eMedication Plan ChMed23A

Author	pwa, tne
Status	**Final**
Classification	Published
Version / Date	2023A / V2.1 / 25.04.2024

Contact	Geschäftsstelle IG eMediplan c/o Köhler, Stüdeli & Partner GmbH Amthausgasse 18, 3011 Bern Tel. +41 (0)31 560 00 24 info@emediplan.ch

1. Table of contents

2. Introduction

Medication plans are a central pillar of any eHealth solution. To enable interoperability between eHealth systems in Switzerland, the organization "IG eMediplan" was founded in 2016. Its aim is to support and provide public, open-source, medication plan formats used by a broad group of stakeholders from the public and private sectors.

This paper describes the specification and reference implementation of the object model for a medication plan, the so-called ChMed23A.

The reference consists of the content and layout specification for the electronic document, a JSON file containing a medication.

The content and layout specification for a paper-based layout used in Print/PDF scenarios is described in the document "eMediplan_Paper-based_Layout".

A ChMed23A can be transmitted using the so called ChTransmissionFormat[1], which specifies the type of the content and includes the compressed and Base64 encoded content.

ChFormat: {inputType}.{compressed-base64-payload}
Example: ChMed23A.
H4sIAAAAAAAACq2OOw4CMQxE7zIt2ZUTAmzcLZsGiU+KUCEKYKlokIACRbk7jkLBAWisZz/NyAmb6/gAHxJWI7hsGgqhnsIOnBDBRmF4+9cebCuBtUL0Xy38g73MnIu+DxX/1nRUkCRiv1zLl9tzOF1uIloqxj9FGTKmId1oHcnxtGM7a+28c9YtJqSZCPkD+iD8fPQAAAA=

This allows IT systems to store and transmit electronic medication plans in the form of a JSON file in UTF-8. It also enables the medication plan to be transmitted in a print-based form by using QR barcodes. Therefore, the medication plan is readable by users and systems alike. This is necessary to guarantee simple handling.

The possibility to transmit and store the compressed and Base64 encoded chunked payload (mainly to not exceed the maximum character size supported by a QR code), will be considered in the future.
Here is an example which describes how to create chunks that fit on one line in this document:
Chunk 1: ChMed23A.1/4.H4sIAAAAAAAACq2OOw4CMQxE7zIt2ZUTAmzcLZsGiU+KUCEKYKlokIACRbk7jk
Chunk 2: ChMed23A.2/4.LBAWisZz/NyAmb6/gAHxJWI7hsGgqhnsIOnBDBRmF4+9cebCuBtUL0Xy38g73MnI
Chunk 3: ChMed23A.3/4.u+DxX/1nRUkCRiv1zLl9tzOF1uIloqxj9FGTKmId1oHcnxtGM7a+28c9YtJqSZCPkD+
Chunk 4: ChMed23A.4/4.iD8fPQAAAA=

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
}
```

[1] ChTransmissionFormat: Transmission format (currently used with ChMed and ChVac)

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. The ChMed23A eMedication object

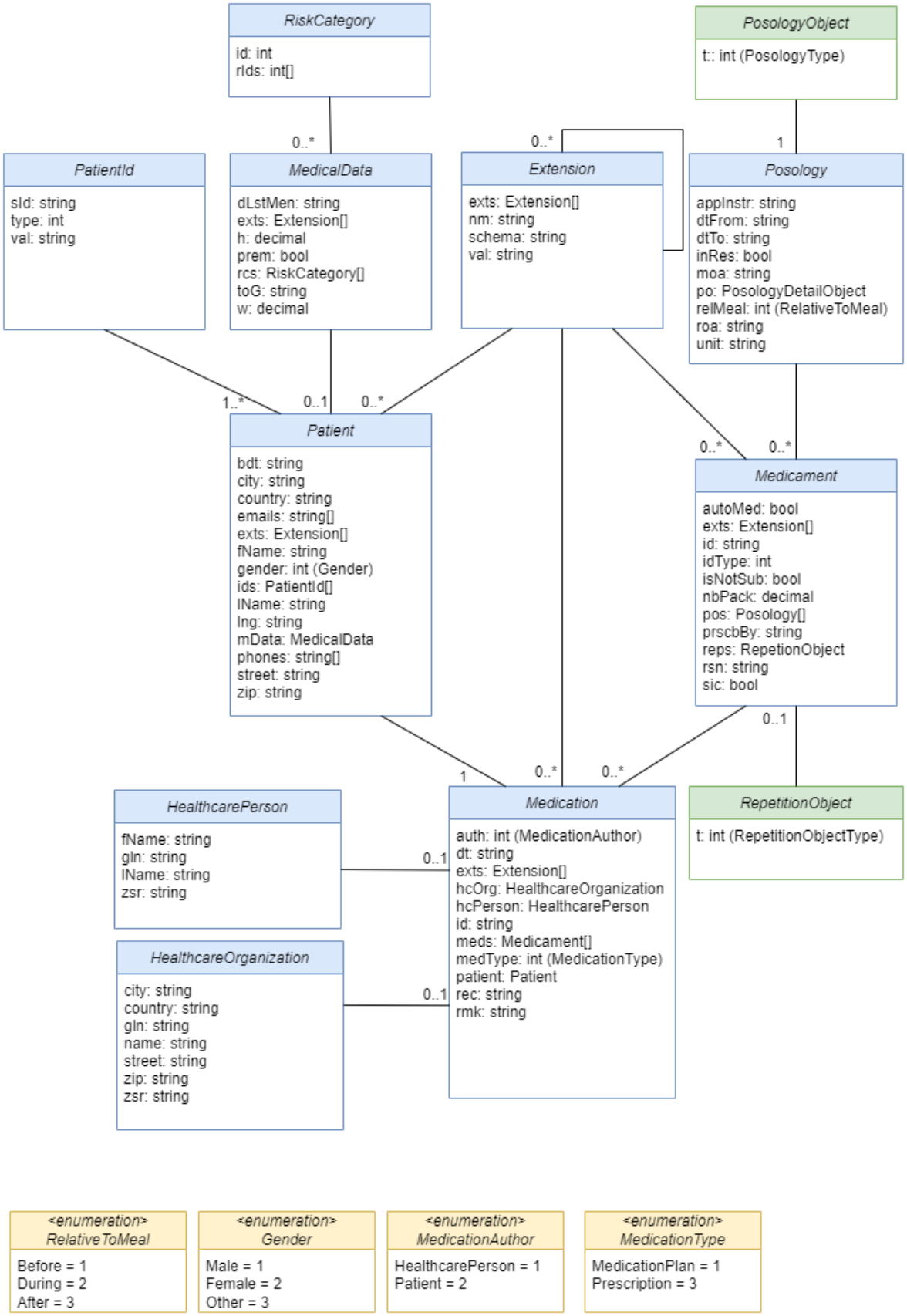
4.1. Overview of the object model

The hierarchy of the object model is quite simple. A ChMed23A eMedication contains one patient with personal data and medical data and multiple medicaments with associated posologies.

The object model is represented using a JSON structure.

To allow serialisation and deserialisation in a QR barcode, the data size of the JSON file should be minimised. We therefore chose quite short property names. We recommend omitting required and optional fields when they are null or empty.

4.2. Object model



Note that the two blocks marked green (*PosologyDetailObject* and *RepetitionObject*) are dynamic objects, which have not been fully represented in this diagram. Please refer to the dedicated chapters in this document for additional details.

4.2.1. Medication

The *Medication* object is the main object; it contains exactly one *Patient* and a list of *Medicaments*.

Name	Type	Usage		Description
		MP	Rx	
patient	*Patient*	R	R	The patient Please refer to 4.2.2 *Patient.*
hcPerson	*HealthcarePerson*	R if auth =1	R if auth =1	The healthcare person (the author of the document) Please refer to 4.2.10 *HealthcarePerson.*
hcOrg	*HealthcareOrganization*	R if auth =1	R if auth =1	The healthcare organization in which the *HealthcarePerson* works. Please refer to 4.2.11 HealthcareOrganization.
meds	list of *Medicaments*	0-N	1-N	List of medicaments Please refer to 4.2.6 *Medicament.*
exts	list of *Extensions*	0-N	0-N	List of extensions Please refer to 4.2.9 *Extension.*
medType	integer	R	R if auth = HealthcarePerson, - if auth = Patient	The type of the *Medication* object Possible values: 1: MedicationPlan (MP) *2: PolymedicationCheck (PMC)* ***[deprecated]*** 3: Prescription (Rx)
id	string	O	O	The ID of the *Medication* object. The responsibility to set the ID is given to the ChMed23A creator.
auth	integer	R	R	The author of the document Possible values: 1: Healthcare person 2: Patient (only for MedicationPlan, not for Prescription)
rec	string	-	O	The recipient (GLN) of the electronic prescription. To be used if the electronic prescription is to be transmitted electronically to a healthcare professional.
dt	string	R	R	The date of creation Format: yyyy-mm-ddThh:mm:ss+02:00 (ISO 8601[2] Combined date and time in UTC) (e.g. 2016-06-16T16:26:15+02:00)
rmk	string	O	O	The remark (any information/advice the author would like to share independently of a specific medicament)

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

4.2.2. Patient

The *Patient* object contains the patient's personal and health data.

Name	Type	Usage		Description
		MP	Rx	
fName	string	R	R	First name
lName	string	R	R	Last name
bdt	string	R	R	Date of birth, format: yyyy-mm-dd (ISO 8601[3] Date)
gender	integer	R	R	Gender[4] of the patient Possible values: 1: Male 2: Female 3: Other
street	string	O	O	Street
zip	string	O	O	Postcode
city	string	O	O	City
country	string	O	O	Country If the address is in Switzerland, this property does not need to be set, as it is assumed by default that the address is in Switzerland. Format: Alpha-2 code (ISO 3166 [5]Country Codes) (e.g. FR for France)
lng	string	R	-	The patient's language (ISO 639-1[6] language code) (e.g. de). Note that while the lowercase version is preferred, the codes are also valid in uppercase (e.g. DE).
ids	list of *PatientId*	1-N	1-N	List of patient identifiers Please refer to 4.2.3 *PatientId.*
exts	list of *Extensions*	0-N	0-N	List of extensions Please refer to 4.2.9 *Extension.*
mData	*MedicalData*	O	-	Medical data information Please refer to 4.2.4 *MedicalData.*
phones	list of string	0-N	0-N	List of phone numbers
emails	list of string	0-N	0-N	List of email addresses

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

[4] The terms "gender" and "sex" are considered synonyms in ChMed23A.

[5] ISO 3166: https://www.iso.org/iso-3166-country-codes.html

[6] Language code ISO 639-1, full list: http://en.wikipedia.org/wiki/list_of_ISO_639-1_codes

4.2.3. PatientId

The *PatientId* object enables a patient to be uniquely identified.

Name	Type	Usage		Description
		MP	Rx	
type	integer	R	R	The type of ID Possible values: 1: Insurance card number 2: Local PID
sId	string	R for *Type* 2 - for *Type* 1	R for *Type* 2 - for *Type* 1	The system (e.g. OID, URL etc.) enabling the *Patient* to be identified (system identifier). To be used only with *Type* 2 (Local PID)
val	string	R	R	The value of the ID

4.2.4. MedicalData

Applies only to *medType* MedicationPlan (MP).

The *MedicalData* object contains the patient's health data.

Name	Type	Usage	Description
		MP	
dLstMen	string	O	Only required in case of *Risk Id* 78 in *RiskCategory* 3 First day of last menstruation, format: yyyy-mm-dd (ISO 8601[7] Date)
prem	boolean	O	True if it is a premature baby, false otherwise (only if age <= 18 months)
toG	string	O	The time of gestation, should usually only be filled if premature is set to true. Format: {week}-{day} week is a natural number including 0, day excluding 0
rcs	list of *RiskCategory*	0-N	Risk categories Please refer to 4.2.5 *RiskCategory.*
w	decimal	O	Weight (kilogram)
h	decimal	O	Height (centimetre)
exts	list of *Extensions*	0-N	List of extensions Please refer to 4.2.9 *Extension.*

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

4.2.5. RiskCategory

The *RiskCategory* object contains risks grouped by category.

Name	Type	Usage	Description
		MP	
id	integer	R	The ID of the risk category (*RC Id*) Possible values: 1: Renal insufficiency 2: Liver insufficiency 3: Reproduction 4: Competitive athlete 5: Operating vehicles/machines 6: Allergies 7: Diabetes
rIds	list of integer	0-N	List of risks (*Risk Id*) within the risk category (*RC Id*)

If the risk category is specified without any risk being specified in the list of risks, the entire risk category is considered as explicitly excluded for the current patient. If the category does not exist, the risks are considered as unknown for the patient.

The possible risks are listed below. The allergies have not been listed here. You can find them on the website of the eMediplan FHIR Implementation Guide[8].

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

RC Id	Risk Id	German	French
1	597	Niereninsuffizienz, terminale (Clcr <15 ml/min)	Insuffisance rénale, terminale (Clcr <15 ml/min)
1	575	Niereninsuffizienz, schwere (Clcr ≥15–29 ml/min)	Insuffisance rénale, sévère (Clcr ≥15–29 ml/min)
1	576	Niereninsuffizienz, mittelschwere (Clcr ≥30–59 ml/min)	Insuffisance rénale, modérée (Clcr ≥30–59 ml/min)
1	577	Niereninsuffizienz, leichte (Clcr ≥60–89 ml/min)	Insuffisance rénale, légère (Clcr ≥60–89 ml/min)
2	572	Leberinsuffizienz, schwere (Child-Pugh C)	Insuffisance hépatique, sévère (Child-Pugh C)
2	573	Leberinsuffizienz, mittelschwere (Child-Pugh B)	Insuffisance hépatique, modérée (Child-Pugh B)
2	574	Leberinsuffizienz, leichte (Child-Pugh A)	Insuffisance hépatique, légère (Child-Pugh A)
3	78	Schwangerschaft	Grossesse
3	77	Stillzeit	Allaitement
3	612	Frauen im gebärfähigen Alter	Femmes en âge de procréer
4	580	Leistungssportler	Sportifs de compétition
5	615	Potenziell gefährlichen Situationen ausgesetzt, wie beispielsweise dem Führen von Fahrzeugen, dem Bedienen von Maschinen oder dem Arbeiten in grossen Höhen	Exposés à des situations potentiellement dangereuses, comme la conduite de véhicules, machines ou travaillant en haute altitude
6	The allergies have not been listed here. The full list can be found in the eMediplan FHIR Implementation Guide[9]		
7	779	Diabetes mellitus Typ 1	Diabète de type 1
7	780	Diabetes mellitus Typ 2	Diabète de type 2

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

4.2.6. Medicament

The *Medicament* object contains information about a medicament as well as its posologies.

Name	Type	Usage		Description
		MP	Rx	
id	string	R	R	The ID defined in the *IdType* below. If the *IdType* is 'None', add a free text description here.
idType	integer	R	R	The type of *ID* Possible values: 1: None 2: GTIN[10] 3: Pharmacode[11] 4: Product Number[12] (not for Rx)
pos	list of *Posology*	0-N	0-N	List of posologies Please refer to 4.2.7 *Posology.*
rsn	string	O	O	Reason for applying the medication (the reason for the medication treatment)
autoMed	boolean	R	-	Automedication (self-medication), true if it is automedication, false otherwise. Self-medication = The patient self-administers treatment without a prescription from a physician.
prscbBy	string	O	-	Prescribed by: the GLN or designation of the person who prescribed the medicament (e.g. physician, pharmacist etc.)
reps	*Repetition* object	-	O	The repetition object indicates how often a prescription can be repeated or how long the prescription is valid. If no repetition object is set, it will be interpreted as if the *Repetition* object of the type *Number* had been set with V=1. If the prescription of a medicament is not repeatable, use the *Repetition* object with the type *Number* and set V=0. Please refer to 4.2.8 *Repetition object.*
isNotSub	boolean	O	O	True if the medicament should not be substituted, false otherwise. Default: false
sic	boolean	-	O	Sic erat scriptum (latin). Is intended to avoid misunderstandings between the physician and pharmacist and indicates to the pharmacist that the physician has deliberately chosen the prescription and wishes to prescribe the drug in exactly this way and not otherwise. Default: false

The table continues on the next page.

[10] Global Trade Item Number (GTIN): https://www.refdata.ch/de/artikel/anmeldung/artikel-refdatabase-gtin

[11] The Pharmacode is the main article identifier in the INDEX database. It is managed by the editorial team at HCI Solutions AG.

[12] The product number is a unique identifier for products in the INDEX database. It is managed by the editorial team at HCI Solutions AG.

The table starts on the previous page.

Name	Type	Usage		Description
		MP	Rx	
nbPack	decimal	-	O	Number of packages to be delivered. Default: 1
exts	list of *Extensions*	0-N	0-N	List of extensions Please refer to 4.2.9 *Extension.*

4.2.7. Posology (Pos)

A posology describes when and what amount of a medicament must be taken.

The table below describes the properties of a posology. Please refer to the document "eMediplan_ChMed23A_Posology" for additional information about creating posologies.

Name	Type	Usage		Description
		MP	Rx	
dtFrom	string	O	O	From date (start date of medication treatment), format: YYYY-MM-DDThh:mm:ss+02:00 or YYYY-MM-DD (ISO 8601[13] Combined date and time including time zone or date only) (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 or YYYY-MM-DD (ISO 8601[14] Combined date and time including time zone or date only) (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	*Posology Detail* object	R	R	The *PosologyDetail* object contains the details of the posology. Please refer to the document "eMediplan_ChMed23A_Posology" for additional information.
relMeal	integer	O	O	Indicates whether a medicament must be taken relative to a meal. Possible values: 1: Before 2: During 3: After

The table continues on the next page.

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

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

The table starts on the previous page.

Name	Type	Usage		Description
		MP	Rx	
unit	string	R	O	The quantity unit. Allowed values (code representation, display values are not allowed): See eMediplan FHIR Implementation Guide[15]
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*. Please refer to the document “eMediplan_ChMed23A_Posology”.
roa	string	O	O	The route of administration (according to EDQM[16]) Allowed values (code representation, display values are not allowed): See eMediplan FHIR Implementation Guide[17]
moa	string	O	O	The method of administration (according to EDQM) Allowed values (code representation, display values are not allowed): See eMediplan FHIR Implementation Guide[18]

4.2.8. Repetition object

Applies only to *medType* Prescription (Rx).

The repetition object indicates how often a prescription can be repeated or how long the prescription is valid.

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

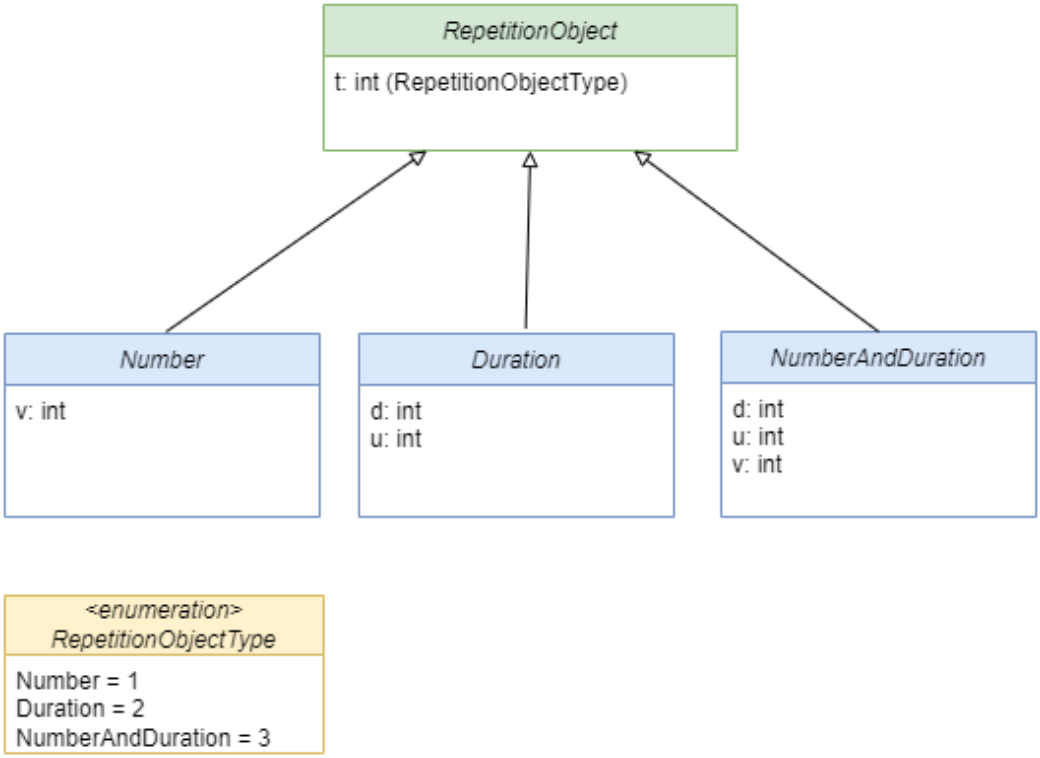
Repetition object	Repetition object type
Number	1
Duration	2
NumberAndDuration	3

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

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

[17] The link will be available from summer 2024. Until then, please use the following link: https://build.fhir.org/ig/ahdis/chmed/branches/master/CodeSystem-chmed-codesystem-cdtyp61.html

[18] The link will be available from summer 2024. Until then, please use the following link: http://chmed.emediplan.ch/fhir/CodeSystem-chmed-codesystem-cdtyp62.html



4.2.8.1. Number

Name	Type	Usage		Description
		MP	Rx	
v	integer	-	R	The value defining the number of repetitions; how often a prescribed medicament can be redeemed after it has been redeemed once. If the prescription of a medicament is not repeatable set 0. Validation: Must be greater than or equal 0.

4.2.8.2. Duration

Name	Type	Usage		Description
		MP	Rx	
d	integer	-	R	The duration of the prescription defining in which time frame the prescription can be redeemed (permanent prescription). E.g. the prescription is repeatable within 6 months. Validation: Must be greater than 0.
u	integer	-	R	The unit of the Duration (*d*) Possible values: 1: Second 2: Minute 3: Hour 4: Day 5: Week 6: Month 7: Year

4.2.8.3. NumberAndDuration

Name	Type	Usage		Description
		MP	Rx	
v	integer	-	R	The value defining the number of repetitions; how often a prescribed medicament can be redeemed within the defined duration (*d*) after it has been redeemed once. Validation: Must be greater than or equal 0.
d	Integer	-	R	The duration of the prescription defining in which time frame the prescription can be redeemed (permanent prescription). E.g. the prescription is repeatable within 6 months. Validation: Must be greater than 0.
u	integer	-	R	The unit of the duration (*d*) Possible values: 1: Second 2: Minute 3: Hour 4: Day 5: Week 6: Month 7: Year

4.2.9. Extension

Extensions can be used to include additional information.

Name	Type	Usage		Description
		MP	Rx	
nm	string	R	R	The name of the field
val	string	O	O	The value of the field
schema	string	R	R	The schema can be any string and can be used to determine how to interpret the extension.
exts	list of *Extensions*	0-N	0-N	The list of nested extensions

4.2.10. HealthcarePerson

The *HealthcarePerson* object contains the healthcare person's data.

Name	Type	Usage		Description
		MP	Rx	
gln	string	O	R	The GLN
fName	string	R	R	First name
lName	string	R	R	Last name
zsr	string	-	O	ZSR number The ZSR number may only be set once, either in object *HealthcarePerson* or in object *HealthcareOrganization*.

4.2.11. HealthcareOrganization

The *HealthcareOrganization* object contains the healthcare organization's data.

Name	Type	Usage		Description
		MP	Rx	
gln	string	R/ O*	-	The GLN * R if no GLN is set in object HealthcarePerson, otherwise O
name	string	R	R	Name
street	string	R	R	Street
zip	string	R	R	Postcode
city	string	R	R	City
country	string	O	O	Country If the address is in Switzerland, this property does not need to be set, as it is assumed by default that the address is in Switzerland. Format: Alpha-2 code (ISO 3166 [19]Country Codes) (e.g. FR for France)
zsr	string	-	O	ZSR number The ZSR number may only be set once, either in object *HealthcarePerson* or in object *HealthcareOrganization*.

[19] ISO 3166: https://www.iso.org/iso-3166-country-codes.html

4.3. Example of a JSON medication object

A typical, valid ChMed23A object would look like this. This example describes that Dora Graber must take 1 pill of Med1 every day at 08:00.

```
{
    "patient": {
        "fName": "Dora",
        "lName": "Graber",
        "bdt": "1951-11-06",
        "gender": 2 // Female
    },
    "meds": [
        {
            "id": "Med1",
            "idType": 1, // None
            "pos": [
                {
                    "po": {
                        "t": 4, // Cyclic
                        "cyDuU": 4, // Daily
                        "cyDu": 1, // Repeate every 1 (day)
                        "tdo": {
                            "t": 2, // Timed dosage
                            "ts": [
                                {
                                    "dt": "08:00:00", // Take every day at 08:00
                                    "do": {
                                        "t": 1, // Simple dosage
                                        “a”: 1 // Amount of 1 (tablet)
                                    }
                                }
                            ]
                        },
                        "tdpc": 1
                    }
                }
            ],
            "unit": "TABL",
            "nbPack": 1.0
        }
    ],
    "medType": 1,
    "id": "9196a4e4-3439-4714-b89a-89402db30c02",
    "auth": 2, // Patient is author
    "dt": "2023-07-14T12:40:57.1203496+02:00"
}
```

5. Changelog

Version	Date	Changes
2.1	25.04.2024	PUBLISHED Clarifications and adjustments to ensure alignment between the specification and the examples
2.0	08.03.2024	PUBLISHED Throughout the document, various texts were optimised. Chapter **4.2 Object model** • The picture of the model was adjusted. Chapter **4.2.1 Medication** • Property *hcOrg* added • Property *medType* usage adjusted • Property *id* usage adjused from R to O for MP and Rx • Property *auth* → clarification added: the patient can only be the author for the MP, but not for the Rx • Property *zsr* removed Chapter **4.2.2 Patient** • Property *country* added Chapter **4.2.6 Medicament** • Property *idType* → value ATC removed • Property *unit* removed • Property *applnstr* removed • Property *roa* removed • Property *moa* removed • Property *sub* renamed to *isNotSub* Chapter **4.2.7 Posology** • Property *unit* added • Property *applnstr* added • Property *roa* added • Property *moa* added Chapter **4.2.8 Repetition object** • The picture of the model was adjusted. Chapter **4.2.10 HealthcarePerson** • Property *gln* usage adjusted from R to O for MP • Property *zsr* added • Property *street* removed • Property *zip* removed • Property *city* removed The chapter **4.2.11 HealthcareOrganization** was added.
1.0	07.08.2023	PUBLISHED Throughout the document, various texts were optimised. Chapter **4.2.1 Medication** • Property *rec* → name changed from *rcv* to *rec* Chapter **4.2.6 Medicament** • Property *rsn* → name changed from *tkgRsn* to *rsn* Chapters **4.2.8.1 Number**, **4.2.8.2 Duration** and **4.2.8.3 NumberAndDuration** • Validation added Chapter **4.2.9 Extension** • Property *schema* added
0.6	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**. Chapter **2. Introduction** • Various texts were changed, removed and added. Chapter **3. Conventions** was added. Chapter **4.2 Object model (previously 3.2)** • Object model adjusted Chapter **4.2.1 Medication (previously 3.2.1)** • The following properties were adjusted according to the conventions: o *Patient → patient* o *Meds → meds* o *PFs → exts* o *MedType → medType* o *Id → id* o *Auth → auth* o *Zsr → zsr* o *Rcv → rcv* o *Dt → dt* o *Rmk → rmk* • New property *hcPerson* added • The type of *exts* (previously *PFs*) was changed from list of *Private Field* to list of *Extensions* • The property *PFSchema* was removed Chapter **4.2.2 Patient (previously 3.2.2)** • The following properties were adjusted according to the conventions: o *FName → fName* o *LName → lName* o *BDt → bdt* o *Gender → gender* o *Street → street* o *Zip → zip* o *City → city* o *Lng → lng* o *Ids → ids* o *PFs → exts* o *MData → mData* • The type of *exts* (previously *PFs*) was changed from list of *Private Field* to list of *Extensions* • *Property Cs* removed • Property *phones* added • Property *emails* added Chapter **4.2.3 PatientId (previously 3.2.3)** • The following properties were adjusted according to the conventions: o *Type → type* o *Sid → sId* o *Val → val* Chapter **4.2.4 MedicalData (previously 3.2.4)** • The following properties were adjusted according to the conventions: o *DLstMen → dLstMen* o *Prem → prem* o *ToG → toG* o *RCs → rcs* o *W → w* o *H → h* o *PFs → exts*

		• The type of *exts* (previously *PFs*) was changed from list of *Private Field* to list of *Extensions* • Property w → type changed from number to decimal • Property h → type changed from number to decimal Chapter **4.2.5 RiskCategory (previously 3.2.5)** • The following properties were adjusted according to the conventions: • *Id* → *id* • *RCs* → *rcs* • Property *rcs* → type changed from list of number to list of integer • Additional explanation that the value set of the allergies can be found on the Website of the eMediplan FHIR Implementation Guide Chapter **4.2.6 Medicament (previously 3.2.6)** • The following properties were adjusted according to the conventions: ○ *Id* → *id* ○ *IDType* → *idType* ○ *Pos* → *pos* ○ *Unit* → *unit* ○ *TkgRsn* → *tkgRsn* ○ *AppInstr* → *appInstr* ○ *AutoMed* → *autoMed* ○ *PrescbBy* → *prescbBy* ○ *Roa* → *roa* ○ *Moa* → *moa* ○ *Reps* → *reps* ○ *Sub* → *sub* ○ *Sic* → *sic* ○ *NbPack* → *nbPack* ○ *PFs* → *exts* • The type of *exts* (previously *PFs*) was changed from list of *Private Field* to list of *Extensions* • Additional explanation of the ID types in the footnote • Additional explanation that the value set of the units can be found on the Website of the eMediplan FHIR Implementation Guide • Additional explanation that ROA and MOA are based on EDQM • Property nbPack → type changed from integer to decimal Chapter **4.2.7 Posology (previously 3.2.7)** • The following properties were adjusted according to the conventions: ○ *DtFrom* → *dtFrom* ○ *DtTo* → *dtTo* ○ *InRes* → *inRes* ○ *PO* → *po* ○ *RelM* → *relMeal* Chapter **3.2.8 *Contact*** removed Chapter **4.2.8 Repetition object (previously 3.2.9)** • Object model adjusted Chapter **4.2.8.1 Number (previously 3.2.9.1)** • Property *t* added • The following properties were adjusted according to the conventions: ○ *V* → *v* Chapter **4.2.8.2 Duration (previously 3.2.9.2)** • Property *t* added • The following properties were adjusted according to the conventions: ○ *D* → *d* ○ *U* → *u* Chapter **4.2.8.3 NumberAndDuration (previously 3.2.9.3)** • Property *t* added • The following properties were adjusted according to the conventions:

		○ *V* → *v* ○ *D* → *d* ○ *U* → *u* Chapter **4.2.9 Extension (previously 3.2.10 Private Fields)** • Name changed from *Private Field* to *Extension* • The following properties were adjusted according to the conventions: ○ *Nm* → *n* ○ *Val* → *val* ○ *PFs* → *exts* • The type of *exts* (previously *PFs*) was changed from list of *Private Field* to list of *Extensions* Chapter **4.2.10 HealthcarePerson (previously 3.2.11)** • The following properties were adjusted according to the conventions: ○ *GLN* → *gln* ○ *FName* → *fName* ○ *LName* → *lName* ○ *Street* → *street* ○ *Zip* → *zip* ○ *City* → *city* Chapter **3.3 Compression** removed Chapter **4.3 Example of a JSON medication object (previously 3.4)** • Example adjusted
0.5	24.07.2023	Internal version for the developers.
0.4	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 **3.2.1 Medication** • Property *Meds* → usage of Rx changed from 0-N to 1-N • Property *MedType* → type changed from number to integer • Property *MedType* → value 2 changed to Polymedication (PMC) [deprecated] • Property *MedType* → Prescription (Rx) changed from value 2 to value 3 • Property *Auth* → type changed from string to integer and possible values defined: 1: Healthcare person, 2: Patient • Property *AuthR* → removed • Property *Rcv* → usage of MP changed from O to – Chapter **3.2.2 Patient** • Usage of the properties *FName*, *LName*, *BDt* and *Gender* changed from O to R • Property *Cs* → type changed from list of *Contact* to *Contact* object • Property *Cs* → usage of MP and Rx changed from 0-N to O • Property *Ids* → usage of MP and Rx changed from 0-N to 1-N Chapter **3.2.3 PatientId** • Property *Type* added • Property *SId* → *SId* depends on the type: not required if type 1 (insurance card number), required if type 2 (local PID) Chapter **3.2.5 RiskCategory** • Property *Id* → type changed from number to integer • Risk category Id 5 text adaption → changed from “Driver” to “Operating vehicles/machines” • *RC Id* 6 including description added to the table Chapter **3.2.6 Medicament** • Property *IdType* → new possible value: 5: ATC code (not for Rx) • Property *Pos* → usage of Rx changed from 0-1 to 0-N • Property *Unit* → usage of MP changed from O to R

		• Property *TkgRsn* → usage of Rx changed from - to O • Property *Sub* → text adaption → "True if the medicament should not be substituted, false otherwise. Default: false". • Property *Sic* added • Property *NbPack* → type changed from number to integer Chapter **3.2.7 Posology (Pos)** • Property *PO* → name changed from *Posology* object to *PosologyDetail* object • Property *RelM* → name changed from *RM* to *RelM* Chapter **3.2.8 Contact** • Property *Mobile* removed Chapter **3.2.9 Repetition object** • New *Repetition* object added: *NumberAndDuration* New object (*HealthcarePerson*) added → see Chapter **3.2.9 HealthcarePerson**
0.3	14.01.2022	Initial version (DRAFT)