
application	application
applicator	applicator
applicatorful	applicatorful
billion organisms unit	billion organisms unit
billion vibrios	billion vibrios
BP unit	British Pharmacopoeial unit
capsule	capsule
cartridge	cartridge
colony forming unit	colony forming unit
cylinder	cylinder
D antigen unit	D antigen unit
disc	disc
dressing	dressing
fluorescent focus unit	fluorescent focus unit
gigabecquerel	gigabecquerel
g / vial	gram/vial
inch	inch
jar	jar
kilobecquerel / mL	kilobecquerel/millilitre
kg	kilogram
kyowa unit / vial	kyowa unit/vial
LD50 unit	lethal dose 50% unit
L / L	litre/litre
megabecquerel	megabecquerel
megabecquerel / mL	megabecquerel/millilitre

microgram / actuation	microgram/actuation
microlitre / g	microlitre/gram
microlitre / L	microlitre/litre
micromole / L	micromole/litre
mg / vial	milligram/vial
mL	millilitre
mm	millimetre
mmol / mL	millimole/millilitre
nanogram	nanogram
nanogram / g	nanogram/gram
nanogram / mL	nanogram/millilitre
nanolitre	nanolitre
organisms unit	organisms unit
ounce	ounce
pad	pad
ppm	parts per million
Ph Eur unit	Pharmacopoeia Europe unit
piece	piece
pills	pills
plaque forming unit	plaque forming unit
pre-filled injection device	pre-filled injection device
pressor unit	pressor unit
roll	roll
sachet	sachet
spray	spray
m2	square metre
syringe	syringe
unit dose	unit dose
unit / dose	unit/dose
unit / g	unit/gram

6.11 APPENDIX K – LEGAL CLASSIFICATION [19]

6.11.1 The HKMTT Legal Classifications will be referencing, and with their definitions extracted from the following terminologies:

- Compendium of Pharmaceutical Products, Department of Health of HKSAR

Table – MTT Legal Classifications for Actual Medicinal Products

Legal Classification	Full Description
A	Antibiotic
DDI	Part I Dangerous Drug
NP	Not a Poison
PI	Part I Poison
PI & A	Part I Poison & Antibiotic
PI & DDI	Part I Poison & Part I Dangerous Drug
PI & DDII&III	Part I Poison & Part II and Part III Dangerous Drug
PII	Part II Poison
PIS1	Part I & First Schedule Poison
PIS1 & A	Part I First Schedule Poison & Antibiotic
PIS1 & DDI	Part I First Schedule Poison & Part I Dangerous Drug
PIS1 & DDII&III	Part I First Schedule Poison & Part II and Part III Dangerous Drug
PIS1S3	Part I, First and Third Schedule Poison
PIS1S3 & A	Part I, First and Third Schedule Poison & Antibiotic
PIS1S3 & DDI	Part I, First and Third Schedule Poison & Part I Dangerous Drug
PIS1S3 & DDII&III	Part I, First and Third Schedule Poison & Part II and Part III Dangerous Drug
PIS3	Part I & Third Schedule Poison

6.12 ALTERNATIVE EXPRESSION RULES

6.12.1 Multi-ingredient products with combined strength expression

6.12.1.1 In normal circumstances for naming the FSN and PT of VMP and AMP for multi-ingredient products, the strength of each of the component should be appended after each of the individual ingredient component; hence the following syntax should apply:
"ingredient1" "strength1" + "ingredient2" "strength2" + "ingredient3" "strength3" "route "dose form"
e.g. VMP: amlodipine (as besilate) 5 mg + valsartan 80 mg oral tablet

6.12.1.2 However in some exceptions the combined strength of all ingredients is of more clinically significant values because the combined strength is used during prescribing, with the fact that the strengths and strength ratios of the ingredients are standardized for these items.

6.12.1.3 Hence for these multi-ingredient products the combined strength is used as strength and appended as below (similar to single-ingredient products):
"ingredient1" + "ingredient2" + "ingredient3" “route” “dose form” “strength”
e.g. for HK-16677 Augmentin tab 375mg where the ingredients for this product includes 250 mg of amoxicillin (as trihydrate) and 125 mg of clavulanate (as potassium), its related product concepts will be expressed as follows:
VTM: amoxicillin (as trihydrate) + clavulanate (as potassium)
VMP: amoxicillin (as trihydrate) + clavulanate (as potassium) oral tablet 375 mg
AMP: Augmentin (amoxicillin (as trihydrate) + clavulanate (as potassium)) oral tablet 375 mg

6.12.2 Insulins

6.12.2.1 Several groups of clinically relevant information have to be structurally included in the nomenclature of insulin preparations.

6.12.2.2 VTM:

i. The VTM should starts with the word "insulin".

ii. The source of origin of insulin should be specified in the VTM descriptions and concepts (e.g. human, porcine, and bovine) except for that insulin produced as human analogs by recombinant DNA technology.

iii. Examples of human insulin analog products include:
- Insulin aspart
- Insulin lispro
- Insulin detemir
- Insulin glargine

iv. For other insulin preparations the sources of origin will have to be included, examples are:
- Insulin neutral human
- Insulin isophane human
- Insulin zinc suspension (soluble) bovine
- Insulin protamine zinc bovine

6.12.2.3 Dosage form and dosage form level extra information

i. Dosage form field will include information on the dosage form as listed in the appendix (e.g. solution for injection, suspension of injection) while the application design (e.g. cartridge, pen, vial) will be included in the dosage form level extra information.

ii. Strength

- For single ingredient preparations:
  - The strength should be expressed in terms of international units per mL of the insulin injection as this piece of information is clinically significant for prescribing.

- For multiple ingredient preparations:
  - The combined overall strength (units per mL) of the multi-ingredient insulin preparations remain clinically significant as the ratios of the different insulin ingredients are standardized and the drugs are prescribed in terms of the combined strength; whereas

the ratio of the ingredients remains a clinically important information. Therefore the strength expression for these multiple ingredient insulin preparations is modified to suit both purposes.

iii. First, the ratio of the insulin ingredients is expressed in terms of percentage, with respective to the ingredient sequence of VTM and is bracketed. Then the combined overall strength of the insulin ingredients follows the ratio information.

iv. Strength level extra information

- The total volume of the preparation (e.g. 3 mL, 10 mL) will be expressed in the Strength level extra information field so as to represent the total amount / units of insulin available in the respective preparations.

- Example:
  - VTM: insulin isophane human + insulin neutral human
  - VMP: insulin isophane human + insulin neutral human subcutaneous suspension for injection (cartridge) (70%/30%) 100 international unit / mL (3 mL)
  - AMP: Mixtard 30 HM (insulin isophane human + insulin neutral human) subcutaneous suspension for injection (cartridge) (70%/30%) 100 international unit / mL (3 mL)

6.12.3 Multi-component Products

6.12.3.1 Multi-component products refer to products that comprise of more than one Virtual Medicinal Products within a single pack and registered under a single registration number. The virtual concepts may itself be a single or multiple ingredient products by its own right as a component of the whole product.

6.12.3.2 For the representation of a multi-component product, each component contained should be represented as a virtual medicinal product as described in previous chapters, and to be divided by a semi-colon separator (";") to indicate that each of these VMPs are of a single pharmaceutical form within a single multi-component product code.

6.12.3.3 Each of the components of a multi-component product will have their VTM, VTM+R, VTM+R+F and VMP descriptions expressed as described in previous chapters.

Example of multi-component products with two single ingredient components:

- HK-55462
- Component 1 : varenicline (as tartrate) oral tablet 500 microgram
- Component 2 : varenicline (as tartrate) oral tablet 1 mg

6.12.3.4 The virtual product concepts will be expressed as:

- VTM : varenicline (as tartrate)
- VTM+R : varenicline (as tartrate) oral
- VTM+R+F : varenicline (as tartrate) oral tablet
- VMP : varenicline (as tartrate) oral tablet 500 microgram ; varenicline (as tartrate) oral tablet 1 mg

6.12.3.5 The actual product concept will be expressed as:

- TN : Champix (varenicline (as tartrate)
- TN+R : Champix (varenicline (as tartrate) oral
- TN+R+F : Champix (varenicline (as tartrate) oral tablet
- AMP : Champix (varenicline (as tartrate) oral tablet 500 microgram; varenicline (as tartrate) oral tablet 1 mg)

6.12.4 Vaccines

6.12.4.1 Vaccine products often have long and extremely complex names; due to the extraordinary nature of this category of products, MTT product concept expression have been handled in exception to the usual MTT editorial rules.

6.12.4.2 FSNs of such products will be constructed as specified in previous chapters with the detailed ingredient information; in general the PTs will also follow such editorial rules and include the following additional information:

- The name of the organisms the vaccine is directed at;
- Specific information of the vaccines where available (e.g. live attenuated, inactivated, conjugated, split virion, surface antigen);
- All vaccine product concepts should contain the word “vaccine” as part of the concept description.

Example of vaccine product concepts fully specified names:

- VTM : hepatitis A virus antigen (inactivated) vaccine)
- VTM+R : hepatitis A virus antigen (inactivated) vaccine intramuscular
- VTM+R+F : hepatitis A virus antigen (inactivated) vaccine intramuscular suspension for injection
- VMP : hepatitis A virus antigen (inactivated) vaccine intramuscular suspension for injection 25 unit / 0.5 mL
- TN : Vaqta Paediatric (hepatitis A virus antigen (inactivated) vaccine)
- TN+R : Vaqta Paediatric (hepatitis A virus antigen (inactivated) vaccine) intramuscular
- TN+R+F : Vaqta Paediatric (hepatitis A virus antigen (inactivated) vaccine) intramuscular suspension for injection
- AMP : Vaqta Paediatric (hepatitis A virus antigen (inactivated) vaccine) intramuscular suspension for injection 25 unit / 0.5 mL

6.12.4.3 Preferred terms of selected vaccines with excessively long and complicated ingredient details will be constructed in a simplified way such that a more concise and clinically-intuitive description would be expressed:

Example of simplified concept preferred term:

- VMP Fully Specified Name : diphtheria toxoid adsorbed not less than 30 international unit / 0.5 mL + tetanus toxoid adsorbed not less than 40 international unit / 0.5 mL vaccine parenteral suspension for injection
- VMP Preferred Term would be simplified to: diphtheria toxoid + tetanus toxoid, adsorbed vaccine parenteral suspension for injection 0.5 mL

This product would contain the following ingredient information:

- Ingredient: influenza virus (split virion inactivated)
- Strength value: 15
- Strength unit: microgram
- Ingredient unit of measure value: 0.5
- Ingredient unit of measure: mL
- Ingredient additional information: A/CALIFORNIA/7/2009 (H1N1)-DERIVED STRAIN USED NYMC X-179A, A/PERTH/6/2009 (H3N2)-LIKE STRAIN USED NYMC X-187 DERIVED FROM A/VICTORIA/210/2009, B/BRISBANE/60/2008

6.13 APPENDIX L – FREQUENCY [1]

6.13.1 The HKMTT Frequency will be referencing, and with their definitions extracted from the following terminologies:

- SNOMED-CT
- HKHA PHS Frequency and Supplementary Frequency Table
- eHR CMS Adaptation Module

Table – MTT Frequency List

eHR Description	Concept Full Description
once daily	once daily
one to two times daily	one to two times daily
one to three times daily	one to three times daily
one to four times daily	one to four times daily
twice daily	twice daily
twice daily during daytime	twice daily during daytime
two to three times daily	two to three times daily
two to four times daily	two to four times daily
three times daily	three times daily
three times daily during daytime	three times daily during daytime
three to four times daily	three to four times daily
four times daily	four times daily
four times daily during daytime	four times daily during daytime
four to six times daily	four to six times daily
five times daily	five times daily
five times daily during daytime	five times daily during daytime
six times daily	six times daily
seven times daily	seven times daily
eight times daily	eight times daily
nine times daily	nine times daily

ten times daily	ten times daily
eleven times daily	eleven times daily
twelve times daily	twelve times daily
sixteen times daily	sixteen times daily
in the morning	in the morning
in the morning on day of examination	in the morning on day of examination
at noon	at noon
in the afternoon	in the afternoon
in the evening	in the evening
at night	at night
at night before the day of examination	at night before the day of examination
at bedtime	at bedtime
before breakfast	before breakfast
with breakfast	with breakfast
after breakfast	after breakfast
before lunch	before lunch
with lunch	with lunch
after lunch	after lunch
before dinner	before dinner
with dinner	with dinner
after dinner	after dinner
every fifteen minutes	every fifteen minutes
every thirty minutes	every thirty minutes
hourly	hourly

hourly during daytime	hourly during daytime
every one to two hours	every one to two hours
every two hours	every two hours
every two hours during daytime	every two hours during daytime
every two to three hours	every two to three hours
every two to four hours	every two to four hours
every three hours	every three hours
every three hours during daytime	every three hours during daytime
every three to four hours	every three to four hours
every three to six hours	every three to six hours
every four hours	every four hours
every four hours during daytime	every four hours during daytime
every four hours while awake	every four hours while awake
every four to six hours	every four to six hours
every five hours	every five hours
every six hours	every six hours
every six to eight hours	every six to eight hours
every eight hours	every eight hours
every eight to twelve hours	every eight to twelve hours
every ten hours	every ten hours
every twelve hours	every twelve hours
every sixteen hours	every sixteen hours
every eighteen hours	every eighteen hours
every twenty four hours	every twenty four hours
every thirty six hours	every thirty six hours

every forty hours	every forty hours
every forty eight hours	every forty eight hours
every sixty hours	every sixty hours
every seventy two hours	every seventy two hours
every ninety six hours	every ninety six hours
once	once
at once	at once
at start of attack	at start of attack
then stop	then stop
before procedure	before procedure
after procedure	after procedure
1 hour before operating procedure	1 hour before operating procedure
on call to operating theatre	on call to operating theatre
on induction of anaesthesia	on induction of anaesthesia
as directed	as directed

6.14 APPENDIX M – Unit of Time [1]

6.14.1 The HKMTT Unit of Time will be referencing, and with their definitions extracted from the following terminologies:

- SNOMED-CT
- HKHA CMS Medication Order Entry System duration unit list
- eHR CMS Adaptation Module

Table – MTT Frequency List

eHR Description	Concept Full Description
day(s)	day(s)
week(s)	week(s)
month(s)	month(s)
cycle(s)	cycle(s)
dose(s)	dose(s)
hour(s)	hour(s)

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