RIZIV-INAMI

VIDIS

Virtual Integrated Drug Information System

Versions

Author	Version	Date	Comment
Hans De Keersmaecker	V1-V4		Voorstel vereenvoudiging posologie in het medicatieschema
INAMI - Goedele Reynders	V5	07-09-2020	Document trio-overleg
INAMI – Goedele Reynders	V6	22-10-2020	Aanpassing na werkgroep 3 & 4
INAMI – Bart Verbeke	V7	01-03-2021	Update naar finale versie
INAMI – Bart Verbeke	V8	20-04-2021	Update na opmerkingen Stijn Longin / Jeroen De Wilde

References

Cookbook: the medication scheme	Version 5.8~~7~~	31/03/2021~~08/05/2020~~

Context

Posology can be registered in different ways in software for caregivers: free text or structured. The software vendors experience difficulties in the support of complex structured schemes with posologies on date, day or weekday. Their need is reduced complexity of the medication schemes to improve interoperability. On the other hand, the caregivers need even more structured posologies (e.g. use of evidence-based posologies).

Before better structured posologies can be introduced in the future, complexity of the current solutions has to be reduced and synchronisation of the schemes has to be made easier. In this document a technical solution is specified that will improve interoperability between different software solutions of caregiver(s) and the vaults.

It's important to note that the solution only concerns the software of the caregiver and the vaults, not the software ~~of the prescriber~~to make a prescription. This specification is a (technical) quick-win that can be implemented on short-term. If there is any necessity, the technical solution can evolve in the future.

The ultimate goal of the adjustment is to have structured ~~prescription~~medication lines. Accompanying measures must be taken to achieve this (e.g. Implementation of an authentic source with evidence-based posologies and associated business rules for the software).

RIZIV-INAMI

1 Definitions

- Free text posology: the caregiver can enter any text he wants.
- Simple structured posology: the caregiver defines moments of medication intake for one day; the intake is the same on other days (example: 2x1 capsule – before breakfast, before supper – per day).
- Posology on date: these are all possible schemes with specific dates (example: yearly on the 3th of march)
- Posology on day: these are schemes that reduce the medication intake, build up the medication intake or provide complex schemes on multiple days (example: day 1 2x1 capsule, day 2 3x0.5 capsule and repeat this every 3 days).
- Posology on weekday: on Monday 2x1 capsule, on Tuesday 1x1 capsule,…
- Complex scheme: in the (technical) context of this document a 'complex scheme' is a scheme with:
    - Posology on date
    - Posology on day
    - Posology on weekday

that's registered in the software in a ~~coded~~ structured way.

2 Current situation

From CareConnect GP, statistical data was provided on the way posology is registered in the software for the last two years. These numbers were ratified by the other software vendors taking part in the trio consultation.

	%
Free text posology	21,121~~1633565~~
Simple structured posology	77,521~~1704971~~
Posology on date	0,0548~~535062~~
Posology on day	0,6986~~005105~~
Posology on weekday	0,6320~~7448~~

The numbers in the table above show complex schemes aren't registered a lot in production in a coded way. Therefore, the technical solution described in the document will only keep the most registered posologies: free text posology and simple structured posology. When a caregiver wants to use posology on date, on day or on weekday (and it isn't possible to use a simple structured posology) it will be put in free text.

Since the registration of complex schemes represent a very small percentage in the current use, the use of free text instead of complex schemes doesn't mean necessarily taking a step back. Users can (and have to) keep using simple structured posologies with reduced complexity and better synchronisation of the schemes.

2.1 Examples of the solution

The technical solution will only support free text posology or simple structured posology. The existing complex posologies will be converted automatically to free text (see section "Conversion").

NOTE: it will no longer be possible for general practitioners~~the user~~ to enter (new) complex posologies in their~~his~~ software solution. Pharmacy software providers have the liberty to adopt this addendum or not.

Met opmaak: Engels (Verenigde Staten)

Met opmaak: Engels (Verenigde Staten)

Met opmaak: Engels (Verenigde Staten)

Met opmaak: Engels (Verenigde Staten)

*Examples of posology that **will be supported** in the technical solution:*

- Simple structured posology

	Freq.	Start	Eind	Inname / eenheid	ontbijt					middagmaal				avondmaal					Info
					nuchter	voor	tijdens	na	tussen	voor	tijdens	na	tussen	voor	tijdens	na	tussen	voor slapen	
Marcoumar tabl. (deelb. in 4) 25x 3mg	Dagelijks	03/09/20	12/09/20	tablet			1				1				1				

	Freq.	Start	Eind	Inname / eenheid	ontbijt					middagmaal				avondmaal					Info
					nuchter	voor	tijdens	na	tussen	voor	tijdens	na	tussen	voor	tijdens	na	tussen	voor slapen	
Marcoumar tabl. (deelb. in 4) 25x 3mg	Wekelijks	03/09/20	01/11/20	tablet			1/2				1				1+1/2				

	Freq.	Start	Eind	Inname / eenheid	ontbijt				middagmaal				avondmaal							Info
					nuchter	voor	tijdens	na	tussen	voor	tijdens	na	tussen	voor	tijdens	na	tussen	voor slapen	09:30	15:10	
Marcoumar tabl. (deelb. in 4) 25x 3mg	Om de 9 dagen	03/09/20	31/01/21	tablet															1/2	1	

*Examples of posology that **won't be supported** in the technical solution:*

Hereunder you can find examples of complex posologies that won't be supported in the technical solution. In the first image you see the complex posology, in the second image you see the complex posology converted to free text.

	Freq.	Start	Eind	Inname / eenheid	ontbijt					middagmaal				avondmaal					Info
					nuchter	voor	tijdens	na	tussen	voor	tijdens	na	tussen	voor	tijdens	na	tussen	voor slapen	
Marcoumar tabl. (deelb. in 4) 25x 3mg	dag 1 - dag 2	03/09/20	29/10/20	tablet			1				1				1				
	dag 3 - dag 4	03/09/20	29/10/20	tablet			1								1				
	dag 5 - dag 6	03/09/20	29/10/20	tablet											1				

	Freq.	Start	Eind	Inname / eenheid	ontbijt					middagmaal				avondmaal					Info
					nuchter	voor	tijdens	na	tussen	voor	tijdens	na	tussen	voor	tijdens	na	tussen	voor slapen	
Marcoumar tabl. (deelb. in 4) 25x 3mg		03/09/20	29/10/20		Dag 1-2 3 x 1 tablet (bij ontbijt, bij middagmaal, bij avondmaal) Dag 3-4 2 x 1 tablet (bij ontbijt, bij avondmaal) Dag 5-6 1 x 1 tablet (bij avondmaal)														

RIZIV-INAMI

- Posology on weekday will be automatically converted to free text.

	Freq.	Start	Eind	Inname / eenheid	ontbijt					middagmaal				avondmaal					Info
					nuc hter	voor	tijdens	na	tussen	voor	tijdens	na	tussen	voor	tijdens	na	tussen	voor s lapen	
Marcoumar tabl. (deelb. in 4) 25x 3mg	Wekeli jks-Ma	03/09/20	29/10/20	tablet							1								
	Wekeli jks-Do	03/09/20	29/10/20	tablet							1								
	Wekel ijks-Zo	03/09/20	29/10/20	tablet							1								

	Freq.	Start	Eind	Inname / eenheid	ontbijt					middagmaal				avondmaal					Info
					nuc hter	voor	tijdens	na	tussen	voor	tijdens	na	tussen	voor	tijdens	na	tussen	voor s lapen	
Marcoumar tabl. (deelb. in 4) 25x 3mg		03/09/20	29/10/20		Wekelijks: Maandag 1 x 1 tablet (bij middagmaal) Donderdag 1 x 1 tablet (bij middagmaal) Zondag 1 x 1 tablet (bij middagmaal)														

- Posology on day will be automatically converted to free text.

	Freq.	Start	Eind	Inname / eenheid	ontbijt					middagmaal				avondmaal					Info
					nuc hter	voor	tijdens	na	tussen	voor	tijdens	na	tussen	voor	tijdens	na	tussen	voor s lapen	
Marcoumar tabl. (deelb. in 4) 25x 3mg	Om de 3 dagen - dag 1	03/09/20	29/10/20	tablet			1												
	Om de 3 dagen - dag 2	03/09/20	29/10/20	tablet			1								1				
	Om de 3 dagen - dag 3	03/09/20	29/10/20	tablet			1												

	Freq.	Start	Eind	Inname / eenheid	ontbijt					middagmaal				avondmaal					Info
					nuc hter	voor	tijdens	na	tussen	voor	tijdens	na	tussen	voor	tijdens	na	tussen	voor s lapen	
Marcoumar tabl. (deelb. in 4) 25x 3mg		03/09/20	29/10/20		Om de 3 dagen: Dag 1: 1 x 1 tablet (bij ontbijt) Dag 2: 2 x 1 tablet (bij ontbijt, bij avondmaal) Dag 3: 1 x 1 tablet (bij ontbijt)														

3 Kmehr posologies

Background information about the current situation is not a part of this document, but can be found in thesection 4.3.4.2 of "Cookbook Medicatieschema"[1].

Kmehr supports following posologies:

- Use of element "posology"
- Use of element "regimen"

3.1 Element "Posology"

This element must be used to transfer a free text posology. The regimen element is not allowed to be present in this case.

The <posology> element can contain one and only one text field:

- Text [1-1]

For <posology> **no** frequency element will be allowed.

Example: free text posology indicating intake of "1 capsule in case of headache, every 4 hours"

```
<posology>
        <text L="nl">1 capsule every 4 hours, in  case of headache</text>
</posology>
```

Complex posologies will be put/converted into free text. A set of user guidelines must be elaborated so that the complex posologies are written down in a uniform manner.

3.2 Element "Regimen"

This element must be used to transfer the coded posology. The posology element is not allowed to be present in this case.

Only one possibility remains in the regimen element "daynumber". To indicate all moments of intake of that day, the following fields must be repeated for all moments:

- <daynumber> [1-1]: daynumber must always be equal to "1"
- <daytime> [1-1]: either dayperiod or time must be present
    - <dayperiod> [0-1]: 1 CD-DAYPERIOD value
    - <time> [1-1]: indicating the exact time to take the medication

[1] Current 5.8 version of the 'Cookbook Medicatieschema': https://www.ehealth.fgov.be/standards/kmehr/en/transactions/medication-scheme-element

https://www.ehealth.fgov.be/standards/kmehr/en/data/file/view/AXIrqDy0yLwYq_7rrxjM?name=Safe_Cookbook_Medicatieschema_v5.7_EN.pdf

- <quantity> [1-1]
    - <decimal> [1-1]
    - <unit> [1-1]: 1 CD-ADMINISTRATIONUNIT value

When <regimen> displays a cyclic behaviour, the period can be indicated by using:

- Frequency [0-1] containing
    - Periodicity [1-1]: 1 CD-PERIODICITY value

Only non-deprecated values that are a multiple of days are allowed, so no values every x hours are permitted (example “Per hour (U)”, “Per 8h (UA)”, “Per 3h (UD)”, “Per half hour (UH)”, “Per 2h (UT)”, “Per 4h (UV), “Per 12h (UW)” or “Per 6h (UZ)”.

Example: coded posology indicating the intake of “4x1 capsule – after getting up, before lunch, before supper, before sleep – each day).

```
<frequency>
        <periodicity>
                <cd S="CD-PERIODICITY" SV="1.1">D</cd>
        </periodicity>
</frequency>
<regimen>
        <daynumber>1</daynumber>
        <daytime>
                <dayperiod>
                        <cd S="CD-DAYPERIOD" SV="1.1">morning</cd>
                </dayperiod>
        </daytime>
        <quantity>
                <decimal>1</decimal>
                <unit>
                        <cd S="CD-ADMINISTRATIONUNIT" SV="1.2">00005</cd>
                </unit>
        </quantity>
        <daynumber>1</daynumber>
        <daytime>
                <dayperiod>
                        <cd S="CD-DAYPERIOD" SV="1.1">beforelunch</cd>
                </dayperiod>
        </daytime>
        <quantity>
                <decimal>1</decimal>
                <unit>
                        <cd S="CD-ADMINISTRATIONUNIT" SV="1.2">00005</cd>
                </unit>
        </quantity>
        <daynumber>1</daynumber>
        <daytime>
                <dayperiod>
```

```
                    <cd S="CD-DAYPERIOD" SV="1.1">beforedinner</cd>
                </dayperiod>
            </daytime>
            <quantity>
                <decimal>1</decimal>
                <unit>
                    <cd S="CD-ADMINISTRATIONUNIT" SV="1.2">00005</cd>
                </unit>
            </quantity>
            <daynumber>1</daynumber>
            <daytime>
                <dayperiod>
                    <cd S="CD-DAYPERIOD" SV="1.1">thehourofsleep</cd>
                </dayperiod>
            </daytime>
            <quantity>
                <decimal>1</decimal>
                <unit>
                    <cd S="CD-ADMINISTRATIONUNIT" SV="1.2">00005</cd>
                </unit>
            </quantity>
    </regimen>
```

4 Conversion

Some of the possibilities in the use of 'regimen' will no longer be supported, so a conversion strategy must be set in place. This conversion strategy must ensure that the posologies that are no longer supported will fade out and are treated in the same way by each software vendor.

~~In addition, some Kmehr tables will be updated. Some values might be mapped to another value, but in other cases values might just become outdated without replacement. If these values have been used, they will also generate non supported medication scheme elements.~~

~~To ensure each software vendor treats a medication scheme element that is no longer supported in the same way, an xslt script should be created to make a free text posology from the XML.~~

There are two possibilities of syncing:

- An invalid type of posology is read from a new or updated scheme from the vault.
- An invalid posology is present in de database of the software vendor that is in sync with the vault or wasn't synced yet.

Only conversion from complex schemes will be done. Simple structured posologies won't be converted. Caregivers will be able, and have to be encouraged, to keep using the simple structured posologies.

A structured posology that has been converted to free text must be preceded by a notification: *converted*.

4.1 Sync from the vault

Each time an invalid medication scheme element is read from a new or updated schema from the vault, it will be ~~provided to the xslt to~~ changed ~~it~~ to free text before it is shown to the user and put in the database.

This way the user will always see the free text version~~ generated by the xslt script.~~ The author remains the author received on the medication scheme element.

4.2 Local sync

Local scheme entries that become invalid, must also be converted and shown to the user after opening the patient record. The local conversion must be done in a way that the result equals the result ~~of the xslt script and will result in~~of ~~a~~ free text posology.