Contents

Chapter 1

Introduction to the system and its purpose (outline briefly what it does).

This is a software aid for pharmacists who need to prepare and dispense Chemotherapy Regimes for patients being treated for neoplasms.

This software uses an internal user modifiable record file to store the regime data. The software is also records and stores patient data, using it to calculate the required doses on the appropriate days.

Chapter 2

How to install the program/database on your system.

On a company network it is recommended that the installation is left to IT support to ensure that the files are placed in central location that is accessible to all who require it.

This also ensures that it can be made part of the system wide backup procedure.
The instructions below cover the installation method for a single user on Windows 7

2.1 How to install

1. Get the Zipped Regime file, right click on it and choose `Extract All`.

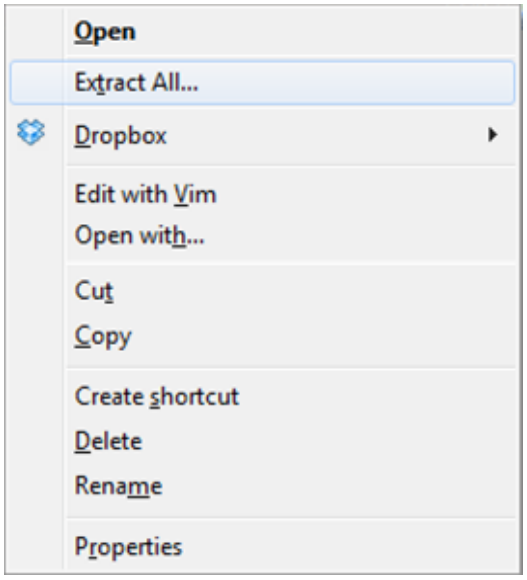


Figure 2.1

2. When this window appears click `Browse`.

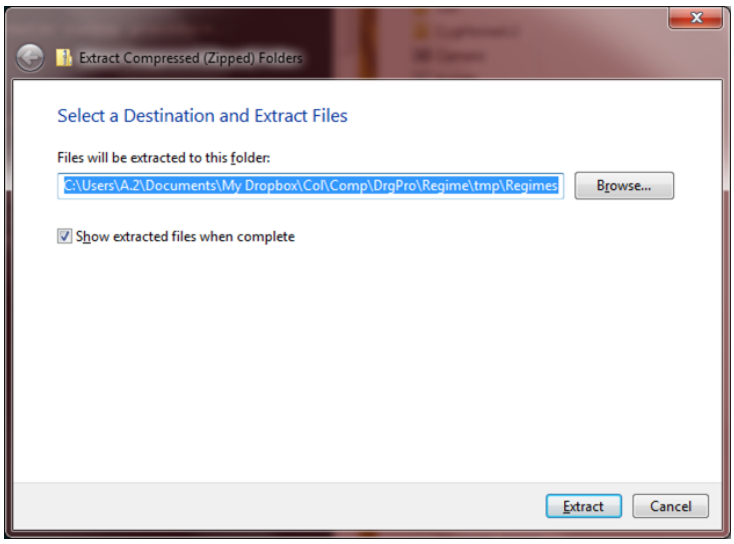


Figure 2.2

3. To place the file in your Start Menu, Click on your User name then `AppData` ⇒ `Roaming` ⇒ `Microsoft` ⇒ `Windows` ⇒ `Start Menu` ⇒ `Programs`, now click `Make New Folder` and name it `Regime`. Press `Enter` and click `Ok`.

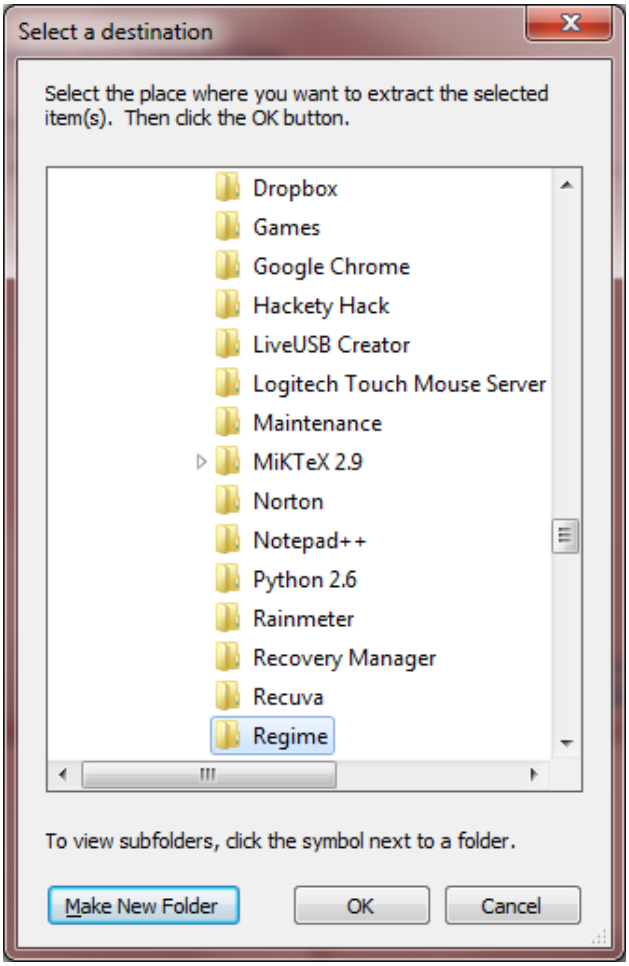


Figure 2.3

4. The Filepath should now look like this `C:\Users\A.2\AppData\Roaming\Microsoft\Windows\Start Menu\Programs\Regime`

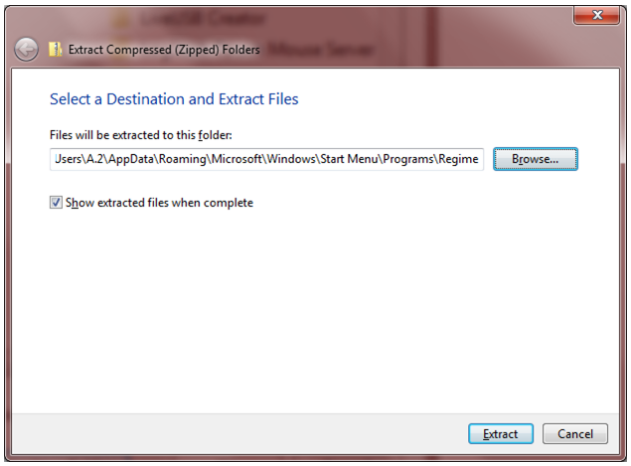


Figure 2.4

5. Click `Extract`. Providing the `Show extracted files when complete` tickbox was selected a file explorer window will open with the selected folder.

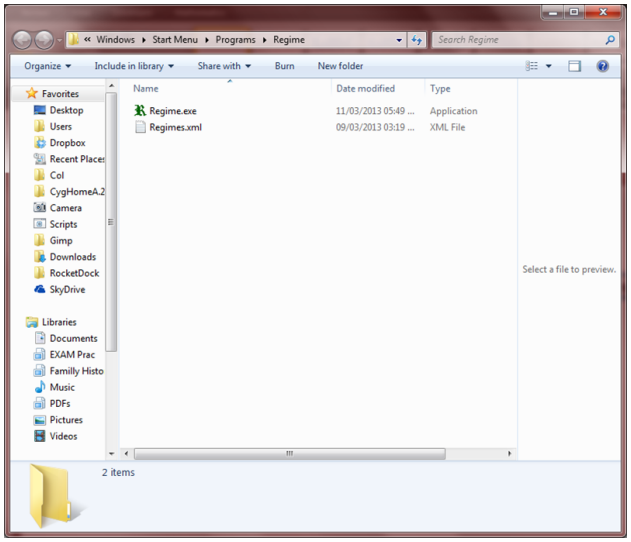


Figure 2.5

You may need to log out for the file to be added to the start menu, but it is possible to search for it.

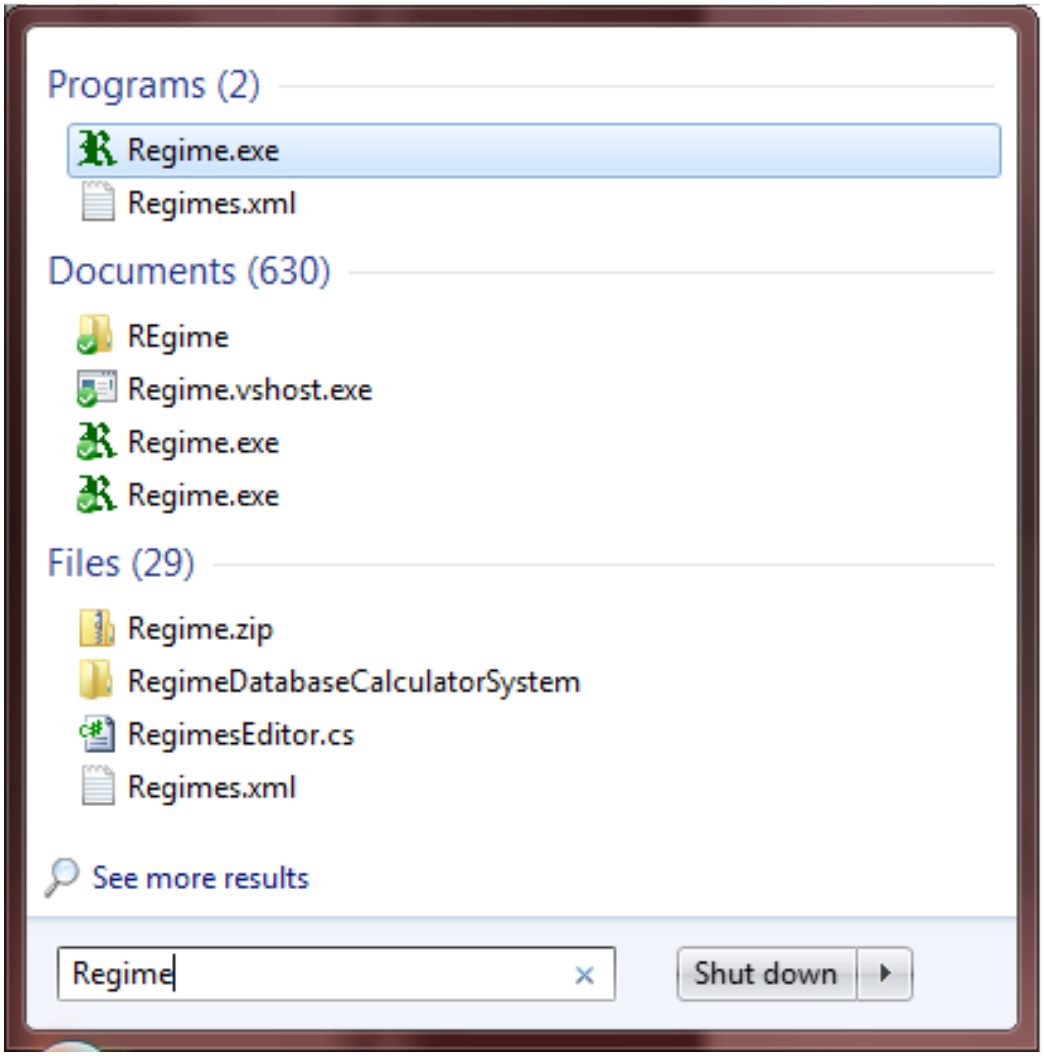


Figure 2.6

Once it is visible it is possible to pin it to the start menu or the Taskbar by using the options from the right click menu.

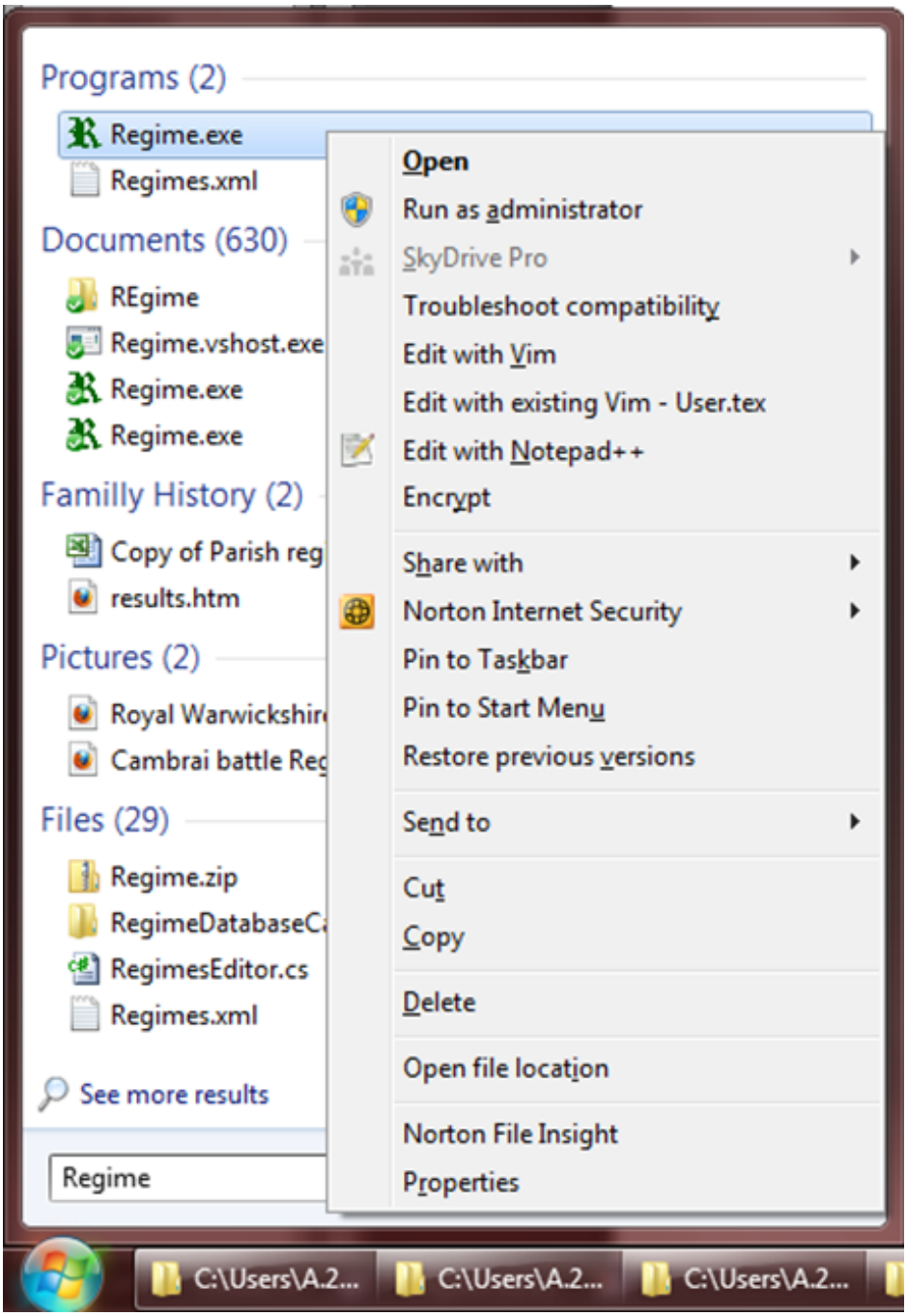


Figure 2.7

Chapter 3

What to expect as you enter the system (password, menu etc)

When the program opens you will see the interface shown below.

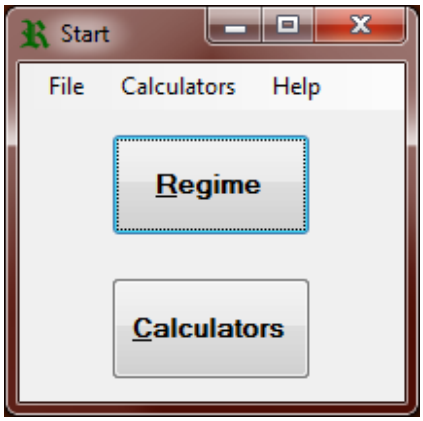


Figure 3.1

Clicking on `Calculators` will call up a self contained calculator interface, useful for quick calculations.

Clicking on `Regime` will open the main regime dosage system.

Under the File Menu is the Regime Editor, this is used to view and edit the data on Regimes.

Chapter 4

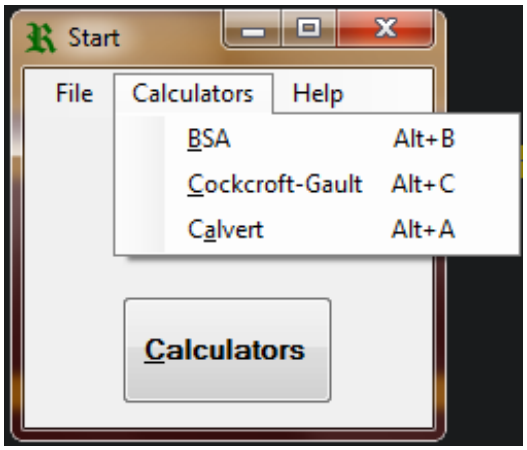
How to use the system:

4.1 The menus

4.1.1 Calculators

This menu calls the Calculators form, taking you directly to the appropriate tab. These options can also be triggered by using the keyboard shortcuts, these work on all forms that include this menu. The Shortcuts are:

- `Alt-B` **B**SA
- `Alt-C` **C**ockcroft-Gault
- `Alt-A` C**a**lvert



4.1.2 File

The Regime Editor is used to review and if necessary edit the regime record file.

4.2 Explain what each form does

`Start`
: Gives you access to the `Calculators`, `Regime` and `Regime Viewer & Editor`.

`Calculators`
: Self-contained calculators for BSA, Renal Function and Calvert.

`Regime`
: Displays a list of patients, includes search and filter by regime functionality.

`PatientData`
: This form is used to view and update patient data and includes integrated dose calculators.

`RegimeViewer`
: Displays a list of Regimes.

`RegimeEditor`
: This form is used to view and update Regimes.

`SPC Viewer`
: Specification of Product Characteristics viewer, this shows the SPC page for the current drug as shown on the website

4.3 Calculators

This form allows you to quickly calculate values required for determining suitable regime doses. The included calculators are for BSA (Dubois and Dubois method), the Creatinine Clearance level (Cockcroft-Gault method) and the Calvert Formula.

You can access this form via the `Calculator` Button on the start page, or from the `Calculator Menu`.

4.3.1 Body Surface Area (BSA)

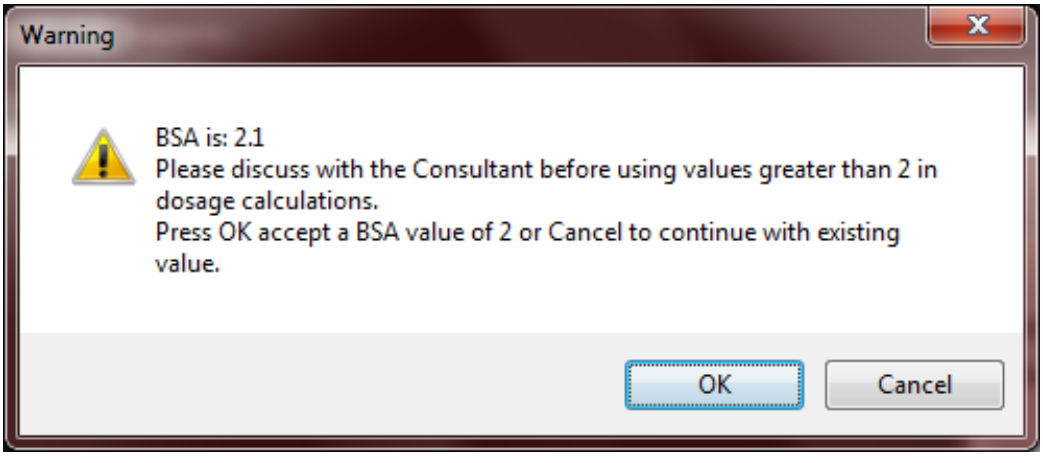
This system uses the Dubois & Dubois method with the formula

$$BSA = 0.20247 \times Height[\text{m}]^{0.725} \times Weight[\text{Kg}]^{0.425}$$

The BSA calculator requires the patients height in meters and the weight in Kilograms; this produces a value in meters squared.

BSA limit

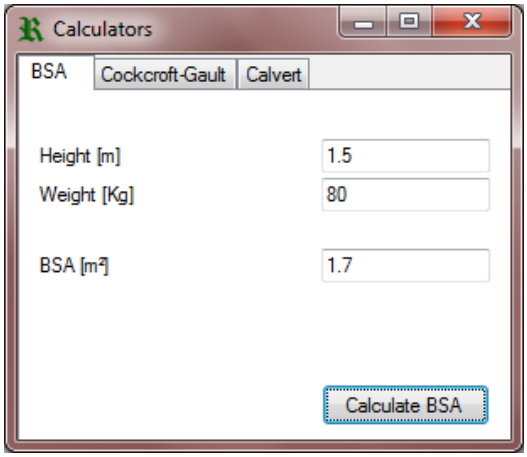
Due to the increased risk, current guidelines recommend that BSA values are capped at 2.0. If the BSA is more than 2.0 you will see this warning:



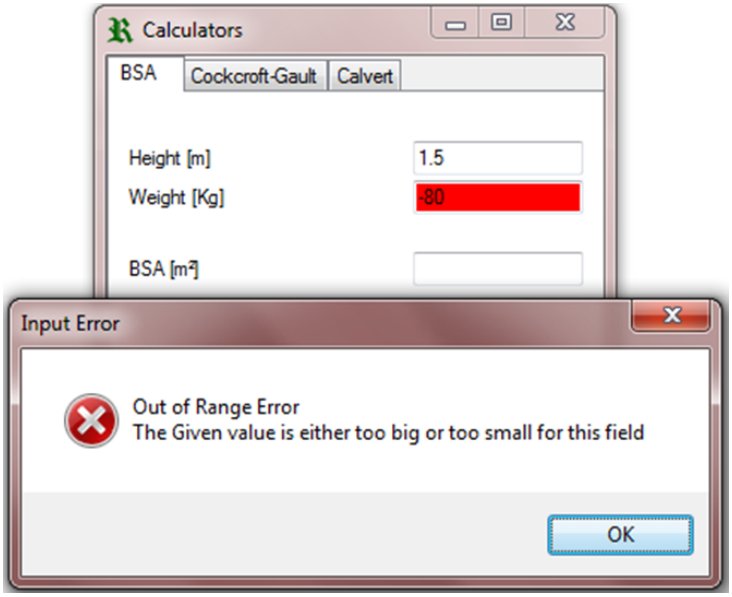
You should discuss the case with the Consultant to determine if a higher dose is suitable in the circumstances.

4.3.2 Validation

Both inputs accept decimal values greater than zero, any inputs that don't fulfill this criteria (zero, negative values or text) will result in an error message and the relevant input field will have a red background.
Once you have a valid answer you can click on the `Use result for Calvert` to switch directly to the Calvert Calculator with the eCCR textbox already filled. Note: this button is not visible until a valid result has been calculated for the eGRF



(a) Valid Input



(b) Invalid Input

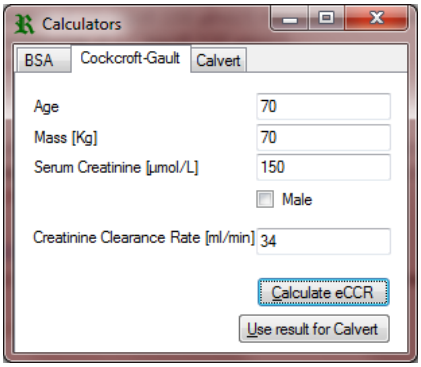
Figure 4.1: BSA Calculator in use

4.3.3 Renal Function

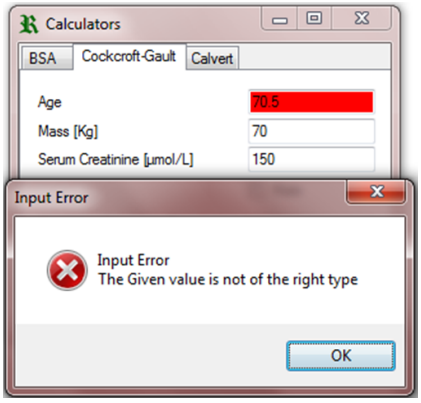
The Cockcroft-Gault formula is used to produce the estimated Glomerular Filtration Rate (eGFR).

$$eGFR[\text{ml/min}] = \frac{(140 - age[\text{years}]) \times Mass[\text{Kg}] \times k(GenderConstant)}{SerumCreatinine[\mu\text{mol / L}]}$$

$k_{Male} = 1.32$
$k_{Female} = 1.04$
The year is to be given as an integer, Mass and Serum Creatinine are decimals and the gender constant is set by selecting the tick box for male patients.



(a) Valid Input

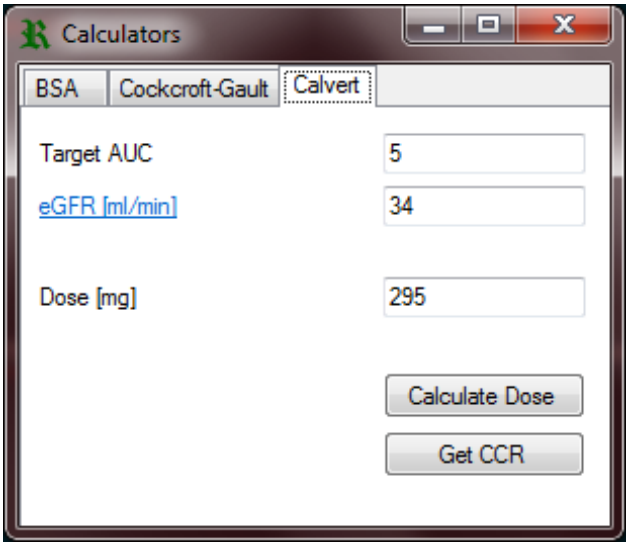


(b) Invalid Input

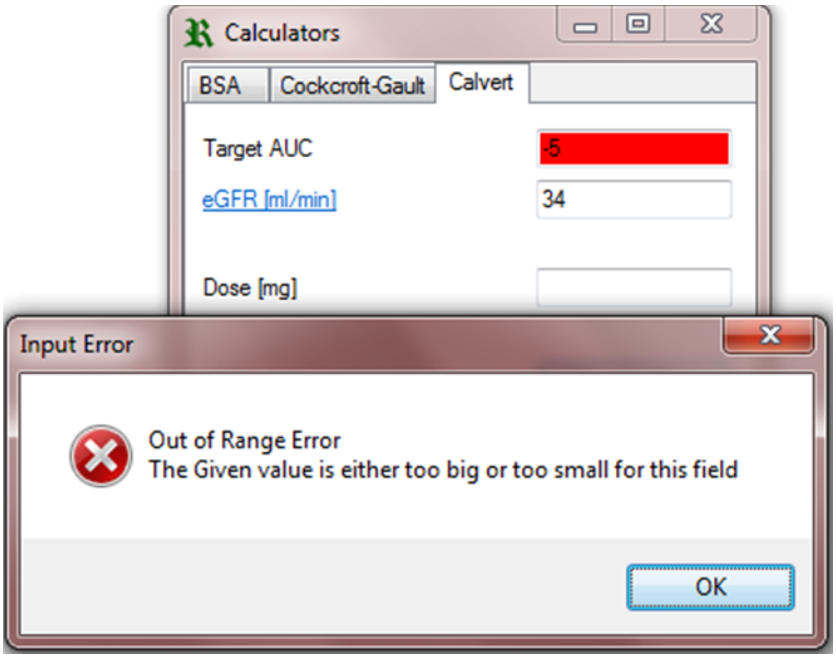
Figure 4.2: eGFR Calculator in use

4.3.4 Calvert

The Calvert Calculator requires that both the eGFR and the Area Under the Curve (AUC) are integers with a value greater than or equal to 1.



(a) Valid Input



(b) Invalid Input

Figure 4.3: BSA Calculator in use

4.4 Regime Viewer & Editor

Accessed via the File Menu on the start page or the keyboard shortcut `Alt-R`, this interface is used to view and if required edit the data for regimes. This shows the form when it is loaded for the first time if no initial data is provided.

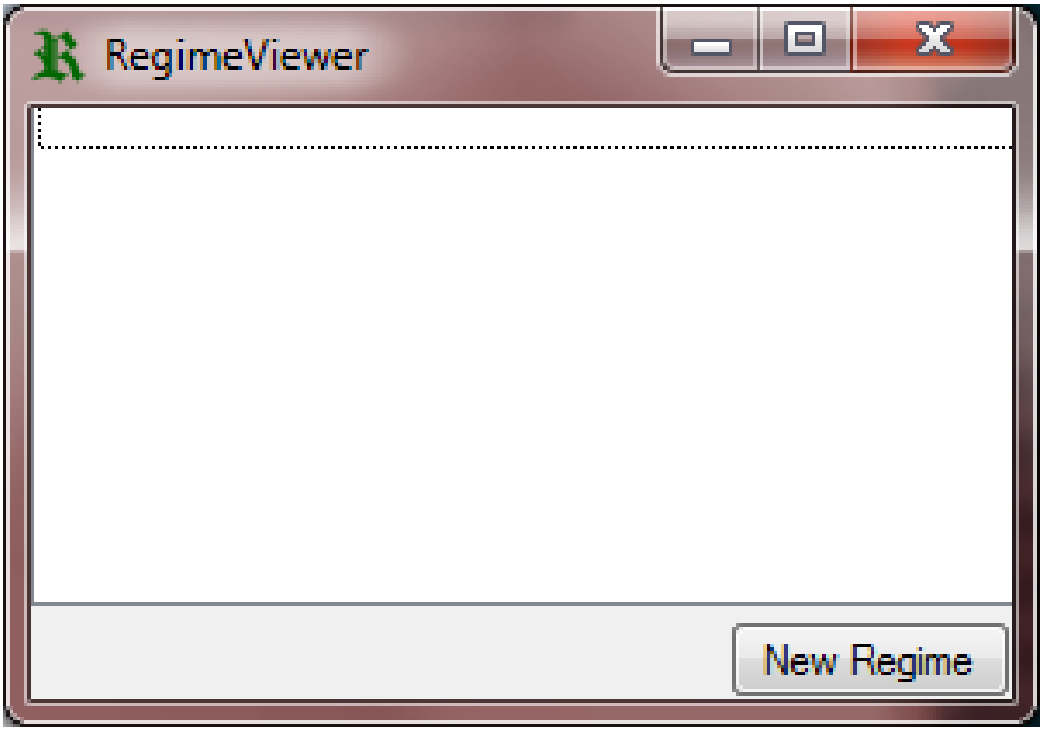


Figure 4.4

4.4.1 How to add a new Regime

1. Click on `New Regime` (bottom right hand corner).

2. This opens the `RegimeEditor` form as shown below.

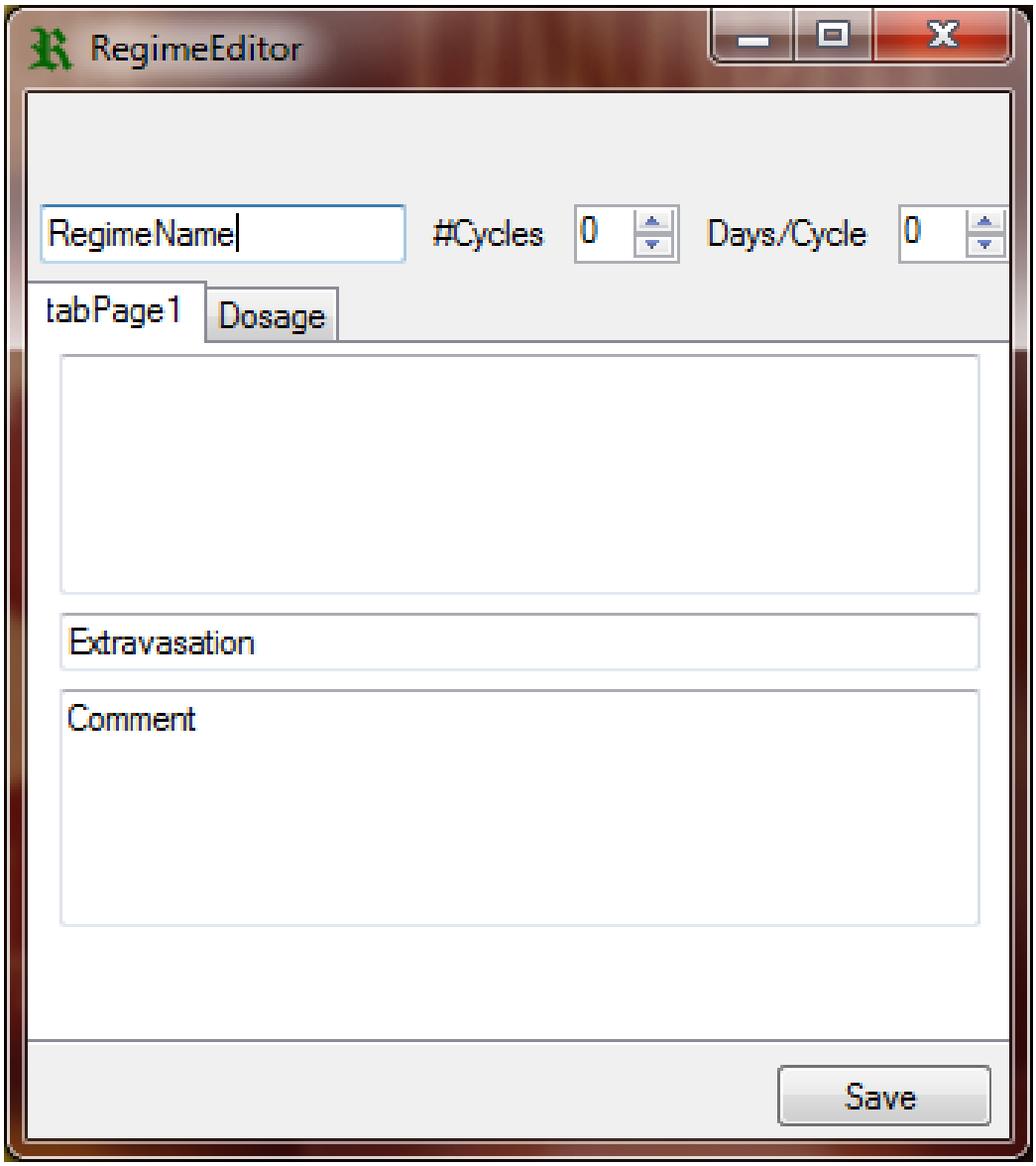


Figure 4.5

Using a reputable source of Regime data copy and paste in the data as follows:

`RegimeName` Enter the name of the Regime, this usually takes the form of an acronym derrived from the Active Ingredients.

`#Cycles` The standard number of cycles of a regime that a patient will undergo.

Figure 4.6

`Days/Cycle` The number of days per cycle.

`First textbox on the first tab` A quick summary of the Regime, including its purpose.

`Extravasation` Discusses the risk of patients undergoing extravasation while on this regime.

`Comment` This is a section for additional data including tests to be performed and modifications that may be required.

4.5 Regime

The main functionality of this software is accessed via the `Regime` button. Once you have clicked on this button you will see the form shown below. The list on the left displays the names of all the available regimes, the list on the right shows all the current patients. The textbox under the patient list is a search box, enter any part of the patients name to filter the list of patients. While the system should start searching automatically, there is also a search button.

4.6 Comment on any validation the user can expect to happen

4.7 Comment on any on-screen help/menus etc

4.8 Give samples of the error messages generated (in-situ!)

4.9 Indicate what to do if something goes wrong

Chapter 5

Explain how to back-up the system (program and data files).