Manual web service and website

www.intermedfoundation.org

Version 2

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Amsterdam January 2010

Safety

The main information concerning the safety of the web service is provided under the Tab "Web services". As stated in the contract with your service/organization on the use of the web service, it is your own responsibility to work according your national standards for the use of computers and software in the health care system[1]. In the next items (Levels of access: Types of users and related rights and Log-in) you can see how safety features are part of the functionality of the web service.

Levels of access: Types of users and related rights

Web service

- **Guest-user:** This is only a view function. Nothing can be added, changed or printed.
- **Restricted user:** Restricted users can create in their organization their own patient-records, view, edit and print records. For all the other patients within an organization they have a view function. Nothing ca be added, changed or printed.
- **Standard User:** Standard users can create their own patient records. Off all patients of their organization, they can view, edit and print records.
- **Administrator of an organization:** In addition to the same rights "Users" have, the administrator of an organization can add: 1. new users, 2. they can add "Projects" (see there) and assign these to the users of an organization, and 3. He can audit the changes made in clinical information through a. "version management" and b. review of the history.
- **INTERMED administrator:** The IM administrator has all rights. In addition to the standard user rights, he can add, edit and delete the following: IM-variables, IM-systems, organizations, outcome evaluation instruments, outcome evaluation projects (combinations of outcome evaluation instruments and signaling actions.

Website

- Visible for every visitor
- Only for visitors who are logged in to the web service (registered users). This concerns the access to the Tab "Projects" in order to participate in projects.
- Within the group of registered users the 'Organization administrator' is the only one to have access to the documents uploaded under projects

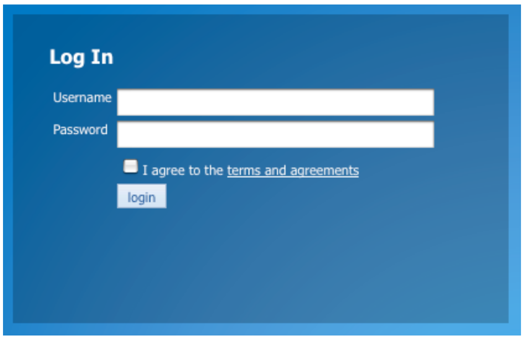
[1] For the Netherlands this is formulated in the NEN 7510 document which you can find at the following url http://www.kennisportal.com/main.asp?ChapterID=4616

Use of the web service

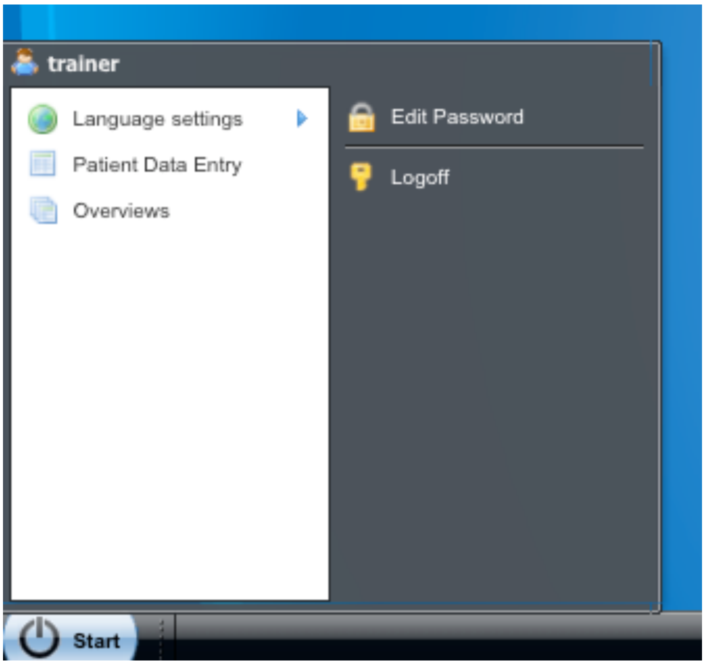
'Login'

To be able to work with the web based service, you have to login with a "Username" and a "Password." Users are linked to organizations. The administrator of your organization, who can add new users and passwords, has provided these. For privacy reasons it is recommended to change the password ("Edit Password") during the first session after you have logged in. Passwords expire in 3 month. You are automatically requested to renew them.

Login with the provided username and password and check the "terms and agreements". In case you and your organization are using the web service for clinical services, there is a standard service license agreement between the provider of the web service and the user of the services. A copy of the contract is available at your organization. If you want to see the concept license agreement, go to the website www.intermedfoundation.org to the Tab "Documentation/Web license agreement". Under "Terms and agreements" you will find the main points. In short it focuses on 2 aspects: a. the disclaim of liability of the provider for the use of the web services and b. the user is pointed out to fulfill the formal general rules related to the use of software in healthcare.



When you push the "login" button a new screen appears with the "Start" button. Push it and the following screen appears.

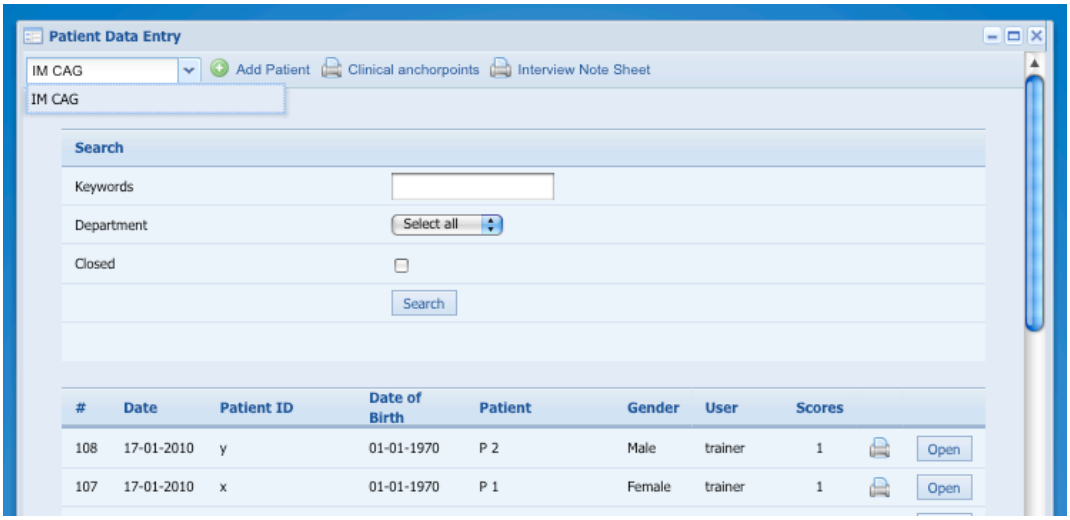


‘Language settings’

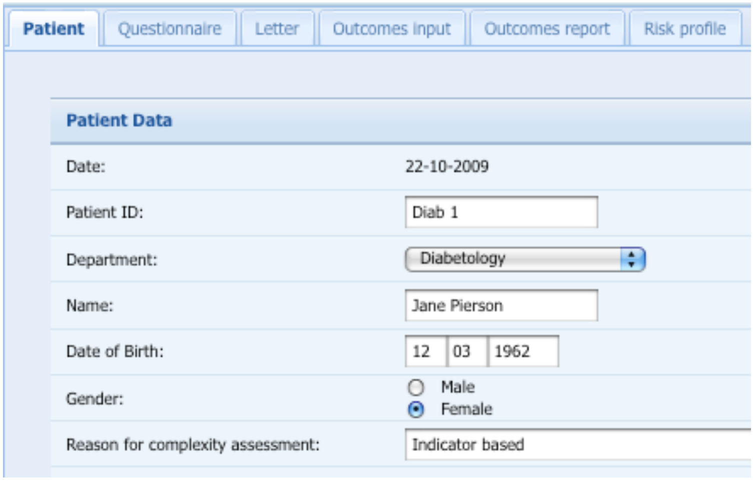
When you click on “language settings” you can select the language you want to work with/in. The default language for the web service is English. When translations of items/sentences are not available, the default language is used.

‘Create a new questionnaire for a patient or select an existing patient from the list’

1. Click on the button ‘Patient Data Entry’ and the screen ‘Patient Data Entry’ appears

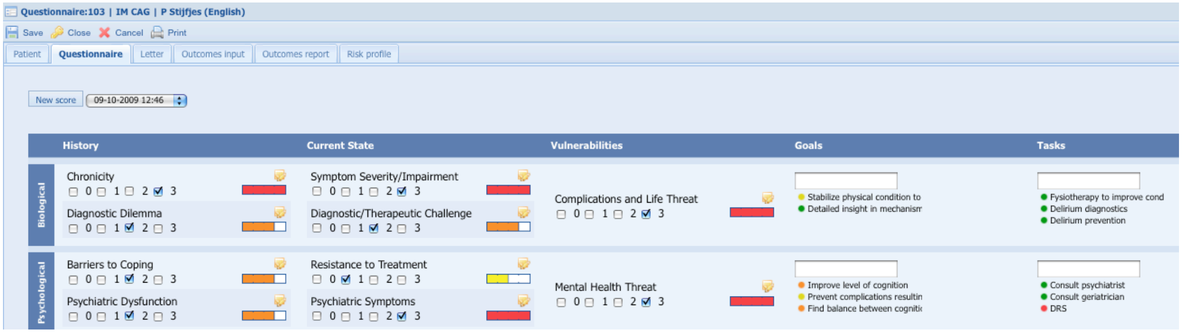


2. Pushing the “Clinical Anchorpoints” button prints a list with the clinical anchorpoints of the variables of the version displayed in the window [IM CAG in this example]
3. Pushing the “Interview Note Sheet” button provides a worksheet to document pertinent information collected during the interview and to do the scoring before data entry on the computer
4. Push the “Add Patient” button or select a patient from the list. A one-page list with the most recent seen patients appears. In addition searches can be done. Closed cases can be found by marking the box “Closed”
5. A new window appears with six tab panels: 'Patient', 'Questionnaire', 'Letter’, ‘Outcomes input”, Outcomes report” and “Risk profile”.
    a. **‘Patient’**: Here patient’s administrative data can be documented.

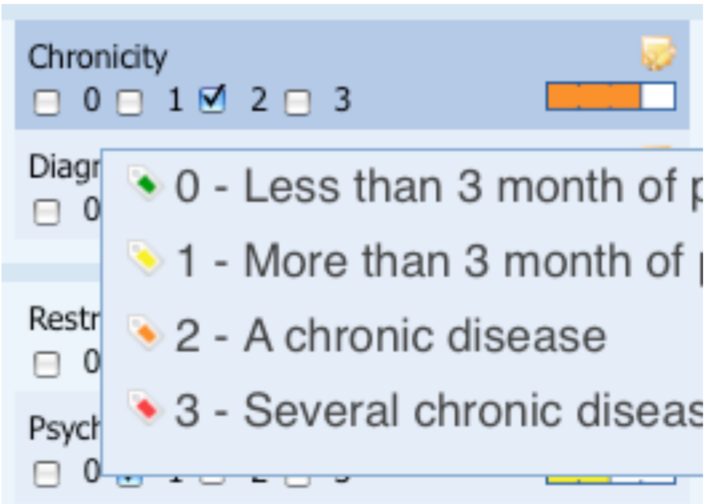


b. Go to **‘Questionnaire’**: Here you will find the data entry screen for the clinical data collected during the interview. By moving the cursor on the field of a variable, the field darkens to blue and the ‘clinical anchor points’ for that specific variable appear in a pop-up screen supporting the scoring (0, 1, 2, or 3). By clicking on the yellow envelope left above the score bar, a box appears where the clinical information related to the score can be entered, which should be closed after data entry.

   In the right two columns “Goals” and “Tasks” can be formulated in a text box. After a return the “Vulnerability” or “Task” appear in a bullet-list below the data entry field. By clicking on the items of these lists the status of the “Goals” and “tasks” can be evaluated, which is visualized in colors in the bullet-lists.

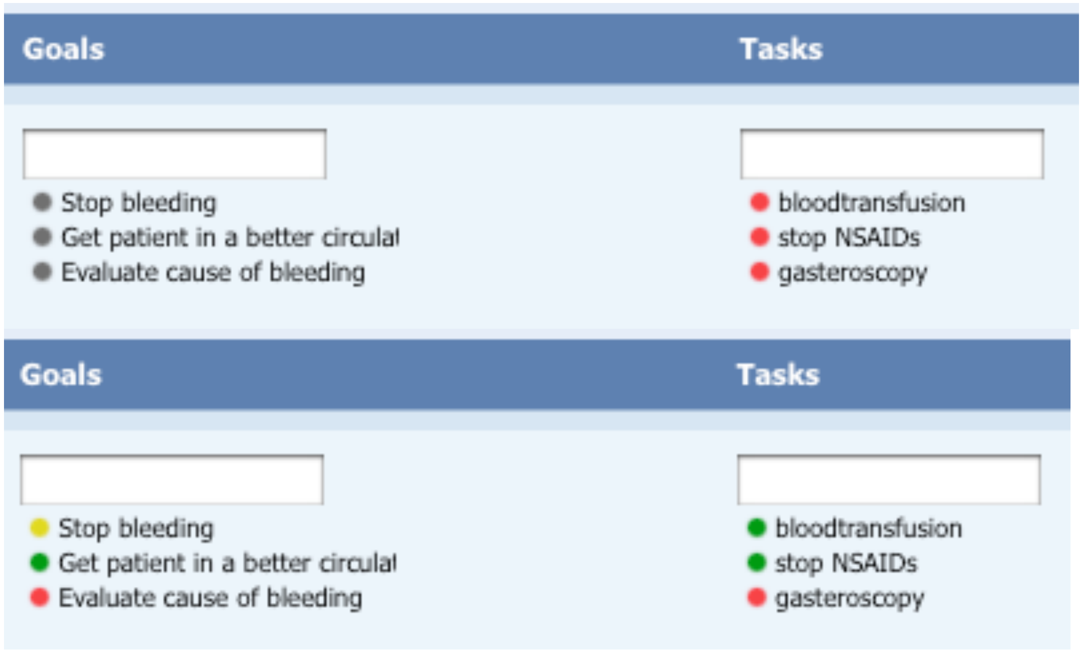


Hovering over the beam with the scoring options [0.1.2.3] will show in an overlay the related clinical anchorpoints to support the scoring



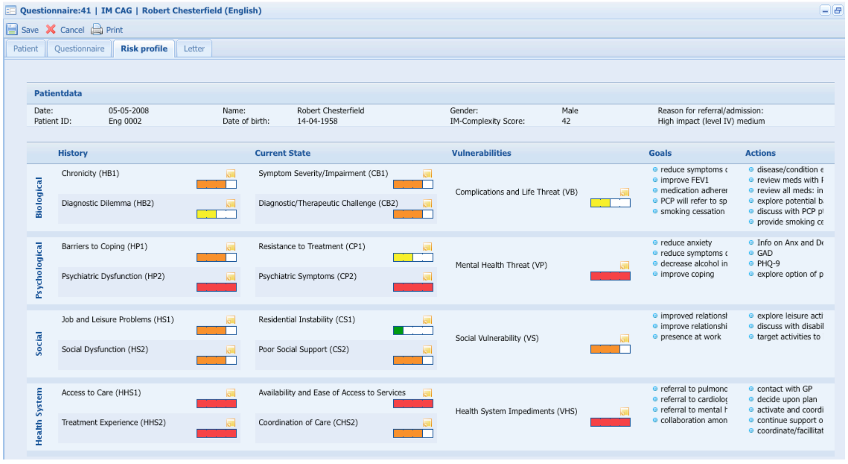
Hovering over the beam with the scoring options will show in an overlay the related clinical data.

Hovering over ‘Goals’ and ‘Tasks’ will also display the full information in an overly. By clicking on the overlay a window opens to score whether goals have been achieved or actions have been taken into effect. Both are reflected in colored ball's when the window is closed.

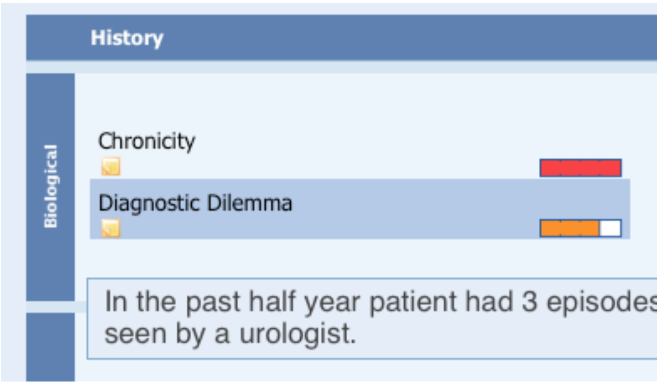


As you can see in the upper left corner repetitive assessments leading to new complexity (IM) scores are possible by clicking on "New score"

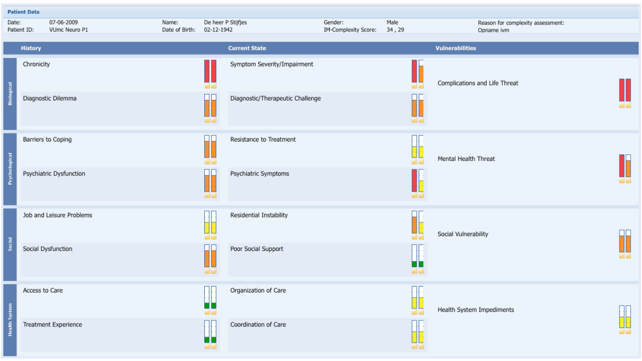
c. **'Risk profile':** This is a presentation screen. This screen is to be used with a beamer during multidisciplinary meetings. It is the same screen as the "Questionnaire" screen, yet without the possibility of data-entry.



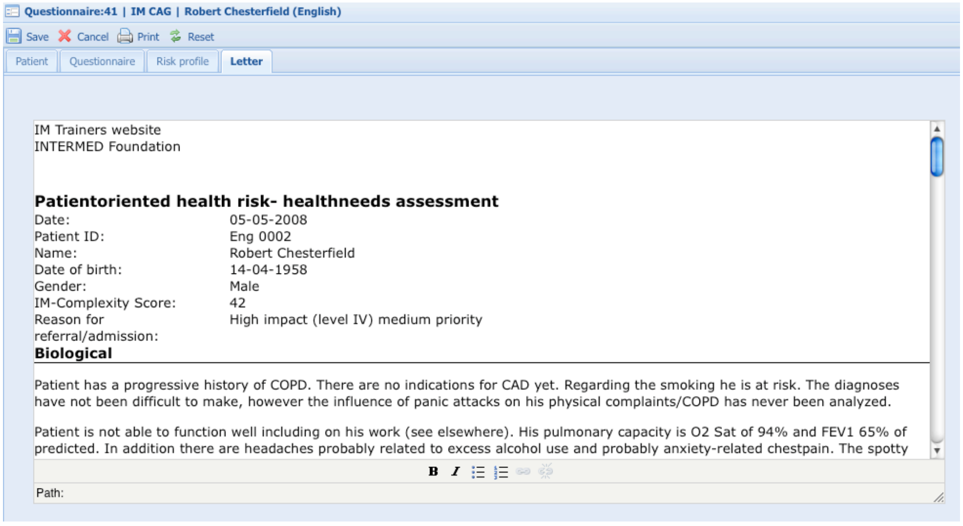
Hovering over the "envelope" with the clinical information of the risk-variables and over the vulnerabilities and tasks will provide the full information:



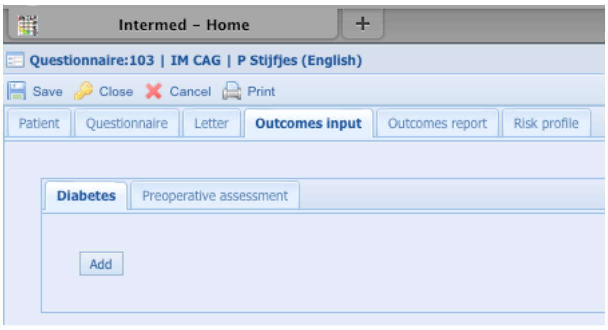
The repetitive assessments can be depicted simultaneous. Thereby a visual evaluation of the course of complexity becomes possible, in addition to the numerical evaluation of the "IM-Complexity score". In the example below from 34 to 29:



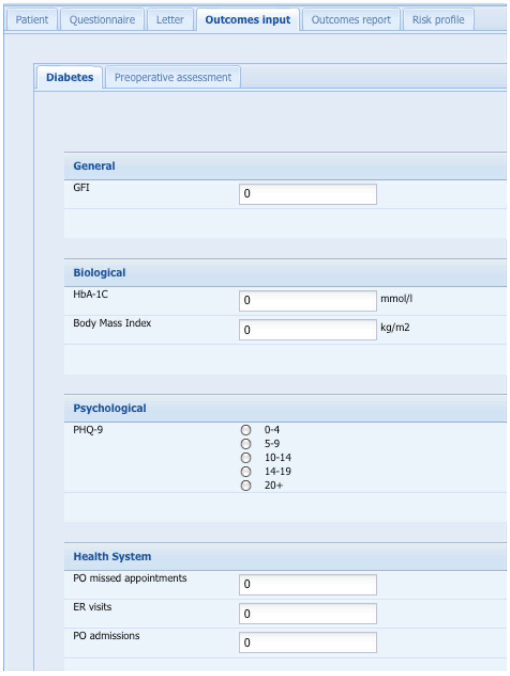
c. **‘Letter’:** When one clicks on the tab “Letter” a large text-box appears with a letter synthesized from the information entered in the “Questionnaire”. Its source is the clinical information related to the risk and vulnerability variables, which have been entered at in the “envelopes” as well as to the boxes for “Goals” and “Tasks”. When necessary, the text can be edited here. There is a work beam on the bottom of the text-box with editing functions. However, text changes performed in the letter are not stored in the database. So it is to be recommended to do the editing of the text on the tab “Questionnaire”.



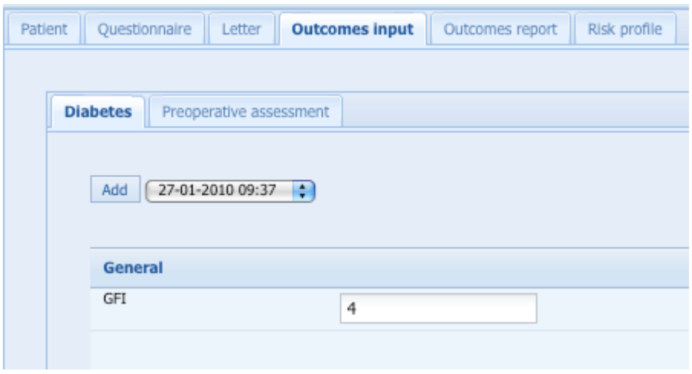
d. **‘Outcome input’:** When one clicks on the Tab “outcomes input, the following screen appears:



Here you will find the circumscribed outcome-projects, which are available in your organization for evaluation. Your organizational administrator can himself create outcomes variables, which he can combine in a project with a certain name, such as for a population of diabetes patients or for patients seen as part of a preoperative assessment. The INTERMED foundation might create research projects in which multiple organizations can participate. Such global projects are offered to all organizations. The administrator of your organization can put these on or off. These are decisions to be made in your organization. When your team has decided to do outcomes assessments and your administrator has activated them, a screen as depicted here will appear. When “Diabetes” is selected the following screen appears:



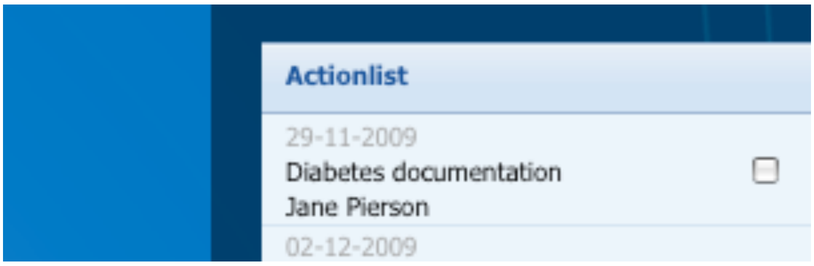
On this screen you can enter you outcome assessments. When you have saved them the next time you open this tab you will find the following screen:



If you click on “Add” you can add a new outcome assessment.

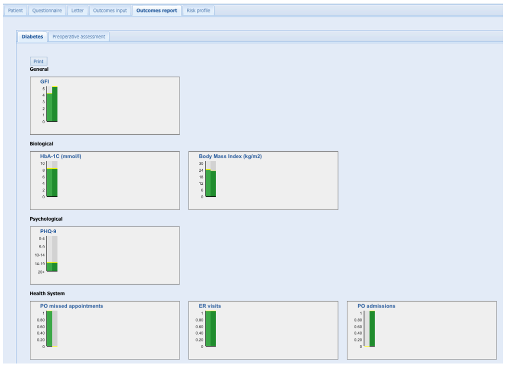
d. **‘Action-list’**

It might happen that you log in and you see an action-list appear at the right border of the screen.



Here you will see a list of patients. This list prompts you to the fact that an outcomes assessment for this patient must be done. When you click on the patient, you are directly guided to the outcomes input screen of that patient. When you check the empty box in the action-list, the patient disappears from the list.

e. **‘Outcomes report’:** When you click on “Outcomes report” the results of your outcome scores will be graphically represented, like in the case represented here. In this case to outcome assessments have been performed:



‘Overviews’

With the function ‘Overviews’ you can create lists of patients’ vignettes, including all or a subset variables. This function can be used for individual users, who want to have patient-lists with summaries of the patients they treat, including the goals and actions. They can be also used as lists of patients to be discussed during a multidisciplinary meeting.

1. Select patients on the screen ‘Overviews’ from the list with questionnaires with the ‘Add’ button.
2. At the bottom of the screen you will find the list of ‘Selected patients’. By dragging the patients in the selection you can modify their order. Also faulty selected patients can be deleted from the list here. Move to the next screen by clicking on ‘Select variables’.
3. In this screen ‘Variables’ can be selected. In the report only those columns will be visible, that have selected variables in them. The same is true for ‘Goals’ and ‘Tasks’. Click on ‘View report’.
4. The generated report can either be beamed for multidisciplinary meetings or can be sent to a printer. Scroll to the top left corner of the screen and push the ‘Printer’ icon.

Functions for the Organization Administrator

Audit

At the right top of all ‘tabs’, the ‘Organization Administrator’ will find in the upper-right corner of the screen a dropdown menu with dates. It allows evaluating when and who made changes.

Functions under ‘Administration’

Adding new Users

When you click on the button ‘Administration’ a screen titled ‘Administration’ will appear. ‘Add user’ is selected.

1. The first screen contains the ‘Contact information’ of the user. The field ‘Last name’ is obligatory
2. The second screen contains the ‘Login information’ for the user. A unique username should be entered and a password. When a new user logs in for the first time, he has to change his password. In addition ‘Language’ and ‘date format’ is selected.
3. On the third screen ‘User rights’, the privileges of users can be set: a. organization administrator, c. organization user, d. restricted user or e. guest user.
4. In the last panel ‘IM-version’, the IM-versions a user can use can be set. If no IM-version is selected, the user can only read and not add or change reports.

When characteristics of users should be changed or when users should be deleted a comparable procedure is followed

Adding new Outcomes, Projects and Actions

When you click on the button ‘Administration’ a screen titled ‘Administration’ will appear. You will see “Outcomes”, “Projects” and “Actions.” With these three variables the outcome measurement of projects can be defined. These projects can serve the purpose of clinical evaluation or (collaborative) research. The INTERMED foundation will create a series of such projects, for instance for preoperative assessment, for a diabetes population or for other areas of emerging interest. These projects will be available in all organizations. Organization administrators can decide to active them. Organization administrators can also develop their own local projects.

The projects consist of two elements: “Outcomes” and “Actions”. First outcomes are variables defined. These can be numerical or categorical. In case of questionnaires only total scores can be added. The outcomes can be used for the clinical management visualized through graph’s under the “Outcomes” tab. They can also be transported to an export-file for research purposes.

Adding and Defining “Outcomes”

Click on ‘Create new Outcome’. You will find a screen with the following fields:

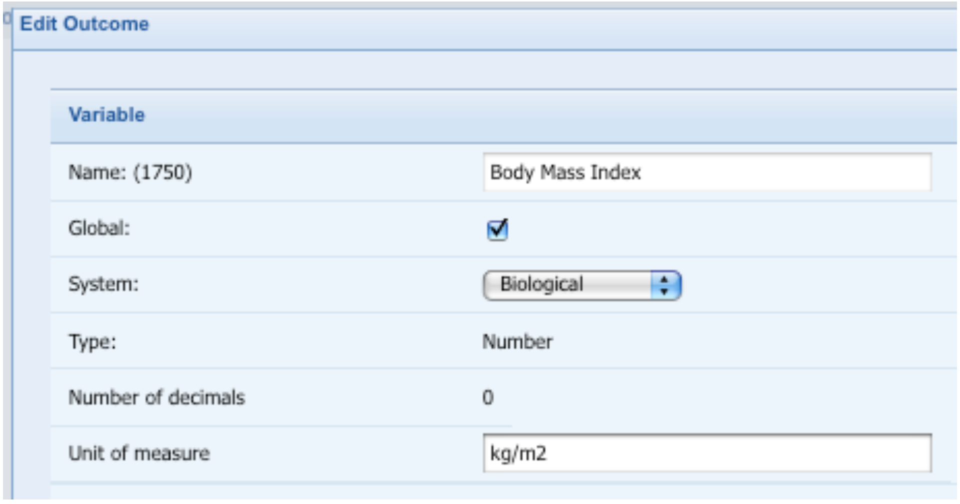
Name: The description of the outcome variable. This description will be used on the ‘Outcomes input’ tab.

Global: Only visible for the “INTERMED Administrator”. With these variable outcomes available in all organizations can be defined.

System: Here it can be defined if an outcome is a general outcome or is related to a system level: biological, psychological, social or health care.

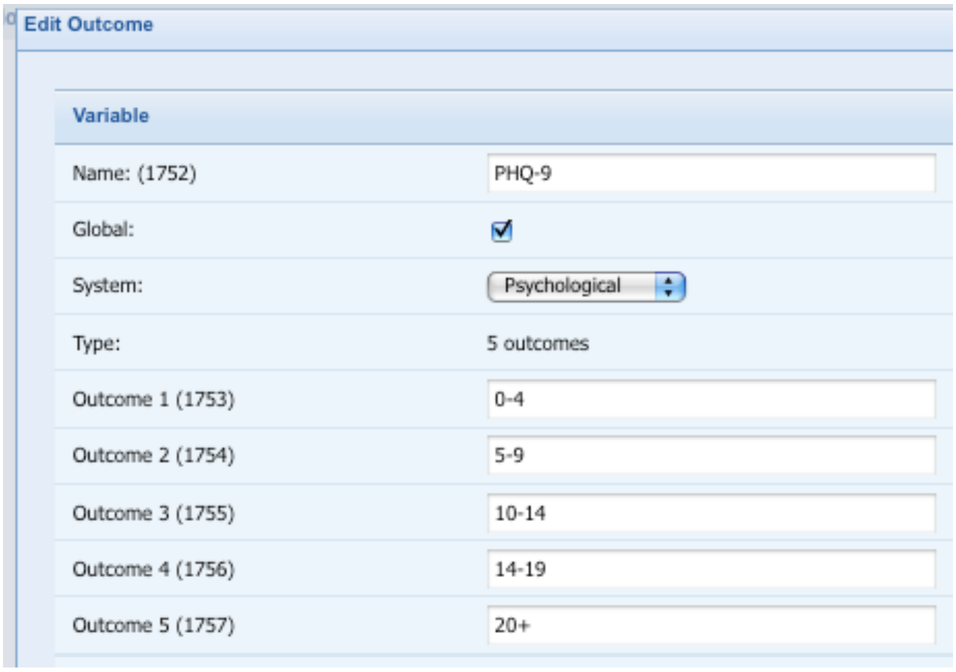
Type: Here the outcome can be defined:

- Numerical: here the number of decimals can be defined and their unit of measurement, see example of 'Body Mass Index"



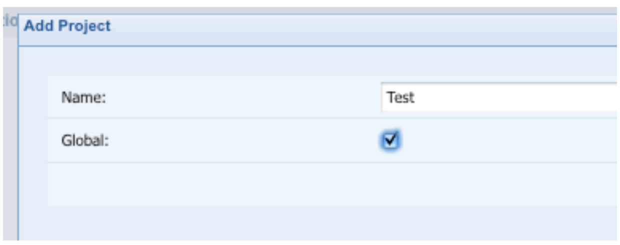
or

- Categorical: here 2 to 5 categories can be defined, see PHQ-9



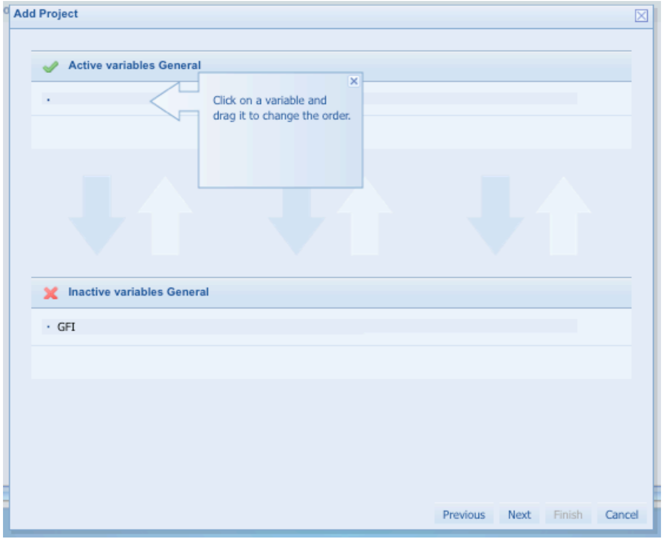
Adding and defining new 'Projects'

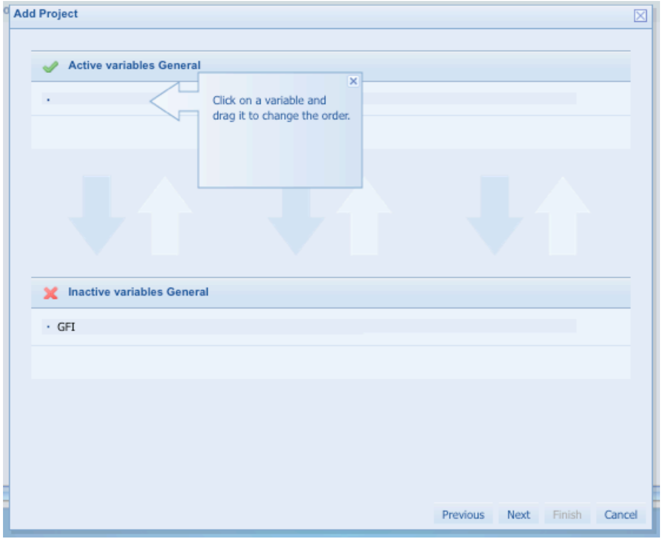
When outcomes have been defined they can be combined into a project. Go to 'Projects'. Click and on the next screen the name of the project can be defined.

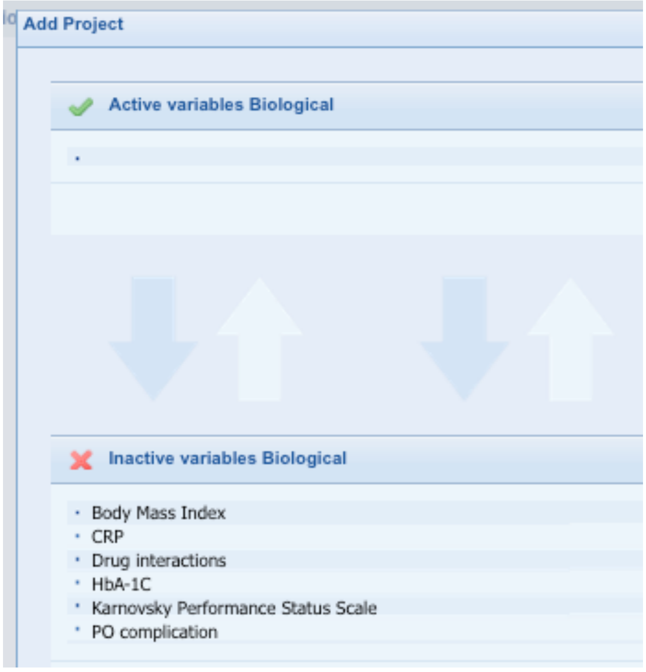


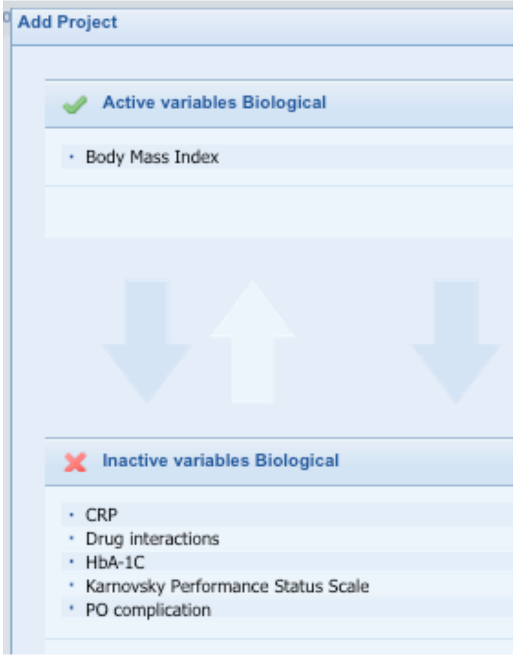
The INTERMED administrator can create global projects available in all organizations with the variable ‘global’.

Click on ‘next’ and 5 subsequent screens for the selection of outcome measures for general-, biological-, psychological-, social- and health care outcomes. They can be selected by dragging them from the bottom row to the top row. See an example for a ‘general’ and a ‘biological’ outcome variable.





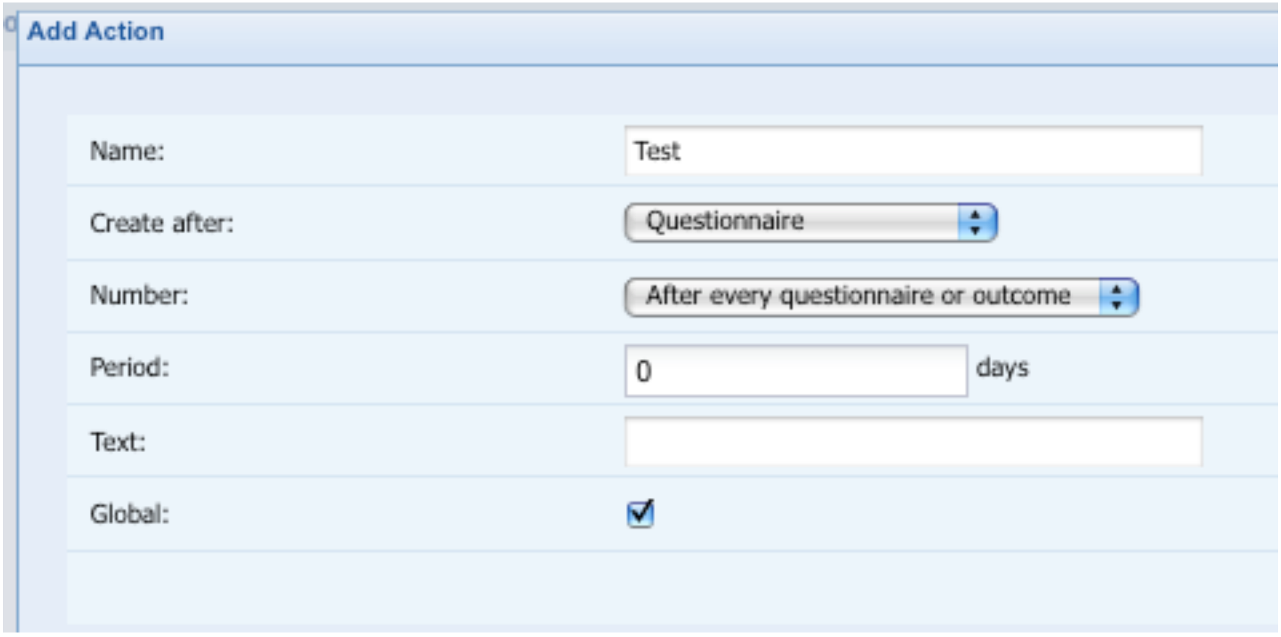




Adding or editing 'Actions'

Goal: the goal of defining actions is that users are prompted to do outcome assessments in patients on their opening screen of the web service in an 'Action list' in the top right corner of their screen.

These actions can be generated in several ways. Which way has to be defined by the Organization- or INTERMED administrator in the following screen:



Here are the definitions of the fields:

Name: This is a description of the type of outcome assessment to be performed, which will appear in the window with the 'Action list'.

Create after: Here a definition is given what the trigger is to add a patient to the 'Action list'. These triggers can be selected from a drop-down menu. In this dropdown menu appear the names of the several available outcome projects (such as 'Diabetes' or "Preoperative') as well as 'Questionnaire'. When a project is selected it implies that the trigger for an action is the completion of an outcome assessment. When 'Questionnaire" is selected, it implies that every assessment of the complexity score (tab 'Questionnaire') triggers the action.

Number: Here it is defined whether an action should be created after every questionnaire or outcome, or after the 2nd, 3rd etc..

Period: Here the period it takes between the creation of an action and its appearance in the

‘Action list’.

Text: A more extensive description of the actions to be taken

Global: This option is only available for the INTERMED administrator. It defines whether or not actions are available in all organizations. On the level of an organization, the ‘Organization Administrator’ can activate and deactivate them. And as a next step define on the user level which user will see an ‘Action list’ or in other words, which users participate in ‘Projects’. ‘Organization Administrators’ can create actions in relation to their local projects. These actions are only available in the organization, where these actions have been created.

Examples

A. Sixty days an INTERMED-interview and its scoring in the ‘Questionnaire’ a second INTERMED-assessment should be performed. The action to initiate this should be defined as follows:

Name:	Next IM-score
Create after:	Questionnaire
Number:	1
Period:	60 days
Text:	New IM-score

B. In a project for diabetes patients every 3-month an outcome assessment should be performed

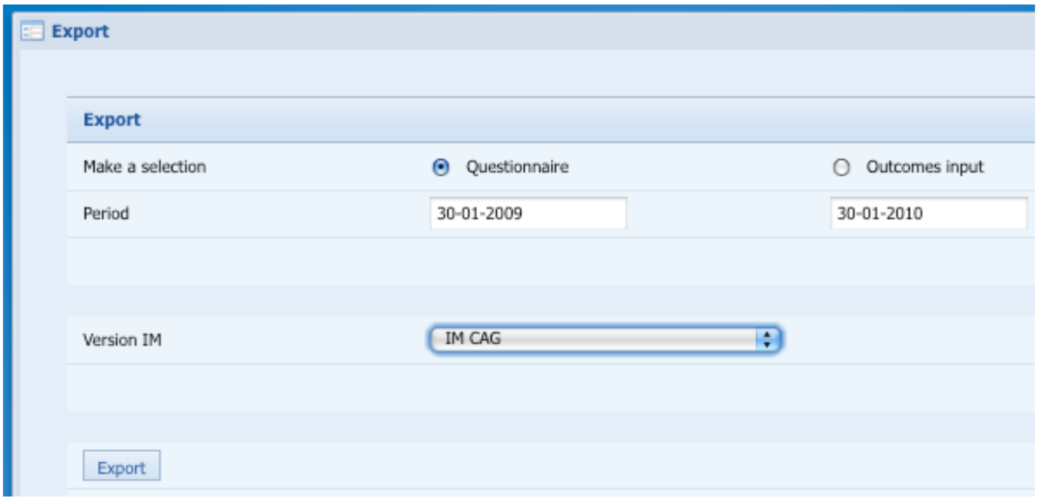
Name:	Diabetes evaluation
Create after:	Diabetes
Number:	After every Questionnaire or Outcome assessment
Period:	60 days
Text:	New diabetes outcome assessment

Export of data

Goal: Use of the data in a statistical environment, such as SPSS

Procedure of data export

Click on 'Export' in the menu bar and the following screen will appear:



As data from 'Questionnaires' and 'Outcomes input' from projects are separately transported is separate files which are later combined when they are imported in SPSS a selection for data transport of 'Questionnaire' data or 'Outcomes input' data should be exported. In addition a period should be selected. When 'Questionnaire' data are exported the version of the INTERMED should be selected.

Format of the exported data

De data are file in 'tab-separated' data files. It implies that on every line of the database the patient data are described with a tab-symbol between the data. Such data set are easily to import in SPSS, Excel or Open Office Calc. Before importing the file should be defined as a 'tab-separated' file. The data-file starts with a sentence describing the names of the exported fields.

- The first column has a unique ID. This can be linked to the export file of the "Outcomes input'.
- The second column contains the timing of the scoring of the questionnaire.
- The third column, the birth date
- The fourth column, the sex
- Followed by all variables of the IM.

The transport of data of the 'Outcomes input' is comparable