



Operating instructions



DRUG GPS

Find and prevent medication errors



Pharmacy

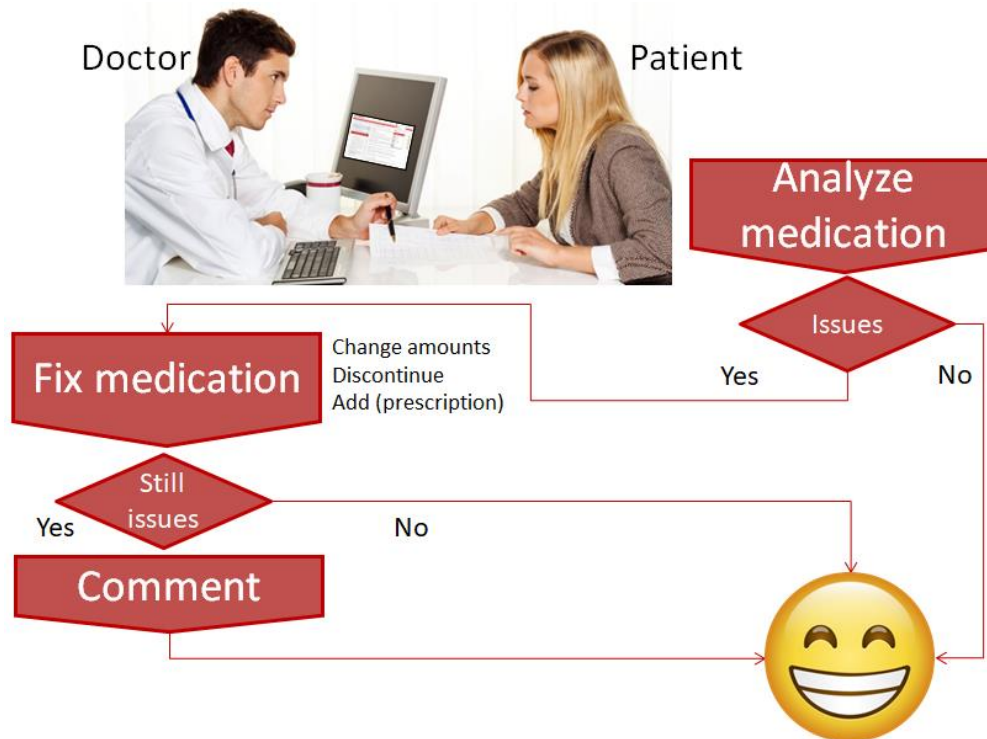


Insurance

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1 Overview



MEDICATION CHECK VER 2.82 - CZECH WOMAN

- Overview
- ▼ Medication
 - Medication list
 - Analysis of the medication
 - Additional data required to check the medication
 - Issues regarding the medication (not depending on amounts)
 - Should-not-happen and precautions - Digitized Prescription Info
 - Amounts of medication and over dosage
 - ▼ Action on medication
 - Clinical conformance report
 - Action taken on medication**
 - Complete summary report of medication
 - Follow-Up

Action taken on medication

Potential alarming issues

Configuration of solution. The solution shows the following part, if they are relevant. You can get them shown in any case by checking the parts you want shown

Explanations related to the medication

- There are several substances in the same risk drug super class. This situation is often one that occurs by mistake, and one of the drugs can be omitted. But it is OK as it is*
 Comment
 This is OK, two diuretics and two anti-hypertensives are OK
- There are direct interactions between drugs. This may be handled in the dosages, but it also may be unhandled, and the dosis of one or more of the drugs must be adjusted or a drug must be exchanged for another. But it is OK as it is*
 Comment
 These two interactions are noted and taken into account in the dosages of the 4 drugs
- The UN organization WHO has elaborated maximum Daily Defined Doses (DDD) for selected active substance - tied to ATC codes, which we have decoded and attached to the corresponding active substances. One or more of the active substances pass their DDD amount by more than 33%. You should check this substance in detail. But it is OK as it is*
 Comment
 This apparent over dose is due to the UN being too cautious - we doctors accept much higher limits than the UN - WHO
- The UN organization WHO has elaborated maximum Daily Defined Doses (DDD) for selected active substance - tied to ATC codes, which we have decoded and attached to the corresponding active substances. One or more of the active substances pass their DDD

2 Details

1. **Indicate basic questions** about yourself. Select country and language.
 - You can be or represent the patient, or
 - You can be the doctor, and then invite the patient. We will ignore that in the following
 - It will display the Alias specified for the patient, and if none is specified, it will display the email address of the patient (thus allowing a doctor to distinguish)
 - Be careful not to specify an email address that identifies the patient, if you don't wish that information to be in the database
2. Key in your **medication list**
 - By selecting in a large drop-down of all approved medications in the country (this is too large for a mobile browser – if you choose this option, you must use a PC for this step)
 - If your country has unique codes you can select to key them in instead (USA, Scandinavia, Spain)
 - Select any medications not recognized by codes – e.g. select a similar medicine
3. Key in **amounts** per day (it defaults to “one every day”; only change if that is wrong)
 - How often do you take the medication
 - How many each time (how many pills or “basic units” e.g. 4 ml, if it comes in 4 ml servings)
4. **Analyse** the medication
 - It will only put issues found into the workflow
 - You can select any issues in the workflow, even if the issue is empty
 - You can select if you want to have “arguments” for having a genomic test, if you haven't already got it
5. **Answer additional** questions it may rise
 - If we need to know the answers in order to see if there is an issue
 - It can be all sorts of questions and clinical values
 - It doesn't need to run the whole analysis again, once you have given the answers
6. **See the result**
 - Step through the issues
 - Divided in whether issues depend on amount
 - (See which substances substantiate a genomic analysis, if selected)
7. **Invite** a doctor now (by email). (It suggests to do so, if there are any issues)
8. **See the doctor** if there are issues
 - You can now invite the doctor
9. The **doctor makes updates or comments** on the issues
 - Updates
 - Changed amounts
 - Stopping meds
 - Adding meds: Issue new prescriptions
 - Re-run the analysis
 - Comment (if there are still issues)
10. **Save/Print** the new report with the doctor's comments
11. **Change** the medication (amounts, stop, new drugs)
12. **Monitor** measurements, if any are stated

3 Starting and later resuming a workflow

3.1 Blue button – starting a new patient

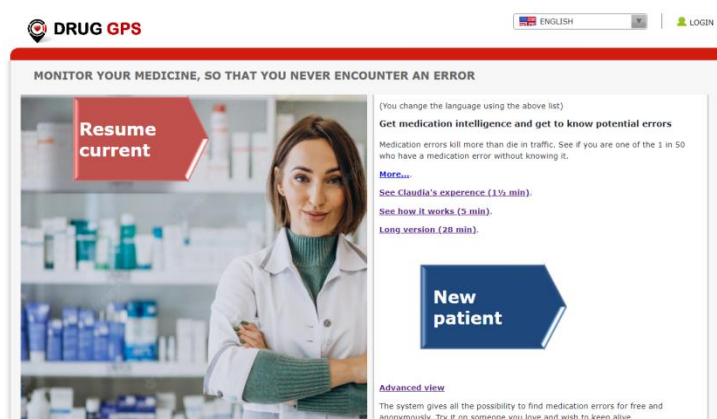
You initiate a workflow by clicking on the blue button “**New patient**”.

- It creates a new user account for you called “**Anon**” + [a time stamp in UTC]. This will always be a unique user
- It automatically generates a password for the account. It will be sent by email to the email address you specify
- The email also contains a link that you can always use to access the workflow (with the username and password)
- You may alter the password on the platform while being logged in to render it impossible to access the workflow, if someone else gets the email

This email will always allow you to access the workflow (by clicking on the link in the email and providing the username / password (which you may have changed)). If you handle several patients, we advise to forward it to yourself with an alias specifying which patient it is for, allowing you to distinguish between several emails with links.

You may forward the email with the credentials to others, but be aware that then you lose the platform’s capability to distinguish what different users said (because the other person logs in as you).

This email may be confused with subsequent invitation emails, where the user is cc. e.g. to the doctor’s invitation (but the user needs not react to it).



3.2 Orange button – resuming a workflow

After having been on the site once, the button to the top left changes from “Demo” to “**Resume current**”.

It will always link to the latest workflow in use on that computer. This is useful for a patient or a family member (but not for a doctor, who has many patients).

It will still require a login to click on it (unless the session of login is still active).

It is an easy alternative to using the email sent to you, because many platforms may save the user name and password (and make it easy to log in).

3.3 Doctors resuming a workflow

We assume that a doctor always reacts on an invitation, and then carries out the tasks, and then never resumes until invited again.

However a doctor can always access all workflows and resume them via

- The “**Advanced view**” menu (requires explanation not present in this document) or
- By clicking on the invitation again (if it is still valid, and if the right invitation password is given).
- (Other options which can be switched on)

3.4 Security

3.4.1 Anonymity

If the data falls in the wrong hands (e.g. a state sponsored hacker), the most identifying information is in the following list. (That is likely to happen at some point – and if it does, we will send emails to that effect.)

- The email address
- The country where the medication comes from (which is likely to be the country where you live).
- And potentially the Alias, if you use it and enter a real name there.

And there is a lot of sensitive information given to the platform

- The date of birth is deliberately obscured (but it is stored as a date of birth, and this may mislead some hackers).
- Gender, height, and weight may also be identifying. There may be a question on racial background, if the system needs to put it.

3.4.2 Deletion of data on a patient

We record all data together with the patient ID, so we can delete that completely from the database.

From that point it is no longer exposed to hackers.

4 Multiple roles in the workflow

4.1 General

- There is a role matrix for the workflow steps (for all the data elements on that step)
 - A user has access determined by the role that the user has
 - Further to this there is the following, which applies to all roles and their users
 - Relevance: An irrelevant step is hidden (it may therefore disappear or appear based on other data)
 - Predecessors: A step may require one or several other steps to be completed, before it is allowed to start.
 - It will never depend on (have a predecessor to) “future” steps (steps down the proposed sequence from the current step) or hidden steps
 - But a particular user may not see a step that it waits for, if this step is hidden to that user’s role
 - Any step may be reset depending on data (forced to start all over, affecting all that have it as predecessor to also wait for it and then start over, however prefilled with their last data)
- A user can have more than one role in a particular workflow. Then the rights just add up for every role

We have designed the workflow such that the patient can execute most things, even the steps meant for the doctor, with the exception of such steps as editing the prescription.

4.2 Viewing the workflow as a role

The roles have different access rights to the workflow steps:

- Some steps may not be shown to a particular role
- Some steps may be executable for a particular role – then you can set the data values of the step and submit it (when clicking “*APPLY*”¹ or “*NEXT*”²)
- Some steps may be read-only for a particular role. If so, the “*APPLY*” button is grayed out, and the “*NEXT*” button will not submit the step.
- There is conflict detection, if multiple users having execute rights load and then submit the same step (the last submitter gets a warning and is asked to submit again, with the first user’s values prefilled)
- Every user can always use the “*NEXT*” button – which will load the next step to which the role has execute rights, if there is any that may commence now. (Otherwise no error [*what happens if you click NEXT then*])

¹ Or “*GEM*”, “*APPLICAR*”, etc. for other languages.

² Or “*GEM OG FORTSÆT*”. “*SIGUIENTE*”, etc. for other languages.

5 Invitations by email

5.1 General

- The receiver gets an email sent from the user name (which may be anonymous)
- The email has the same language as the one selected by the sender
- The sender gets a :cc: of the email [this may be confusing, since the sender has no action on the email]
- The sender determines a validity of an invitation (an end date). It is by default one month ahead
- The sender further determines
 - The email address of the person invited
 - An invitation password (which is not stated in the email, it must be passed e.g. in-person). This ensures that if the wrong person retrieves the email (or if it is wrongly specified) then the invitation cannot be invoked
- The sender can at any time revoke an invitation (by inviting another email address, e.g. him/herself)
- The receiver of the email just
 - Click on the link
 - Login or register as a new user
 - Enter the invitation password (which is not in the email – and which is probably different from the user password)
- The receiver now has the role to which (s)he is invited.

5.2 Procedure

Ref	Step	Details
Sender		
1	Specify the recipient's email address	Most browsers will prefill this field with a username. This must be replaced by the receiver's email address
2	Specify the invitation password	This password must be told to the receiver – it is not included in the email (and is the guard against the invitation falling in the hands of the wrong receiver)
3	Change the validity of the invitation	
Receiver		
4	Click on the link	The email contains a link and a short explanation The receiver should have received the invitation password prior to clicking on the link
5	If not logged in (e.g. if this is the first time on Drug GPS)	If the receiver is logged in, then clicking on the link will lead to step 6
5A	If already registered: Log in	Specify the username and the password of the recipient

Ref	Step	Details
5B	If not registered: Create a user profile	<p>Register the recipient user (and the system will automatically log in as this new user)</p> <ul style="list-style-type: none"> • User name (it will be checked for uniqueness) • Password (for the user) • Email address of the user (it does not have to be identical to the invitation's email address) • First and Last Names (there is no validation, you can call yourself anything; but it will be used in certain situations, e.g. when inviting others) <p>There will be an OK to click if all goes well. Then the new user is logged in.</p>
6	Specify the invitation password	<p>The password is visible while you type it. Like all passwords, it is case sensitive.</p> <p>It is not the same password as the one for the user account.</p> <p>You get it (e.g. in-person or in a phone call or a text message) from the sender.</p>

5B is the scenario, when inviting a doctor who does not know the platform.

[There is currently no restrictions on passwords, neither for the user profile nor the invitation. It may be implemented in the future.]

6 Country and language

The language chosen has no bearing on anything else than the labels used in the presentation layer, including the reports produced.

The language can be selected differently for different users. The functionality is not influenced (other than when invitation emails are sent – the email has the language selected by the sender at the time the invitation was made). The system currently supports: **EN, ES, FR, CS, DA**. [For sales purposes on Drug GPS. We can furthermore support **IT, PT, DE, and AR**]

But the country selected has significance:

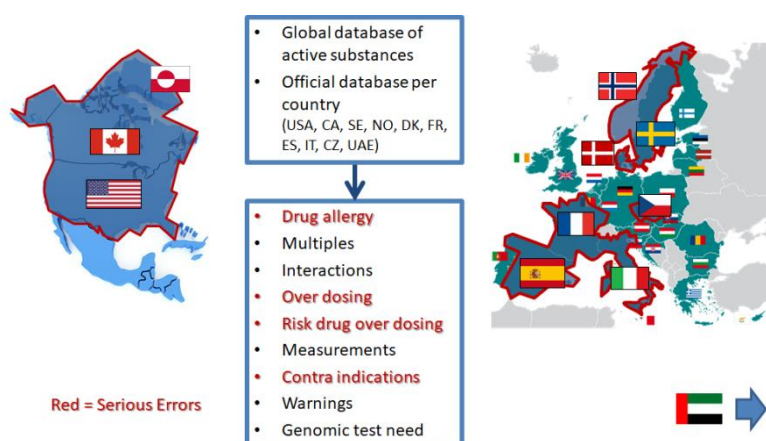
- The medication list (the dropdown with all approved medication) is in accordance with the country selected.
- The units for height and weight are different: In the USA they are ft (feet), in (inches), and lb (pounds), whereas for other countries the metric units are used (cm and kg).
- When selecting any of the USA, Spain, Norway, or Denmark you get the option to specify a code instead of being forced to select from the huge dropdown (this ideally is possible in Sweden, but we don't have the required database of numbers yet).

If you have medications from (purchased in) different countries:

The dropdown will remember the medication you have selected so far (provided you submitted your choices).

So you can

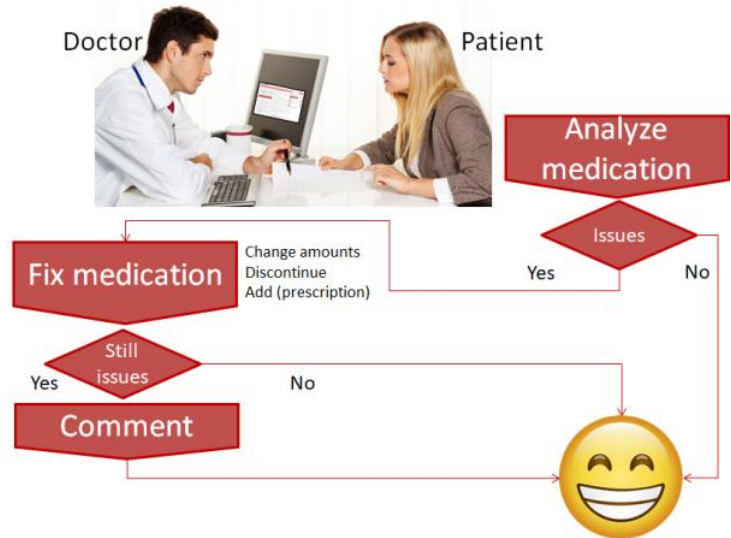
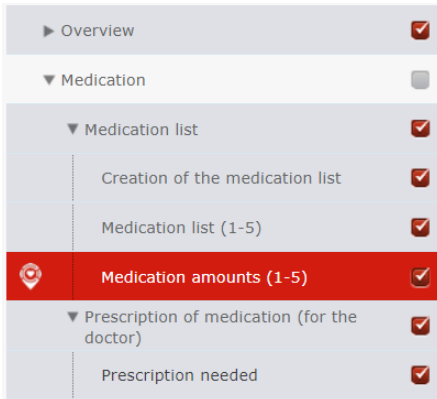
- Select the first country
- Build the medication list for that country
- Select the medication(s) that you have from this country
- Submit the list of medications
- Go back and change the selection of country
- Build the medication list for that country. The list will change to that country, but it will include the medication that you have already picked in previous countries
- Select the medication(s) that you have from this new country
- Submit the list of medications
- (You can carry on to a third country etc. The system currently supports any combination of: **US, CA, ES, FR, IT, CZ, SE, NO, DK, AE**)
- And when you are done composing the list, you can go on and specify the amounts
- Then run the analysis ... and go on as usual



The reason it can do that is that it operates exclusively on active substances, which are the same across countries, together with the functionality of Drug GPS.

This may be your situation, if you are admitted to a hospital or otherwise get medications prescribed in a foreign country, and you want to know how it goes with your prior list of medications from back home. Or if you relocate and replenish your drugs in another country. Etc.

7 Doctor's changes to the medication



The doctor may implement changes:

- Existing medication: In the “Medication amounts” step(s) [highlighted above]
 - Change amounts. The following two are multiplied
 - Per time
 - Frequency
 - Discontinue (stop) medication:
 - Set a checkmark in “Stop medicine or specify end date for medicine”
 - Specify an end date in the field that appears underneath the checkmark
It may be required to specify an end date at least 2 days in the past; if you specify today, the analysis will still take the medication into account, since it assumes that the substance stays for 24 hours after the medicine has been discontinued
 - Add medicine (make a new prescription).
 - This happens on a separate step, not editable by the patient
 - The solution supports adding up to 3 new medicinal products

When changes happen (any of the above), the system will propose a renewed analysis.

After the analysis, the doctor will once again see issues, now according to the renewed analysis. (He/she may re-iterate the changes above, incl. amend the prescription).

Finally – if there are any issues left that cannot be fixed (due to irrelevance or not being possible for this patient) – the doctor can by setting checkmarks for each issue, acknowledge that (s)he is aware of it/them. For each issue the doctor should comment in the text field.

Explanations related to the medication

The UN organization WHO has elaborated maximum Daily Defined Doses (DDD) for selected active substance - tied to ATC codes, which we have decoded and attached to the corresponding active substances. One or more of the active substances pass their DDD amount by more than 33%. You should check this substance in detail. But it is OK as it is*

Comment

Comment on issue number 1...

One (or more) of the medications are of a type where we have implemented the prescription info (the package insert) as an intelligent check - and this check has revealed that at least one of the precautions mentioned in this information is violated. But it is OK as it is*

Comment

Comment on issue number 2...

All in all there are one or more issues with the drugs, which a doctor should know of and potentially correct, if there is found to be an error in this. But it is OK as it is*

Comment

Comment on issue number 3...]

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