PCS CLINICAL AUDIT TOOL

USER GUIDE

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Version 2-3

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2.3.1	09/12/2008	Christine Chidgey	Updates for version 2.3 release and in particular to 1) add a Results Date filter 2) provide ability to save filter criteria 3) improve Diabetes SIP graphs

1. INTRODUCTION

1.1. Clinical Audit Tool (CAT)

The Clinical Audit Tool (CAT) analyses clinical information from GP Clinical Desktop Systems. It translates data into real statistical and graphical information that is easy to understand and action. This allows practitioners to assess and improve the quality and completeness of patient information. The benefit to the practice is to assist with its ongoing accreditation and provide opportunities to grow practice income. The emphasis of the tool is to help practice staff to take specific action to improve patient coverage in chronic disease management and prevention.

Other benefits of CAT are many and include:

- targeting patients with particular needs
- targeting patients with specific health risk profiles
- improved compliance with statistical data collections
- extracting data to meet the needs of others
- meeting reporting requirements

Statistics that are required for the Australia Primary Care Collaboratives (APCC) program and the DoHA Future Directions Key Performance Indicators for Divisions are a by-product of the use of the system.

1.2. User Guide

The purpose of this document is to provide instructions on how to install and use the functionality provided by the CAT.

1.3. Notes about this User Guide

This User Guide describes the use of the PCS Clinical Audit Tool with reference to the HCN Medical Director, Best Practice and Genie Clinical Desktop Systems.

Wherever Medical Director is used in this document we are referring to the Health Communications Network – Medical Director ™ Clinical Desktop System.

Wherever Best Practice is used in the document we are referring to the Clinical Desktop System produced by Best Practice Software.

Wherever Genie is referred to we are referring to the Clinical Desktop System produced by Genie Solutions.

There are other Clinical Desktop Systems that may interoperate with the PCS Clinical Audit Tool in the future and additions will be made to this User Guide when they are available.

1.4. Definitions, acronyms and abbreviations

Term	Description
ACR	Microalbumin Creatinine Ratio
APCC	Australia Primary Care Collaboratives
ATSI	Aboriginal Torres Strait Islander
BMI	Body Mass Index
BP	Blood Pressure
CAT	Clinical Audit Tool
CHD	Coronary Heart Disease
COPD	Chronic Obstructive Pulmonary Disease
CV	Cardiovascular
CVD	Cardiovascular Disease
DVA	Department Veteran Affairs
eGFR	Estimated Glomerular Filtration Rate
HbA1c	Haemoglobin A1c
HDL	High-density Lipoproteins
HMR	Home Medicine Review
LDL	Low-density Lipoprotein
MD	Medical Director
NPCC	National Primary Care Collaboratives
PCS	Pen Computer Systems
RACGP	Royal Australian College of General Practitioners
SIP	Service Incentive Payment

2. SYSTEM REQUIREMENTS

The minimum and recommended system requirements to be able to run the Clinical Audit tool are provided in this section.

2.1. Operating System

Clinical Audit runs under the following environments;
Microsoft Windows VISTA
Microsoft Windows XP Professional
Microsoft Windows 2003 Server
Microsoft Windows 2003 R2 Server

2.2. Microsoft .NET Framework

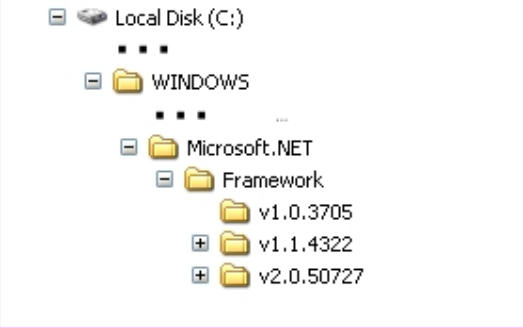
PCS Clinical Audit requires the Microsoft .NET Framework version 2.0 to be installed prior to installing PCS Clinical Audit. This can be downloaded from

http://www.microsoft.com/downloads/details.aspx?FamilyID=0856eacb-4362-4b0d-8edd-aab15c5e04f5&displaylang=en

How to check which version of .NET you have installed:

Method 1:
Go to Start > Control Panel
Open 'Add or Remove Programs'
Check to see that 'Microsoft .NET Framework 2.0' appears in the list

Method 2:
Using windows explorer



Locate the %systemroot%\Microsoft.NET\Framework folder
[The %systemroot% is found under your c:\ drive and will usually be named 'WINDOWS' or 'WINNT']

The versions that are installed will be listed by folder.

2.3. Internet Explorer

To install PCS Clinical Audit you must use Internet Explorer version 5.5 or later. Clinical Audit can be installed by going to the following URL

http://www.pencs.com.au/ClickOnce/ClinicalAudit/publish.htm

2.4. Internet Connection

PCS Clinical Audit uses an authentication mechanism that requires a persistent internet connection. It is recommended that you have a broadband internet connection to operate PCS Clinical Audit.

2.5. Memory

Clinical Audit requires at least 196MB of available memory for a typical Clinical Desktop System (eg. Medical Director) installation[1]. It is recommended that you use Clinical Audit on a system with at least 512MB of RAM installed.

2.6. Disk Space

The program itself is relatively small; however, each snapshot for a typical Clinical Desktop System (eg. Medical Director) installation[1] will require around 25MB of disk space.

2.7. Clinical Desktop System Compatibility

- *Medical Director*
  Clinical Audit has been tested against Medical Director Versions 2 and 3. As new versions of Medical Director are released, PCS Clinical Audit will be validated and, if required, updated to maintain compatibility.

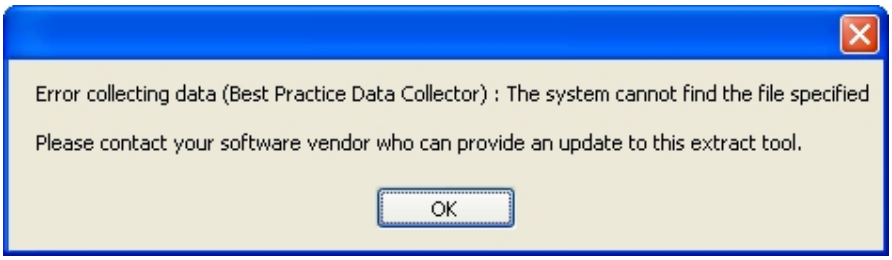
- *Best Practice*
  Clinical Audit is compatible with Best Practice version 1.6.0.395 and later. As new versions of Best Practice are released, PCS Clinical Audit will be validated and, if required, updated to maintain compatibility.

- *Genie*
  Clinical Audit is compatible with Genie Version 7.5.3 and later. As new versions of Genie are released, PCS Clinical Audit will be validated and, if required, updated to maintain compatibility.

[1] For the purposes of this document a typical Medical Director installation contains approximately 10,000 patient records.

2.8. Best Practice Requirements

Best Practice Software provides a new executable file that must exist with your Best Practice application in order for Clinical Audit to be able to collect data. If this file is not installed you will receive the following error message when you click the Clinical Audit 'Collect' button.



If you receive this message contact Best Practice Software and they will provide a copy of the file for you. It is intended that this file will included in future releases of the application.

2.9. Genie Requirements

The Genie software application provides a new Reports menu option that performs the data extraction for Clinical Audit. This is described in the Appendices section of this manual.

3. INSTALLATION

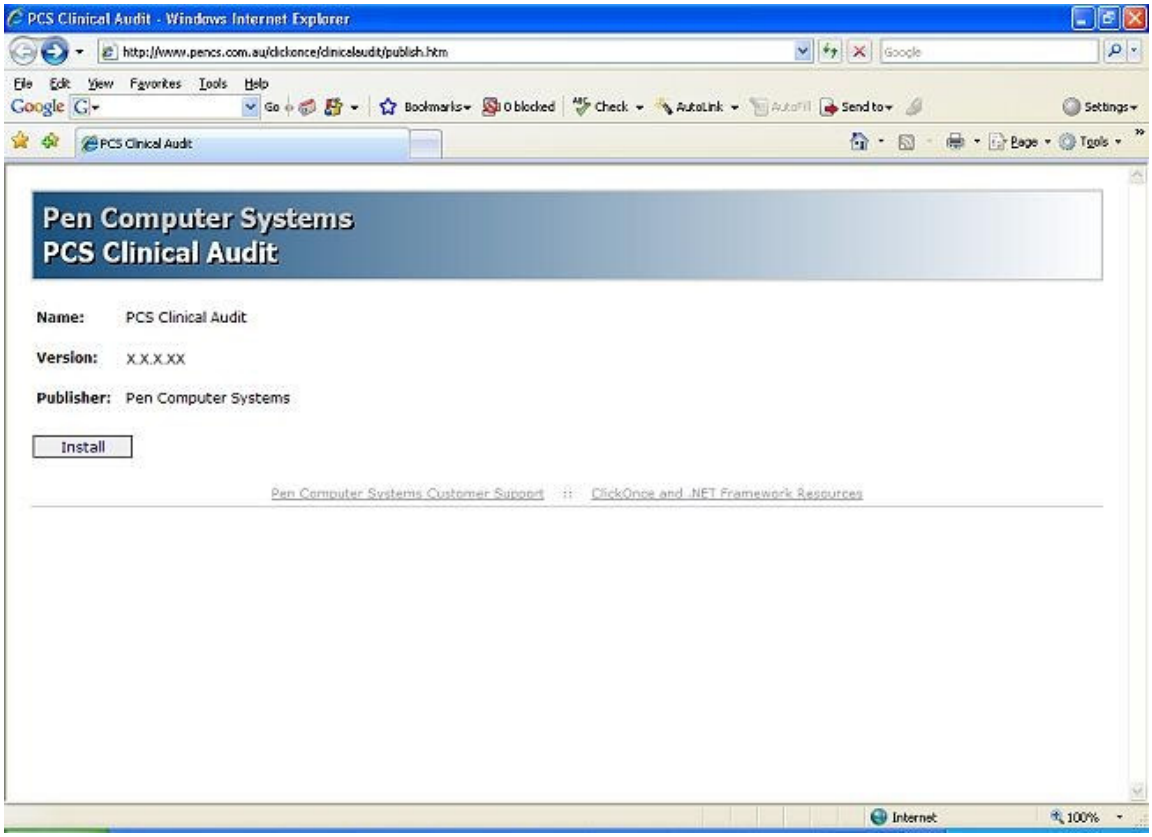
The Clinical Audit Tool is available using Microsoft ClickOnce technology.

Using **Internet Explorer** and go to the URL

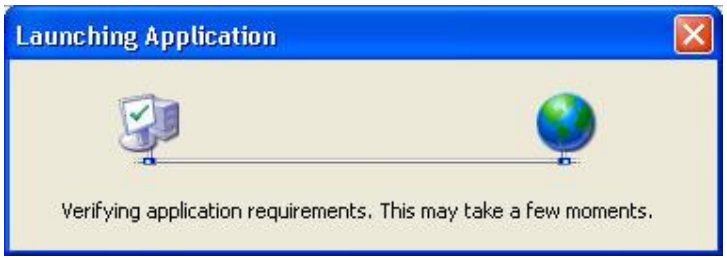
http://www.pencs.com.au/clickonce/clinicalaudit/publish.htm

Note: ClickOnce technology is not compatible with FireFox.

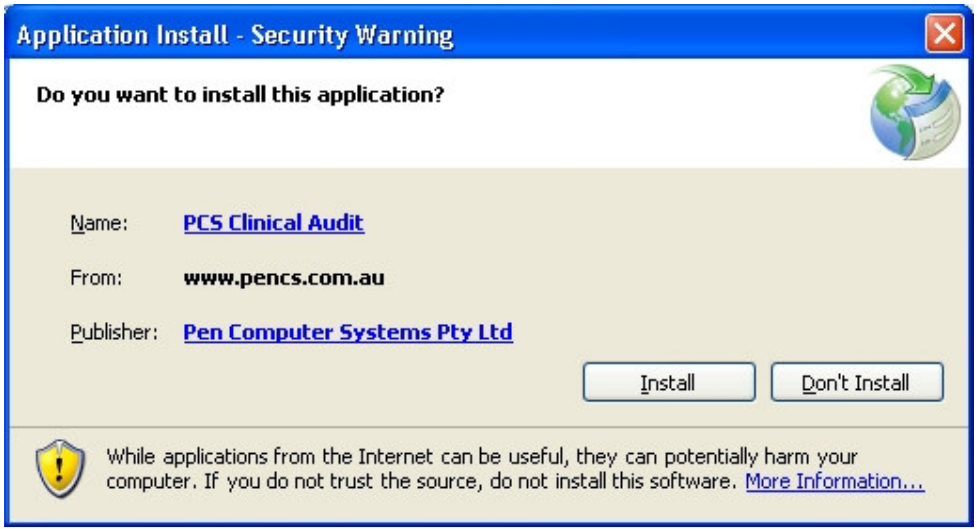
Click the 'Install' button



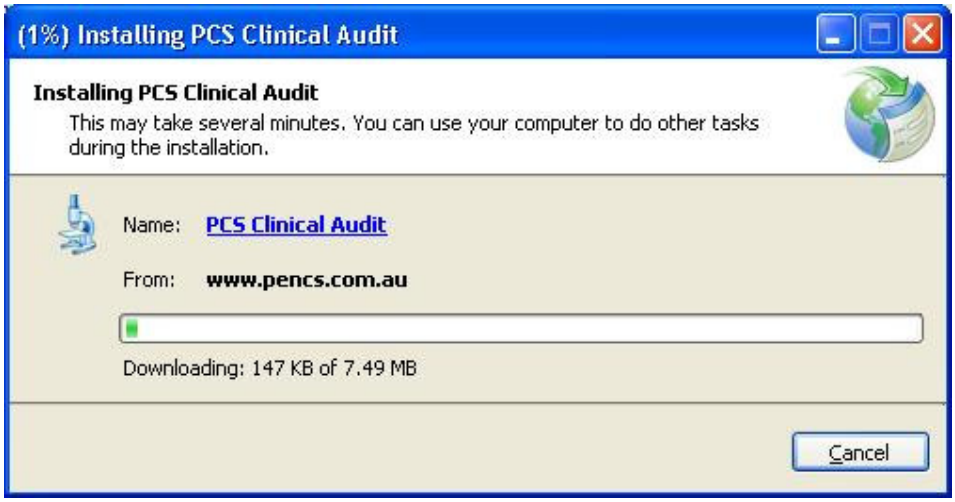
The application will be launched.



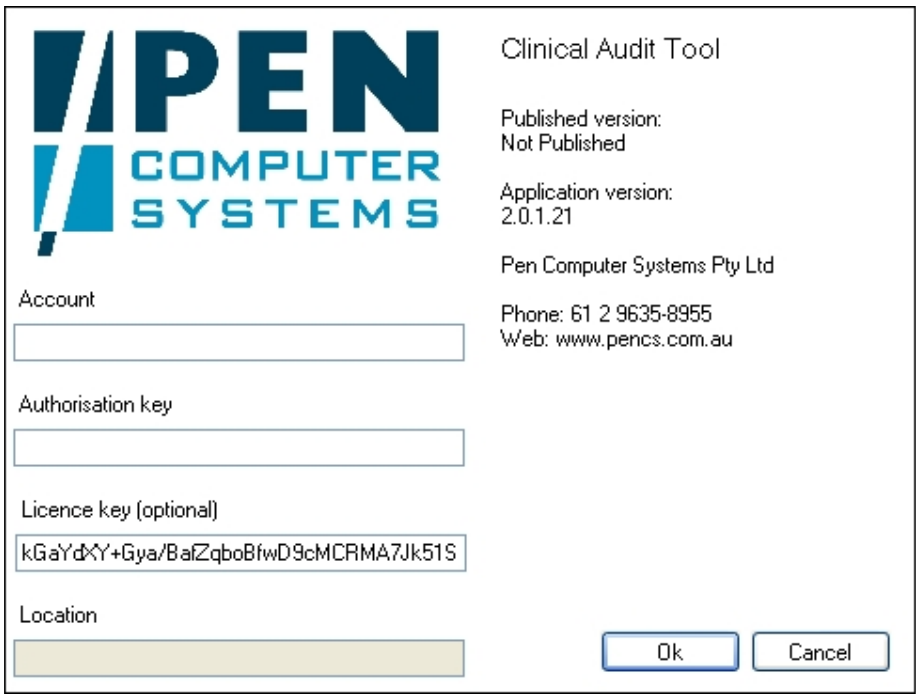
You will be provided with some security information about the application. Click the 'Install' button to continue with the install.



A dialog box will display showing you the progress of the install.



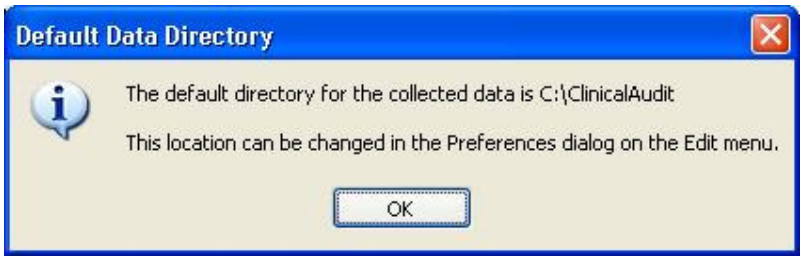
Once the install has completed the Clinical Audit Tool Login screen will appear.



Account name and **Authorisation key** – enter the details provided to you.
License Key – leave this empty unless you have been provided with a special key (a key will be automatically generated for you at first login)

Click 'Ok'

The first time you login the dialog box below will pop up.



This lets you know that the folder 'C:\ClinicalAudit' on your PC will be used to store the 'snap-shots' of your data for analysis by the Clinical Audit Tool. If you prefer to store them somewhere else you can change this by selecting Edit > Preferences from the top menu. Setting your preferences is explained in the next section: 'Setting Your Preferences'.

3.1. Installing to a Desktop PC

Clinical Audit needs to be installed under each profile (login) that will be using it on the PC. That is, if multiple people log on to the one PC and they each want to use Clinical Audit the installation needs to be repeated for each login. The application generally only installs once but 'activates' itself for the other logins on additional installs.

3.2. Installing to Terminal Services or Citrix

The only differences to the preceding installation instructions are the following:

1. Clinical Audit needs to be installed on the SERVER

   - Log on as the user via a Terminal Services or Citrix session and you will automatically be on the server. Follow the installation instructions in the preceding section.

2. Clinical Audit needs to be installed under each profile (login) that will be using it. That is, if multiple people will be using it, the installation needs to be repeated for each login. The application generally only installs once but 'activates' itself for the other logins on additional installs.

   - Log on as each user that will be using CAT and repeat the install instructions.

NOTE: If access privileges are an issue, then you will need to elevate the user's privileges to install and then restore them afterwards. This is a Microsoft configuration.

3.3. Proxy Servers

If you are having trouble installing the Clinical Audit Tool it may be because you a behind a Proxy Server. Some Proxy Servers will prevent you from installing the Clinical Audit Tool which uses a very new deployment technology developed by Microsoft.

When attempting to install one of the following may occur

- you get a message like "the application failed to install"
- you get a message indicating a "CGI error"
- you can't login even though you have the correct user name and password

These problems are most likely caused by your system's Proxy Server.

If you cannot install the Tool, please contact your Network Administrator or IT support person and advise them of this issue. There is a hot-fix supplied by Microsoft that may help in allowing installation to occur behind your Proxy Server.

The hot-fix can be downloaded here:

http://www.myhealthepractice.com.au/DOTNETHOTFIX_Proxy_KB917952.zip

If your Network Administrator or IT support contact is unable to help please contact your division.

Follow these steps

1. Logon to the computer you are installing CAT onto as Administrator
2. Download the zip file and extract the files
3. Run the extracted .exe file
4. Reboot the computer

3.4. Using Clinical Audit Offline

You must install and login initially to Clinical Audit while connected to the Internet so your login details can be validated.

You can then use CAT without being connected to the Internet for a period of 1 month.

When you are connected to the Internet CAT is able to verify your registration credentials are still valid and check to see if there are any application updates available for download.

If you use CAT for a long period of time without connecting to the Internet then your credentials will eventually expire. You will need to connect again and go to the CAT installation URL to download an update.

Note: If you have a Desktop Shortcut to CAT and it does not work offline you simply need to delete and recreate it.

3.5. CAT Licence Key

All CAT users are provided with a license key that gives them access to the Clinical Audit Core Product (CACP). The CACP includes all the functionality that is described in this manual.

The license key is generated the first time a user logs in by leaving the license key field blank.

Custom CAT modules may be developed to meet specific user requirements. License keys can be issued to users that provide access to the CACP and the required additional modules.

The license key is updated by entering the new issued license key at the login screen or in the preferences screen.

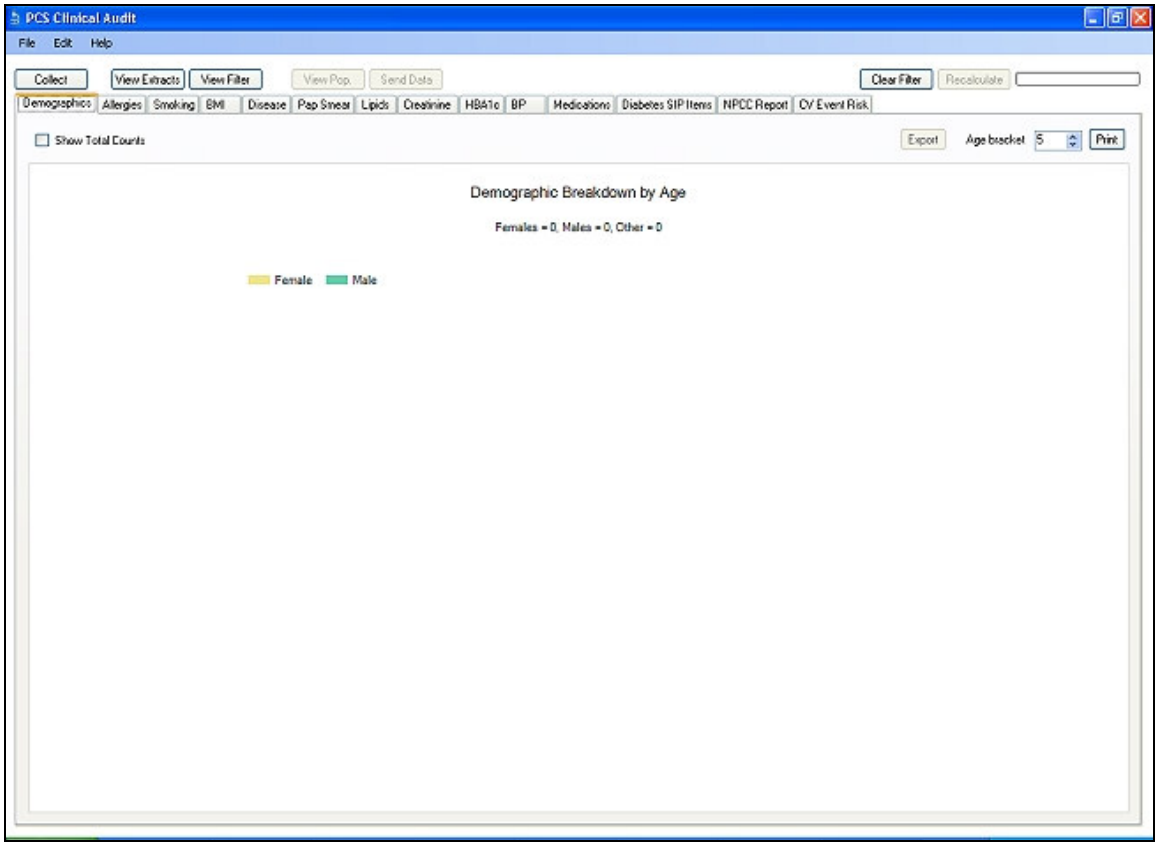
4. CAT USER INTERFACE

Once the CAT software has been installed it is available from your Programs List.

Click Start > All Programs > Pen Computer Systems > PCS Clinical Audit

Enter your Account name and Authorisation key and click 'OK'.

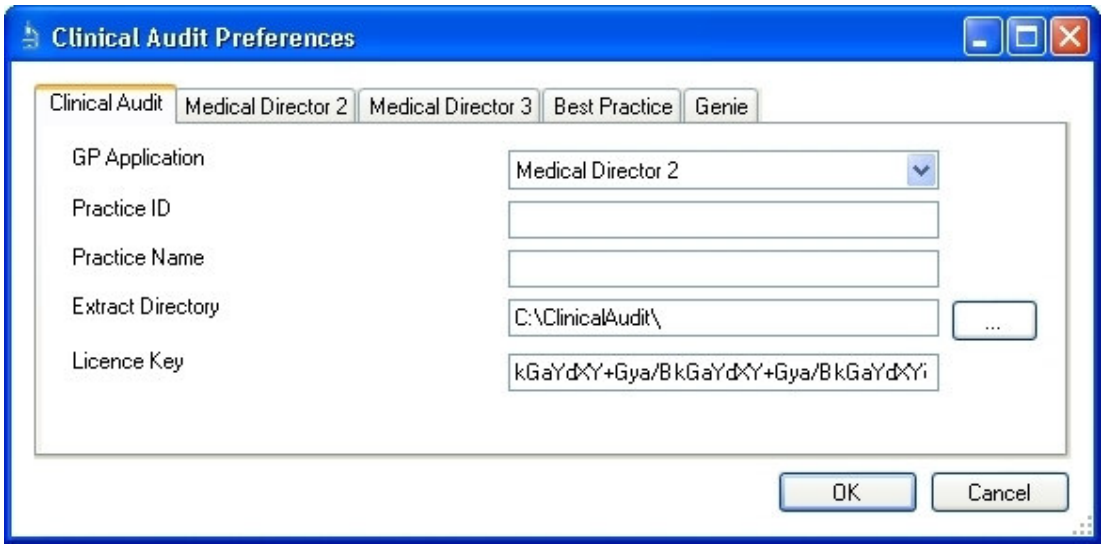
Once you have logged in the screen below will display. You will see the population figure is initially 0 because you have not yet collected data from your clinical desktop system.



4.1. Setting Your Preferences

Your Preferences are set by selecting Edit > Preferences from the top menu.

The Preferences Dialog box will be displayed.



GP Application
From the drop down list select the Clinical Desktop System you wish to collect from. Then click the tab for that Clinical Desktop System to enter further values.

Practice Name and Practice ID Number
Fill in the values for these fields with your practice details. At a future time these values will be used if your practice decides to participate in projects that send consented, de-identified patient clinical data to your Division or other data repository.

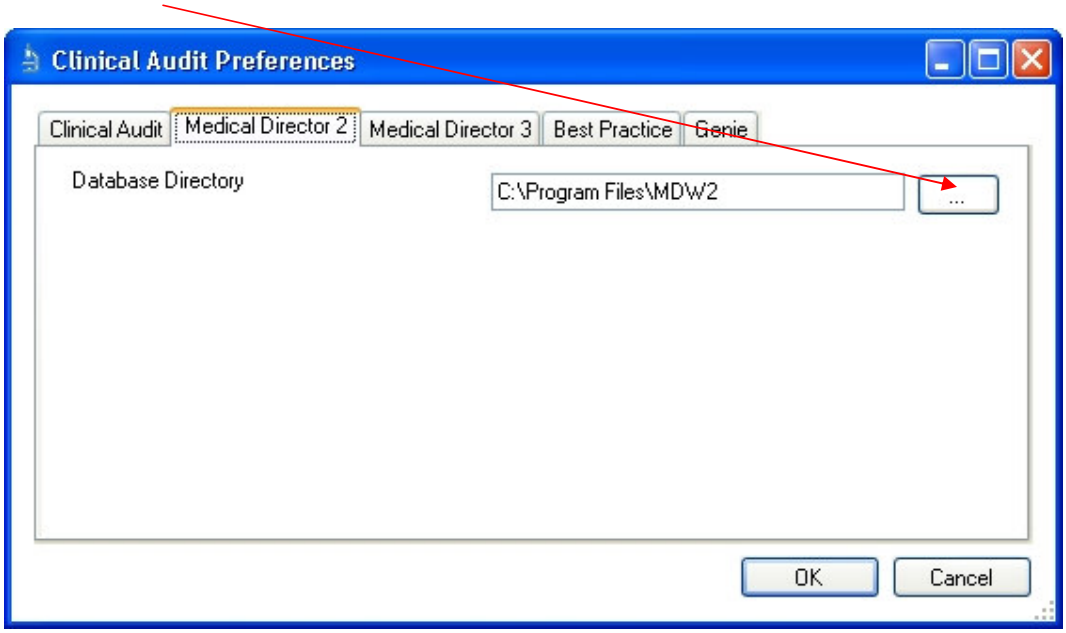
Extract Directory
This folder is used to store the 'snap-shots' of your data for analysis by the Clinical Audit Tool. By default the data will be stored in the folder 'C:\ClinicalAudit' on your PC. If you prefer to store them somewhere else you can change this by clicking the 'Browse' button and choosing another Data Folder Location. Click 'OK' when you have selected a new location. Click 'OK' to save this location and close the Dialog box.

License Key
The license key contains details of the modules in CAT you have access to. All users have access to all the functionality described in this manual.
You should not change the license key unless you are specifically provided with a new one by PCS.

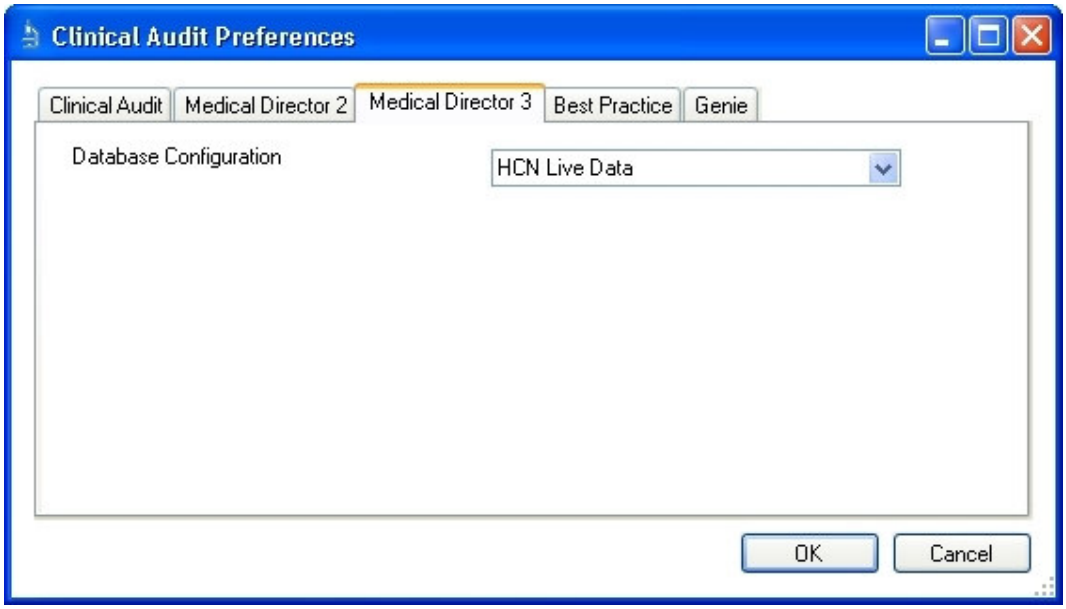
4.1.1. Choosing your Clinical Desktop System

Once you have selected your Clinical Desktop System from the 'Clinical Audit' tab, click the tab for that Clinical Desktop System to enter further values.

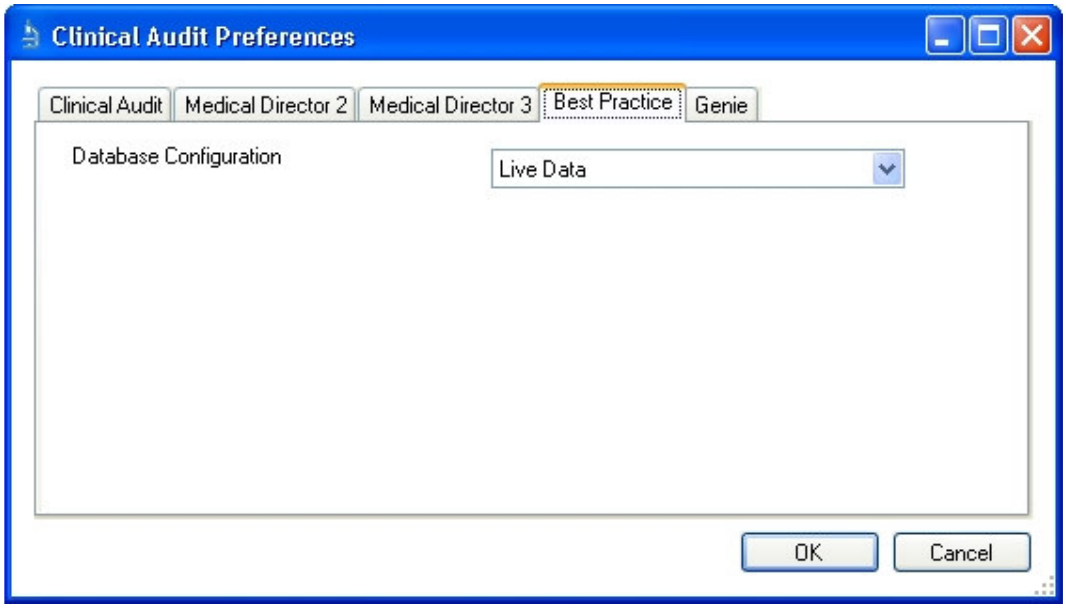
Medical Director 2
Click the browse button to locate the database directory.



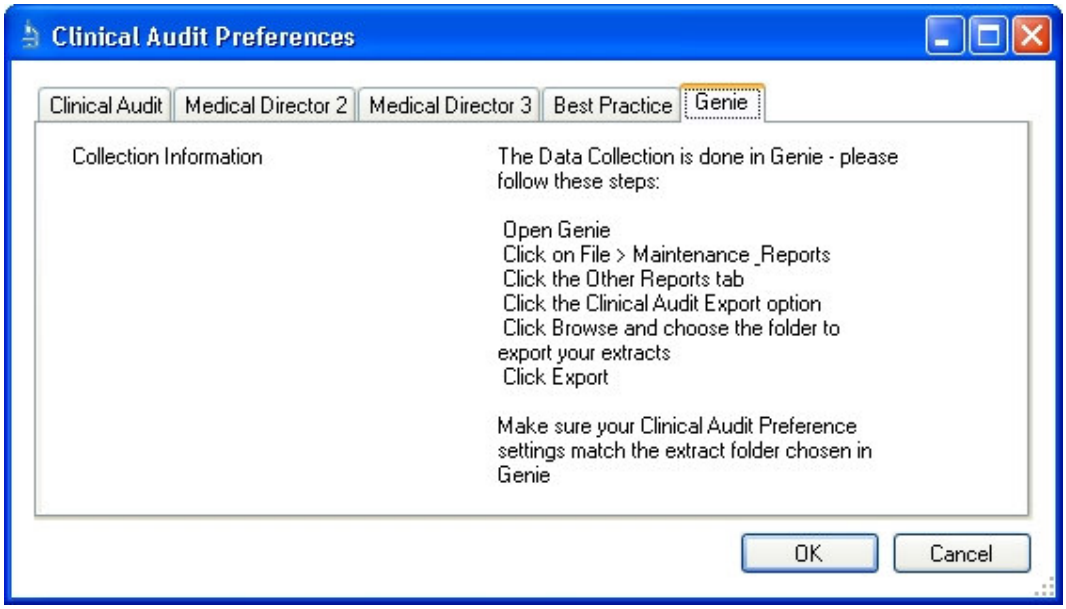
Medical Director 3
Select your database configuration from the drop-down list. These will match the configurations you have available through the 'HCN Maintenance' icon on your desktop.



Best Practice
Select either 'Live Data' or 'Sample Data' from the drop down list.



Genie
There is no further set up for Genie.
The Genie software application itself provides a new Reports menu option that performs the data extraction for Clinical Audit. This is described Appendices section of this manual.
The Genie preference tab summarises the steps you should follow.
Ensure the **Extract Directory** on the 'Clinical Audit' tab matches the extract folder chosen in Genie.



Once you have selected your Clinical Desktop system the details will be displayed above the row of tabs.

Clinical Desktop System Database Location

4.1.2. Choosing a preferred Data Folder Location

If there are a few clinicians in the practice that are using CAT then choose a **network drive** that is accessible to all.
Use the 'Edit > Preferences' option to set the same 'Data Folder Location' for each user.

More than 1 user can work with the same snapshot at the same time.

Genie users will need to make sure this folder matches the folder they select from the Genie application when they do the extract.
This is described in the Appendices section of this manual.

4.1.3. Changing the Licence Key

You should not change the license key unless you are specifically provided with a new one by PCS.
The license key is updated by clearing the license key field and pasting the new one you have been issued into the field.

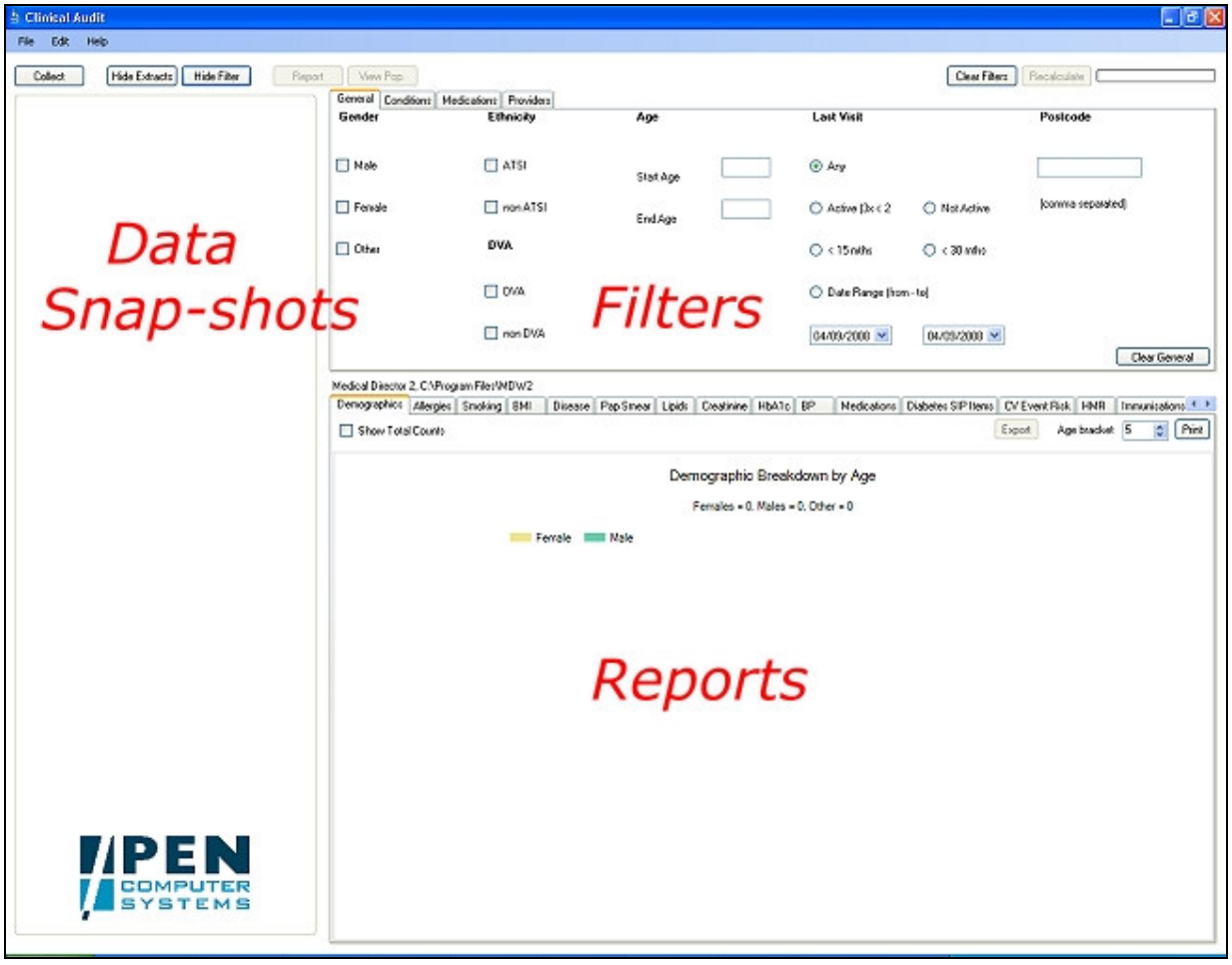
4.2. Navigating the CAT User Interface

Click the 'View Extracts' and the 'View Filter' buttons to display all the areas of the CAT user interface.

The screen is divided into 3 sections:

- Data **Snap-shots** (or Extracts) collected for analysis (Left Hand Panel)
- Data **Filters** (Top Right Panel)
- Data **Reports** (Bottom Right Panel)

It is handy to be able to hide the data collection and data filter areas of the screen in order to make best use of your screen space to view the data results. You can toggle between the View/Hide modes at any time.



5. COLLECTING DATA SETS

NOTE:
Before you start collecting data sets ensure you have set up your preferences to point to the correct clinical desktop system for your practice. (See 'Setting Your Preferences' for details about how to do this.)

A data set is collected by clicking the 'Collect' button at the top left of the screen.

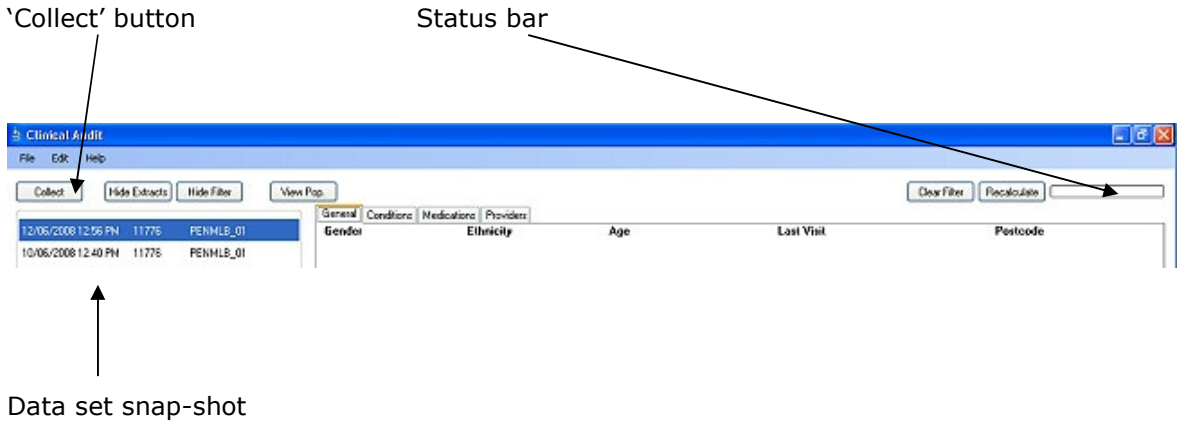
Once you click the 'Collect' button you will see the 'status bar' in the top right hand corner of the screen flashing while the data is retrieved from the clinical desktop system.

- Genie users please note that the data collection is performed from within the Genie application. Clicking the CAT 'Collect' button at the top left of the screen will provide you with the summary steps on how this is done within Genie. Step by step details are provided in the Appendices.

The data set collected is saved in your preferred data folder (see 'Setting Your Preferences' for more information).

When the data retrieval has completed you will see an entry in the left hand column. The data is stored as a 'snap-shot' on your PC. You can use this 'snap-shot' for analysis at any time in the future.

Tip: To refresh the list of 'snap-shots' click Edit > Preferences and click 'OK'.



Each entry displays the date/time of collection, the number of records retrieved and the machine name on which the collection was done.

You can collect as many data sets as you wish over time. Each data set will be listed as an entry in the left hand column.

To analyse a specific data set click on the entry for that data set. It will become highlighted and you will see the 'status bar' in the top right hand corner of the screen flashing while the data is reloaded from the 'snap-shot' into Clinical Audit.

5.1. What data is collected

Data is only collected for **patients who are active in your Clinical system**. Data for patients who are deceased or have been made inactive is not collected.

This means when you are analysing your data using CAT you are only seeing patients who are currently marked as active in your Clinical system. You may find patients in CAT that you know are no longer active at your practice. If you inactivate them in your Clinical system they will be excluded from future data collections.

5.2. How is the data stored

The collect saves 2 xml data files to your preferred data folder. One file is pure Clinical data and has no identifiable patient information. This is called the DATA file. The other file is the LINK file and contains all the patient identifiable data. The LINK file is only used when you want to re-identify a list of patients that make up a segment of a graph.

In your preferred data folder the files look like this:

5.3. Existing data set compatibility with changes to CAT

CAT version 2 has new filters and reports. Additional data is collected by version 2 for these new functions. Your CAT version 1 extracts will not have the additional data needed to make these functions work.

You can load up your version 1 extracts and analyse them as before - the new functionality will inactivated for these extracts by being greyed out.

6. DATA FILTERING

6.1. Data Filtering Overview

Data can be filtered so that you can view graphs and reports for specific criteria.

The data filters are organised into a series of tabs:

- **General** (Demographics)
- **Conditions** (Medical)
- **Medications**
- **Results**
- **Providers**

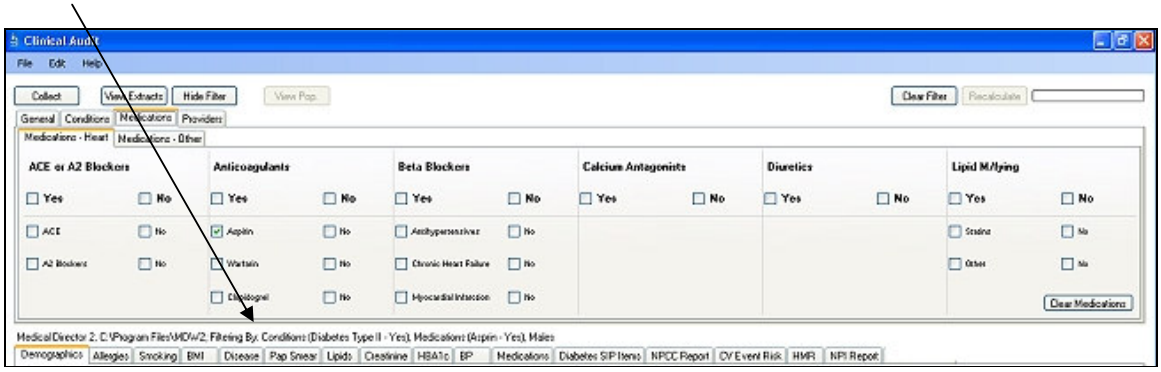
Another tab is provided for you to save your selected filter criteria:

- **Saved Filters**

To filter the data simply select the criteria you require to look at. This is usually done by ticking selection boxes. The criteria you have selected will be displayed at the top of the Results panel. They will be displayed even if you hide the filter panel.

Click 'Recalculate'. You will see the 'status bar' in the top right hand corner of the screen flashing while the filtered data is reloaded from the 'snap-shot' into Clinical Audit. This will limit your data to look at only patients that match all the conditions ticked.

Example:
'Filter By' displays the criteria selected (eg. Male, Diabetes Type II, Aspirin)



Examples for each of the filter types are provided in the following sections.

6.2. Changing Filters

When you make changes to the filters the new selections do not become effective in the Reports until you have clicked the 'Recalculate' button.

- The 'Recalculate' button will turn red when the filter text has changed but the button has not been clicked

- If the 'Recalculate' button has not be clicked the correct previous filter text will display on any printed graphs and reports

6.3. Clearing Filters

To clear filters that have been selected either:

- Click the 'Clear Filters' button in the top right hand corner of the screen to clear all your filters.

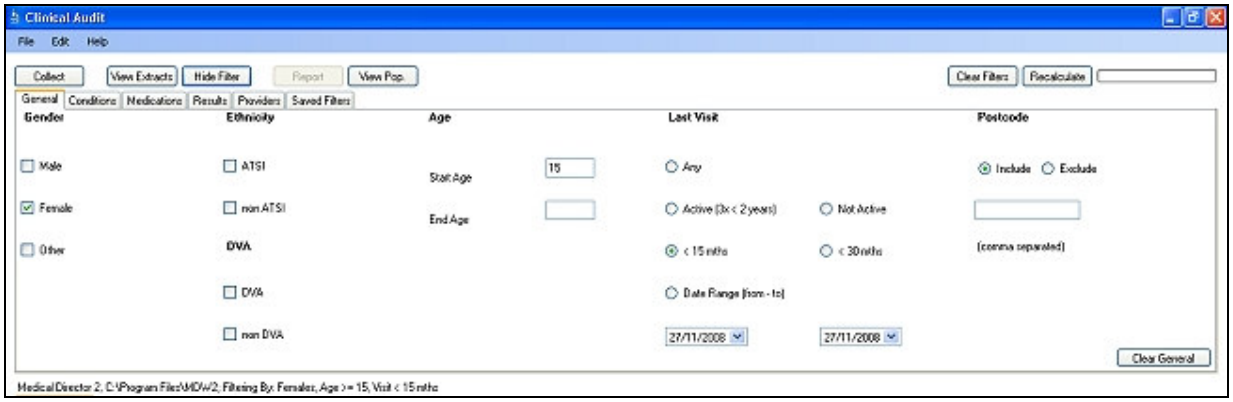
  The 'Clear Filters' dialogue box will appear.
  Note: This dialogue box is also used to clear any Report Selections that have been made. Refer to the 'Cross Tabulation Report' for details on this functionality.

  The 'Clear all Filter Selections' will be pre-ticked. Click 'OK' to continue.

- Click the 'Clear …' button at the bottom right hand corner of each tab to clear only the filters for that tab.

NOTE:
Make sure you **click 'Recalculate'** when you have changed the filters.

6.4. Demographic Filtering



Patient data can be filtered as follows:

Gender Male
Female
Other
No selection = All

Note: Ticking multiple boxes will create an OR criteria ie. Male OR Female.

Ethnicity ATSI (Aboriginal Torres Strait Islander)
non ATSI
No selection = All

Note: Ticking multiple boxes will create an OR criteria ie. ATSI OR non ATSI

DVA DVA (Department Veteran Affairs)
non DVA
No selection = All

Note: Ticking multiple boxes will create an OR criteria ie. DVA OR non DVA

Age Enter a numeric start age or end age to limit your selection

Last Visit The last visit date is the most recent date a patient contact has been recorded.

In Medical Director this is deemed to be the date of the most recent progress note. Check the 'General Data Mappings' Appendices for each Clinical system.

Values for selection are:

- Any = the last visit was at any time (all patients will be selected)
- Active = has had 3 visits in the last 2 years (RACGP definition)
- Not Active = a patient not meeting the RACGP definition of active
- <15 mths = has visited in the last 15 months
- <30 mths = has visited in the last 30 months
- Date Range with from/to date selection = patients whose most recent visit occurred within a period of time

The 'Date Range' filter – to note:
The 'Date Range' filter cannot be used to retrospectively look at the data in a 'snap-shot'. The 'snap-shot' is only valid for the point in time at which it was taken.

For example: If you filter on last visit between 1 and 2 years ago you will be excluding patients you have had a visit more recently. These patients may or may not have had a visit in the period of time you are selecting. You will not be selecting all patients who visited within that period.

Postcode Enter a 4 digit postcode or
Multiple postcodes can be entered separated by a comma

This filter allows you to select whether the list of postcodes is for

- Include in the filter
  Patients matching a postcode in the list will be selected
- Exclude from the filter
  Patients matching a postcode will not be selected

The Exclude option allows practices to find patients that do not reside in their local area and may be transient.

6.4.1. Demographic Filter Mappings with Clinical systems

The demographic filter mappings are provided in the 'General Data Mappings' Appendices for each Clinical system.

6.5. Medical Conditions Filtering

Selecting Conditions by ticking the boxes will limit your data to look at only patients that match all the conditions ticked:

Condition – Yes , No , no selection = All

You can select to filter by patients that

- Have a condition (tick the Yes box)
- Do not have a condition (tick the No box)

If you tick one of the main condition headings (bolded) the sub-heading selections will not be available and all patients matching that broad condition will be selected.

6.5.1. Pregnancy

Pregnancy is included under the conditions filter. Ticking this as 'Yes' will give you a list of the patients who are currently flagged as pregnant in the Clinical System. Check the appendix for your Clinical system for details about how this is checked.

6.5.2. Medical Conditions Filter Mappings with Clinical systems

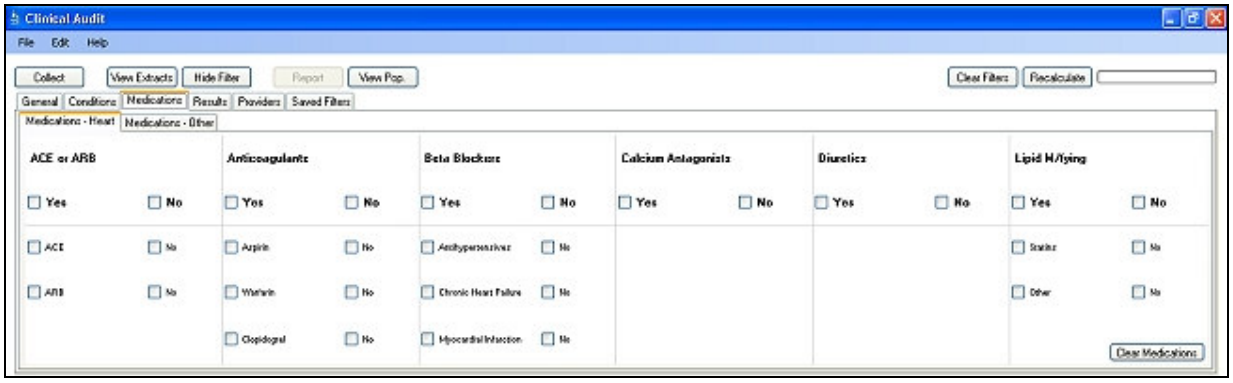
The conditions filter mappings are provided in the 'Conditions Data Mappings' Appendices for each Clinical system.

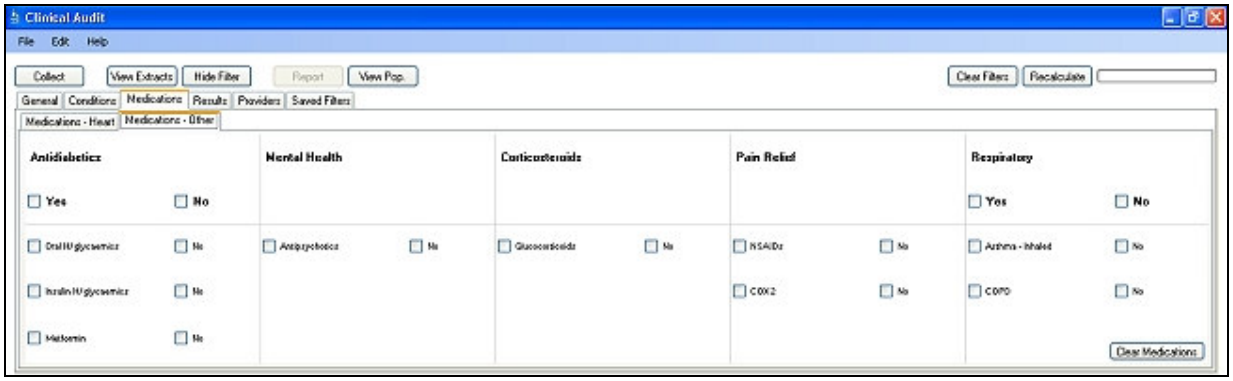
Note that some conditions are flagged as true for a patient if the patient has **ever had** the condition ie. the condition forms part of the patient history but is not currently listed as active (eg. heart disease). Check the appendix for your Clinical system for details about how different conditions are collected.

6.6. Medications Filtering

Medications are divided into 2 tabs to allow for a greater number of medications to be selected. These are

- Medications – Heart
- Medications – Other





Selecting Medications by ticking the boxes Yes or No will limit your data to look at only patients that match the medication status selected:

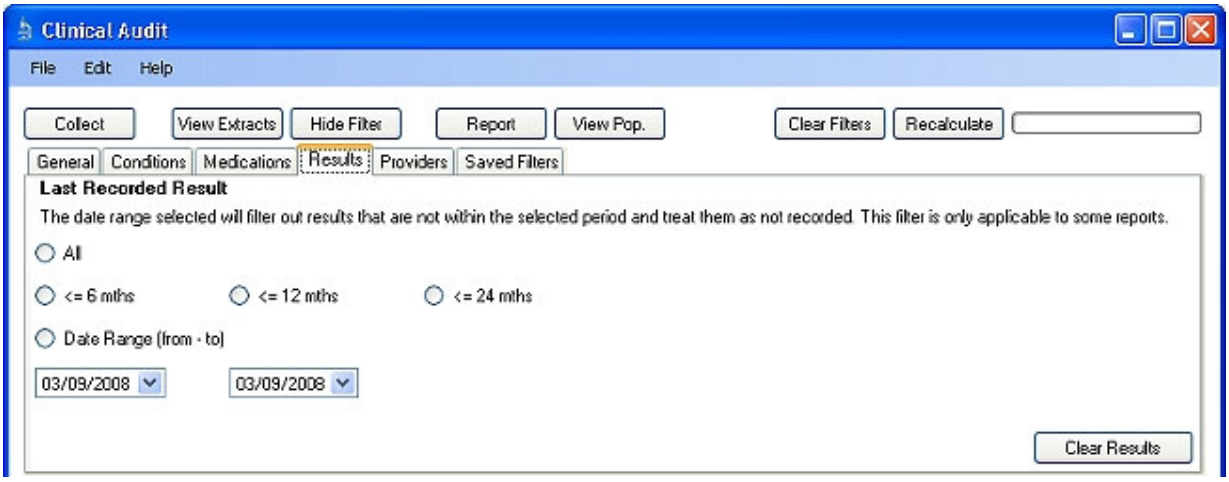
Medication – Yes , No , no selection = All

6.6.1. Medications Filter Mappings with Clinical systems

The medications filter mappings are provided in the 'Medications Data Mappings' Appendices for each Clinical system.

Medications are flagged as true if they are on the patient's current medication list. The collection process does not make any decisions about whether a medication should actually have been removed from the current medication list. The GP is responsible for making sure the list of medications is accurate.

6.7. Results Filtering



This filter allows the user to view the last recorded result that falls within a specified time period or date range.

By selecting a date range of

- <= 6mths
- <=12 mths
- <=24 mths
- User defined range

the user can filter out results that have not been measured within the selected period.

Results outside the selected period are treated as 'Not recorded'.

This will give a more meaningful picture for charts like HbA1c where old results are really not relevant.

The filter is only applicable to some charts. Where the filter has been applied the chart title will include the selected period.
For example,

HBA1c Status [population = 6984]

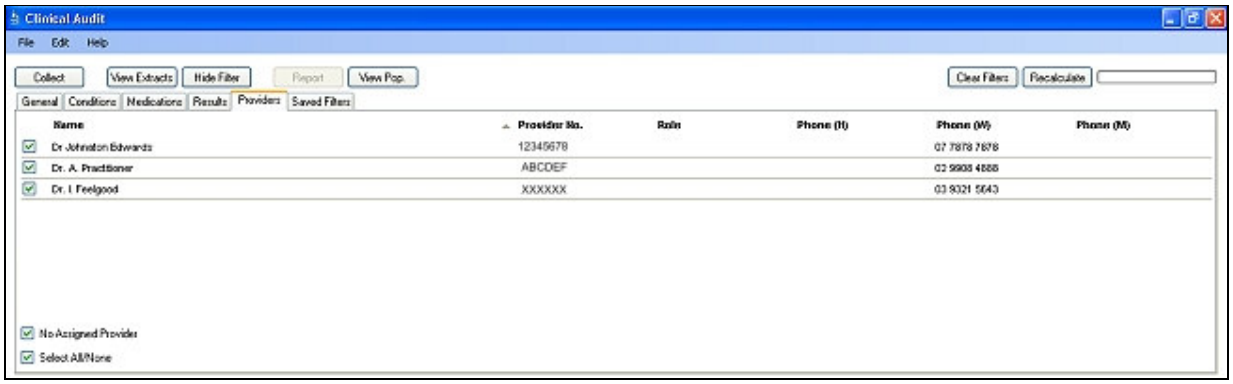
with last recorded result 3/3/2008 - 3/9/2008

6.8. Provider Filtering

The provider filter allows you to filter patients by provider. This allows providers within your practice to drill down to their own patients.

The provider filter tab displays a list of the practice clinicians with a provider number. You can filter by

- Practice – all providers are ticked
- One or more providers – tick those you wish to filter on and un-tick the 'No Assigned Provider' box
- No Assigned Provider – to find patients that are not assigned to any provider



6.8.1. Method of assigning a patient to a provider

Medical Director

Where there is more than one provider in the practice, patients will be assigned to a particular provider based on which provider they were most frequently seen by in recent consultations.

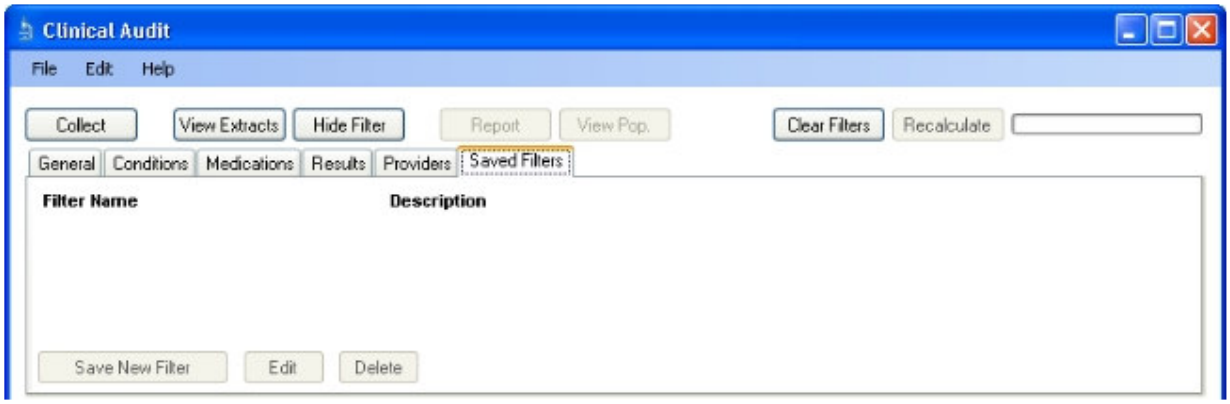
Patients will be assigned to the provider who saw them for the highest number of consultations in the previous 18 months.
Where there is no consultation recorded in the previous 18 months, the patient will be assigned to the provider who saw them most recently, up to 5 years ago.
Where there is no consultation recorded in the previous 5 years, no provider will be assigned.

Genie

Genie will use the 'Usual Provider' that is entered on the patient details screen.

6.9. Saving Filter Criteria

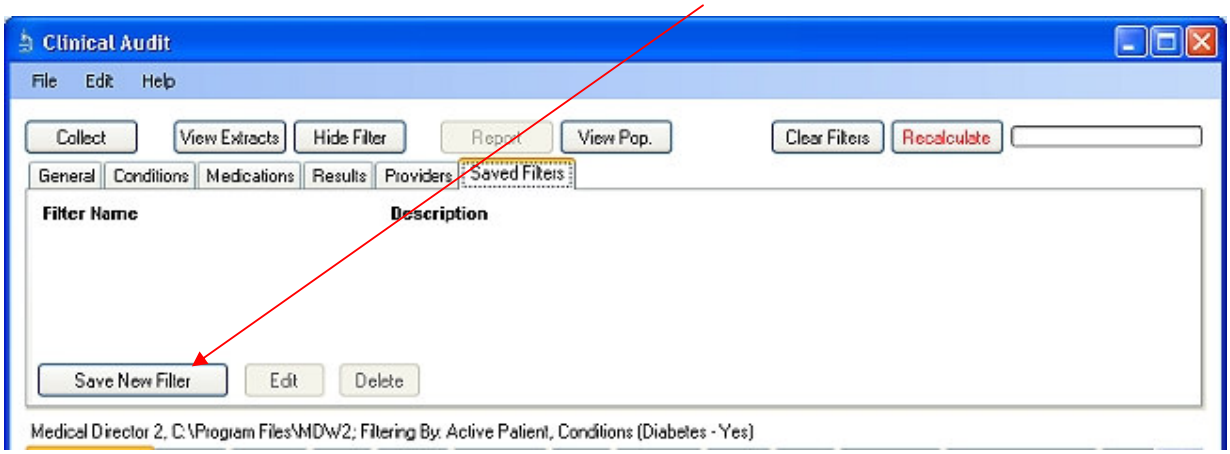
The 'Saved Filters' tab allows a set of filter criteria to be saved as a named search. Saved search names can be reloaded at a later time and run. This gives the ability for practices to run the same filters over intervals of time and compare results.



6.9.1. Creating a New Filter Name

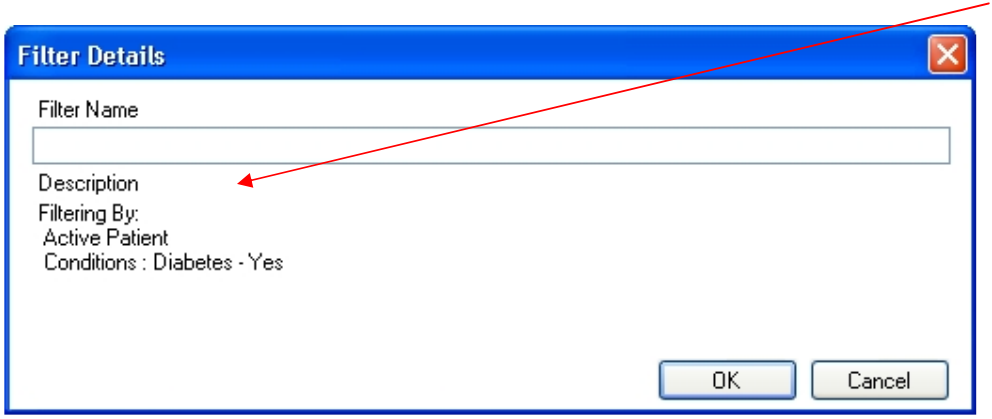
Initially the 'Saved Filters' tab will be empty. To create a filter:

- Select some filter options eg. Active Patient with Diabetes
- The 'Save New Filter' button will become available



- Click the 'Save New Filter' button
- The 'Filter Details' dialogue box will open

- The filter options you have selected will be shown in the filter Description

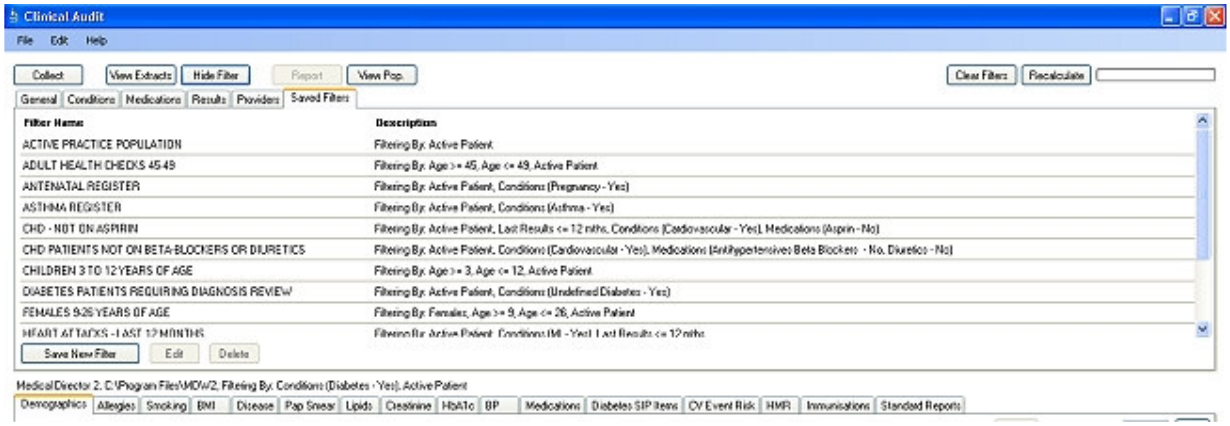


- Fill in the 'Filter Name'

- Click 'OK'
- The new filter name will now be listed on the 'Saved Filters' tab

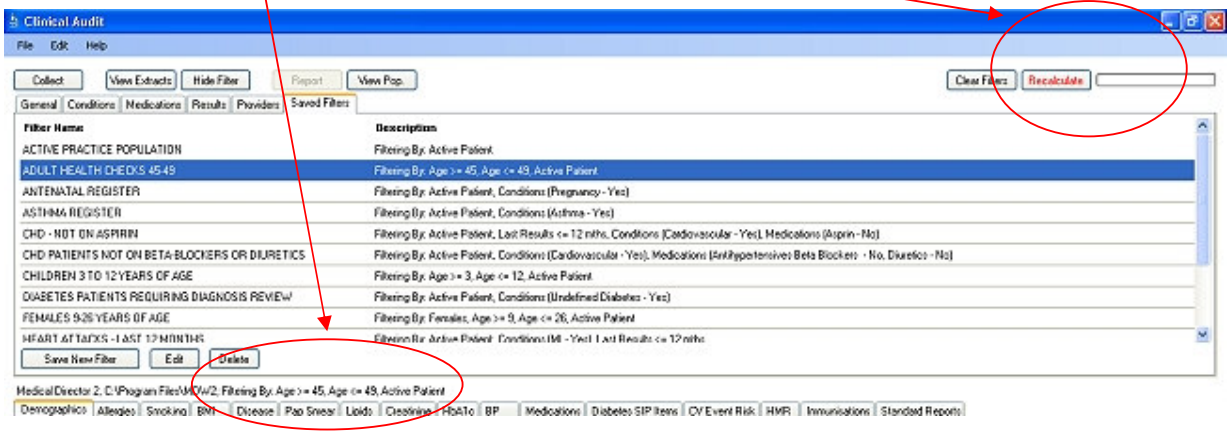
The filter name can be changed using the **'Edit'** button.
The filter can be deleted using the **'Delete'** button.

6.9.2. Loading existing filters



To load a saved filter

- Click the 'Saved Filters' tab
- Click on the filter name required
- The filter details will be loaded into the other filter tabs and will display at the top of the Results panel
- The 'Recalculate button will turn red



Click the 'Recalculate' button

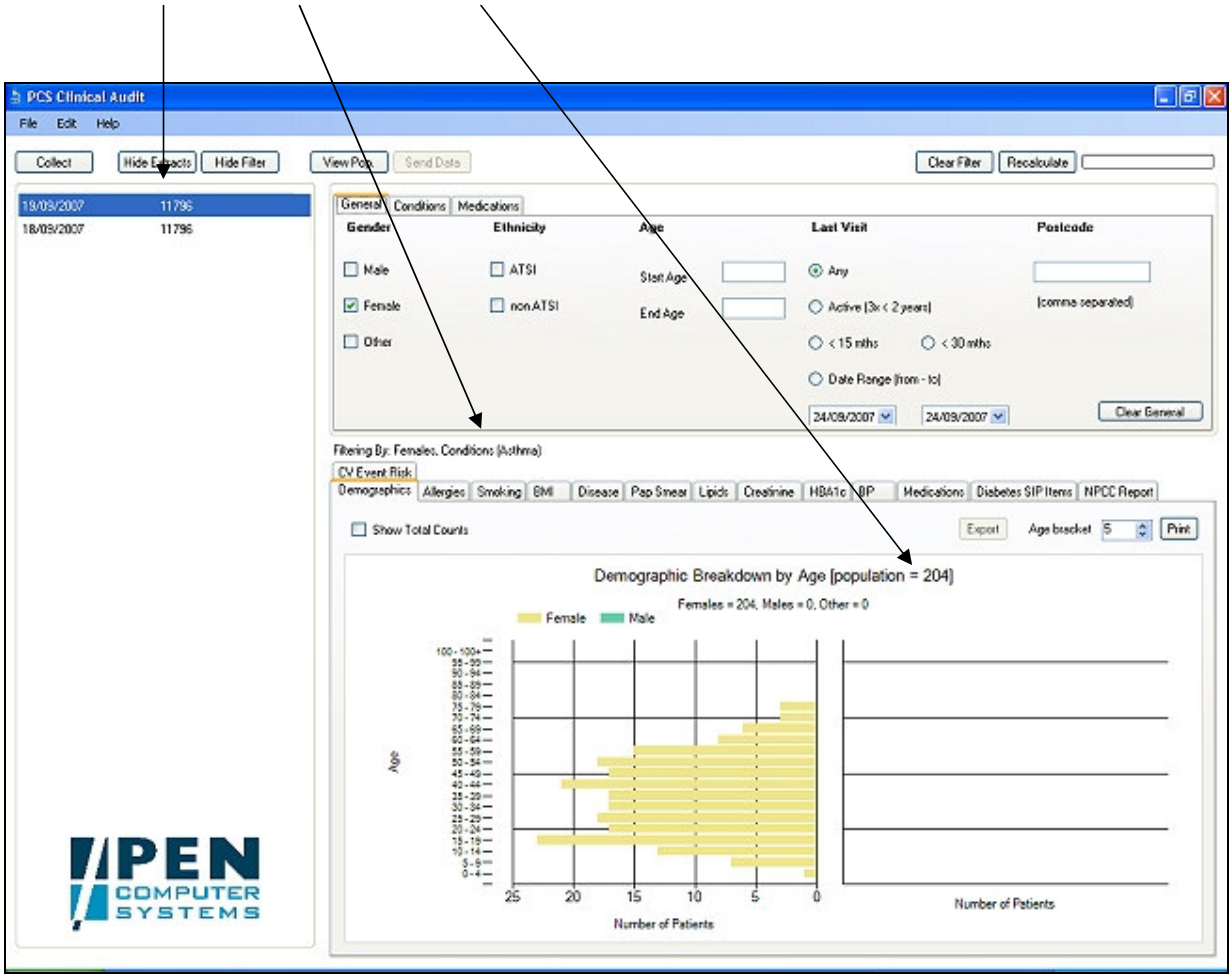
7. ANALYSING A DATA SET

7.1. Data Set Results Overview

Once you have selected your data set snap-shot and your data filters click 'Recalculate'. You will see the 'status bar' in the top right hand corner of the screen flashing while the filtered data is reloaded from the 'snap-shot' into Clinical Audit. Once this has finished you are ready to work with the data set of patients that match all the conditions selected.

The data set for this exercise has 11796 patients and has been filtered on Gender = Female and Condition = Asthma. 204 patients have been returned matching the filter.

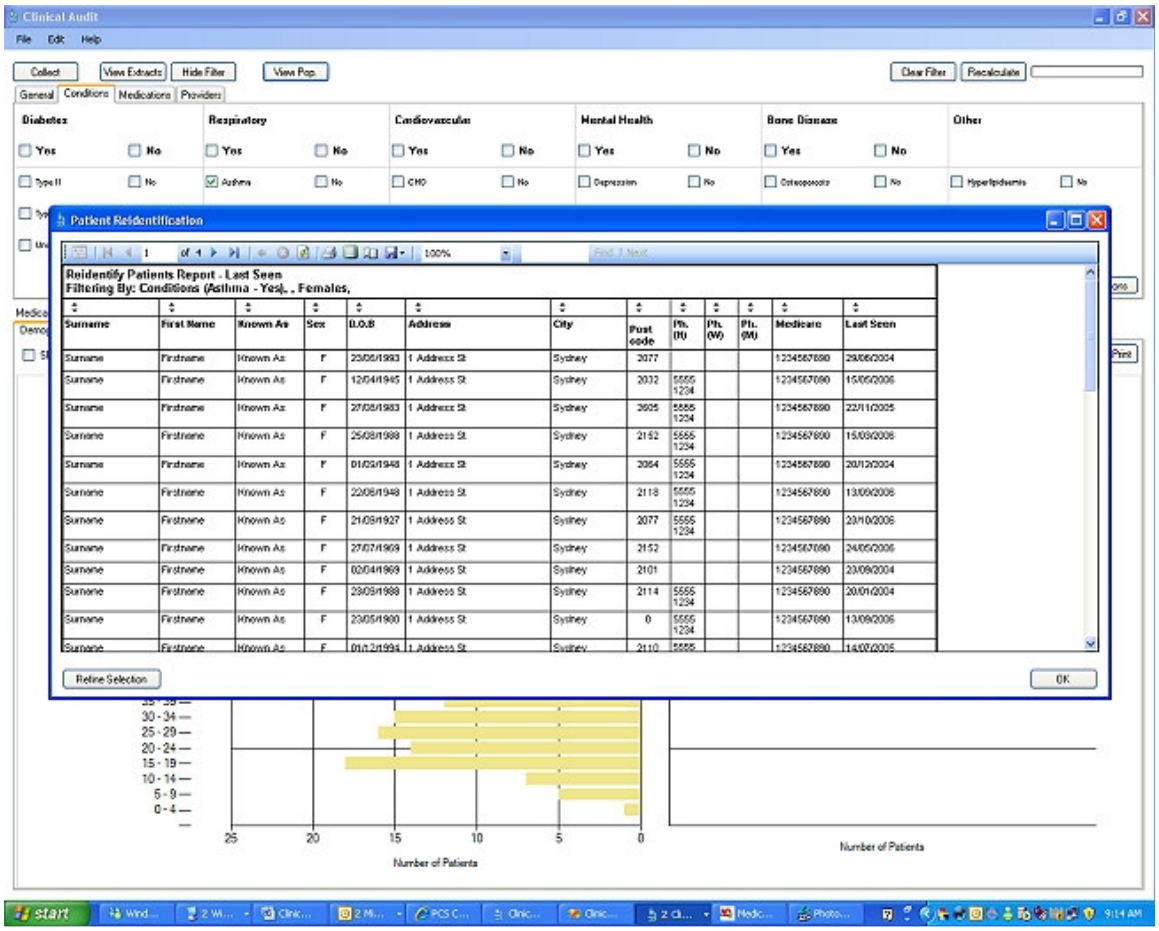
Example:
Total Patients , Filter , Selected Patients



Click the 'View Pop.' button at the top of the screen to get a list of the patients that have been selected in this dataset. (Note this is the filtered dataset not the full dataset.)

This will pop up a list of patient details. Use the 'Export' menu option to export the data to Excel format for follow up, if required.

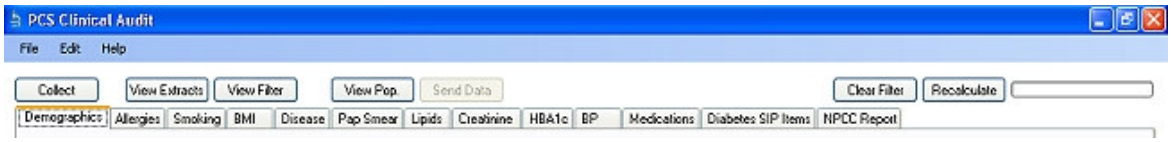
The far right column on the Population list will show you the patients last visit date.



7.2. Data Set Results Graphs and Reports

Click the 'Hide Extracts' and 'Hide Filter' buttons to maximise the use of your screen for viewing results.

The tabs along the top of the results panel allow you to view various graphical representations of your data set.



These are

- Demographics
- Allergies
- Smoking
- BMI (Body Mass Index)
- Disease
- Pap Smear
- Lipids (includes Cholesterol, HDL, LDL, Triglycerides, Total Chol/HDL Ratio)
- Creatinine (includes ACR, eGFR)
- HBA1c
- BP (Blood Pressure)
- Medications
- Diabetes SIP (Service Incentive Payment) Items
- CV (Cardiovascular) Event Risk
- HMR (Home Medicine Review)
- Immunisations (includes Influenza, Pneumococcal, Gardasil, Pertussis)
- Standard Reports
    - NPCC (National Primary Care Collaboratives) Report
    - NPI (National Performance Indicators)
    - Data Summary Report Card

All views are of your filtered data set not your full data set except for the NPCC and NPI Reports.

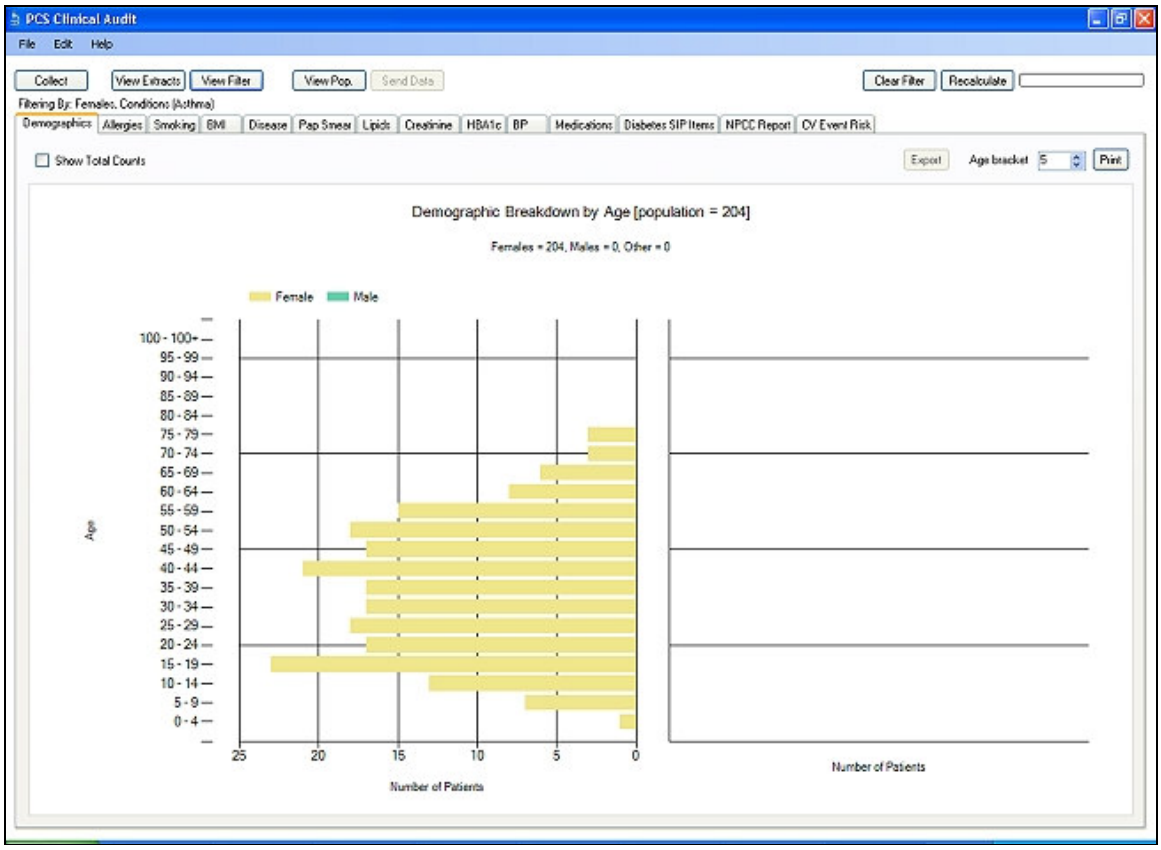
The NPCC and NPI Reports are always derived from your full data set.
The NPCC report will always show the practice total number of Diabetes and CHD patients.

Some views are automatically filtered further to suit the data being represented.
These are

- Pap Smear – filters out gender=male
- CV Event Risk – filters out age<20, age>79, ethnicity=ATSI, condition=Diabetic, condition=Cardiovascular disease (CVD)
- Immunisations > Gardasil – filters out gender=male and age<9

7.2.1. Demographics

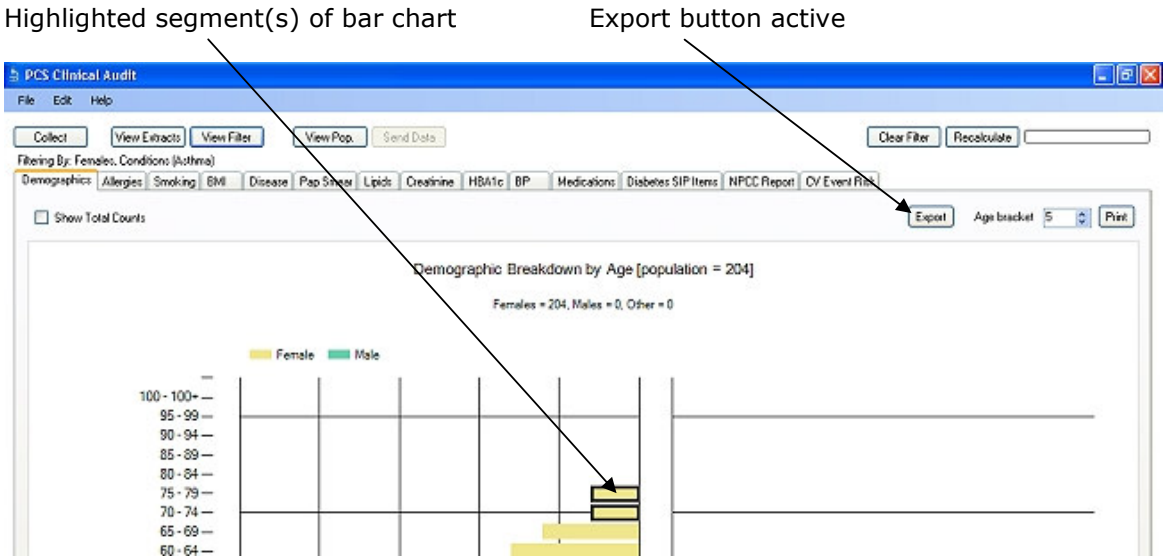
Demographics displays your data set as a breakdown of males and females. The data is displayed as a graph of the number of patients per age group.



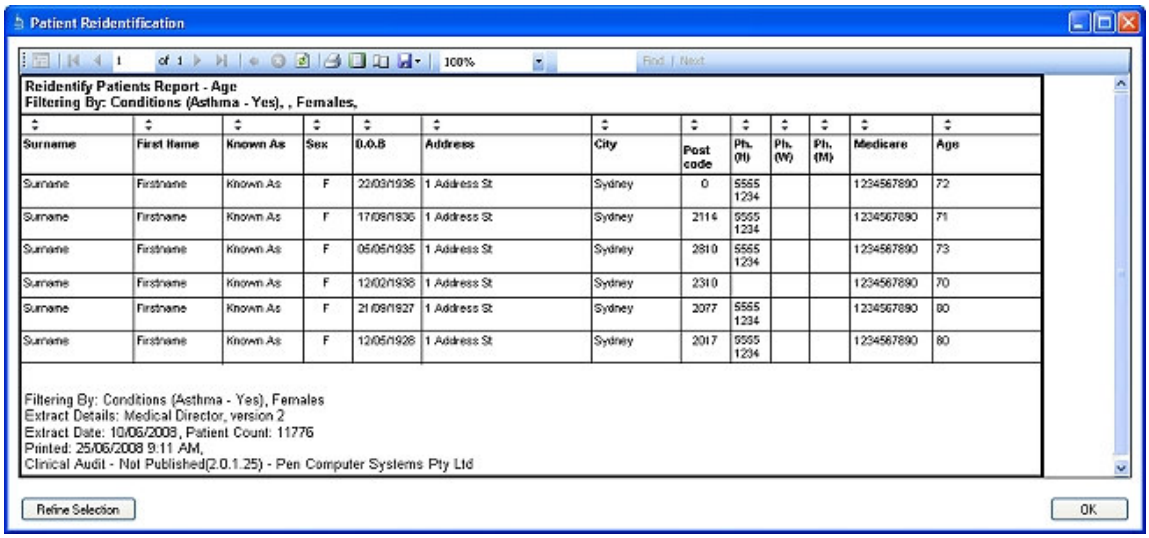
Show Total Counts checkbox – click this checkbox to display the count in each group.

Age Bracket selection box – this allows you to select an age bracket value between 1 and 10 years. The default value is 5 which displays ages grouped from 0-4, 5-9 etc. Changing this value, for example to 10, would display as below. Note that you must click the 'Recalculate' button for the new age bracket to be displayed.

Export button – if you click on any segment of the bar chart it will become highlighted and the 'Export' button in the right hand corner of the results panel will become active. You can select more than one segment of the graph.



Click the 'Export' button to get a list of the patients that make up this group. (This works the same way as the 'View Pop.' button except that you not looking at the filtered population but are drilling down to a subset of it.)



This will pop up a list of patient details. The specific age value for each patient in the group selected will be provided in the last column.

Use the 'Export' menu option to export the data to Excel format for follow up, if required.

Print button – click the 'Print' button to print a copy of the graph.

7.2.1.1. Reidentify Report

The reidentify report allows you to identify a list of patient that make up

- the filtered population
- a segment of a pie or bar chart

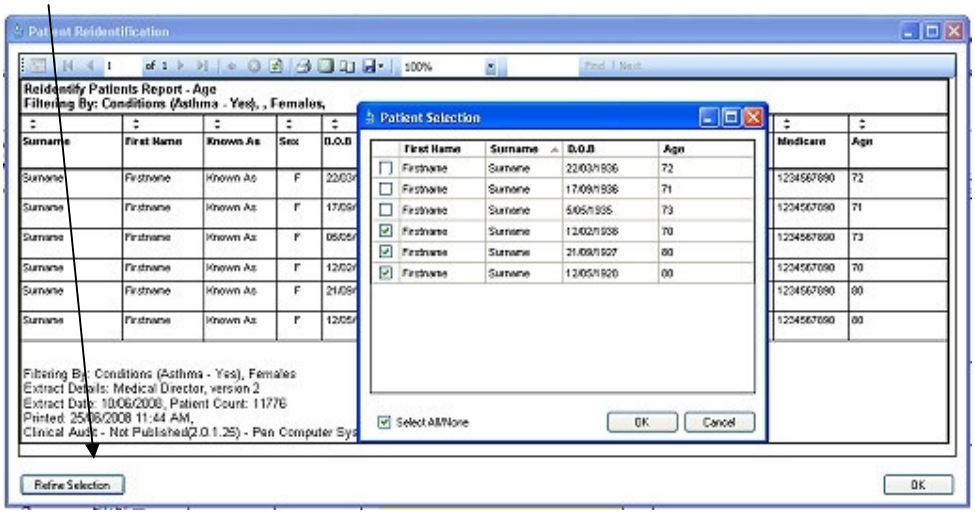
The last column of the report will give you information specific to the graph you are looking at, for example:

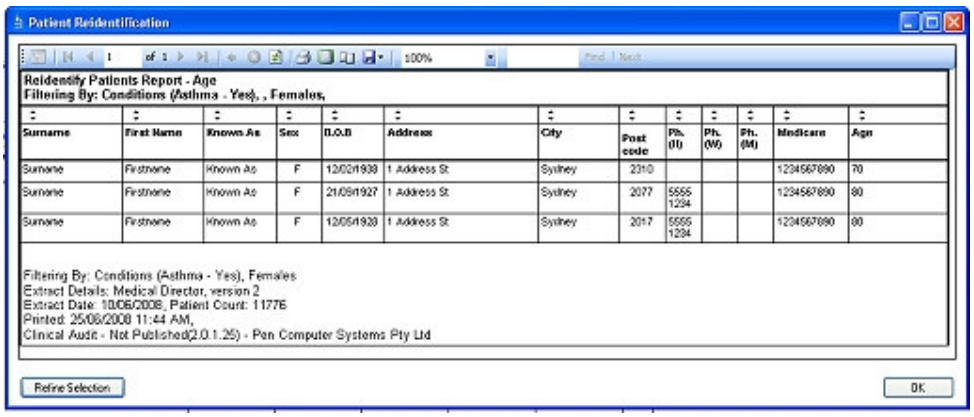
- population list will show you the patient last visit date
- demographics graph will show you age
- BMI graph will show you the BMI value

The 'Refine Selection' button lets you remove patients from the reidentified list for printing purposes. This is helpful if you wish to target a small number of patients for follow up and only wish to print those you are targeting.

- Click the 'Refine Selection' button
- From the pop-up list of patients untick those you do not wish to target
- Click OK

Refine Selection button

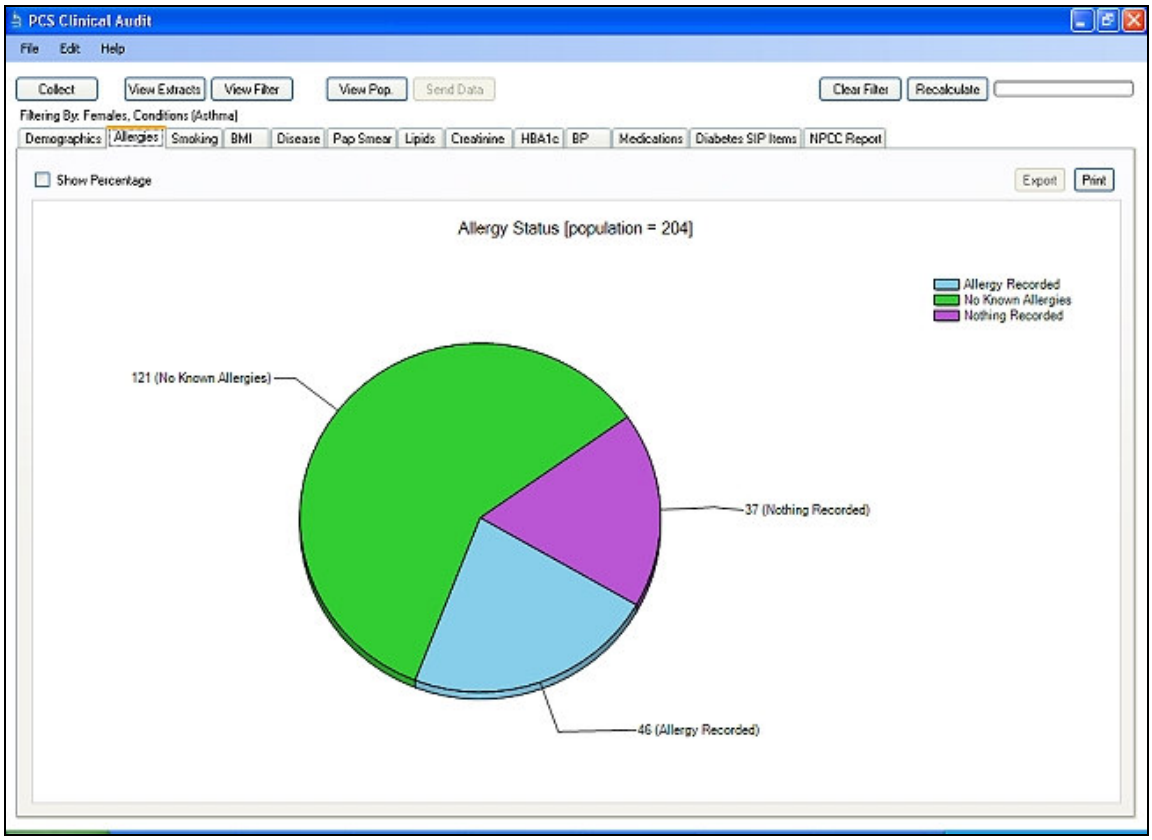




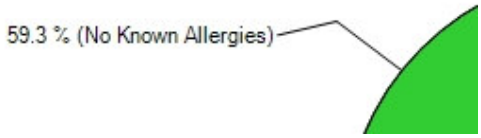
7.2.2. Allergies

Allergies displays your data as a breakdown of allergy status: Allergy Recorded, No Known Allergies, Nothing Recorded. The data is displayed as a pie chart.

The patient count in each allergy status group is displayed for each segment of the pie chart.



Show Percentage checkbox – click this checkbox to display the percentage in each group rather than the count.

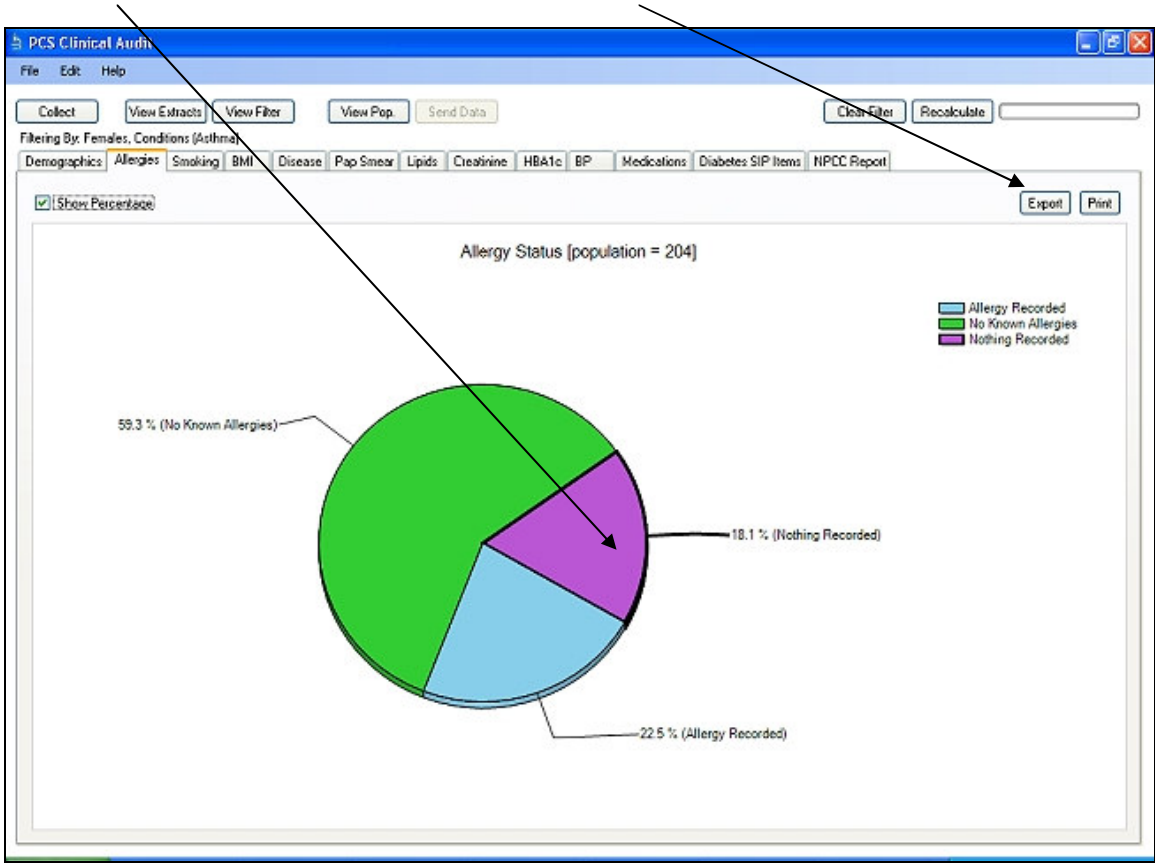


Uncheck this checkbox to display count.

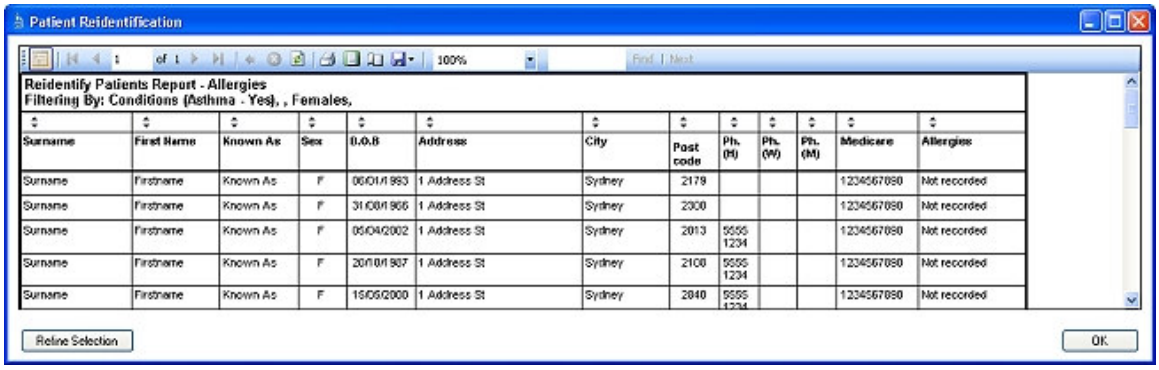
Export button – if you click on any segment of the pie chart it will become highlighted and the 'Export' button in the right hand corner of the results panel will become active. You can select more than one segment of the pie.

Highlighted segment of pie chart

Export button active



Click the 'Export' button to get a list of the patients that make up this group. (This works the same way as the 'View Pop.' button except that you not looking at the filtered population but are drilling down to a subset of it.)



This will pop up a list of patient details. The specific allergy value for each patient in the group selected will be provided in the last column.

Use the 'Export' menu option to export the data to Excel format for follow up, if required.

Print button – click the 'Print' button to print a copy of the graph.

7.2.2.1. Allergies Mappings with Clinical systems

The allergies mappings are provided in the 'General Data Mappings' Appendices for each Clinical system.

7.2.3. Smoking

Smoking displays your data as a breakdown of smoking status: Daily Smoker, Irregular Smoker, Ex Smoker, Never Smoked, Nothing Recorded. The data is displayed as a pie chart. Functions available are as described for Allergies.

7.2.3.1. Smoking Mappings with Clinical systems

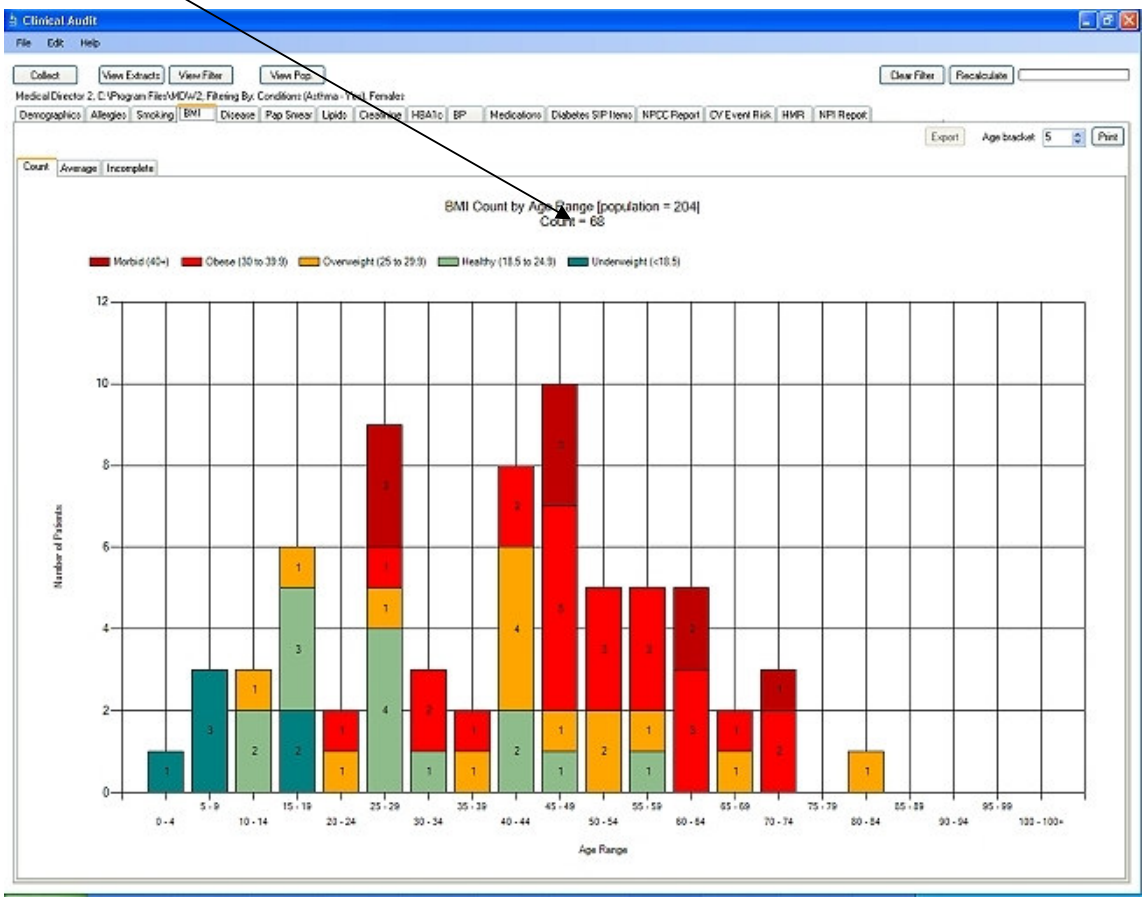
The smoking mappings are provided in the 'General Data Mappings' Appendices for each Clinical system.

7.2.4. BMI

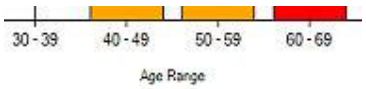
BMI displays your data as a breakdown of BMI status: Morbid Obesity (40+), Obese(30 to 40), Overweight(25 to 29.9), Healthy(18.5 to 24.9), Underweight(<18.5). The data is displayed as

- Count per age range in a bar chart
- Average BMI per age range in a bar chart with the healthy range indicated
- Incomplete – where either of height, weight or height/weight are missing so BMI cannot be calculated

The 'Count' on the Count graph will show you the total of the patients graphed – this is the total number of patients where BMI has been able to be calculated.



Age Bracket selection box – this allows you to select an age bracket value between 1 and 10 years. The default value is 5 which displays ages grouped from 0-4, 5-9 etc. Changing this value, for example to 10, would display as below. Note that you must click the 'Recalculate' button for the new age bracket to be displayed.

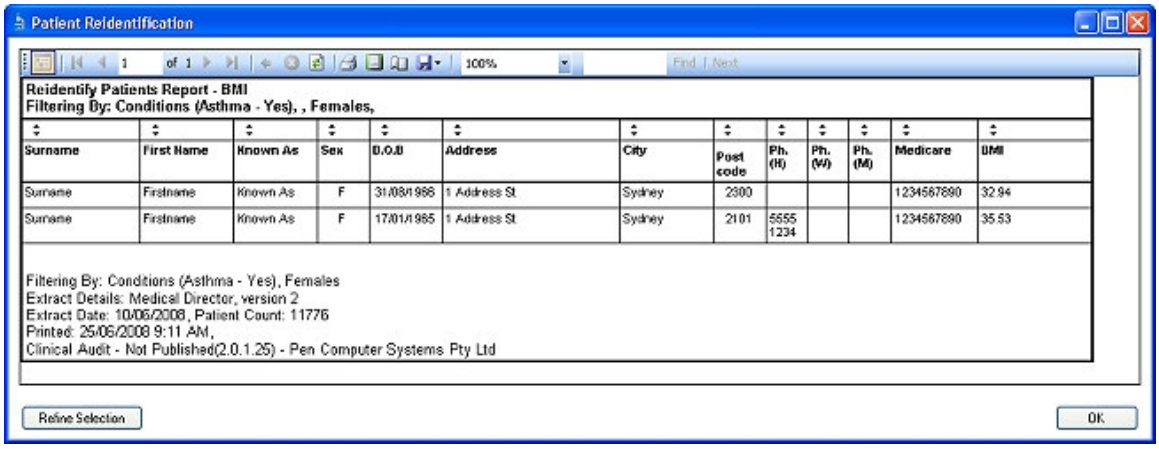


Export button – if you click on any segment of the bar chart it will become highlighted and the 'Export' button in the right hand corner of the results panel will become active. You can select more than one segment of the graph.

Highlighted segment of bar chart

Export button active

Click the 'Export' button to get a list of the patients that make up this group. (This works the same way as the 'View Pop.' button except that you not looking at the filtered population but are drilling down to a subset of it.)



This will pop up a list of patient details with their BMI value. Use the 'Export' menu option to export the data to Excel format for follow up, if required.
Print button – click the 'Print' button to print a copy of the graph.

7.2.4.1. BMI Mappings with Clinical systems

The BMI mappings are provided in the 'General Data Mappings' Appendices under Measurements for each Clinical system.

7.2.5. Disease

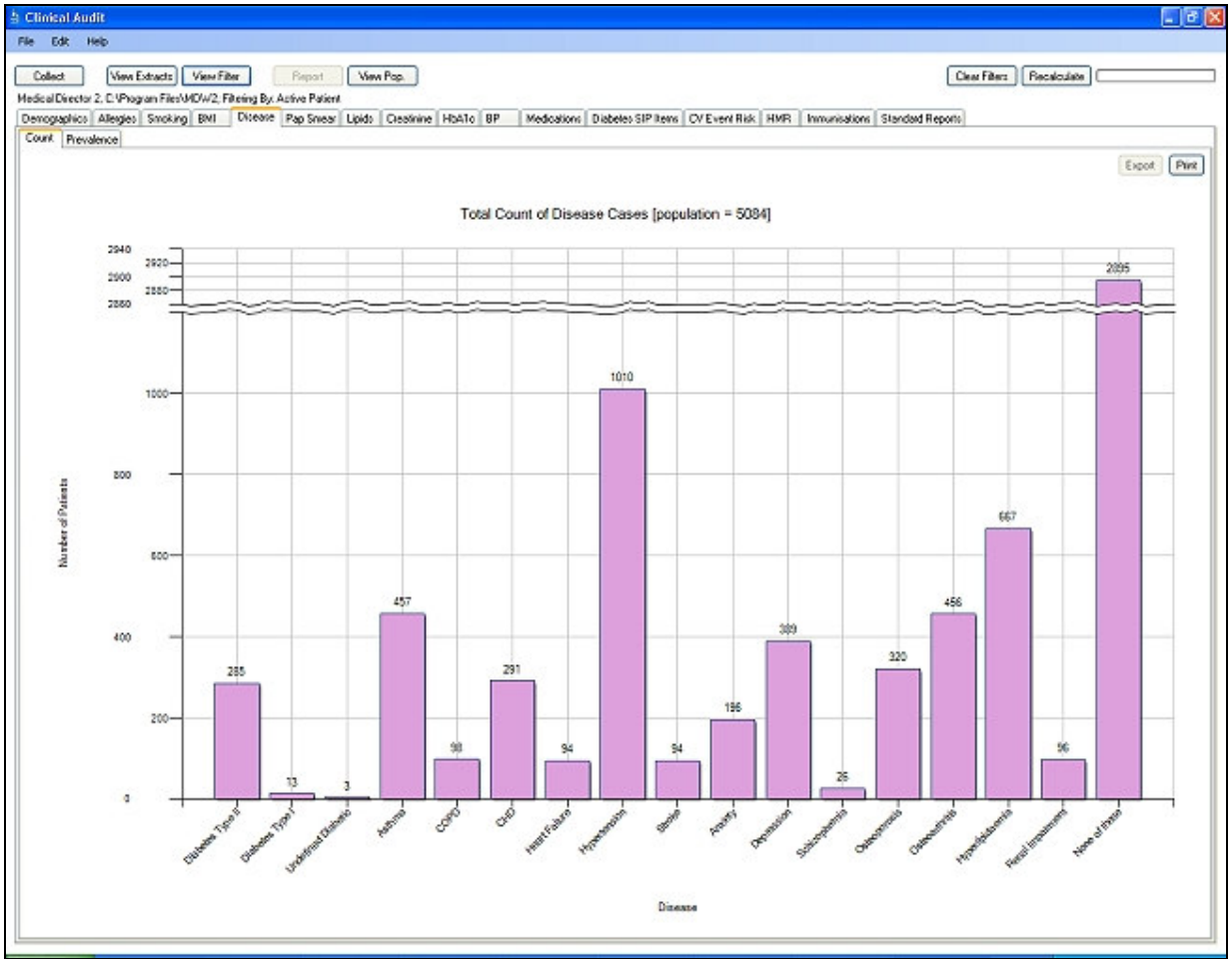
Disease is displayed as a count (the number of patients that have the disease) and the prevalence in the population.

The Disease Prevalence is calculated by identifying the number of patients with a specific disease diagnosis and expressing it as a percentage of the total population.

The disease categories are the same as the conditions provided in the conditions filter. The data is displayed as:

- Count per condition in a bar chart
- Prevalence per condition as a percentage of this population in a bar chart

A bar is also provided on the chart for patients that have 'None of these' disease categories. This is provided to assist practices in targeting patients for preventative care and miscoding.



Export button functions as described for BMI.

Print button – click the 'Print' button to print a copy of the graph.

7.2.5.1. Disease Mappings with Clinical systems

The conditions (disease) mappings are provided in the 'Conditions Data Mappings' Appendices for each Clinical system.

Note that some conditions are flagged as true for a patient if the patient has **ever had** the condition ie. the condition forms part of the patient history but is not currently listed as active (eg. heart disease). Check the appendix for your Clinical system for details about how different conditions are collected.

7.2.6. Pap Smear

The pap smear tab automatically filters out the male population. The population figure displayed on this tab is the number patients in your filtered dataset with gender female or other.

Pap Smear displays your data as a breakdown of:

- Pap Smear Recorded: Pap Smear Recorded, No Pap Smear Recorded, Ineligible.
- Pap Smear Done Date (where Pap Smear Recorded): <1yr, 1-2yrs, 2-3yrs, 3-4yrs, >4yrs

The category of 'Ineligible' includes:
Medical Director - all patients who have a hysterectomy condition recorded.
Best Practice – all patients with tick-box 'Not Required' checked
Genie – all patients marked don't recall

The data is displayed as a pie chart. Functions available are as described for Allergies.

7.2.6.1. Pap Smear Mappings with Clinical systems

The pap smear mappings are provided in the 'General Data Mappings' Appendices for each Clinical application.

7.2.7. Lipids

Lipids displays your data as a breakdown of:

- Cholesterol: <4.0, >4.0 and <=5.5, >5.5 and <=6.5, >6.5 and <=7.5, >7.5, No Cholesterol Recorded.
- HDL: <1.0, >1.0 and <=2.0, >2.0, No HDL Recorded
- LDL: <2.5, >2.5 and <=4.0, >4.0, No LDL Recorded
- Triglycerides: <2.0, >2.0 and <=4.0, >4.0, No Triglycerides Recorded
- Total Chol/HDL Ratio: <3.5, >3.5 and <5.0, >5.0, No Total Chol/HDL Ratio Recorded

The data is displayed as a pie chart. Functions available are as described for Allergies.

7.2.7.1. Lipids Mappings with Clinical systems

The lipids mappings are provided in the 'General Data Mappings' Appendices under Measurements for each Clinical application.

If there are results for Cholesterol, HDL, LDL and/or Triglycerides then the most recent values will be displayed. If there are results for HDL and cholesterol is recorded the most recent values will be used by CAT to display the Chol/HDL ratio.

7.2.8. Creatinine

Creatinine displays your data as a breakdown of:

- ACR (Microalbumin Creatinine Ratio: <=3.5 (Normal), >3.5 (Abnormal), No Microalbumin, No Creatinine, No Data

  ACR (mg/mmol) is calculated from Microalbumin and Creatinine. The formula is

  $$\frac{\text{microalbumin mg/L}}{\text{creatinine mmol/L}}$$

- eGFR (Estimated Glomerular Filtration Rate):
  >100 = Normal
  60-100mg/ml = Stage 1
  30-60 mg/ml = Stage 2
  15-30mg/ml = Stage 3
  <=15mg/ml = Stage 4
  No Data

  eGFR (ml/min) is calculated using the CockCroft-Gault formula from Creatinine measurement, weight and age. This formula is

  $$\frac{(140 - \text{age}) \times \text{weight Kg} \times \text{Constant}}{\text{creatinine } \mu\text{mol/L}}$$

  Constant = 1.23 for males, 1.04 for females

The data is displayed as a pie chart. Functions available are as described for Allergies.

7.2.8.1. Creatinine Mappings with Clinical systems

The creatinine mappings are provided in the 'General Data Mappings' Appendices under Measurements for each Clinical application.

If there are results for creatinine and weight is recorded the most recent values will be used by CAT to calculate the eGFR.

7.2.9. HBA1c

HBA1c displays your data as a breakdown of HBA1c status: <=7%, >7% and <=8%, >8% and <10%, >=10%, No HBA1c Recorded. The data is displayed as a pie chart. Functions available are as described for Allergies.

7.2.9.1. HbA1c Mappings with Clinical systems

The HbA1c mappings are provided in the 'General Data Mappings' Appendices under Measurements for each Clinical application.

7.2.10. BP

BP displays your data as a breakdown of BP status: <=130/80, 130/80-140/90, >140/90, No BP Recorded. The data is displayed as a pie chart. Functions available are as described for Allergies.

A patient's BP must have both systolic and diastolic values recorded on the same day to be valid. The most recent recording is used. If only one value is recorded this will be invalid and display in the 'No BP Recorded' category.

A patient's BP will be shown in the higher segment if either of the systolic or diastolic values is above the cut-off. Eg. a BP of 141/85 will end up in the >140/90 category.

7.2.10.1. BP Mappings with Clinical systems

The BP mappings are provided in the 'General Data Mappings' Appendices under Measurements for each Clinical application.

7.2.11. Medications

Medications displays your data as a breakdown of medication groups. These are the same medication groups as provided in the medications filter. The data is displayed as:

- Count per condition in a bar chart
- Prevalence per condition as a percentage of this population in a bar chart

Functions available are as described for Disease.

A bar is also provided on the chart for patients that have 'None of these' disease categories. This is provided to assist practices in targeting patients for preventative care and miscoding.

7.2.11.1. Medications Mappings with Clinical systems

The medications mappings are provided in the 'Medications Data Mappings' Appendices for each Clinical application.

Medications are flagged as true if they are on the patient's current medication list. The collection process does not make any decisions about whether a medication should actually have been removed from the current medication list. The GP is responsible for making sure the list of medications is accurate.

7.2.12. Diabetes SIP (Service Incentive Payment) Items

The Diabetes SIP graph is **not automatically filtered by the patients with Diabetes**. To review your Diabetes SIP items you need to first filter on Condition = Diabetes.

The filtering is not done automatically as some of the items may be of interest for the wider patient population eg. CHD patients who have not had a BP in the past 6 mths.

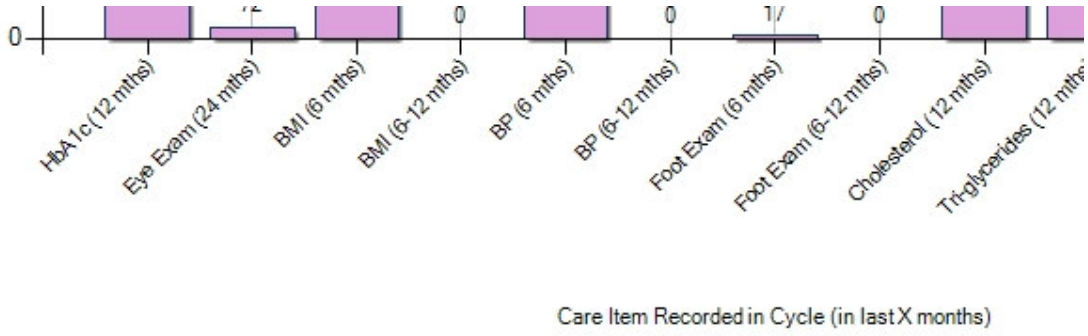
Diabetes SIP displays your data as a breakdown of diabetes care items:

HbA1c,
Eye Exam,
BMI < 6mths, BMI 6-12 mths,
BP < 6mths, BP 6-12 mths,
Foot Exam < 6mths, Foot Exam 6-12 mths,
Cholesterol,
Triglycerides,
HDL,
Microalbuminuria,
Smoking.

The data is displayed as:

- Count of Patients with Care Item Recorded in the Last x Months
- Count of Patients with No Care Item Recorded in the Last x Months (ie. Items Remaining)
- Count of Items Completed per Patient

where x is the number of months within which an item is required to be recorded (6, 12 or 24 months)



NOTE:
Old Extract files did not contain data for BMI, BP and Foot Exam recorded in the last 6-12 months. Where these are loaded CAT will display a message to alert the user that the extract file they are viewing does not contain the data elements in the last 6-12mths. The bar segments of the chart for these data elements will always be empty and show 0.

7.2.12.1. Cycle of Care by Item

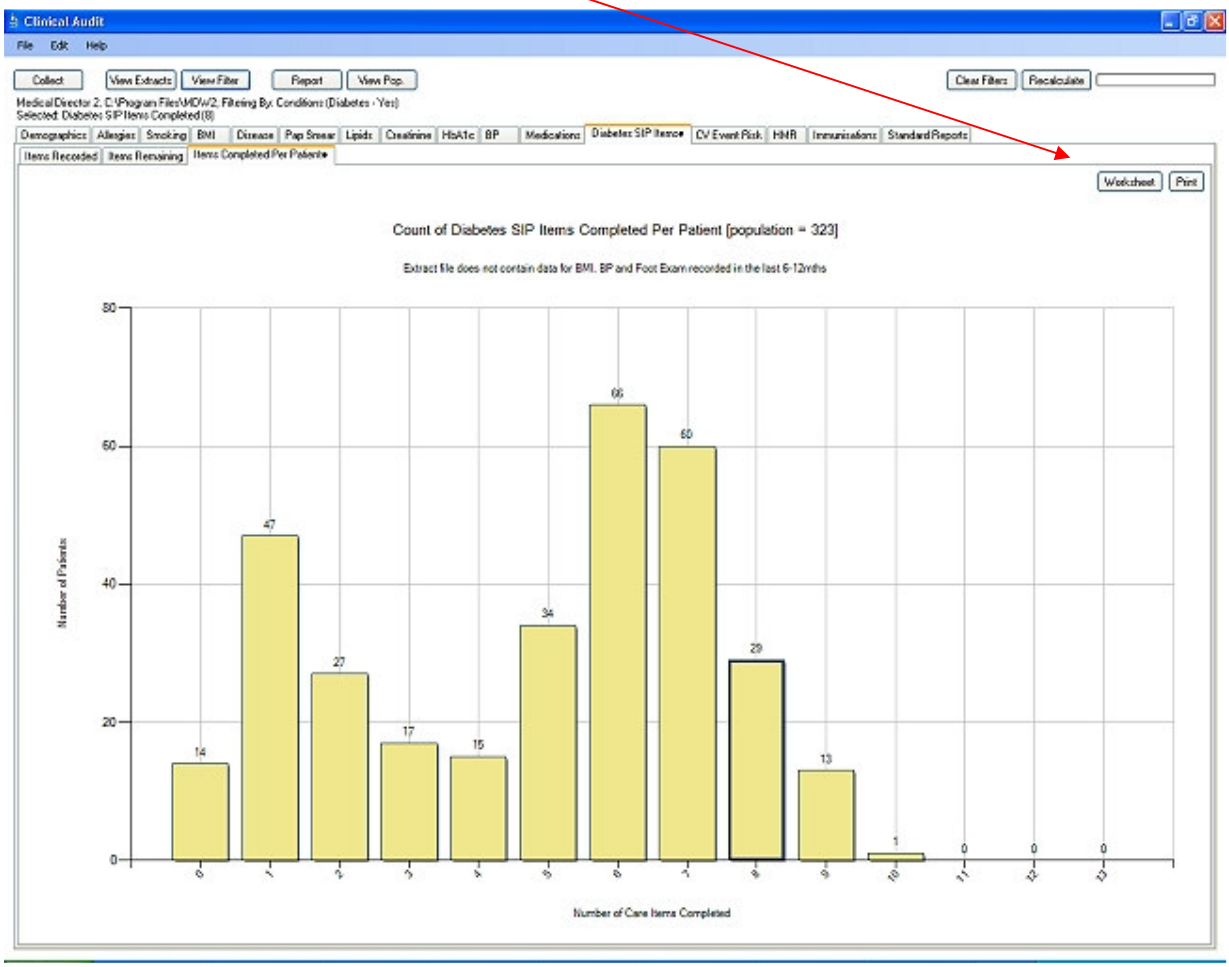
The 'Items Recorded' and 'Items Remaining' graphs will help you to identify by item the areas of care that still need to be recorded for a patient.

Export button functions as described for BMI.
Print button – click the 'Print' button to print a copy of the graph.

7.2.12.2. Cycle of Care by Patient

The 'Items Completed per Patient' graph provides a view by patients of items that have been completed or not.

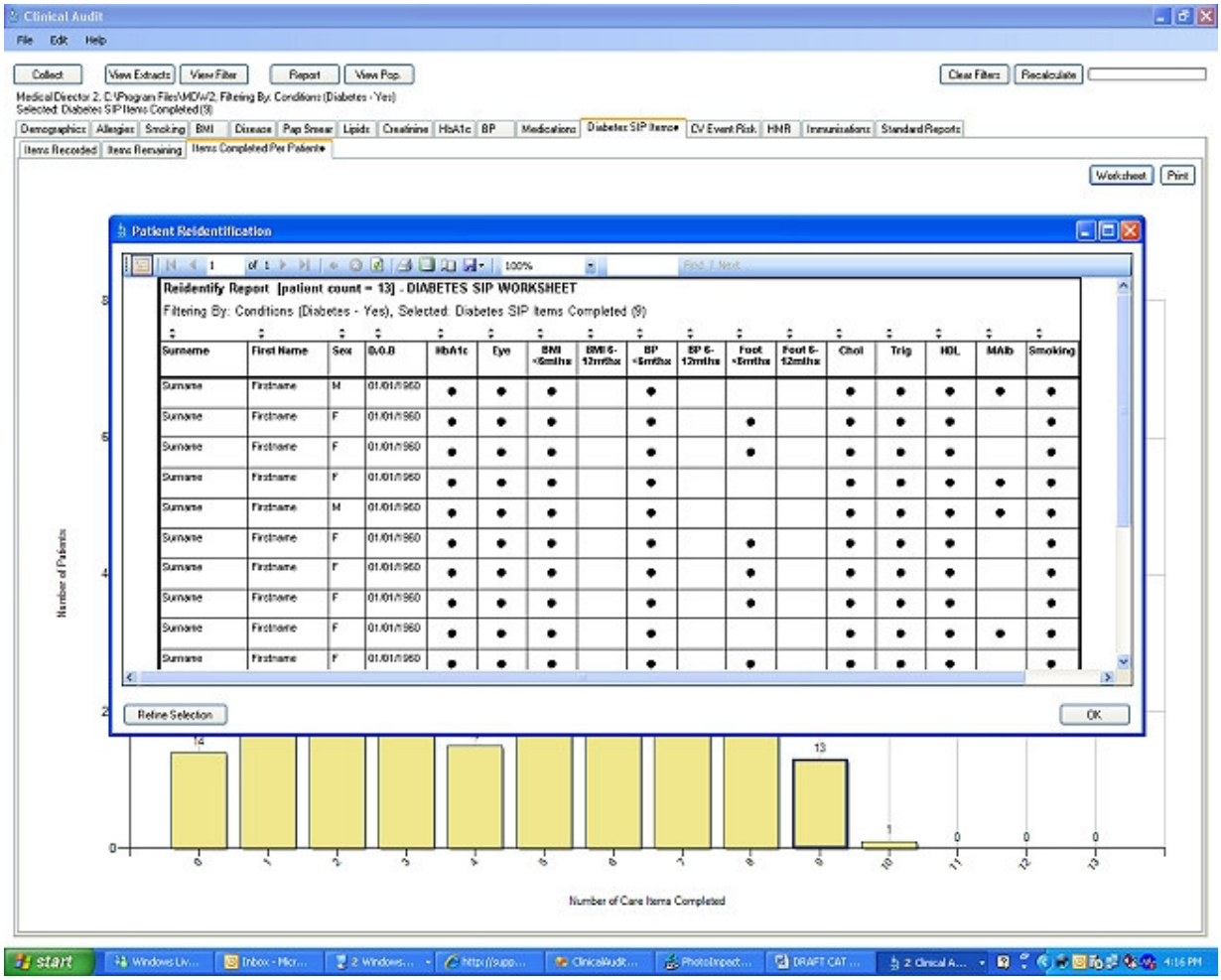
The 'Export' button is renamed 'Worksheet' for this graph as it gives a different style of re-identify report.



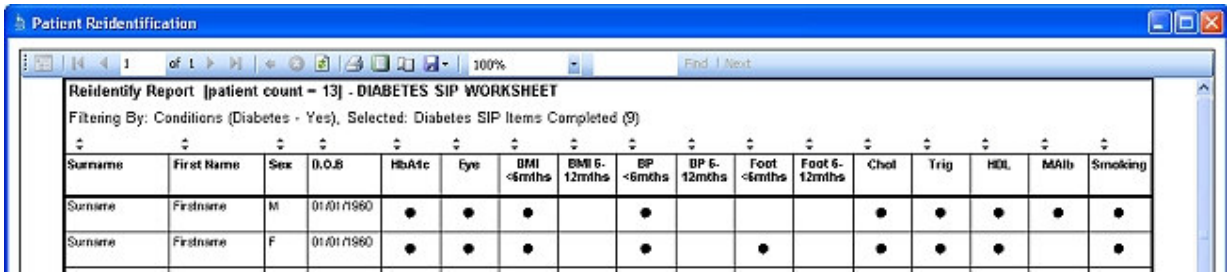
Click the 'Worksheet' button to get a list of the patients in any segment(s) of the graph and view the list as a **Diabetes SIP Worksheet**.

Print button – click the 'Print' button to print a copy of the graph.

7.2.12.3. The Diabetes SIP Worksheet



The worksheet shows a ● in the column of each item which has been completed for a patient.
In this example we have picked patients that have 9 items completed.



NOTE:
Old Extract Files will only have a possible maximum of 10 items counted. BMI, BP and Foot items in the last 6-12mths have not been collected.

When claiming a SIP payment you should always check all requirements have been met in your clinical software system.

7.2.12.4. Diabetes SIP Mappings with Clinical systems

The Diabetes SIP mappings are provided in the 'Diabetes SIP Data Mappings' Appendices for each Clinical application.

7.2.13. CV (Cardiovascular) Event Risk

The CV Event Risk graph displays your data as the % risk of a Cardiovascular Event in 10 years time. It is a guide only based on population health statistics and is useful for clinicians to gain a high level view of patients who are at risk for surveillance.

It is derived from the Cardiovascular Risk Calculator which was published in The Journal of the American Medical Association (JAMA) in the May 16 2001 Edition. The calculation uses the Framingham Point Score contained in the National Cholesterol Education Program (http://www.nhlbi.nih.gov/guidelines/cholesterol) Adult Treatment Panel III Report.

Framingham risk scoring provides a method of patient risk assessment by weighting major risk factors and estimating a 10-Year Cardiovascular Risk as a %.

It **excludes** patients who have:

- Age: <20 or >79
- Ethnicity: ATSI [2]
- Condition: Diabetic or CVD [3]

The data items used in the calculation are:

- Gender
- Smoking Status (Smoker/Non-smoker)
- Cholesterol (Mg/dL) [4]
- HDL (Mg/dL) [4]
- Systolic BP (mm Hg)
- Systolic BP being treated [5]

[2] Ethnic groups may have a differing risk of cardiovascular disease (CVD) at the same level of risk factors. The JAMA publication mentions the existence of limited data supporting a variation and a British study (http://www.epi.bris.ac.uk/CVDethrisk/) has found a variation for ethnic groups within Britain. This calculator does not adjust for ethnic group.

[3] CVD includes the CAT Cardiovascular Conditions CHD, Heart Failure and Stroke.

[4] CAT captures Cholesterol and HDL in mmol/L which is converted to Mg/dL :
1 Mg/dL = 39 X 1 mmol/L

[5] Treatment is determined by examining the medication a patient is on. CAT collect data for the following medication categories that are prescribed for BP: ACE Inhibitors, A2 Blockers, Beta-blockers, Calcium Antagonists and Diuretics. If a patient is on one of these they are considered as being treated.

CV Event Risk displays your data as a breakdown of the % 10 Year Risk of a Cardiovascular Event: >=20%, 15-19%, 10-14%, 5-9% and <5%. The data is displayed as

- Count per age range in a bar chart

The graph provides a total population number (the filtered population) and an eligible population number.

The eligible population is the number of patients in your filtered dataset that can be assessed for risk ie. patients that do not fall into one of the excluded groups.

The 'Count' on the Count graph will show you the total of the patients graphed – this is the total number of patients where CV Event Risk has been able to be calculated.

The eligible population – total count = patients with incomplete data where no risk can be calculated. These patients are displayed on the second tab.

Export button functions are as described for BMI: by selecting the high risk sections of the bar chart and clicking the 'Export' button a list of the patients that make up this group can be obtained. This provides valuable information for practice staff working to improve chronic disease management and prevention. The information can also, for example, be used to substantiate the 45-49 year old health check.
Print button – click the 'Print' button to print a copy of the graph.

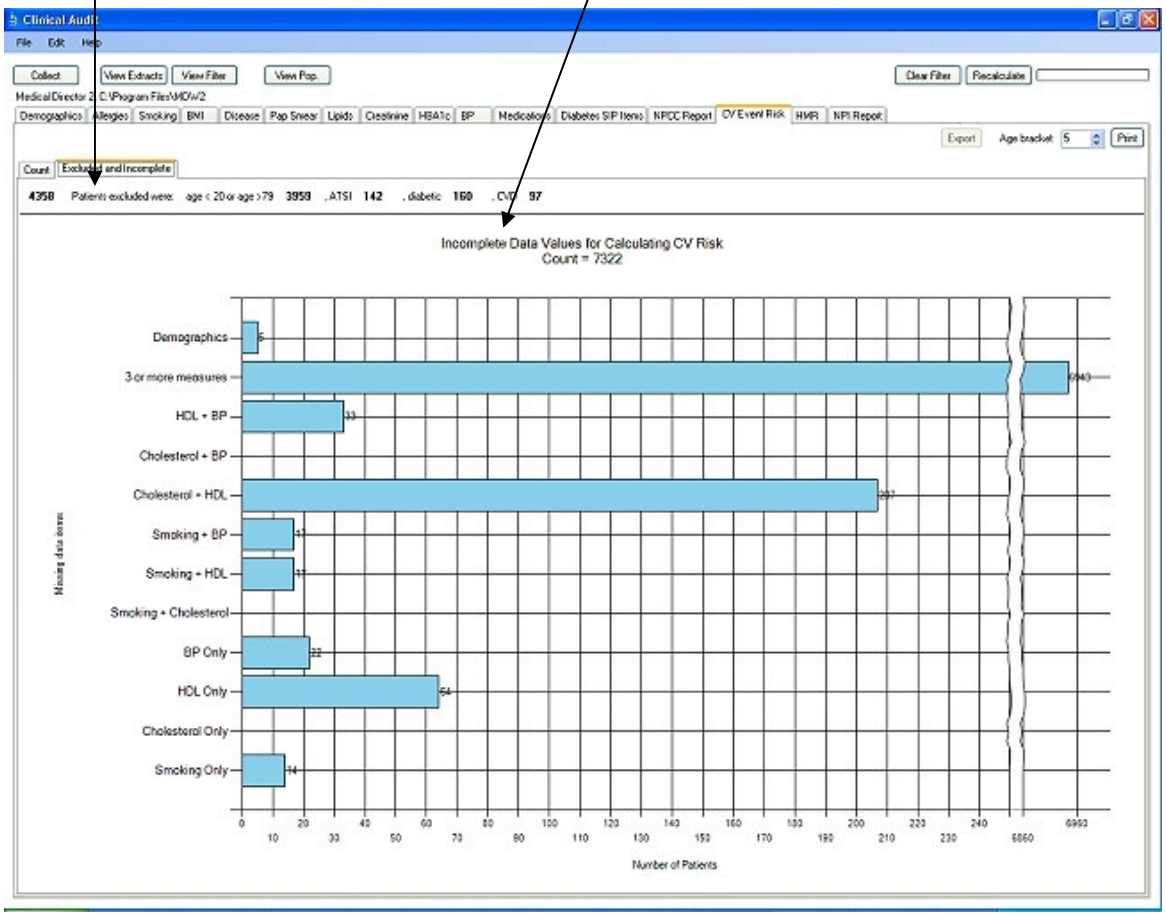
Within the eligible population a patient may have incomplete results for the data items used in the calculation. The % risk therefore cannot be calculated for these patients.

This data is displayed under the tab

- Excluded and Incomplete

Excluded patient details

Incomplete patient details



Incomplete data

This horizontal bar chart helps practice staff improve their data quality by identifying patients with missing data. The **Export** button can be used for this purpose as described above.

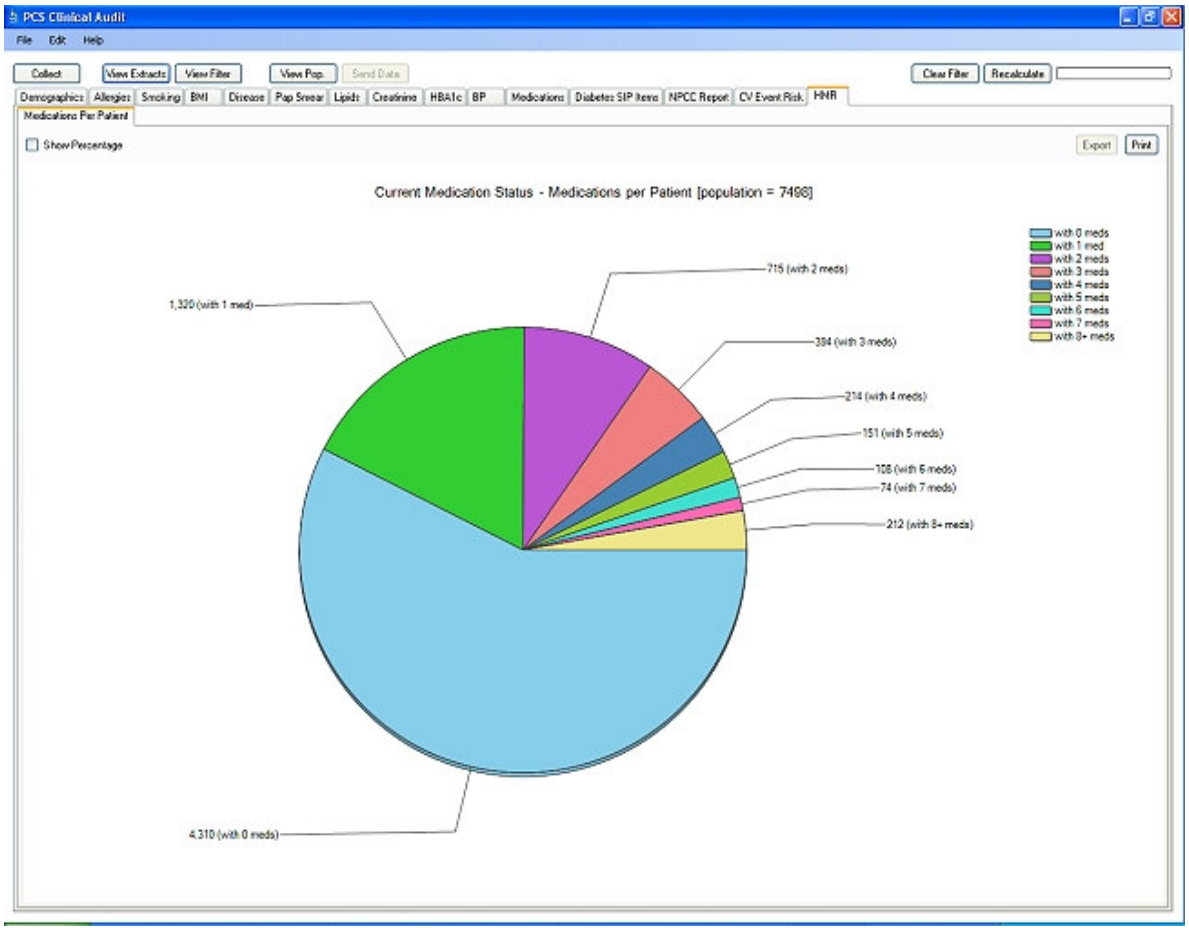
Excluded data

The number of patients that have been excluded is provided in order of exclusion category: <20, >79, ATSI, diabetic, CVD. Once a patient is excluded for meeting an exclusion category they are not counted for subsequent categories.

7.2.14. HMR (Home Medicines Review)

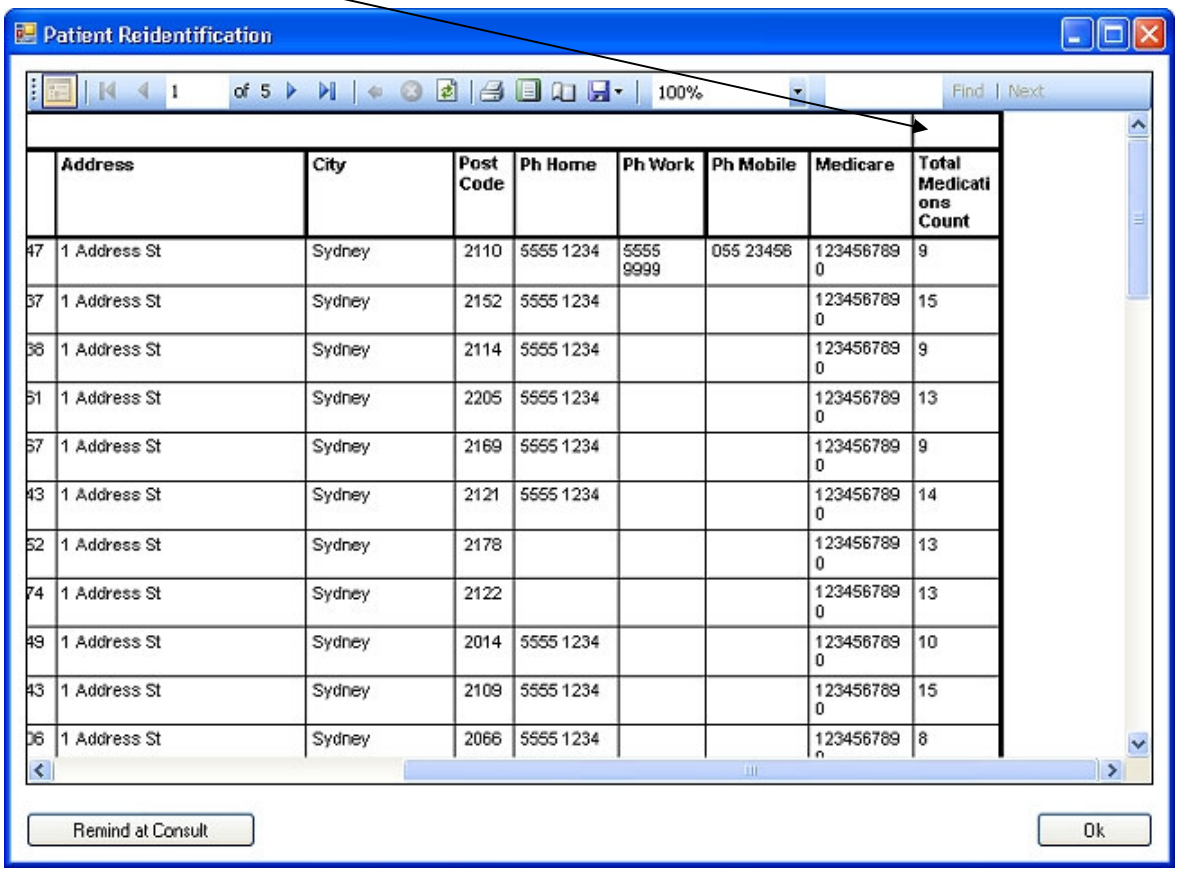
The HMR tab filters out patients who are not on any medications. The population figure on this tab is the number of patients who have current medications listed.

The HMR tab displays the current medication status by the number of medications per patient. The number of medications is broken down 0, 1, 2, 3, 4, 5, 6, 7, 8+.



The data is displayed as a pie chart. Functions available are as described for Allergies.

Exporting the data to a patient list for HMR will show you exactly how many medications a patient is on.



	Address	City	Post Code	Ph Home	Ph Work	Ph Mobile	Medicare	Total Medications Count
47	1 Address St	Sydney	2110	5555 1234	5555 9999	055 23456	1234567890	9
37	1 Address St	Sydney	2152	5555 1234			1234567890	15
38	1 Address St	Sydney	2114	5555 1234			1234567890	9
51	1 Address St	Sydney	2205	5555 1234			1234567890	13
37	1 Address St	Sydney	2169	5555 1234			1234567890	9
43	1 Address St	Sydney	2121	5555 1234			1234567890	14
52	1 Address St	Sydney	2178				1234567890	13
74	1 Address St	Sydney	2122				1234567890	13
49	1 Address St	Sydney	2014	5555 1234			1234567890	10
43	1 Address St	Sydney	2109	5555 1234			1234567890	15
06	1 Address St	Sydney	2066	5555 1234			1234567890	8

Exporting this list to Excel will allow you to sort the data by medication count, allowing you to target patients on the greatest number of medications.

7.2.14.1. HMR Mappings with Clinical systems

Medications are flagged as true if they are on the patient's current medication list. The collection process does not make any decisions about whether a medication should actually have been removed from the current medication list. The GP is responsible for making sure the list of medications is accurate.

The HMR number of current medications is the total count of medications on the patient's current medication list.

Details of where the current medication list is found are provided in the 'Medications Data Mappings' Appendices for each Clinical application.

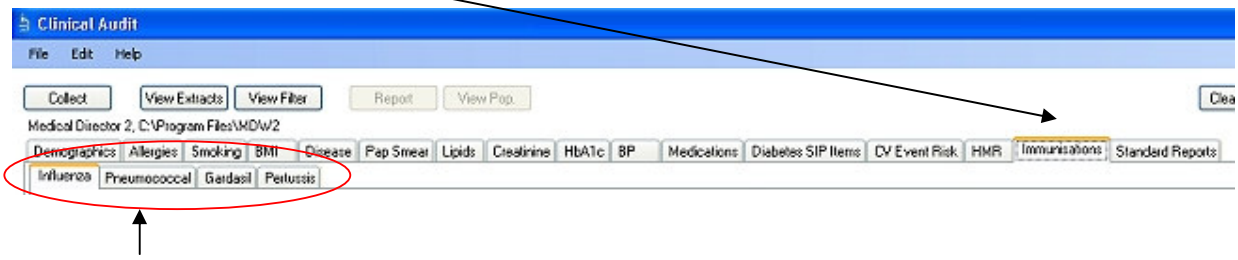
7.2.15. Immunisations

The Immunisations tab contains sub-tabs for Influenza, Pneumococcal, Gardasil and Pertussis.

The charts are all pie charts.

- Influenza, Pneumococcal and Pertussis all display the most recent date the patient had the immunisation or if no immunisation is recorded.
- Gardasil displays the number of doses a patient has had or if no dose is recorded. The reidentification report includes the date of the last immunisation.

Immunisation tab



Immunisation charts

Chart functions available are as described for Allergies.

7.2.15.1. Immunisations Mappings with Clinical systems

Medical Director
Immunisations are collected if they have been entered in the MD Immunisations tab. The values collected for each type of immunisation are:

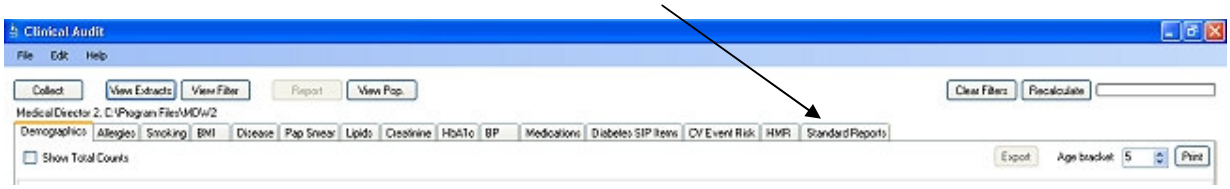
Influenza	Pneumococcal	Gardasil	Pertussis
FLUVAX FLUARIX FLUAD FLUVIRIN INFLUENZA INFLUVAC VAXIGRIP VAXIGRIP JUNIOR	PNEUMOVAX 23 PNEUMOVAX	GARDASIL	ADACEL BOOSTRIX BOOSTRIX IPV DTP PERTUSSIS

Best Practice and Genie This function is not available yet.

8. Reports

8.1. Standard Reports

A number of reports are available under the 'Standard Reports' tab.



These are:

- NPCC (National Primary Care Collaboratives) Report
- NPI (National Performance Indicators)
- Summary Report Card

8.1.1. NPCC (National Primary Care Collaboratives) Report

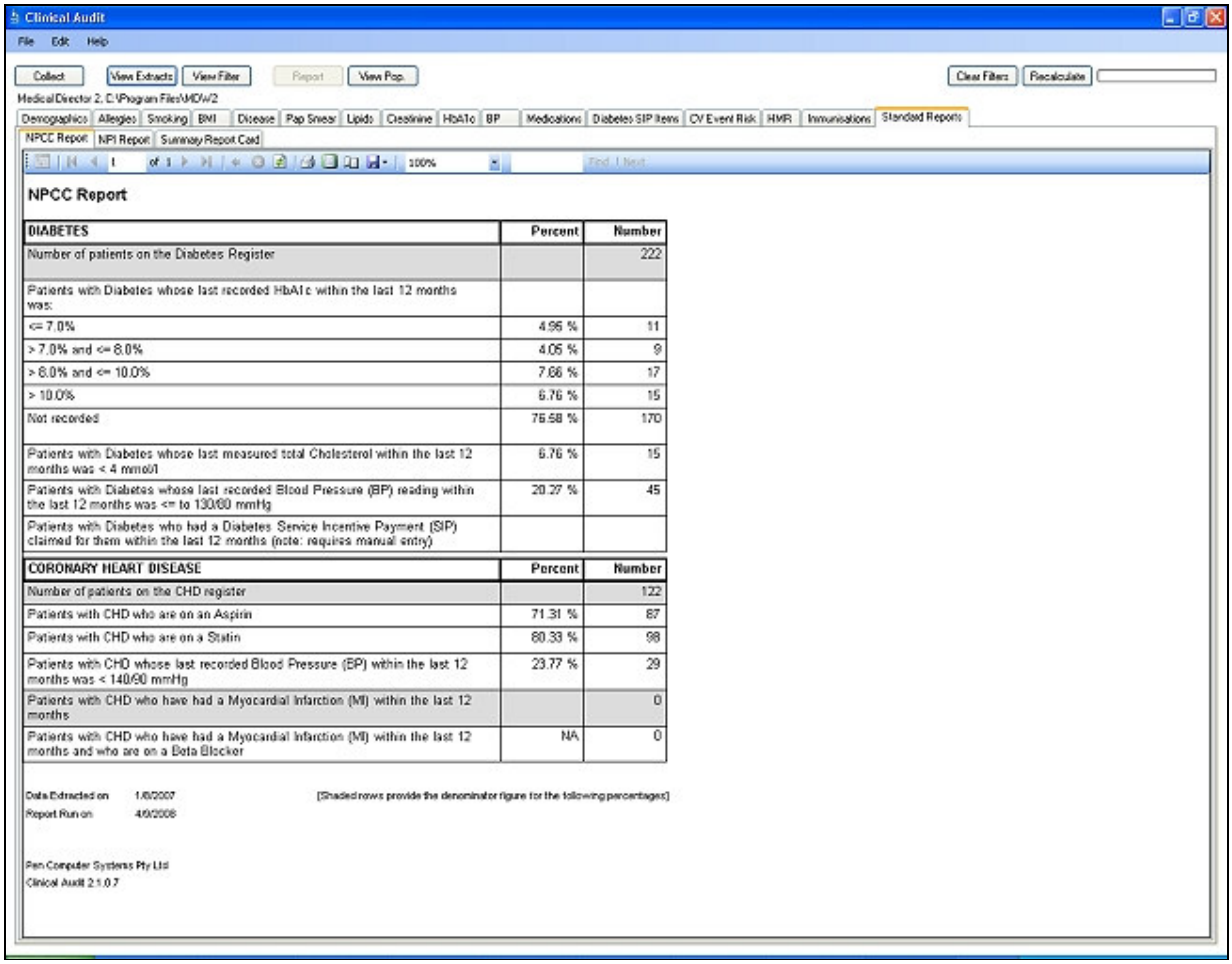
The NPCC Report is available under the 'Standard Reports' tab.

The NPCC Report is always derived from your full data set not your filtered data set. It will always show the practice total number of Diabetes and CHD patients.

This report provides you with summary statistics for your patients who are listed on the Diabetes Register and Coronary Heart Disease Register.

This report cannot be filtered by date. It is applicable only to the date at which the data collection was extracted. The date of extract will appear on the report. The reason is because CAT collects a 'snap-shot' of a patient's current results at the date of extract. It does not collect a full patient history and hence it is not possible to create an NPCC report retrospectively.

A report toolbar is available which provides functions to view, print and export the document.



DIABETES	Percent	Number
Number of patients on the Diabetes Register		222
Patients with Diabetes whose last recorded HbA1c within the last 12 months was:		
<= 7.0%	4.95 %	11
> 7.0% and <= 8.0%	4.05 %	9
> 8.0% and <= 10.0%	7.66 %	17
> 10.0%	6.76 %	15
Not recorded	76.58 %	170
Patients with Diabetes whose last measured total Cholesterol within the last 12 months was < 4 mmol/l	6.76 %	15
Patients with Diabetes whose last recorded Blood Pressure (BP) reading within the last 12 months was <= to 130/80 mmHg	20.27 %	45
Patients with Diabetes who had a Diabetes Service Incentive Payment (SIP) claimed for them within the last 12 months (note: requires manual entry)		

CORONARY HEART DISEASE	Percent	Number
Number of patients on the CHD register		122
Patients with CHD who are on an Aspirin	71.31 %	87
Patients with CHD who are on a Statin	80.33 %	98
Patients with CHD whose last recorded Blood Pressure (BP) within the last 12 months was < 140/90 mmHg	23.77 %	29
Patients with CHD who have had a Myocardial Infarction (MI) within the last 12 months		0
Patients with CHD who have had a Myocardial Infarction (MI) within the last 12 months and who are on a Beta Blocker	NA	0

8.1.2. NPI (National Performance Indicators) Report

The NPI Reports are available under the 'Standard Reports' tab.

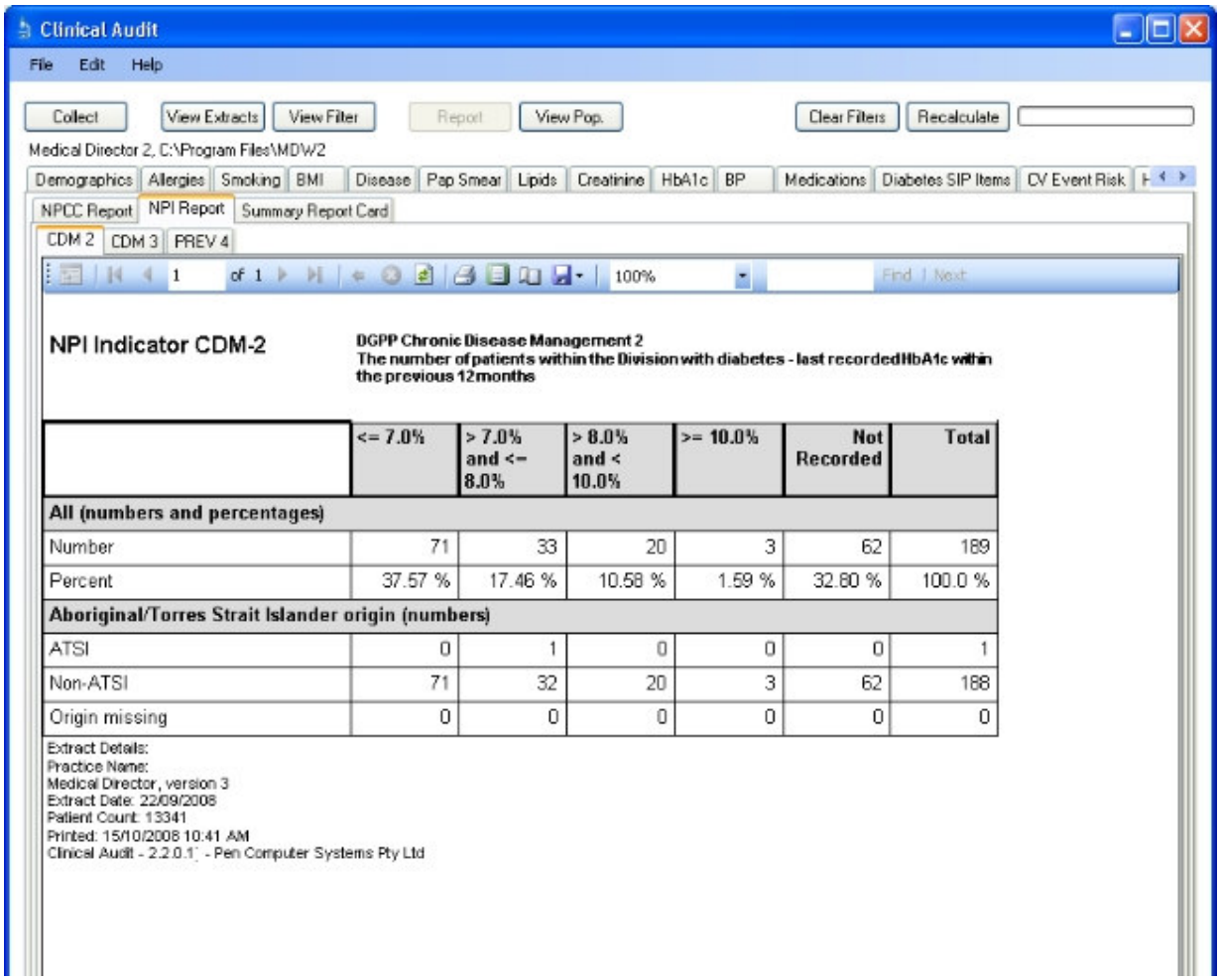
The NPI Reports are always derived from your full data set not your filtered data set.

The following NPI Reports for 2008-09 are available:

- CDM 2 for reporting on Diabetes patients HbA1c results in last 12mths
- CDM 3 for reporting on CHD patients with BP < 130/80 in last 12 mths
- PREV 4 for reporting on female patients aged 20-69 with a pap smear in last 2 yrs

This report cannot be filtered by date. It is applicable only to the date at which the data collection was extracted. The date of extract will appear on the report. The reason is because CAT collects a 'snap-shot' of a patient's current results at the date of extract. It does not collect a full patient history and hence it is not possible to create an NPI reports retrospectively.

A report toolbar is available which provides functions to view, print and export the document.



	<= 7.0%	> 7.0% and <= 8.0%	> 8.0% and < 10.0%	>= 10.0%	Not Recorded	Total
All (numbers and percentages)						
Number	71	33	20	3	62	189
Percent	37.57 %	17.46 %	10.58 %	1.59 %	32.80 %	100.0 %
Aboriginal/Torres Strait Islander origin (numbers)						
ATSI	0	1	0	0	0	1
Non-ATSI	71	32	20	3	62	188
Origin missing	0	0	0	0	0	0

8.1.3. Summary Report Card

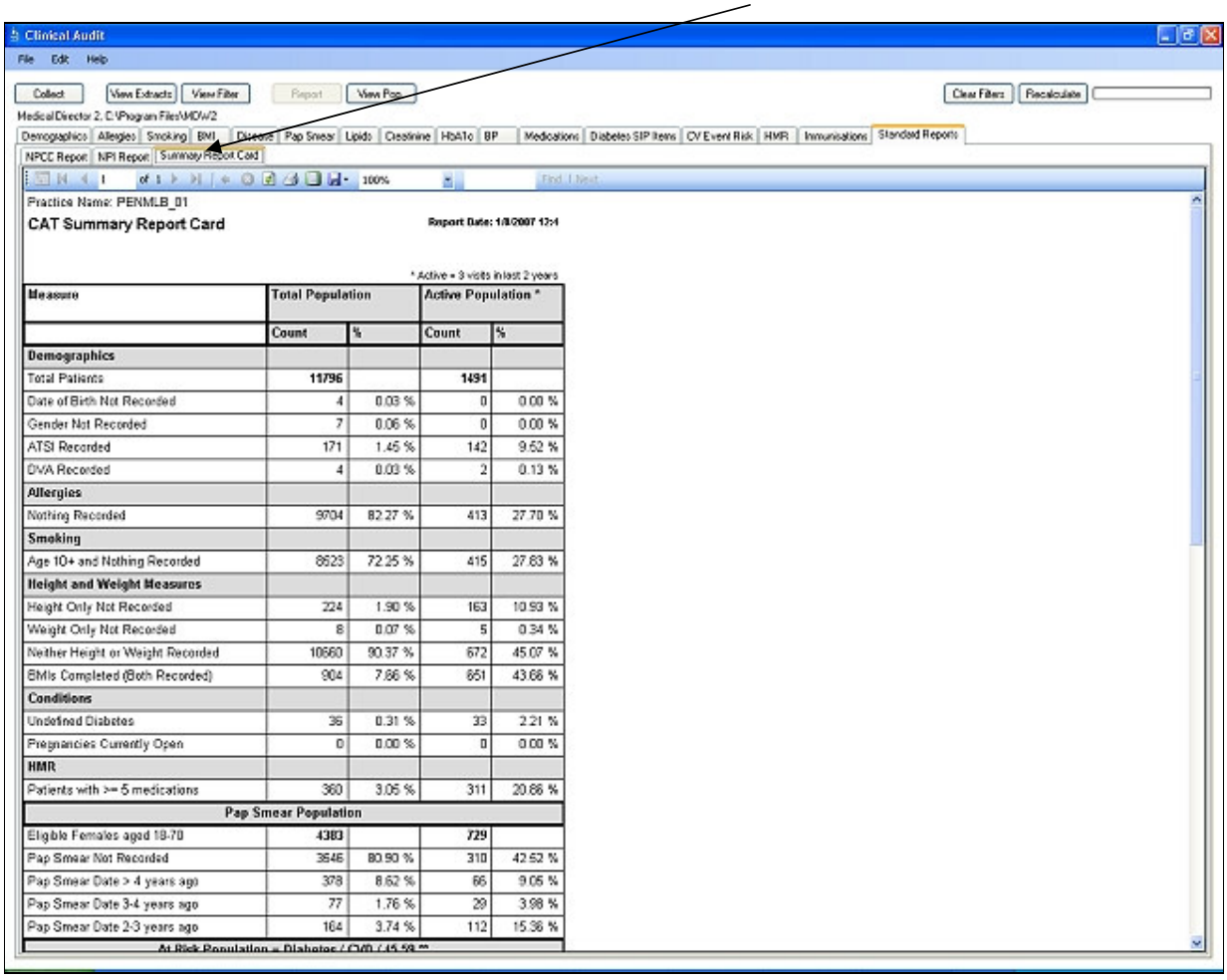
The Summary Report Card is available under the 'Standard Reports' tab.

This report provides an instant snapshot of GP data quality across most of the graphs provided. This means the user doesn't have to go to each tab and write the figures down.

The report can be exported to Excel so the user can create a month by month set of figures if they choose. [Note the user needs to collect new extract files for each monthly report.]

The user can also use the filters to target specific populations.

This report is found under the 'Standard Reports' tab > 'Summary Report Card' tab



Measure	Total Population		Active Population *	
	Count	%	Count	%
Demographics				
Total Patients	11796		1491	
Date of Birth Not Recorded	4	0.03 %	0	0.00 %
Gender Not Recorded	7	0.06 %	0	0.00 %
ATSI Recorded	171	1.45 %	142	9.52 %
DVA Recorded	4	0.03 %	2	0.13 %
Allergies				
Nothing Recorded	9704	82.27 %	413	27.70 %
Smoking				
Age 10+ and Nothing Recorded	8523	72.25 %	415	27.83 %
Height and Weight Measures				
Height Only Not Recorded	224	1.90 %	163	10.93 %
Weight Only Not Recorded	8	0.07 %	5	0.34 %
Neither Height or Weight Recorded	10660	90.37 %	672	45.07 %
BMIs Completed (Both Recorded)	904	7.66 %	651	43.66 %
Conditions				
Undefined Diabetes	36	0.31 %	33	2.21 %
Pregnancies Currently Open	0	0.00 %	0	0.00 %
HMR				
Patients with >= 5 medications	360	3.05 %	311	20.86 %
Pap Smear Population				
Eligible Females aged 18-70	4383		729	
Pap Smear Not Recorded	3646	80.90 %	310	42.52 %
Pap Smear Date > 4 years ago	378	8.62 %	66	9.05 %
Pap Smear Date 3-4 years ago	77	1.76 %	29	3.98 %
Pap Smear Date 2-3 years ago	164	3.74 %	112	15.36 %

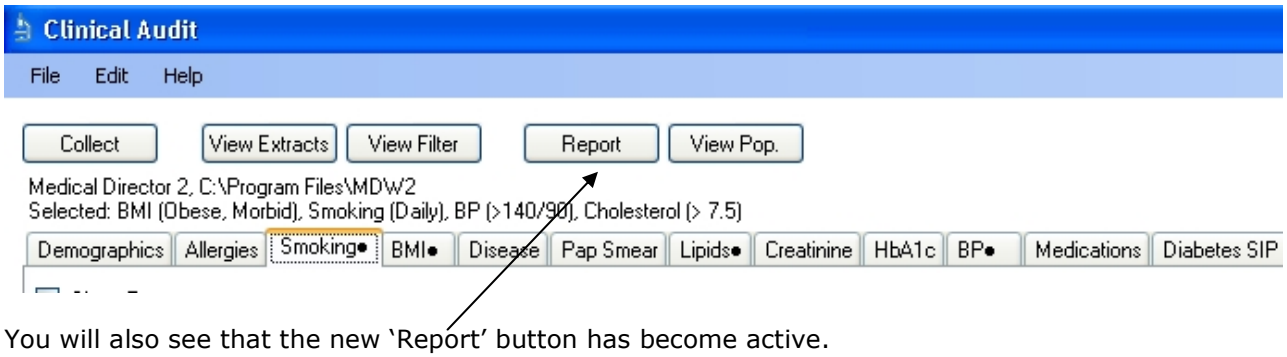
8.2. Cross Tabulation Report

The cross tabulation report provides the ability to find patients who appear on more than one graph - this assists with the identification of target population risk groups.

For example: Highlight the graphs segment for BMI >30, Smoker, BP >140/90, Cholesterol level >7.5 and view which patients meet all these criteria.

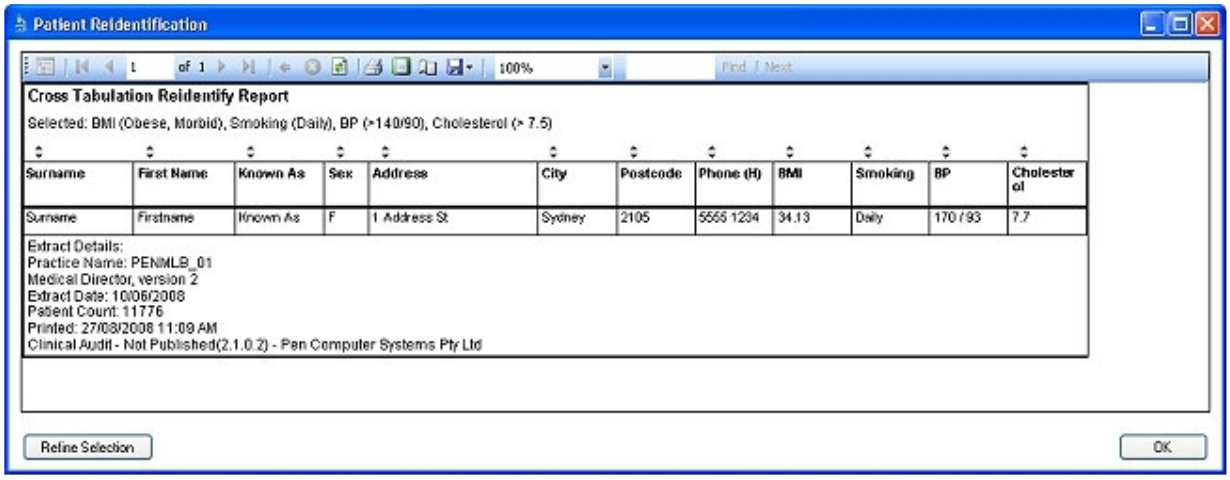
As you highlight report chart segments you will see 2 pieces of information on the screen
1. A ● will appear on the tab where you have made a chart segment selection
2. A new line will appear underneath where the filter details display. This line will provide details of which chart segments are selected

This example below shows BMI (Obese, Morbid), Smoking (Daily), BP (>140/90). Lipids – Cholesterol (>7.5)



You will also see that the new 'Report' button has become active.

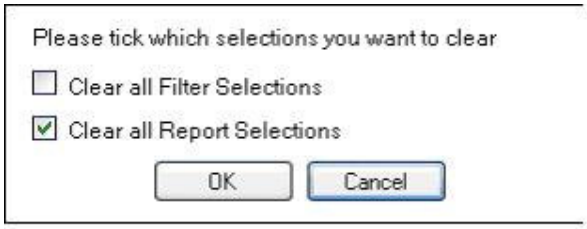
Click the 'Report' button
The standard Reidentify Report will display in an adjusted format to allow the data values for the chart selections you have made to be provided.



8.2.1. Clearing Report Selections

To clear the Report Chart Segments you have selected click the 'Clear Filters' button at the top right hand corner of the CAT screen. The 'Clear Filters' dialogue box will appear.

The 'Clear all Report Selections' tick box will be pre-selected if report segment selections have been made. Click 'OK'.



The • which appears on the tabs with selected report segments will be cleared. The text line with selected report segments information will be cleared.

9. How to improve data quality using CAT

There are a number of ways that CAT can be used to improve the data quality of your clinical desktop system. Some of these are listed below.

9.1. Patients with no Date of Birth

Patients with no date of birth (DOB) will have their age set to 999 in the data set. To find them use the age filter.

- Set the Start Age = 998
- Click the 'Recalculate' button
- Click the 'View Pop.' Button
- The Patient report for this filtered group will be displayed and you will see that the DOB column is empty

9.2. Patients with no Gender

Patients with no gender will have their gender as something other than 'M' or 'F' in the data set – probably it will be blank. To find them use the gender filter.

- Tick Gender = Other
- Click the 'Recalculate' button
- Click the 'View Pop.' Button
- The Patient report for this filtered group will be displayed and you will see that the sex column is empty or has something other than 'M' or 'F'

9.3. Patients with no Allergy status recorded

The Allergies tab displays your data as a breakdown of allergy status: Allergy Recorded, No Known Allergies, Nothing Recorded.

Use this tab to identify patients with the status of 'Nothing Recorded'.

Refer to the section on Allergies.

9.4. Patients with no Smoking status recorded

Smoking displays your data as a breakdown of smoking status: Daily Smoker, Irregular Smoker, Ex Smoker, Never Smoked, Nothing Recorded.

Use this tab to identify patients with the status of 'Nothing Recorded'.

You may need to use the age filter to exclude patients under 10 years old.

Refer to the section on Smoking.

9.5. Patients with incorrect Diabetes coding

Patients with Diabetes should be coded with a Diagnosis of Type I or Type II.

To find incorrect coding search for

i) Patients with both Type I and Type II recorded
- Tick the Diabetes 'Type I' checkbox
- Tick the Diabetes 'Type II' checkbox
- Click the 'Recalculate' button
- Click the 'View Pop.' Button
- The Patient report for this filtered group will have both diagnosis recorded

ii) Patients with an Undefined only diagnosis recorded – patients should have a primary diagnosis of Type I or Type II recorded
- Tick the Diabetes 'Type I' NO checkbox
- Tick the Diabetes 'Type II' NO checkbox
- Tick the Diabetes 'Undefined' checkbox
- Click the 'Recalculate' button
- Click the 'View Pop.' Button
- The Patient report for this filtered group will no primary Diabetes diagnosis recorded

iii)

10. FURTHER INFORMATION

For further information about the Clinical Audit Tool contact PEN Computer Systems.

Head Office:

Pen Computer Systems Pty Ltd
Level 6, 10-14 Smith St
PARRAMATTA NSW 2150

Phone: 61 2 9635 8955
Fax: 61 2 9635 8966
Email: enquiries@pencs.com.au
Web: www.pencs.com.au

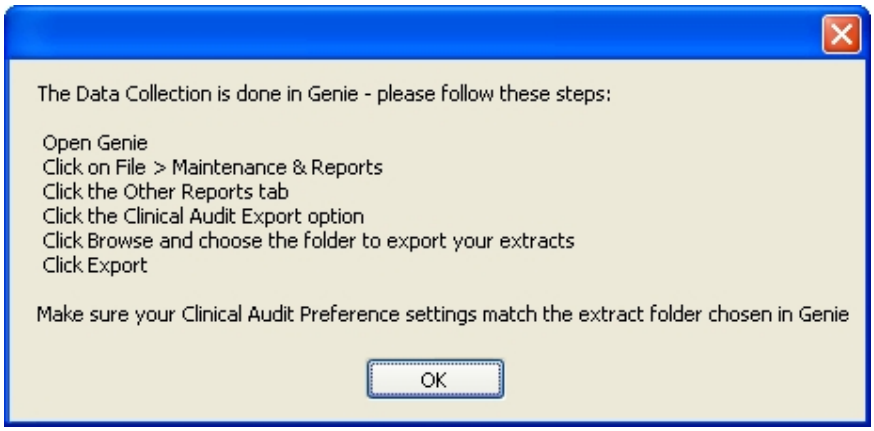
Melbourne Office:

Pen Computer Systems Pty Ltd
Level 5, 434 St Kilda Road
MELBOURNE VIC 3004

Phone: 61 3 9866 8477
Fax: 61 3 9866 5699

11. APPENDIX A - GENIE DATA COLLECTION

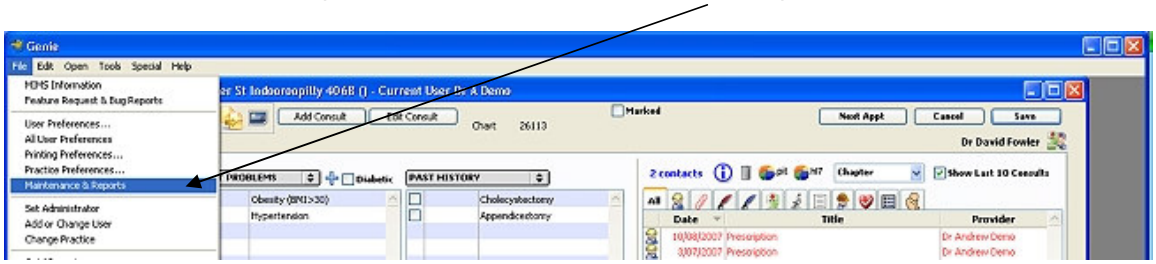
For Genie users the data set collection is performed from within the Genie software application. Clicking the CAT 'Collect' button at the top left of the screen will provide you with the summary steps on how this is done within Genie.



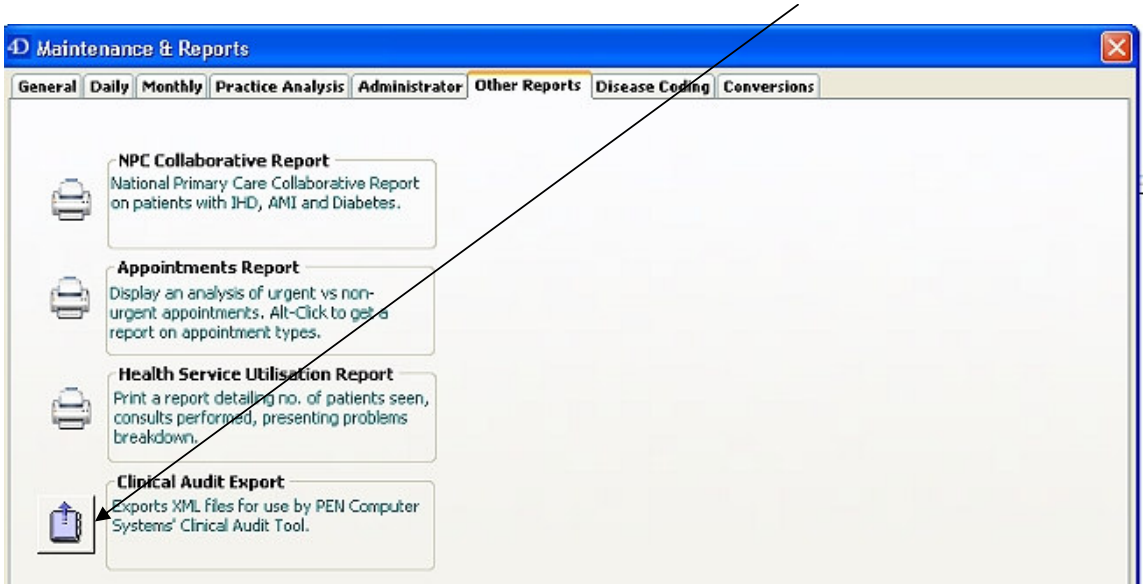
Collecting data sets from within Genie

Open the Genie application

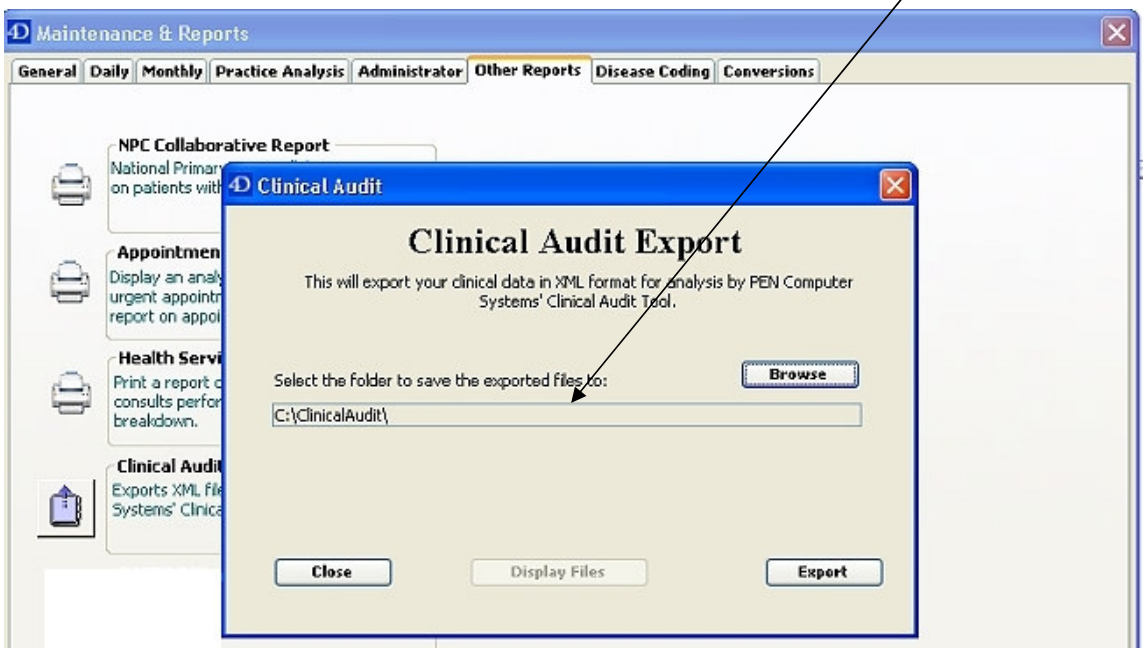
Click on the 'File' menu option and choose 'Maintenance & Reports'



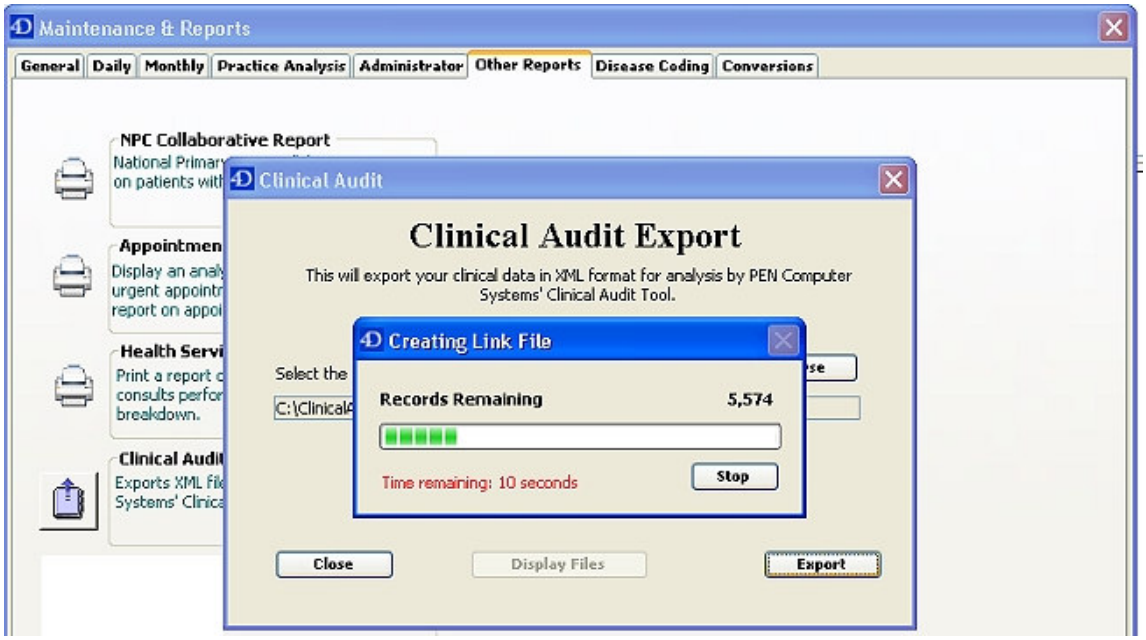
From the 'Maintenance & Reports' window click the 'Clinical Audit Export' button



From the 'Clinical Audit' dialogue box click the 'Browse' button to select the folder you wish to export your data extract to.
This should be set to match your Clinical Audit 'Data Folder Location' preference.

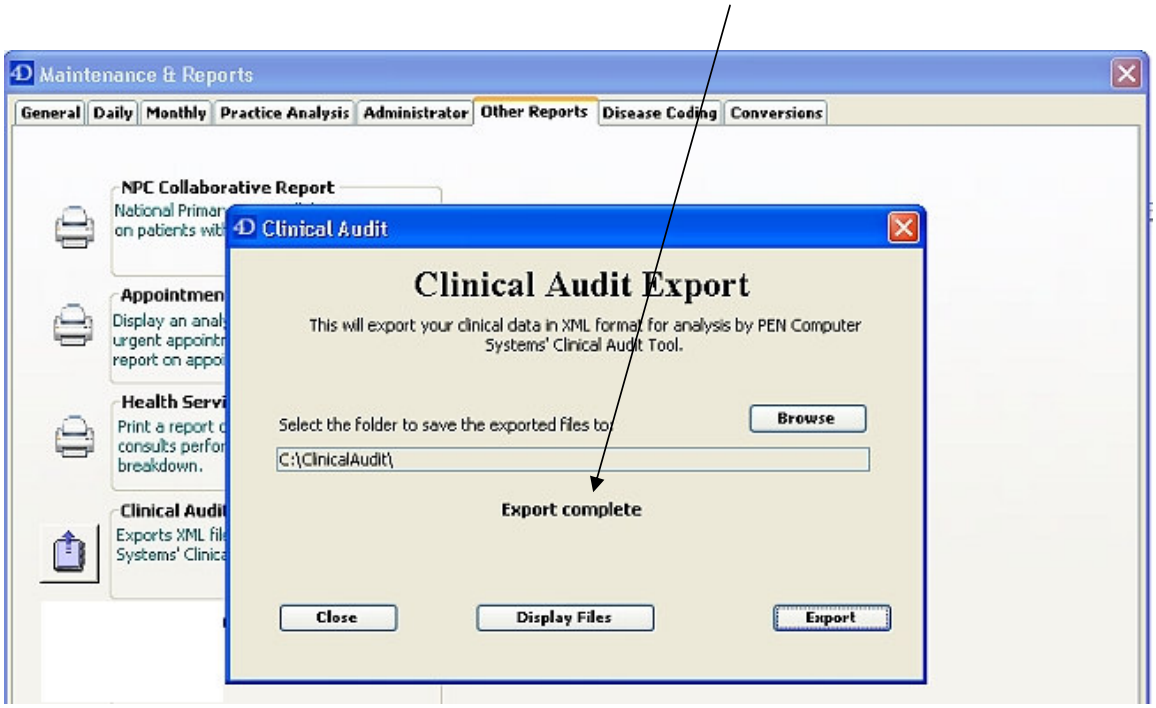


Click the 'Export' button to start the data extract



Two files will be created – the link file and then the data file – you will be shown the progress of each file extract

Once the export has completed you will see the 'Export Complete' message displayed.



12. APPENDIX B – MEDICAL DIRECTOR DATA CATEGORY MAPPINGS

12.1. APPENDIX B-1 – CONDITIONS DATA CATEGORY MAPPINGS (MD)

The data collection process collects conditions that are found on the MD 'Past History' screen. Chronic conditions are flagged as true for a patient if the condition is marked as **either active or inactive**.

From the list below only Asthma and Depression are regarded as being recoverable. These conditions are flagged as true if they are marked as **active only**.

CAT Category	Medical Director Mapping
Diabetes	
Type II	
	Diabetes Mellitus - NIDDM Diabetes Mellitus - Type II NIDDM Non insulin dependent diabetes mellitus
Type I	
	Diabetes Mellitus - IDDM Diabetes Mellitus - Type I IDDM (Insulin dependent diabetes mellitus) Insulin dependent diabetes mellitus Juvenile Onset Diabetes
Undefined diabetic	
	Arteritis - Diabetes Mellitus Diabetes Diabetes - controlled Diabetes - Unstable Diabetes Mellitus Diabetes with Vascular Changes Diabetic Endarteritis Diabetic Peripheral Vascular Disease Diabetic Vascular Disease - Peripheral Unstable Diabetes
Respiratory	
Asthma	

[Active only conditions are collected]	Acute severe asthma Allergy induced asthma Asthma Asthma - Allergy induced Asthma - Chronic Persistent Asthma - Exercise induced Asthma - Frequent Episodic Asthma - Infective exacerbation Asthma – Infrequent Episodic Bronchial asthma Exercise induced asthma Exertional asthma Status asthmaticus Wheezy bronchitis
COPD	
	Chronic Airways Limitation Chronic Bronchitis Chronic Obstructive Airways Disease Chronic Obstructive Pulmonary Disease COAD COAD (Chronic Obstructive Airways Disease) COPD (Chronic Obstructive Pulmonary Disease)
Cardiovascular	
CHD	
	Acute coronary insufficiency Acute myocardial infarction AMI (Acute Myocardial Infarction) Angina Angina pectoris Angina pectoris - Prinzmetal Angina pectoris - unstable Angioplasty - coronary Angioplasty - coronary (with stent) Anterior myocardial infarct Anterolateral myocardial infarct Atherosclerotic heart disease Balloon coronary angioplasty Blockage Coronary Artery Bypass - coronary CABG (Coronary Artery Bypass Graft) Coronary Angiography and Stent Coronary artery balloon angioplasty Coronary artery bypass graft Coronary artery disease Coronary artery disease - Rehabilitation Coronary artery endarterectomy Coronary artery spasm Coronary artery stent Coronary artery surgery Coronary heart disease Coronary insufficiency

	Coronary Occlusion Heart attack IHD (Ischaemic Heart Disease) Inferior myocardial infarction Ischaemic heart disease Myocardial Damage Myocardial infarction Myocardial infarction - anterolateral Myocardial infarction - inferior Myocardial infarction - posterior Myocardial infarction - subendocardial Myocardial infarction - superior Myocardial Infarction - with ST elevation Myocardial Infarction - without ST elevation Myocardial insufficiency NSTEMI (Non-ST-Elevation Myocardial Infarction) Occlusion - Coronary Artery PCTA Percutaneous transluminal angioplasty Posterior myocardial infarct Preinfarction syndrome Prinzmetal angina STEMI (ST-Elevation Myocardial Infarction) Stent - coronary artery Subendocardial myocardial infarct Superior myocardial infarct Surgery - Coronary artery Surgery - Coronary artery balloon angioplasty Surgery - Coronary artery bypass graft Surgery - Coronary artery endarterectomy Surgery - Coronary artery stent Unstable Angina Unstable Angina - High risk Unstable Angina - Low risk Unstable Angina - Moderate risk Variant angina
Hypertension	
	Antihypertensive agent prescription Blood Pressure Labile Blood Pressure review BP Labile BP Unstable Essential hypertension HBP High blood pressure HT (Hypertension) Hypertension Hypertension - Borderline Hypertension - Controlled Hypertension - Isolated Systolic Hypertension - Labile Hypertension - Life style management Hypertension - Malignant Hypertension - Portal

	Hypertension - Renovascular Hypertension - Unstable Hypertension review Hypertensive crisis Labile Blood Pressure Labile BP Labile Hypertension Malignant hypertension Portal hypertension Prescription - Hypertension Primary hypertension Renal Hypertension Renovascular Hypertension Review - BP Severe refractory hypertension
Heart Failure	
	Acute cardiac failure Acute heart failure Cardiac failure CCF Congestive Cardiac Failure Congestive Heart Failure Cor pulmonale Heart failure Heart failure - Acute Heart failure - Biventricular Heart failure - High output Heart failure - Left Heart failure - Right High output cardiac failure High output heart failure Hypertensive heart failure Left ventricular failure LHF (Left heart failure) LVF (Left ventricular failure) Pulmonary oedema RHF (Right heart failure) Right ventricular failure RVF (Right ventricular failure)
Stroke	

	Cerebral Haemorrhage Cerebrovascular Accident CVA (Cerebrovascular Accident) Haemorrhage - intracerebral Haemorrhagic CVA Haemorrhagic Stroke Intracerebral bleed Intracerebral haemorrhage Ischaemic Stroke Lacunar Stroke Migranous Stroke Stroke Stroke - Haemorrhagic Stroke - Ischaemic Stroke - Lacunar Stroke - Migranous Stroke - Thrombotic Thrombotic - Stroke

Mental Health	
Depression	
[Active only conditions are collected]	Anxiety/Depression Depression - Endogenous Depression - Major Depression - Minor Depression - Post Natal Depression - Reactive Depression - recurrent Depressive anxiety disorder Endogenous depression Melancholia Mixed anxiety/depressive disorder Organic depression Post Natal Depression Reactive depression
Anxiety	
	Anxiety Anxiety - Generalised Anxiety - Social Anxiety disorder Anxiety feeling Anxiety neurosis Anxiety phobia Anxiety/Depression Depressive anxiety disorder Feeling anxious GAD (Generalised Anxiety Disorder) Generalised Anxiety Disorder (GAD) Mixed anxiety/depressive disorder Mood - anxious Nervous Nervous Anxiety Neurotic anxiety Phobia Social Anxiety Disorder Social Phobia Tense
Schizophrenia	
	Borderline schizophrenia Brief reactive schizophrenia Catatonic schizophrenia Chronic Schizophrenia Paranoid schizophrenia Schizophrenia Schizophrenia - borderline Schizophrenia - brief Schizophrenia - catatonic Schizophrenia - chronic Schizophrenia - paranoid

Bone Disease	
Osteoporosis	
	Osteopaenia Osteopenia Osteoporosis Osteoporosis - corticosteroid induced Osteoporosis - no fracture Osteoporosis with fracture Post menopausal osteoporosis Steroid induced osteoporosis Steroid osteopathy
Osteoarthritis	
	Arthritis - Osteo Hip Osteoarthritis Hip Osteoarthrosis Knee Osteoarthritis Knee Osteoarthrosis OA (Osteoarthritis) Osteoarthritis Osteoarthritis - Ankle Osteoarthritis - Fingers Osteoarthritis - Hands Osteoarthritis - Hip Osteoarthritis - Knee Osteoarthritis - Neck Osteoarthritis - Shoulder Osteoarthritis - Spine Osteoarthrosis Spondylosis Wear and tear arthritis
Other	
Hyperlipidaemia	
	Dyslipidaemia High cholesterol Hypercholesterolaemia Hyperlipidaemia Hyperlipidaemia - controlled Hyperlipidaemia review Hyperlipidaemia type 2 Hyperlipoproteinaemia - Type2 Review – hyperlipidaemia

Renal Impairment	
	Acute renal failure Chronic Renal Failure Cirrhosis with acute renal failure Dialysis - haemodialysis Haemodialysis Hemodialysis Hepatorenal syndrome Impairment - Renal Kidney failure Kidney failure - acute Kidney failure - chronic Kidney Impairment Renal artery stenosis Renal Damage Renal dialysis Renal failure Renal failure due to cirrhosis Renal Impairment Renal insufficiency - acute Renal insufficiency - chronic Stenosis - Renal artery Uraemia Kidney Disease – Chronic – Stage 1 -5 Renal Disease – Chronic – Stage 1 -5 Chronic Kidney Disease - Stage 1 -5 CKD (Chronic Kidney Disease) – Stage 1 -5

12.1.1. Pregnancy

Pregnancy is true if the patient has an incomplete pregnancy under the Obstetrics tab.

12.2. APPENDIX B-2 – MEDICATIONS DATA CATEGORY MAPPINGS (MD)

The data collection process collects medications that are found on the MD 'RX' screen. It does not make any decisions about whether a medication should actually have been removed from the 'RX' screen. The GP is responsible for making sure the list of medications is accurate.

Medications - Heart

CAT Category	Medical Director Mapping
ARB	Class: Cardiovascular System > Antihypertensives > Angiotension II Antagonists > All
ACE Inhibitors	Class: Cardiovascular System > Antihypertensives > ACE Inhibitors > All
Aspirin	Generic Names: Aspirin Aspirin/Dipyridamole Aspirin/Citric Acid/Sodium Bicarbonate Aspirin/Citric Acid/Sodium Bicarbonate/Sodium Aspirin/Glycine
Warfarin	Generic Names: Warfarin
Clopidogrel	Generic Names: Clopidogrel
Beta Blockers - Antihypertensive	Generic Names: Atenolol Bisoprolol Carvedilol Labetalol Metoprolol Oxprenolol Pindolol Propranolol

Beta Blockers – Chronic heart failure	Generic Names: Bisoprolol Carvedilol Brand Names: [these are controlled release preparations of Metoprolol and Metoprolol Succinate] Toprol-XL Toprol-XL Titration Pack
Beta Blockers - Myocardial Infarction	Generic Names: Atenolol Betaxolol Hydrochloride Bisoprolol Fumarate Carvedilol Esmolol Hydrochloride Labetalol Hydrochloride Metoprolol Succinate Oxprenolol Hydrochloride Pindolol Sotalol Sotalol Hydrochloride
Calcium Antagonists	Class: Cardiovascular System > Antihypertensives > Calcium Channel Blockers > All
Diuretics	Classes: Cardiovascular System > Antihypertensives > Diuretic Cardiovascular System > Antihypertensives > Diuretic > Diuretic Herbal Cardiovascular System > Antihypertensives > Diuretic > Diuretic Potassium Sparing
Lipid M/fying - Statins	Generic Names: Atorvastatin Atorvastatin/Amlodipine Fluvastatin Pravastatin Simvastatin Ezetimibe/Simvastatin Rosuvastatin

Lipid M/fying - Other	Generic Names: Cholestyramine Clofibrate Colestipol Ezetimibe Fenofibrate Gemfibrozil Cerivastatin Probucol Nicotinic Acid Avena Sativa/Nicotinic Acid Policosanol

Medications Other

Antidiabetics	
H/glycaemics – Insulin	Class: Hormones And Metabolic Products > Antidiabetic Agents > Hypoglycaemic Agents – Insulin > All
H/glycaemics – Oral	Class: Hormones And Metabolic Products > Antidiabetic Agents > Hypoglycaemic Agents – Oral > All
Metformin	Generic Names: Metformin Rosiglitazone/metformin Metformin hydrochloride/glibenclamide
Mental Health	
Antipsychotics	Class: Nervous System > Antipsychotics
Corticosterids	
Glucocorticoids	Class: Hormones and Metabolic Products > Adrenal Hormones > Corticosteroid > Corticosteroid-Glucocorticoid

Pain Relief	
NSAIDs	Generic Names: Diclofenac Diclofenac/Misoprostol Ibuprofen Ibuprofen Lysine Ibuprofen/Codeine Ibuprofen/Codeine Phosphate Ibuprofen/Pseudoephedrine Hydrochloride Indomethacin Ketorolac Ketoprofen Ketorolac Trometamol Mefenamic Acid Naproxen Piroxicam Sulindac Tiaprofenic Acid Class: Musculoskeletal Agents > Antiinflammatory Agents> Systemic NSAIDs > COX 2 Inhibitors
COX2	Class: Musculoskeletal Agents > Antiinflammatory Agents> Systemic NSAIDs > COX 2 Inhibitors
Respiratory	
Asthma – Inhaled	Class: Respiratory > Antiasthmatic and/or COPD preparations > Antiasthmatic Preventative > Steroid – Inhaled Generic Names: Budesonide
COPD	Generic Names: Tiotropium

12.3. APPENDIX B-3 – GENERAL DATA CATEGORY MAPPINGS (MD)

Demographic	**Medical Director Mapping**
Gender	Patient Details screen > Sex
Ethnicity	Patient Details screen > Tick boxes for Aboriginal / TSI
DVA	Patient Details Screen > • the Pension Status set to 'Full DVA' or 'Limited DVA' • or the DVA No. field has a value
Age	Patient Details screen > DOB
Last Visit	Past History screen > Checks dates on history progress notes items
Postcode	Patient Details screen > Postcode

Allergy	**Medical Director Mapping** **Patient Details > Allergies tab**
Allergy Recorded	An Allergy Item is present
No Known Allergies	The 'No Known Allergies' check box is checked
Nothing Recorded	No Allergy Items are present and the 'No Known Allergies' check box is unchecked

Smoking	**Medical Director Mapping** **Patient Details > Smoking tab >** [Note that smoking data from the Diabetes record is not used. Adding data to the diabetes record does not update the smoking tab which is taken as the primary MD smoking data.]
Daily Smoker	Smoker = Smoker is selected and frequency is daily
Irregular Smoker	Smoker = Smoker is selected and frequency is not daily
Ex Smoker	Smoker = Ex-Smoker is selected
Never Smoked	Smoker = Never smoked is selected
Nothing Recorded	Smoker has nothing selected

Measurements	Medical Director Mapping
BMI	Clinical > Diabetes Record > Add Values OR Tools > Weight Calculator
Cholesterol	Clinical > Diabetes Record > Add Values OR Pathology HL7 results
HDL	Clinical > Diabetes Record > Add Values OR Pathology HL7 results
LDL	Clinical > Diabetes Record > Assessment OR Pathology HL7 results
Triglycerides	Clinical > Diabetes Record > Add Values OR Pathology HL7 results
Creatinine	Clinical > Measurements > Add Values OR Pathology HL7 results
Microalbinuria	Clinical > Measurements > Assessment OR Pathology HL7 results
HbA1c	Clinical > Diabetes Record > Add Values OR Pathology HL7 results
BP	Clinical > Diabetes Record > Add Values OR Tools > BP Monitor > Sitting

Diseases	Medical Director Mapping
Condition	Past History screen > Checks the condition selected on history items, where Conditions are selected from a coded list. Refer to the Appendices for a list of conditions mapping to each CAT condition.

Pap Smear	**Medical Director Mapping** **1. Female Patient Record > Smears tab**
Recorded	An entry is present on the tab
Done Date	Date of most recent entry
	2. Pathology HL7 Results
Recorded	True if a result exists
Done Date	Date of test result

Medications	**Medical Director Mapping**
Medication	Current Rx screen > Checks the Drugs listed, where Drugs are selected from a coded list Refer to the Appendices for a list of medications mapping to each CAT medication.
HMR	Current Rx screen > Counts All Drugs listed as current medications

12.4. APPENDIX B-4 – DIABETES SIP DATA CATEGORY MAPPINGS (MD)

Diabetes SIP Item	Medical Director Mapping
HbA1c	Clinical > Diabetes Record > Add Values OR Pathology HL7 results
Eye Exam	Clinical > Diabetes Record > Add Values
BMI	Clinical > Diabetes Record > Add Values OR Tools > Weight Calculator
BP	Clinical > Diabetes Record > Add Values OR Tools > BP Monitor > Sitting
Foot Exam	Clinical > Diabetes Record > Add Values or Assessment : Foot Exam or Podiatrist Attendance date entered
Cholesterol	Clinical > Diabetes Record > Add Values OR Pathology HL7 results
Triglycerides	Clinical > Diabetes Record > Add Values OR Pathology HL7 results
HDL	Clinical > Diabetes Record > Add Values OR Pathology HL7 results
Microalbuminuria	Clinical > Diabetes Record > Assessment OR Pathology HL7 results
Smoking	Patient Details > Smoking tab [Note that smoking data from the Diabetes record is not used. Adding data to the diabetes record does not update the smoking tab which is taken as the primary MD smoking data.]

13. APPENDIX C – BEST PRACTICE DATA MAPPINGS

13.1. APPENDIX C-1 - CONDITIONS DATA MAPPINGS (BP)

Best Practice only collects **active conditions**. This is the default setting. A clinician must make a choice when making a condition inactive and hence inactive conditions are not collected.

(In contrast Medical Director defaults a condition to inactive.)

CAT Category	Best Practice Mapping
Diabetes	
> Type II	Diabetes Mellitus, NIDDM Diabetes Mellitus, Type 2 NIDDM Non insulin dependent Diabetes Mellitus Type 2 Diabetes Mellitus
> Type I	Diabetes mellitus, IDDM Diabetes mellitus, Type 1 IDDM Insulin dependent Diabetes mellitus Juvenile onset Diabetes mellitus Type 1 Diabetes mellitus
> Undefined diabetic	Diabetes Diabetes - controlled Diabetes - Unstable Diabetes Mellitus Diabetic endarteritis Diabetic peripheral vascular disease Peripheral vascular disease, diabetic Unstable Diabetes
Respiratory	
> Asthma	Acute severe asthma Allergic asthma Allergy induced asthma Asthma Asthma review Asthma, allergy induced Asthma, exercise induced Asthma, infective exacerbation Bronchial asthma Exercise induced asthma Exertional asthma Infective exacerbation of asthma Status asthmaticus Wheezy bronchitis

> COPD	Bronchitis, chronic Chronic bronchitis Chronic Obstructive Airways Disease Chronic Obstructive Pulmonary Disease COAD COAD - Infective exacerbation COPD Emphysema
Cardiovascular	
> CHD	Acute coronary insufficiency Acute myocardial infarction AMI Angina Angina pectoris Angiogram, coronary Angioplasty, coronary Anterior myocardial infarct Anterolateral myocardial infarct Balloon coronary angioplasty CABG Coronary angiogram Coronary angiography Coronary Angiography - No significant obstr Coronary angioplasty Coronary angioplasty with stent Coronary artery bypass graft Coronary artery disease Coronary artery endarterectomy Coronary artery stent Coronary endarterectomy Coronary insufficiency Coronary occlusion Health assessment Heart attack IHD Inferior myocardial infarction Ischaemic heart disease MI Myocardial infarction Myocardial infarction, anterior Myocardial infarction, anterolateral Myocardial infarction, inferior Myocardial infarction, posterior Myocardial infarction, subendocardial Myocardial infarction, superior Occlusion, Coronary artery Posterior myocardial infarct Preinfarction syndrome Stent, coronary artery Subendocardial infarct Subendocardial myocardial infarct Superior myocardial infarct Unstable angina

> Hypertension	Borderline hypertension Essential hypertension High blood pressure Hypertension Hypertension - Preventive care Hypertension in pregnancy Hypertension, Isolated systolic Hypertension, borderline Hypertension, malignant Hypertension, portal Hypertension, pulmonary Hypertension, renovascular Hypertension, white coat Idiopathic pulmonary hypertension Isolated systolic hypertension Labile Blood Pressure Labile BP Malignant hypertension Portal hypertension Pregnancy induced hypertension Preventive care - Hypertension Primary pulmonary hypertension Pulmonary hypertension Renal hypertension Renovascular hypertension Severe refractory hypertension White coat hypertension
> Heart Failure	Acute cardiac failure Acute heart failure Biventricular heart failure Cardiac failure Cardiac failure, acute CCF Congestive cardiac failure Congestive heart failure Cor pulmonale Heart failure Heart failure, acute Heart failure, high output Heart failure, left High output cardiac failure High output heart failure Hypertensive heart failure Left heart failure Left Ventricular Failure LHF LVF RHF Right heart failure Right ventricular failure RVF

> Stroke	Cerebral haemorrhage Cerebral infarction Cerebrovascular Accident CVA Haemorrhage, intracerebral Haemorrhagic CVA Haemorrhagic stroke Intracerebral bleed Intracerebral haemorrhage Intracranial haemorrhage Ischaemic stroke Lacunar Stroke Migrainous stroke Stroke Stroke, haemorrhagic Stroke, ischaemic Stroke, lacunar Stroke, migrainous Stroke, thrombotic Thrombotic stroke
Mental Health	
> Depression	Anxiety/Depression Depression Depression, endogenous Depression, Post Natal Depression, reactive Endogenous depression Neurotic depression Organic depression Post Natal Depression Reactive depression
> Anxiety	Anxiety Anxiety disorder Anxiety neurosis Anxiety/Depression Fear, irrational GAD Generalised Anxiety Disorder Irrational fear Neurotic depression Phobia Phobic anxiety disorder Phobic disorder Social Anxiety Disorder Social phobia
> Schizophrenia	Borderline schizophrenia Catatonic schizophrenia Chronic schizophrenia Paranoid schizophrenia Schizophrenia Schizophrenia, borderline Schizophrenia, catatonic Schizophrenia, chronic Schizophrenia, paranoid

Bone Disease	
> Osteoporosis	Osteopenia Osteoporosis Osteoporosis, steroid induced Steroid induced osteoporosis Steroid osteopathy
> Osteoarthritis	Ankle osteoarthritis Cervical spine osteoarthritis Hip osteoarthritis Hip osteoarthrosis Knee osteoarthritis Knee osteoarthrosis Lumbar spine osteoarthritis OA Osteoarthritis Osteoarthritis in neck Osteoarthritis cervical spine Osteoarthritis in fingers Osteoarthritis in hand Osteoarthritis in lumbar spine Osteoarthritis of ankle Osteoarthritis of hip Osteoarthritis of knee Osteoarthrosis
Other	
> Hyperlipidaemia	Dyslipidaemia Familial hypercholesterolaemia Hyperlipidaemia Hyperlipidaemia type 2 Hyperlipoproteinaemia, Type 2

13.1.1. Pregnancy

Pregnancy is true if the patient has a current pregnancy under the Obstetrics tab.

13.2. APPENDIX C-2 - MEDICATIONS DATA MAPPINGS (BP)

CAT Category	Best Practice Mapping – Generic Name
ARB	Candesartan Cilexetil Candesartan Cilexetil, Hydrochlorothiazide Eprosartan Mesylate Eprosartan Mesylate, Hydrochlorothiazide Irbesartan Irbesartan, Hydrochlorothiazide Losartan Potassium Olmesartan medoxomil Olmesartan medoxomil, Hydrochlorothiazide Telmisartan Telmisartan, Hydrochlorothiazide
ACE Inhibitors	Captopril Enalapril Maleate Enalapril Maleate, Hydrochlorothiazide Fosinopril Sodium Fosinopril Sodium, Hydrochlorothiazide Lisinopril Perindopril Arginine Perindopril arginine, Indapamide hemihydrate Perindopril Erbumine Perindopril erbumine, Indapamide hemihydrate Quinapril Quinapril, Hydrochlorothiazide Ramipril Ramipril, Felodipine Trandolapril Trandolapril, Verapamil
Aspirin	Aspirin Aspirin, Glycine Dipyridamole, Aspirin
Beta Blockers	Atenolol Bisoprolol fumarate Carvedilol Labetalol Hydrochloride Metoprolol Succinate Metoprolol Tartrate Oxprenolol Hydrochloride Pindolol Propranolol Hydrochloride Sotalol Hydrochloride

Calcium Antagonists	Amlodipine Amlodipine Besylate Amlodipine besylate, atorvastatin Amlodipine Maleate Diltiazem Hydrochloride Diltiazem Hydrochloride (Controlled Delivery) Felodipine Lercanidipine Hydrochloride Nifedipine Ramipril, Felodipine Trandolapril, Verapamil Verapamil Hydrochloride
Diuretics	Bendrofluazide Bumetanide Candesartan Cilexetil Candesartan Cilexetil, Hydrochlorothiazide Diazoxide Enalapril Maleate, Hydrochlorothiazide Eprosartan Mesylate Eprosartan Mesylate, Hydrochlorothiazide Ethacrynic Acid Fosinopril Sodium, Hydrochlorothiazide Frusemide Hydrochlorothiazide Hydrochlorothiazide, Amiloride Hydrochlorothiazide, Triamterene Hydrochlorothiazide/Amiloride Hydrochlorothiazide/Triamterene Indapamide Hemihydrate Irbesartan, Hydrochlorothiazide Olmesartan medoxomil, Hydrochlorothiazide Perindopril arginine, Indapamide hemihydrate Quinapril, Hydrochlorothiazide Telmisartan, Hydrochlorothiazide

H/glycaemics – Insulin	Insulin Aspart Insulin aspart Insulin aspart rys Insulin Aspart, Insulin Aspart Protamine Suspension Insulin detemir Insulin glargine Insulin glulisine Insulin Isophane (N.P.H.) Bovine Insulin Isophane (N.P.H.) Human Insulin lispro Insulin Lispro Insulin lispro, Insulin lispro Protamine Suspension Insulin Lispro, Insulin Lispro Protamine Suspension Insulin Neutral (Bovine) Insulin Neutral (Human) Insulin Neutral 20%, Isophane 80% Human Insulin Neutral 30%, Isophane 70% Human Insulin Neutral 30%, Isophane 70% Human Insulin Neutral Bovine Insulin Neutral, Isophane (Human) Insulin Neutral/Isophane (Human) Insulin Zinc Suspension (Human) Neutral Insulin (Human)
H/glycaemics – Oral	Glibenclamide Gliclazide Glimepiride Glipizide Metformin Hydrochloride Metformin Hydrochloride, Glibenclamide Metformin Hydrochloride, Glibenclamide Metformin, Glibenclamide Metformin, Glibenclamide Pioglitazone Hydrochloride Rosiglitazone Rosiglitazone Maleate, Metformin Hydrochloride Rosiglitazone Maleate, Metformin Hydrochloride
Lipid M/fying - Statins	Amlodipine besylate, atorvastatin Atorvastatin Ezetimibe, Simvastatin Fluvastatin Pravastatin Sodium Rosuvastatin Simvastatin
Lipid M/fying - Other	Cholestyramine Colestipol Hydrochloride Ezetimibe Ezetimibe, Simvastatin Fenofibrate Gemfibrozil Nicotinic Acid

13.3. APPENDIX C-3 - GENERAL DATA MAPPINGS (BP)

Demographic	Best Practice Mapping
Gender	Open > Demographics screen > Sex
Ethnicity	Open > Demographics screen > Drop down list for Aboriginal / TSI
DVA	Open > Demographics screen > DVA No. has a value
Age	Open > Demographics screen > DOB
Last Visit	Past Visits screen > Checks most recent date in the list
Postcode	Open > Demographics screen > Postcode

Allergy	Best Practice Mapping Main Patient Screen > Allergies / Adverse Drug Reactions Box
Allergy Recorded	An Allergy Item is present
No Known Allergies	The 'Nil Known' check box is checked
Nothing Recorded	No Allergy Items are present and the 'Nil Known' check box is unchecked

Smoking	Best Practice Mapping Main Patient screen > Open > Alcohol and Smoking History > Tobacco
Daily Smoker	Smoker = Smoker is selected
Irregular Smoker	This option is not captured in Best Practice
Ex Smoker	Smoker = Ex-Smoker is selected
Never Smoked	Smoker = Never smoked is selected
Nothing Recorded	Smoker has nothing selected

Measurements	Best Practice Mapping
BMI	Patient Record > Main Patient Screen > Observations screen
Cholesterol HDL LDL Triglycerides	Lipids data : Patient Record > Main Patient screen > Enhanced Primary Care > Diabetes Cycle of Care screen.
Creatinine	Patient Record > Main Patient screen > Enhanced Primary Care > Diabetes Cycle of Care screen.
Microalbinuria	Patient Record > Main Patient screen > Enhanced Primary Care > Diabetes Cycle of Care screen.
HbA1c	Patient Record > Main Patient screen > Enhanced Primary Care > Diabetes Cycle of Care screen.
BP	Patient Record > Main Patient screen either - opening the Observations screen, or - opening the Enhanced Primary Care > Diabetes Cycle of Care screen.

Pap Smear

The Pap Smear data can be found in Best Practice by opening a Female Patient Record and from the Main Patient screen opening the Cervical Smears screen. If there are smear tests they will be listed by date.

Patients with tick-box 'Not Required' checked are ignored.

Disease	Best Practice Mapping
Condition	Past History screen > Checks the condition selected on history items, where Conditions are selected from a coded list. Refer to Appendix C-1 for a list of conditions mapping to each CAT condition.

Medications	Best Practice Mapping
Medication	Current Rx screen > Checks the Drugs listed as current medications, where Drugs are selected from a coded list. Refer to Appendix C-2 for a list of medications mapping to each CAT medication.
HMR	Current Rx screen > Counts All Drugs listed as current medications

13.4. APPENDIX C-4 – DIABETES SIP DATA MAPPINGS (BP)

Item	Best Practice Mapping
HbA1c	Enhanced Primary Care > Diabetes Cycle of Care
Eye Exam	Enhanced Primary Care > Diabetes Cycle of Care
BMI	Observations
BP	Observations Or Enhanced Primary Care > Diabetes Cycle of Care
Foot Exam	Enhanced Primary Care > Diabetes Cycle of Care
Cholesterol	Enhanced Primary Care > Diabetes Cycle of Care
Triglycerides	Enhanced Primary Care > Diabetes Cycle of Care
HDL	Enhanced Primary Care > Diabetes Cycle of Care
Microalbuminuria	Enhanced Primary Care > Diabetes Cycle of Care
Smoking	Open > Alcohol and Smoking History > Tobacco

14. APPENDIX D – GENIE DATA MAPPINGS

14.1. APPENDIX D-1 - CONDITIONS DATA MAPPINGS (GENIE)

An * next to the CAT category indicates that Genie checks current problems and past history

Note: Where ICPC Codes are not being used, Genie checks the problem text and some patient medications to determine if a condition exists – these are noted against the category.

CAT Category	Genie Condition Mapping (either of the following columns)	
	ICPC Code	**Problem Text**
Diabetes		
	Requires Diabetic box to be ticked and one of the codes or text below:	
> Type II	T90	NIDDM Type 2 Type II Non insulin dependent
> Type I	T89	IDDM Type I Insulin dependent Juvenile onset
> Undefined diabetic	Diabetic box ticked and not in Type I or II above.	
Respiratory		
> Asthma	R96	Asthma
> COPD	R95	COAD COPD Chronic Airways Limitation Chronic Bronchitis Chronic Obstructive Airways Disease Chronic Obstructive Pulmonary Disease

Cardiovascular		
> CHD *	K74 K75 K76 K53 K54	coronary insufficiency myocardial infarct AMI angina Angioplasty Atherosclerotic heart disease Blockage Coronary Artery Coronary CABG Heart Attack IHD Ischaemic Heart Disease Myocardial insufficiency NSTEMI PCTA Preinfarction syndrome
> Myocardial infarction *	K75	myocardial infarct AMI myocardial damage NSTEMI PCTA

> Hypertension	K85 K86 K87	Hypertension High Blood Pressure High BP Hypertensive Labile Blood Pressure Labile Hypertension Malignant Hypertension Primary Hypertension Essential Hypertension Renal Hypertension Renovascular Hypertension Refractory Hypertension
	OR, patient is taking an anti-hypertensive medication as per MIMS Section 2A	

> Heart Failure *	K77	cardiac failure heart failure CCF Cor Pulmonale Left Ventricular failure LHF LVF Pulmonary Oedema RHF Right ventricular failure RVF
> Stroke *	K90	cerebral haemorrhage cerebrovascular accident CVA Haemorrhage intracerebral Haemorrhagic CVA Haemorrhagic stroke intracerebral bleed intracerebral haemorrhage Ischaemic stroke Lacunar stroke Stroke Thrombotic Stroke
Mental Health		
> Depression	P76	Depressive Depression Affective disorder
	OR, patient is taking an anti-depressant medication as per MIMS Section 3D	
> Anxiety	P01 P74	Anxiety
	OR, patient is taking an anxiolytic as per MIMS Section 3B	
> Schizophrenia	P72	Schizophreni

Bone Disease		
> Osteoporosis	L95	osteoporo osteopaenia osteopenia steroid osteopathy

> Osteoarthritis	L83 L84 L89 L90 L91 L92	osteoarthritis osteoarthrosis spondylosis
Other		
> Hyperlipidaemia	T93	Dyslipidaemia High cholesterol Hypercholesterolaemia Hyperlipidaemia Hyperlipoproteinaemia
	OR, patient is taking a lipid-lowering agent as per MIMS Section 2F	

14.1.1. Pregnancy

Pregnancy is not currently collected by Genie.

14.2. APPENDIX D-2 - MEDICATIONS DATA MAPPINGS (GENIE)

CAT Category	Genie Mapping	
	MIMS Class ID	Class Name
ARB	405	Alpha-blockers (quinazoline derivatives)
	838	Alpha-blockers (benzenesulfonamides)
ACE Inhibitors	189	Angiotensin converting enzyme inhibitors
Aspirin	39	Salicylates
Beta Blockers	46	Beta-blockers
Calcium Antagonists	54	Calcium channel blocking agents - phenylalkylamines
	377	Calcium channel blocking agents - dihydropyridines
	501	Calcium channel blocking agents – benzothiazepines
Diuretics	107	Loop diuretics
	162	Thiazide diuretics and related agents
H/glycaemics – Insulin	98	Insulins
H/glycaemics – Oral	329	Sulfonylureas
	47	Biguanides
	163	Thiazolidinediones
Lipid M/fying - Statins	92	HMG-CoA reductase inhibitors
Lipid M/fying - Other	165	Clofibrate
	166	Colestipol Hydrochloride
	168	Gemfibrozil
	169	Probucol
	170	Nicotinic acid
	172	Cholestyramine
	1748	Cerivastatin Sodium
	1810	Avena Sativa Seed
	2428	Avena Sativa Herb Extract
	2484	Avena Sativa Seed Dry
	3105	Policosanol
	3818	Ezetimibe
	4029	Fenofibrate

14.3. APPENDIX D-3 - GENERAL DATA MAPPINGS (GENIE)

Demographic	Genie Mapping
Gender	Patient Record > Edit Patient screen > Sex (M,F,blank)
Ethnicity	Patient Record > Edit Patient screen > Misc > Culture > Drop down list for Aboriginal / TSI
DVA	Patient Record > Edit Patient screen > DVA No. as a value
Age	Patient Record > Edit Patient screen > DOB
Last Visit	Patient Record – Main tab - Contacts panel > Checks most recent date in the list
Postcode	Patient Record > Edit Patient screen > Postcode

Allergy	Genie Mapping Patient Record - Main tab – Allergies Box
Allergy Recorded	An Allergy Item is present
No Known Allergies	The 'Nil Known' option is selected
Nothing Recorded	No Allergy Items are present and the 'Nil Known' option is not selected

Smoking	Genie Mapping Patient Record - Main tab – Smoking tick box
Daily Smoker	Smoker = Smoker is ticked
Irregular Smoker	NA
Ex Smoker	NA
Never Smoked	Smoker = Smoker is not ticked
Nothing Recorded	NA

Measurements
The following measurements can be found in Genie by opening a Patient Record and from the Main tab – Contacts panel viewing the Consultation Record.

BMI
Lipids: HDL, LDL, Triglycerides
Creatinine
HbA1c
BP

Pap Smear
The Pap Smear data can be found in Genie on the Patient Record - Main tab. If there are smear tests the 'Last pap' date will be listed.

Patients marked don't recall are ignored.

Medications - HMR
Medications can be found on the Patient Record – Main tab. HMR counts all the medications listed.

14.4. APPENDIX D-4 - DIABETES SIP DATA MAPPINGS (GENIE)

Diabetes SIP Item	Genie Mapping
HbA1c	Patient Record - Main tab – Contacts panel - view the Consultation Record
Eye Exam	Patient Record – Main tab – Contacts panel – presenting problem = Referral to Ophthalmologist OR eye exam
BMI	Patient Record - Main tab – Contacts panel - view the Consultation Record
BP	Patient Record - Main tab – Contacts panel - view the Consultation Record
Foot Exam	Patient Record – Main tab – Contacts panel – presenting problem = Referral to Podiatrist OR foot exam OR feet exam
Cholesterol	Patient Record - Main tab – Contacts panel - view the Consultation Record
Triglycerides	Patient Record - Main tab – Contacts panel - view the Consultation Record
HDL	Patient Record - Main tab – Contacts panel - view the Consultation Record
Microalbuminuria	Patient Record - Main tab – Contacts panel - view the Consultation Record
Smoking	Patient Record - Main tab – Smoking tick box