eMedication Plan ChMed23A Posology

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1. Table of contents

2. Introduction

This document is an addition to the specification “eMediplan_ChMed23A”. It focuses on the topic of posology and describes how to use the *PosologyDetail* objects and its dependencies (*TimedDosage* objects, *Dosage* objects, *Sequence* objects and *Application* objects).

3. Conventions

3.1. Objects

In the context of this document, properties named ‘Object’ can hold different types of data. Every object contains a type as well as properties defined by the type itself.

E.g. for dosage objects, a simple dosage only contains an amount:

```
{
    "t": 1, // Simple dosage
    "a": 1 // Amount of 1
}
```

Whereas a dosage range specifies a minimum and a maximum amount:

```
{
    "t": 3, // Dosage range
    "aMin": 1.0, // Minimum amount of 1
    "aMax": 3.0 // Maximum amount of 3
}
```

Use the appropriate object type to represent the desired posology.

Objects must be deserialised according to the specified type.

3.2. Naming

To minimise the size of the JSON files being generated, property names have been abbreviated using the following rules:

- Property names always start with a lowercase character.
- Properties holding an array of elements have the suffix ‘s’, which represents the plural.
- Properties holding variable object types contain an ‘o’. E.g. *PosologyDetail* object → po, *Dosage* object → do
- If the abbreviation of a word consists of a single character, keep it lowercase; use CamelCase otherwise. E.g. MeasurementType → mt, ApplicationInstructions → appInstr

3.3. Value types

The following types are used for the properties in the model.

Property type	Format	Examples	Description
boolean	true / false	true false	The value is either true or false or can be null if not required.
integer	whole number	1 700	A number without a decimal separator. In case it contains a decimal separator, the number will be rounded to the closest whole number.
decimal	decimal number	1.5 7 30.005	A number which is either a whole number or a number containing a decimal, the separator is a dot.
string	text	“any text”	A text contained in quotes.
list of …	a list of items	[1, 7] ["item1”]	An array containing elements of the specified type.
object	complex object	{ }	Can contain any type of complex object. Supported type(s) will be described.

3.4. Usage

The usage specifies if a property must be provided. The following values can be set.

Usage	Description
R	The value is required and must be set.
R if …	The value must be provided if the specified condition is met (usually, if another property has a certain value).
O	The value is optional. It will be used by certain use cases if it has been set.
-	The value can be set, but won’t be used.
x-N	A list of values can be provided; the minimum amount that must be included is specified by x.

4. Overview

This overview shows the dependencies between the *PosologyDetail* objects, *TimedDosage* objects, *Sequence* objects, *Dosage* objects and *Application* objects.

The following table illustrates which *TimedDosage* object or *Sequence* object can/can't be used for a specific *PosologyDetail* object:

***PosologyDetail* object**	***TimedDosage* object**					
	DosageOnly	Times	DaySegments	WeekDays	DaysOfMonth	Interval
Daily	No	No	No	No	No	No
FreeText	No	No	No	No	No	No
Single	**Yes**	**Yes**	**Yes**	No	No	No
Cyclic	**Yes**	**Yes**	**Yes**	**Yes, if CyDuU = week**	**Yes, if CyDuU = month**	**Yes**
Sequence	**Yes, within the Posology *Sequence* (part of *Sequence* object)**					

The following table illustrates which *TimedDosage* object, *Dosage* object or *Application* object can/can't be used for a specific *TimedDosage* object:

***TimedDosage* objects**	***TimedDosage* object**						***Dosage* object**			***Application* objects**	
	DosageOnly	Times	DaySegments	WeekDays	DaysOfMonth	Interval	DosageSimple	DosageFromTo	DosageRange	ApplicationAtTime	ApplicationSegment
DosageOnly	No	No	No	No	No	No	**Yes**	**Yes**	**Yes**	No	No
Times	No	No	No	No	No	No	No	No	No	**Yes**	No
DaySegments	No	No	No	No	No	No	No	No	No	No	**Yes**
WeekDays	**Yes**	**Yes**	**Yes**	No	No	**Yes**	No	No	No	No	No
DaysOfMonth	**Yes**	**Yes**	**Yes**	No	No	**Yes**	No	No	No	No	No
Interval	No	No	No	No	No	No	**Yes**	**Yes**	**Yes**	No	No

5. Posology

The posology of a medicament describes **when**, which **quantity** of the medicament must be applied. Different kind of posologies can be specified with the available *PosologyDetail* objects, this chapter describes how.

A posology CAN contain a start and an end date for the treatment and MUST specify the type of the *PosologyDetail* object it contains.

Name	Type	Usage		Description
		MP[1]	Rx[2]	
dtFrom	string	O	O	From date (start date of medication treatment), format: yyyy-mm-ddThh:mm:ss+02:00 (ISO 8601[3] Combined date and time in UTC) (e.g. 2016-06-16T16:26:15+02:00)
dtTo	string	O	O	To date (end date of medication treatment), format: yyyy-mm-ddThh:mm:ss+02:00 (ISO 8601 Combined date and time in UTC) (e.g. 2016-06-16T16:26:15+02:00) The *DtTo* must be considered as inclusive. For example DtTo: 2015-05-01, the patient must apply the medicament also on 2015-05-01.
inRes	boolean	O	O	Reserve medication True if in reserve, false otherwise. Default: false
po	*PosologyDetail* object	R	R	The *PosologyDetail* object contains the details of the posology. Please refer to 6 *PosologyDetail objects.*
relMeal	integer	O	O	Indicates whether a medicament must be taken relative to a meal. Value set: 11.3 *Relative to meal*
unit	string	R	O	The quantity unit. Mandatory if *Pos* is defined. (The unit must be based on the standardised substance in the INDEX database.) Possible values: CDTYP 9 in INDEX database / CODE schema. The value set is also available on the website of the eMediplan FHIR Implementation Guide[4].

The table continues on the next page.

[1] MP: *MedicationPlan* corresponds to *medType*: 1 of the *Medication* object (see specification document "eMediplan_ChMed23A")

[2] Rx: *Prescription* corresponds to *medType*: 2 of the *Medication* object (see specification document "eMediplan_ChMed23A")

[3] ISO 8601: http://en.wikipedia.org/wiki/ISO_8601

[4] The link will be available from spring 2024. Until then, please use the following link: https://build.fhir.org/ig/ahdis/chmed/branches/master/CodeSystem-chmed-codesystem-cdtyp9.html

The table starts on the previous page.

Name	Type	Usage		Description
		MP	Rx	
appInstr	string	O	O	Application instructions (further information on how to apply the medication, e.g. dissolve in a glass of water or fruit juice). Please note: For unstructured posology we recommend using the *Posology* object *FreeText* instead of *AppInstr*.
roa	string	O	O	The route of administration (according to EDQM[5]) Possible values: CDTYP 61 in INDEX database / CODE schema
moa	string	O	O	The method of administration (according to EDQM) Possible values: CDTYP 62 in INDEX database / CODE schema

5.1. Limitations and validations

- If both *dtFrom* and *dtTo* are set, the to date (*dtTo*) must be greater than the from date (*dtFrom*) or equal to the from date (*dtFrom*)

5.2. Examples

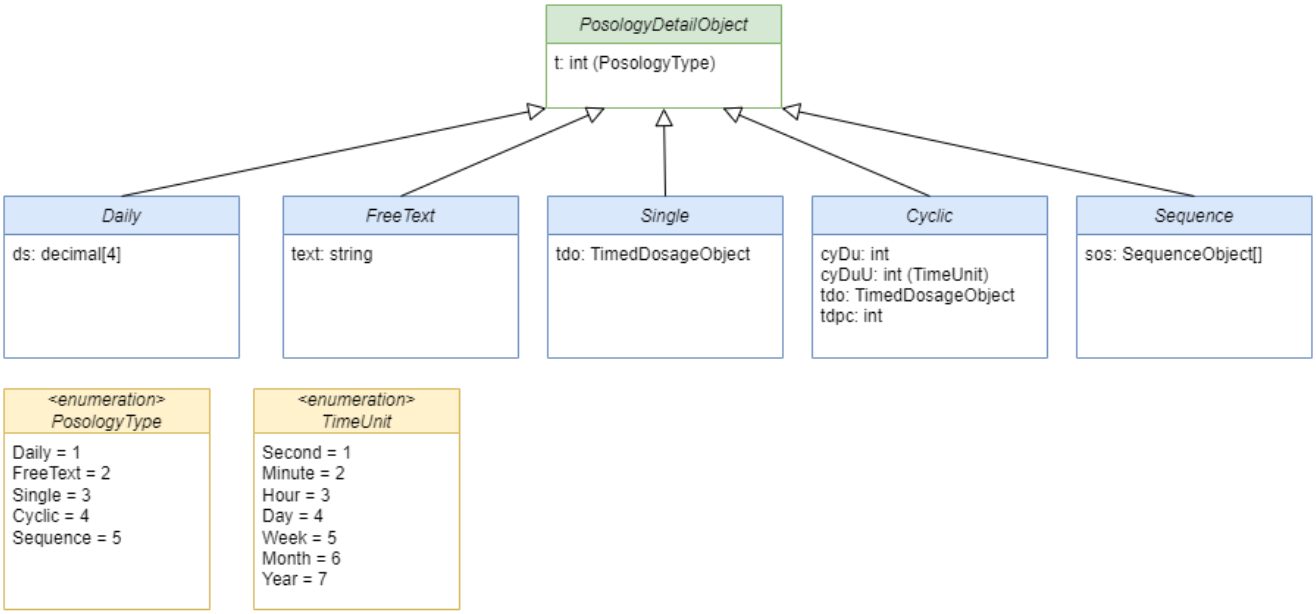
```
{
    "dtFrom": "2023-07-13",
    "dtTo": "2023-08-13",
    "relMeal": 1,
    "inRes": false,
    "po": { … },
    "unit": "Stk",
    "appInstr": "Dissolve in a glass of water or fruit juice.",
    "roa": "20053000",
    "moa": "19"
}
```

[5] EDQM: European Directorate for the Quality of Medicines & HealthCare

6. PosologyDetail objects

Different types of *PosologyDetail* objects are available. E.g. the daily posology object can be used to easily define daily dosages for morning, noon, evening and night or a sequence can be used to specify a complex posology like ‘take daily for 2 weeks, then take a break of 2 days”.

The chapters below will describe the structure of every available *PosologyDetail* object with examples.



The following table shows all *PosologyDetail* objects with their *PosologyDetail* object type:

***PosologyDetail* object**	***PosologyDetail* object type**
Daily	1
FreeText	2
Single	3
Cyclic	4
Sequence	5

6.1. Daily

Describes when (morning, noon, evening, night) and how much of a medicament must be applied daily, using a simple structure.

Note that the unit of the dosage specified is set on the medicament with the property *unit*.

Name	Type	Usage		Description
		MP	Rx	
t	integer	R	R	MUST be 1
ds	array of decimal	R	R	The dosages specify the amount of the medicament to be applied in a day segment. Indexes: 1: Morning 2: Noon 3: Evening 4: Night

6.1.1. Limitations and validation

- Dosages must contain exactly four decimal values
- All dosages must be equal to or greater than 0

6.1.2. Example

Take daily 1 in the morning and 2 in the evening.

```
{
    "t": 1, // Daily
    "ds": [
        1.5, // 1.5 (pills) in the morning
        0,
        2, // 2 pills in the evening
        0
    ]
}
```

6.2. FreeText

Describes an unstructured posology consisting of free text.

Name	Type	Usage		Description
		MP	Rx	
t	integer	R	R	MUST be 2
text	string	R	R	Free text describing the posology

6.2.1. Limitations and validation

- Length of text must be greater than 0

6.2.2. Examples

Free text.

```
{
    "t": 2, // Free text
    "text": "Take one pill. Wait one hour. If symptoms persist, take a second pill and wait 30 minutes. If symptoms persist, contact doctor."
}
```

6.3. Single

Describes a single application of a medicament. With the *TimedDosage* object, there are several possibilities to specify when the single application takes place.

Name	Type	Usage		Description
		MP	Rx	
t	integer	R	R	MUST be 3
tdo	*TimedDosage* object	R	R	The *TimedDosage* object specifies the timing and dosage of a medicament to be applied. Please refer to 7 *TimedDosage objects.*

6.3.1. Limitations and validation

- The following *TimedDosage* objects are supported: *DosageOnly*, *Times*, *DaySegments*.
- Make sure the timed dosage specifies a unique dosage. This is not being enforced by the validation.

6.3.2. Examples

Take 1:

```
{
    "t": 3, // Single application
    "tdo": {
        "t": 1, // Dosage only
        "d": {
            "t": 1, // Simple dosage
            "a": 1 // Amount of 1
        }
    }
}
```

6.4. Cyclic

Describes the application of a medicament at constant intervals.

Name	Type	Usage		Description
		MP	Rx	
t	integer	R	R	MUST be 4
cyDuU	integer	R	R	The cycle duration unit specifies the time unit (hours, days etc.) *cyDu* will be interpreted with it. Value set: 11.4 *Time units*
cyDu	integer	R	R	The duration of a cycle
tdo	*TimedDosage* object	R	R	The *TimedDosage* object specifies the timing and dosage of a medicament to be applied. Please refer to 7 *TimedDosage objects.*
tdpc	integer	O	O	The timed dosages per cycle specifies how often the timed dosage must be repeated within the cycle. Default: 1 Example: tdpc=2 if a medication must be applied twice a week without specifying when.

6.4.1. Limitations and validation

- The following *TimedDosage* objects are supported:
  - *DosageOnly*, *Times*, *DaySegments*, *Interval*
  - *WeekDays*: Supported if cycle duration unit is week
  - *DaysOfMonth*: Supported if cycle duration unit is month
- Cycle duration (*cyDu*) must be greater than 0
- Timed dosages per cycle (*tdpc*) must be greater than 0

6.4.2. Examples

1 pill twice a week:

```
{
    "t": 4, // Cyclic
    "cyDuU": 5, // weekly duration unit
    "cyDu": 5, // Cycle duration of 5 (weeks)
    "tdo": {
        "t": 1, // Dosage only
        "d": {
            "t": 1, // Simple dosage
            "a": 1 // Amount of 1
        }
    },
    "tdpc": 2 // take twice within cycle
}
```

6.5. Sequence

Allows multiple posologies to be combined with a pause as a sequence.

Name	Type	Usage		Description
		MP	Rx	
t	integer	R	R	MUST be 5
sos	List of *Sequence* objects	R	R	The ordered list of *Sequence* objects. Please refer to 9 *Sequence objects.*

6.5.1. Limitations and validation

- The list of *Sequence* objects must contain at least 1 element

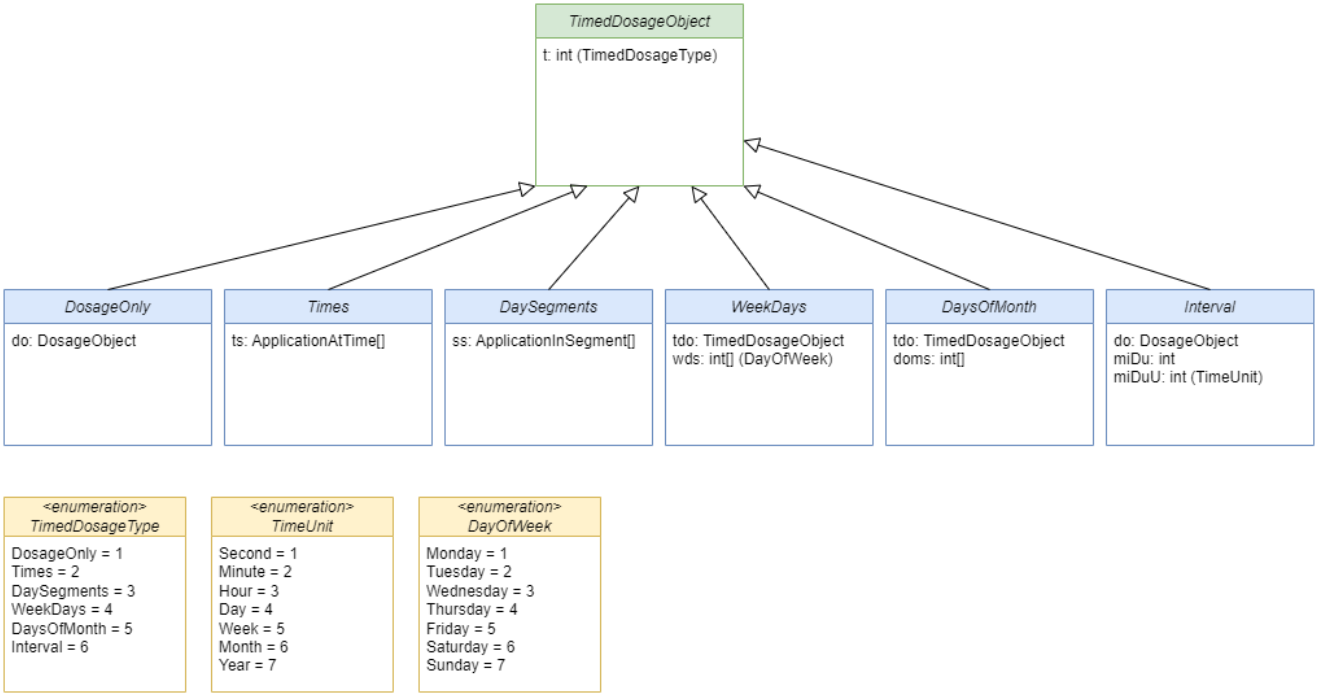
6.5.2. Examples

Take daily 1 for 21 days, then take a break of 7 days

```
{
    "t": 5, // Sequence
    "sos": [
        {
            "t": 1, // Posology sequence
            "po": {
                "t": 4, // Cyclic
                "cyDuU": 4, // Daily cycle duration unit
                "cyDu": 1, // Take every 1 (day)
                "td": {
                    "t": 1, // Dosage only
                    "d": {
                        "t": 1, // Simple dosage
                        "a": 1 // Amount of 1
                    }
                },
                "tdpc": 1 // take once within cycle
            },
            "duU": 4, // Daily duration unit
            "du": 21 // Duration of 21 (days)
        },
        {
            "t": 2, // Pause
            "duU": 4, // Daily duration unit
            "du": 7 // Duration of 7 (days)
        }
    ]
}
```

7. TimedDosage objects

Different types of *TimedDosage* objects are available to specify the moment and amount of an application of a medicament. All *TimedDosage* objects must specify an amount to be applied. It is not mandatory to specify the moment of the application, but it is possible to set them precisely (time of day) or vaguely (day of week or month, day segment etc.).



The following table shows all *TimedDosage* objects with their *TimedDosage* object type:

***TimedDosage* object**	***TimedDosage* object type**
DosageOnly	1
Times	2
DaySegments	3
WeekDays	4
DaysOfMonth	5
Interval	6

7.1. DosageOnly

Specifies a dosage without specifying a precise moment for taking.

Name	Type	Usage		Description
		MP	Rx	
t	integer	R	R	MUST be 1
do	*Dosage* object	R	R	The object specifies the dosage to be applied. Please refer to 8 *Dosage objects*.

7.1.1. Limitations and validation

- None

7.1.2. Examples

Take 1

```
{
    "t": 1, // Dosage only
    "do": {
        "t": 1, // Simple dosage
        "a": 1 // Amount of 1
    }
}
```

7.2. Times

Specifies precise times when a medicament must be applied.

Name	Type	Usage		Description
		MP	Rx	
t	integer	R	R	MUST be 2
ts	list of *ApplicationAtTime*	R	R	Specifies the dosage to be applied at a certain time. Please refer to 10.1 *ApplicationAtTime.*

7.2.1. Limitations and validation

- None

7.2.2. Examples

Take 1 at 08:00.

```
{
    "t": 2, // Times
    "ts": [
        {
            "dt": "08:00:00", // Time of day
            "do": {
                "t": 1, // Simple dosage
                "a": 1 // Amount of 1
            }
        }
    ]
}
```

7.3. DaySegments

Specifies the day segment (morning, noon, evening, night) when a medicament must be applied.

Name	Type	Usage		Description
		MP	Rx	
t	integer	R	R	MUST be 3
ss	list of *ApplicationInSegment*	R	R	Specifies the dosage to be applied in a day segment. Please refer to 10.2 *ApplicationInSegment.*

7.3.1. Limitations and validation

- None

7.3.2. Examples

Take 1 in the evening

```
{
    "t": 3, // day segments
    "ss": [
        {
            "s": 3, // Evening
            "do": {
                "t": 1, // Simple dosage
                "a": 1 // Amount of 1
            }
        }
    ]
}
```

7.4. WeekDays

Specifies on which days of the week a medicament must be applied.

Name	Type	Usage		Description
		MP	Rx	
t	integer	R	R	MUST be 4
wds	list of integers	R	R	The weekdays for which the timed dosage must be applied. Value set: 11.1 *Days of week*
tdo	*TimedDosage* object	R	R	The *TimedDosage* object specifies the timing and dosage of a medicament to be applied. Please refer to 7 *TimedDosage objects.*

7.4.1. Limitations and validation

- At least one day of the week must be specified
- A day of the week may only be contained once in the list
- The following *TimedDosage* objects are supported for *tdo*: *DosageOnly*, *Times*, *DaySegments*.

7.4.2. Examples

Take 1 on Monday, Wednesday and Friday

```
{
    "t": 4, // Weekdays
    "wds": [1, 3, 5], // Monday, Wednesday, Friday
    "tdo": {
        "t": 1, // Dosage only
        "do": {
            "t": 1, // Simple dosage
            "a": 1 // Amount of 1
        }
    }
}
```

7.5. DaysOfMonth

Specifies on which days of the month a medicament must be applied.

Name	Type	Usage		Description
		MP	Rx	
t	integer	R	R	MUST be 5
doms	list of integers	R	R	The days of the month specify when the application(s) must occur.
tdo	*TimedDosage* object	R	R	The timed dosage object specifying the timing and dosage of a medicament to be applied. Please refer to 7 *TimedDosage objects.*

7.5.1. Limitations and validation

- At least one day must be specified in days (*DoMs*).
- A day of the month may only be contained once in the list.
- All days included must be greater than 0 and smaller than or equal to 28.
- The following *TimedDosage* objects are supported for TD: *DosageOnly*, *Times*, *DaySegments*.

7.5.2. Examples

Take 1 on the 1st and 15th of the month

```
{
    "t": 5, // Days of month
    "doms": [ 1, 15  ], // Specified days in month
    "tdo": {
        "t": 1, // Dosage only
        "do": {
            "t": 1, // Simple dosage
            "a": 1 // Amount of 1
        }
    }
}
```

7.6. Interval

Specifies the application of a medicament with a minimal interval between two applications.

Name	Type	Usage		Description
		MP	Rx	
t	integer	R	R	MUST be 6
do	*Dosage* object	R	R	The object specifies the dosage to be applied. Please refer to 8 *Dosage objects.*
miDu	integer	R	R	Minimal interval duration between two applications of a medicament
miDuU	integer	R	R	The unit of the minimal interval duration Value set: 11.4 *Time units*

7.6.1. Limitations and validation

- Minimal interval duration (*miDu*) must be greater than 0.

7.6.2. Examples

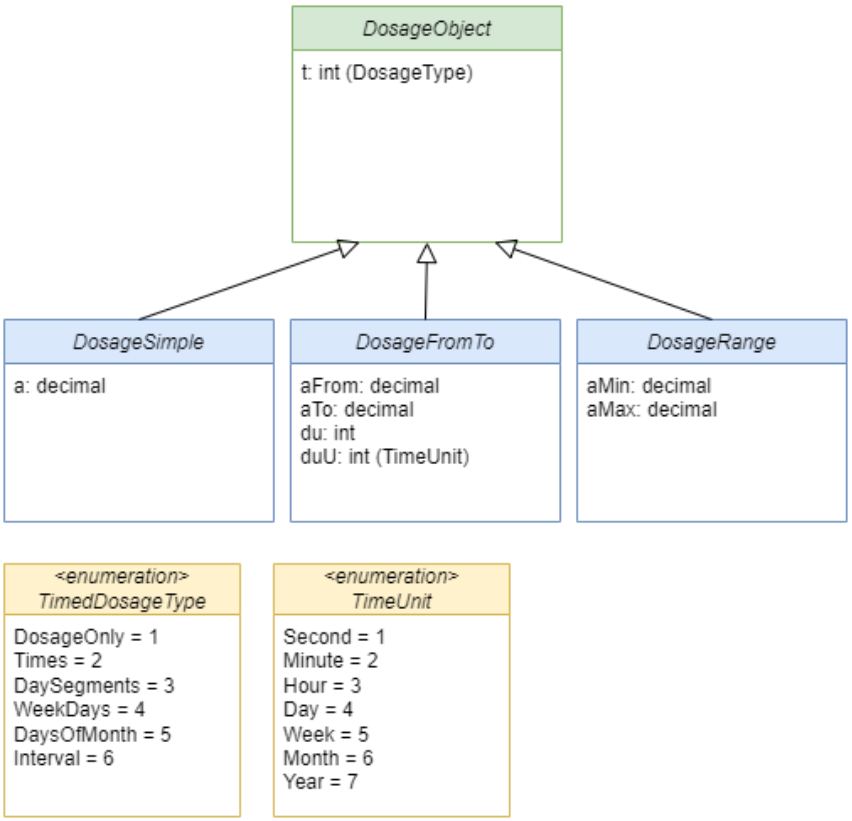
Apply medication with a minimal interval of 6 hours between two applications.

```
{
    "t": 6, // Interval
    "do": {
        "t": 1, // Simple dosage
        "a": 1 // Amount of 1
    },
    "miDuU": 3, // Hours interval unit
    "miDu": 6 // Every 6 (hours)
}
```

8. Dosage objects

Dosage objects describe the amount of a medication that must be applied.

Note that the unit of the amount is specified by the *unit* set for the *Medicament*.



The following table shows all *Dosage* objects with their *Dosage* object type:

***Dosage* object**	***Dosage* object type**
DosageSimple	1
DosageFromTo	2
DosageRange	3

8.1. DosageSimple

Specifies a simple amount. E.g. 1 (pill) or 10 (ml).

Name	Type	Usage		Description
		MP	Rx	
t	integer	R	R	MUST be 1
a	decimal	R	R	The amount to be applied

8.1.1. Limitations and validation

- Amount (*a*) must be greater than 0

8.1.2. Examples

Take 1.

```
{
    "t": 1, // Simple dosage
    "a": 1 // Amount of 1
}
```

8.2. DosageFromTo

Specifies how a dosage changes during time. This can be e.g. used for infusions.

Name	Type	Usage		Description
		MP	Rx	
t	integer	R	R	MUST be 2
aFrom	decimal	R	R	The amount from specifies the start amount
aTo	decimal	R	R	The amount to specifies the end amount
duU	integer	R	R	The unit of the duration Value set: 11.4 *Time units*
du	integer	R	R	The duration

8.2.1. Limitations and validation

- Amount from (*aFrom*) must be greater than or equal to 0
- Amount to (*aTo*) must be greater than the amount from (*aFrom*)
- Duration (*du*) must be greater than 0

8.2.2. Examples

Start with a dosage of 5, end with a dosage of 10 during a time interval of 45 minutes.

```
{
    "t": 2, // From/to dosage
    "aFrom": 5, // Start amount is 5
    "aTo": 10, // End amount is 10
    "duU": 2, // Duration unit is minutes
    "du": 45 // Duration is 45 (minutes)
}
```

8.3. DosageRange

With a dosage range a minimum and a maximum amount must be specified.

Name	Type	Usage		Description
		MP	Rx	
t	integer	R	R	MUST be 3
aMin	decimal	R	R	The minimum amount of a medication that must be applied
aMax	decimal	R	R	The maximum amount of a medication that must be applied

8.3.1. Limitations and validation

- Minimum amount (*aMin*) must be greater than 0
- Maximum amount (*aMax*) must be greater than *aMin*

8.3.2. Examples

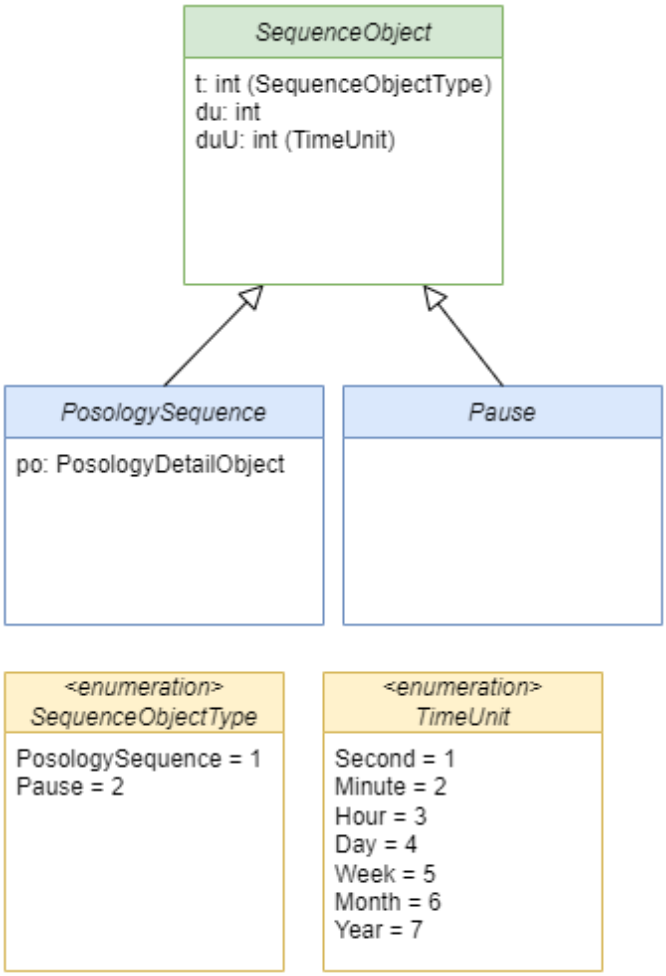
Take min 1 and max 3.

```
{
    "t": 3, // Dosage range
    "aMin": 1.0, // Minimum amount of 1
    "aMax": 3.0 // Maximum amount of 3
}
```

9. Sequence objects

Sequence objects can be used to specify a sequence of posologies that have to be respected in the correct order and can possibly be repeated.

Every sequence specifies its duration (including the unit).



The following table shows all *Sequence* objects with their *Sequence* object type:

***Sequence* object**	***Sequence* object type**
PosologySequence	1
Pause	2

9.1. PosologySequence

Wraps any type of *PosologyDetail* object in order to create a sequence.

Name	Type	Usage		Description
		MP	Rx	
t	integer	R	R	MUST be 1
du	integer	R	R	The duration of the sequence
duU	integer	R	R	The duration unit used to interpret the duration (*du*) of the sequence Value set: 11.4 *Time units*
po	*PosologyDetail* Object	R	R	The *PosologyDetail* object Please refer to 6.1 *PosologyDetail objects.*

9.1.1. Limitations and validation

- Duration (*du*) must be greater than 0

9.1.2. Examples

Take 1 daily for 21 days

```
{
    "t": 1, // Sequence
    "po": {
        "t": 4, // Cyclic
        "cyDuU": 4, // Unit is day
        "cyDu": 1, // Cacle lasts 1 (day)
        "tdo": {
            "t": 1, // Dosage only
            "do": {
                "t": 1, // Simple dosage
                "a": 1 // Amount of 1
            }
        },
        "tdpc": 1
    },
    "duU": 4, // Unit is day
    "du": 21 // Sequence lasts 21 (days)
}
```

9.2. Pause

Specifies a duration of a break where the medication doesn't have to be applied.

Name	Type	Usage		Description
		MP	Rx	
t	integer	R	R	MUST be 2
du	integer	R	R	The duration of the sequence
duU	integer	R	R	The duration unit used to interpret the duration (*du*) of the sequence Value set: 11.4 *Time units*

9.2.1. Limitations and validation

- Duration (*du*) must be greater than 0

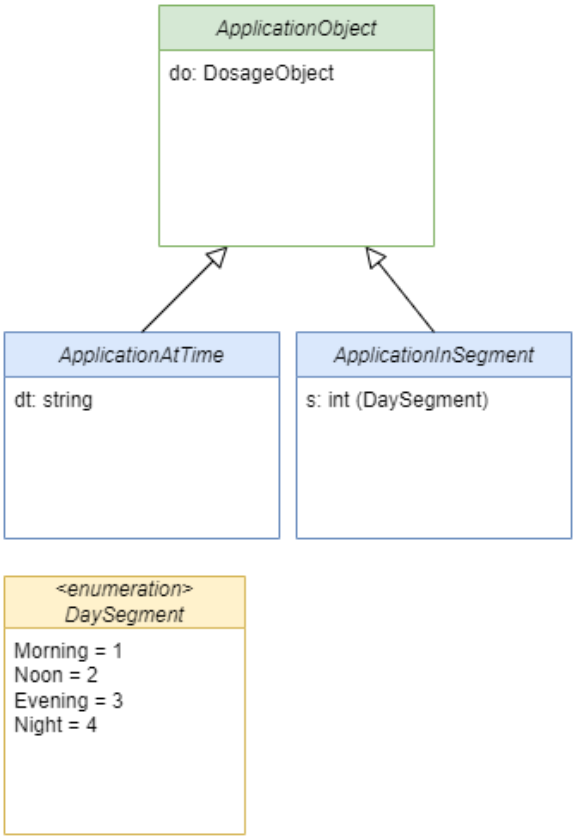
9.2.2. Examples

Break of 7 days.

```
{
    "t": 2, // Pause
    "duU": 4, // Unit is day
    "du": 7 // Pause lasts 7 (days)
}
```

10. Application objects

Application objects specify a dosage that must be applied at certain times; either at a precise time or in a day's segment (morning, noon, evening or night).



Note that *Application* objects do not include a type, as all other objects do. This is because *Application* objects can't be generically added to their parent, but are always explicitly typed. A *TimedDosage* object of the type *Times* must contain a list of *ApplicationAtTime* and one of the type *DaySegments* must contain a list of *ApplicationInSegment*.

10.1. ApplicationAtTime

Specifies a precise moment in time when a medicament must be applied.

Name	Type	Usage		Description
		MP	Rx	
do	*Dosage* Object	R	R	The object specifies the dosage to be applied.
dt	string	R	R	Time of day when the medicament must be applied (hh:mm:ss). The time applies to the time zone of Switzerland: GMT+2 (summer time) or GMT+1 (winter time). The time format hh:mm is also supported (e.g. 08:00).

10.1.1. Limitations and validation

- *dt* must be equal to or greater than 00:00:00 and smaller than or equal to 23:59:59

10.1.2. Examples

Take 1 at 08:00

```
{
    "dt": "08:00:00", // Take at 8 in the morning
    "do": {
        "t": 1, // Simple dosage
        "a": 1 // Amount of 1
    }
}
```

10.2. ApplicationInSegment

Specifies a day segment (morning, noon, evening or night) when a medicament must be applied.

Name	Type	Usage		Description
		MP	Rx	
do	*Dosage* Object	R	R	The object specifies the dosage to be applied.
s	integer	R	R	The day segment Value set: 11.2 *Day segments*

10.2.1. Limitations and validation

- None

10.2.2. Examples

Take 1 in the evening

```
{
    "s": 3, // evening
    "do": {
        "t": 1, // Simple dosage
        "a": 1 // Amount of 1
    }
}
```

11. Value sets

The ChMed23A uses proprietary value sets described in this chapter.

11.1. Days of week

Specifies a day of the week.

Name	Value (integer)
Monday	1
Tuesday	2
Wednesday	3
Thursday	4
Friday	5
Saturday	6
Sunday	7

11.2. Day segments

Specifies a day segment.

Name	Value (integer)
Morning	1
Noon	2
Evening	3
Night	4

11.3. Relative to meal

Specifies whether a medicament must be taken relative to a meal.

Name	Value (integer)
Before	1
During (includes also “immediately with the meal” and “at the beginning of the meal”)	2
After	3
Empty stomach	4
With a high-fat meal	5
With a light meal	6
With a main meal	7

11.4. Time units

Specifies the available time units.

Name	Value (integer)
Second	1
Minute	2
Hour	3
Day	4
Week	5
Month	6
Year	7

12. Changelog

Version	Date	Changes
2.1	25.04.2024	PUBLISHED Chapter **7.5 DaysOfMonth** • Property *doms*: added uniqueness requirement Chapter **10.1 ApplicationAtTime** • Property *dt*: adjusted allowed value range to conform with standardized time formats
2.0	08.03.2024	PUBLISHED Chapter **5 Posology** • *dtFrom* → example date changed to 2016-06-16 • *dtTo* → example date changed to 2016-06-16 • Property *unit* added • Property *appInstr* added • Property *roa* added • Property *moa* added Chapter **6 PosologyDetail objects** • The picture of the model was adjusted. Chapter **7 TimedDosage objects** • The picture of the model was adjusted. Chapter **7.5 DaysOfMonth** • The limitation/validation was adjusted → "or equal to" was added to "All days included must be greater than 0 and smaller than **or equal to** 28" Chapter **8 Dosage objects** • The picture of the model was adjusted. Chapter **9 Sequence objects** • The picture of the model was adjusted. Chapter **10 Application objects** • The picture of the model was adjusted. Chapter **11.3 Relative to meal** • More precise definition of the value *During* added. • 4 new values added (*Empty stomach, With a high-fat meal, With a light meal, With a main meal*)
1.0	07.08.2023	PUBLISHED Throughout the document, various texts were optimised. Chapter **10.1 ApplicationAtTime** • Property *do* added Chapter **10.2 ApplicationInSegment** • Property *do* added
0.5	25.07.2023	DRAFT Throughout the document, various texts were optimised and references, links and images were updated. The **format name** CHMED23A has been changed to **ChMed23A**. New chapter added: **3. Conventions** Chapter **5. Posology (previously 4.)** • The following properties were adjusted according to the conventions: ○ *DtFrom → dtFrom* ○ *DtTo → dtTo* ○ *InRes → inRes* ○ *PO → po* ○ *RelM → relMeal*

		• Property *dtFrom* and *dtTo* → type changed from date to string
		• Example in chapter 5.2 adjusted
		Chapter **6. PosologyDetail objects (previously 5.)**
		• Object model adjusted
		Chapter **6.1 Daily (previously 5.1)**
		• Property *t* added
		• The following properties were adjusted according to the conventions:
		  ○ *Ds* → *ds*
		• Property ds → type changed from array of numbers to array of decimal
		• Example in chapter 6.1.2 adjusted
		Chapter **6.2 FreeText (previously 5.2)**
		• Property *t* added
		• The following properties were adjusted according to the conventions:
		  ○ *Text* → *text*
		• Example in chapter 6.2.2 adjusted
		Chapter **6.3 Single (previously 5.3)**
		• Property *t* added
		• The following properties were adjusted according to the conventions:
		  ○ *TD* → *tdo*
		• Example in chapter 6.3.2 adjusted
		Chapter **6.4 Cyclic (previously 5.4)**
		• Property *t* added
		• The following properties were adjusted according to the conventions:
		  ○ *CyDuU* → *cyDuU*
		  ○ *CyDu* → *cyDu*
		  ○ *TD* → *tdo*
		  ○ *TDpC* → *tdpc*
		• Example in chapter 6.4.2 adjusted
		Chapter *6.5 Sequence (previously 5.5)*
		• Property *t* added
		• The following properties were adjusted according to the conventions:
		  ○ *SO* → *sos*
		• Example in chapter 6.5.2 adjusted
		Chapter **7. TimedDosage objects (previously 6.)**
		• Object model adjusted
		Chapter **7.1 Dosage only (previously 6.1)**
		• Property *t* added
		• The following properties were adjusted according to the conventions:
		  ○ *DO* → *do*
		• Example in chapter 7.1.2 adjusted
		Chapter **7.2 Times (previously 6.2)**
		• Property *t* added
		• The following properties were adjusted according to the conventions:
		  ○ *Ts* → *ts*
		• Example in chapter 7.2.2 adjusted
		Chapter **7.3 DaySegments (previously 6.3)**
		• Property *t* added
		• The following properties were adjusted according to the conventions:
		  ○ *Ts* → *ss*
		• Example in chapter 7.3.2 adjusted
		Chapter **7.4 WeekDays (previously 6.4)**
		• Property *t* added
		• The following properties were adjusted according to the conventions:
		  ○ *WDs* → *wds*
		  ○ *TD* → *tdo*
		• Example in chapter 7.4.2 adjusted

		Chapter **7.5 DaysOfMonth (previously 6.5)**
		• Property *t* added
		• The following properties were adjusted according to the conventions:
		  ○ *DoMs* → *doms*
		  ○ *TD* → *tdo*
		• Example in chapter 7.5.2 adjusted
		Chapter **7.6 Interval (previously 6.6)**
		• Property *t* added
		• The following properties were adjusted according to the conventions:
		  ○ *DO* → *do*
		  ○ *MIDu* → *miDu*
		  ○ *MIDuU* → *miDuU*
		• Example in chapter 7.6.2 adjusted
		Chapter **8. Dosage objects (previously 7.)**
		• Object model adjusted
		Chapter **8.1 DosageSimple (previously 7.1)**
		• Property *t* added
		• The following properties were adjusted according to the conventions:
		  ○ *A* → *a*
		• Property *a* → type changed from numerical to decimal
		• Example in chapter 8.1.2 adjusted
		Chapter **8.2 DosageFromTo (previously 7.2)**
		• Property *t* added
		• The following properties were adjusted according to the conventions:
		  ○ *AFrom* → *aFrom*
		  ○ *ATo* → *aTo*
		  ○ *DuU* → *duU*
		  ○ *Du* → *du*
		• Properties *aFrom* and *aTo* → type changed from numerical to decimal
		• Example in chapter 8.2.2 adjusted
		Chapter **8.3 DosageRange (previously 7.3)**
		• Property *t* added
		• The following properties were adjusted according to the conventions:
		  ○ *AMin* → *aMin*
		  ○ *AMax* → *aMax*
		• Properties *aMin* and *aMax* → type changed from numerical to decimal
		• Example in chapter 8.3.2 adjusted
		Chapter **9. Sequence objects (previously 8.)**
		• Object model adjusted
		Chapter **9.1 PosologySequence (previously 8.1)**
		• Property *t* added
		• The following properties were adjusted according to the conventions:
		  ○ *Du* → *du*
		  ○ *DuU* → *duU*
		  ○ *PO* → *po*
		• Property duU → type changed from numerical to integer
		• Example in chapter 9.1.2 adjusted
		Chapter **9.2 Pause (previously 8.2)**
		• Property *t* added
		• The following properties were adjusted according to the conventions:
		  ○ *Du* → *du*
		  ○ *DuU* → *duU*
		• Property *duU* → type changed from numerical to integer
		• Example in chapter 9.2.2 adjusted
		Chapter **10. Application objects (previously 9.)**
		• Object model adjusted

		Chapter **10.1 ApplicationAtTime (previously 9.1)**
		• Property *t* added
		• The following properties were adjusted according to the conventions:
		  ○ *DT → dt*
		• Example in chapter 10.1.2 adjusted
		Chapter **10.2 ApplicationInSegment (previously 9.2)**
		• Property *t* added
		• The following properties were adjusted according to the conventions:
		  ○ *S → s*
		• Example in chapter 10.2.2 adjusted

0.4	24.07.2023	Internal version for the developers.
0.3	28.06.2023	DRAFT Throughout the document, various texts were optimised and references, links and images were updated. The **format name** CHMED21A has been changed to **CHMED23A**. Chapter **4 Posology** • Property *PO* → name changed from *Posology* object to *PosologyDetail* object • Property *RelM* → name changed from *RM* to *RelM* Chapter **5 PosologyDetail objects** • Name changed from *Posology* object to *PosologyDetail* object • *PosologyDetail* object *Even/odd days* removed Chapter **5.6 Evend/odd** removed Chapter **6.2 Times** • Property *Ts* → name changed from *TakingAtTime* to *ApplicationAtTime* Chapter **6.2 DaySegments** • Property *Ts* → name changed from *TakingInSegment* to *ApplicationInSegment* Chapter **6.5 DaysOfMonth** • Property *Ds* changed to *DoMs* Chapter **6.5.1 Limitations and validation** • Days changed from 32 to 28: “all days included must be greater than 0 and smaller than 28” Chapter **6.6 Interval** • Property *D* changed to *DO* • Property *MID* changed to *MIDu* • Property *MIDU* changed to *MIDuU* Chapter **8.1 PosologySequence** • Property *D* changed to *Du* • Property *DU* changed to *DuU* Chapter **8.2 Pause** • Property *D* changed to *Du* • Property *DU* changed to *DuU* Chapter **9** changed from *Taking* objects to **Application objects** Chapter **9.1** changed from *TakingAtTime* to **ApplicationAtTime** • New property *DT* • properties *Off* and *OffU* removed Chapter **9.2** *TakingInSegment* changed to **ApplicationInSegment**
0.2	14.01.2022	Initial version (DRAFT)