Information Management in General Practice

Using PEN Clinical Audit Tool

- Training Workbook for General Practice -

Written by Noel Stewart
March 2010
Pen Clinical Audit Tool

Acknowledgments:
These notes have been prepared by Noel Stewart of North East Valley Division of General Practice as a guide to using the PEN Clinical Audit Tool. They can be used in conjunction with the User Guide provided by PEN Computer Systems.

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Version history of notes

<table>
<thead>
<tr>
<th>Version No.</th>
<th>Date</th>
<th>Major changes/developments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>August 1, 2009</td>
<td></td>
</tr>
<tr>
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</tr>
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<td>Update diabetes exercises</td>
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Part 1 – Overview
Learning Objectives
This training workbook is provided to assist you to analyses clinical data using the PEN Clinical Audit Tool. On completion of this module participants should be able to use the CAT to:
- target patients with particular needs or those with specific health risk profiles
- highlight areas where data cleansing is needed, especially in the correct coding of diagnoses
- understand the concept of “rubbish in, rubbish out” and to understand that better clinical outcomes for patients is dependent on “clean” data
- understand that “data cleansing” is an ongoing process
- assist in making patient records more complete, such as increased recording of allergies, smoking and alcohol

Why use the PEN Clinical Audit Tool (CAT)
The search functions and analytical capabilities of clinical software such as Medical Director are not powerful enough for many of the proactive tasks that need to be undertaken to improve patient care and outcomes. The CAT is particularly good at providing information so you can use it to:
- be a business management tool - target patients with particular needs or those with specific health risk profiles where there are specific item numbers
- target “at risk” groups
- improving clinical data which in turn leads to better patient outcomes
- create accurate disease and other registers
- assist in meeting accreditation requirements

What type of course is this?
Ideally this is a leader led “hands-on” training course aiming to empower the nurse in the general practice setting. Whether you work alone, in pairs or threes, is dependent on the number of computers available. The course is flexible enough to be a 2 – 4 hour workshop.

The training book is also designed to be used by an individual working their way through the exercises.

Equipment/Resources needed
- Laptop or desktop computer with a current version of PEN Clinical Audit Tool
- Data projector for the trainer/instructor
- Internet access for everyone would be an advantage but not necessary. The trainer should have internet access.
- This workbook/Presentation
- PEN Clinical Audit Tool User Manual

Please note:
- The instructions may vary as the screen shots are from the PEN CAT. There may be some variation in the instructions or different menus as this program is continually being upgraded
- The course uses PEN CAT but the lessons learned apply to any of the other clinical audit tools
Part 2 – Introduction to the Clinical Audit Tool

What is it?
The PEN Computer Systems Clinical Audit Tool (CAT) is a clinical information system that supports quality improvement in information management and enhances the business capability of General Practice.

It is a clinical information system that puts the GP, nurse and practice staff in the driving seat where they can target patients with particular needs or those with specific health risk profiles.

What does it do?
The CAT identifies patient demographic and clinical cohorts and produces pie and bar charts according to the criteria you select. By clicking on a wedge or bar of the chart you can get a list of patient names that can be immediately printed or exported as a pdf file or an Excel spreadsheet.

How does it work?
The CAT is an extraction tool that takes a “snapshot” of your clinical data. It then allows you to analyse that data. It can highlight areas where improvements are needed (such as better recording of allergy or smoking status) or where data needs to be “cleansed” (such as where no DOB or gender is recorded) as well as cross referencing diseases, medications and particular demographic groupings. It also includes a medication count where you can identify those patients on x number of medicines. It is very easy, for example to identify all patients over sixty on five or more medications. These patients can then be targeted, if appropriate, for a Home Medicines Review.

Collecting the first data set
Click on the Collect button – this could take some time to collect the Medical Director, Best Practice, ZedMed or Genie data. This is known as an “extract” and is the equivalent of a “snapshot” of your clinical software data at a given time.

Once the “Collect” is complete a graph of the demographic breakdown of your practice will appear.

Please note:
There is no need to press the Collect button again while completing the exercises below.

The next time you open PCS Clinical Audit you will click on the View Extracts button and then click once on the most recently displayed extract.

You only do a Collect every once in a while – you work on the one set of data (the “extract” and once improvements are made you do another Collect to verify your improvements.
Pen Clinical Audit Tool

Part 2 – Using the Clinical Audit Tool
Filling out the “CAT first report template”

Across the top of the screen is a series of tabs that take you to the different areas of the program.

In the exercises below you will be using some of these items.

Total Population Figures

1. Open Clinical Audit, then click on the View Extracts button and then click once on the date of the most recent extract.

Fill out all the Total population fields in the template on Page 4, e.g. all the Allergy, Gender, Smoking and Diabetes Prevalence as well as ATSI numbers.

Active Patient Population Figures

2. Click on the View Filter button and then under Activity select Active (3x < 2 years).

3. Then click on Recalculate (Top right corner).

4. Click on Hide Filter - this allows you have more display space on the screen.

You can now fill out the Active Patient figures into the template (next page).
First Report template
Total population = all patients
Active population = seen 3 times in last 2 years

<table>
<thead>
<tr>
<th></th>
<th>Whole Practice</th>
<th>GP 1</th>
<th>GP 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total population</strong></td>
<td>00</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Active population</strong></td>
<td>00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Gender not recorded

<table>
<thead>
<tr>
<th></th>
<th>Whole Practice</th>
<th>GP 1</th>
<th>GP 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total population</strong></td>
<td>00</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Active population</strong></td>
<td>00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. Allergy Nothing Recorded

<table>
<thead>
<tr>
<th></th>
<th>Whole Practice</th>
<th>GP 1</th>
<th>GP 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total population</strong></td>
<td>%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Active population</strong></td>
<td>%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. Smoking – nothing recorded

<table>
<thead>
<tr>
<th></th>
<th>Whole Practice</th>
<th>GP 1</th>
<th>GP 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total population</strong></td>
<td>%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Active population</strong></td>
<td>%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. Recording of ATSI patients

<table>
<thead>
<tr>
<th></th>
<th>Whole Practice</th>
<th>GP 1</th>
<th>GP 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total population</strong></td>
<td>00</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Active population</strong></td>
<td>00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5. Diabetes Prevalence

<table>
<thead>
<tr>
<th></th>
<th>Whole Practice</th>
<th>GP 1</th>
<th>GP 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total population</strong></td>
<td>%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Active population</strong></td>
<td>%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>No. of Undefined diabetics - Active</strong></td>
<td>%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Expected % Diabetes in postcode area</strong></td>
<td>5.6%</td>
<td>5.6%</td>
<td>5.6%</td>
</tr>
<tr>
<td><strong>Diabetics 65+, 8+ medications</strong></td>
<td>00</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Diabetics 65+, 5+ medications</strong></td>
<td>00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6. Diabetes “at risk” *

<table>
<thead>
<tr>
<th></th>
<th>Whole Practice</th>
<th>GP 1</th>
<th>GP 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>40-49 year olds</strong></td>
<td>00</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>50+ year olds</strong></td>
<td>00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Put in the numeric (000) or % values (%) as indicated.
* Diabetes “at risk” = active patient, hypertension, not on diabetic medications, BMI = o’weight or obese

North East Valley Division of General Practice
Completing the First Report Template

Gender not recorded
1. Click on the Demographics tab.
2. Fill out the numeric value, not %.
3. Click on the View Pop. button to see the patient names – this can then be printed or saved to a file (pdf or Excel).

Allergy
1. Click on the Allergies tab.
2. Click on the Show Percentage box (is it below 10%?) – record the Nothing recorded figures in the template.
3. Click on the Nothing recorded wedge of the pie chart.
4. Click on the Export button to reveal the patient names – you can print or save this list.

Smoking exercise
1. Click on the Smoking tab.
2. Click on the Show percentage box.
3. Record the % of the pie chart wedge which shows the Age>10 Nothing recorded.
4. If you double click on that wedge of the pie chart this is a shortcut to identify the patients.

ATSI patients
1. Click on the View Filter button and then under Ethnicity check the ATSI box.
2. Click on Recalculate (Top right corner).
3. Write in the number – do this for both the total and active patients.
4. Once complete remove the tick from the ATSI box and click on Recalculate.

Diabetes Prevalence
1. Click on the Disease tab.
2. Click on Recalculate – this will show the % for each of the diseases.
3. Add the 3 figures for Diabetes Type II, Diabetes Type I and Undefined Diabetic.
4. Double click on the Undefined Diabetics bar chart – this will identify those patients. By printing the list someone in the practice (a nurse) can be delegated to redefine those patients as Type I or Type II in the clinical software.

Diabetes on 8+ Medications
1. Click on Show Filter if necessary and then click on the Conditions tab.
2. Place a tick in the Diabetes box and then Hide Filter.
3. Click on the HMR tab – record the number of patients on 8+ medications.
4. Click on the Show percentage box - record the % of patients on 8+ medications.
5. For patients on 5+ medications repeat steps above but add the numbers (and %) of 5 meds, 6 meds, 7 meds and 8+ meds.

Reporting by individual doctor
1. Click on the Providers tab.
2. Remove the ticks from all boxes except the second one and Recalculate.
3. Fill out the template for the first GP.
4. Repeat the process for the 2nd GP.
### Example of Individual GP Reports

**Collection Date:** October 2008 to December 2009

<table>
<thead>
<tr>
<th></th>
<th>Whole Practice</th>
<th>GP 1</th>
<th>GP 2</th>
<th>GP 3</th>
<th>GP 4</th>
<th>GP 5</th>
<th>GP 6</th>
<th>GP 7</th>
<th>GP 8</th>
<th>GP 9</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Allergy Recorded</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total population</td>
<td>13697</td>
<td>2488</td>
<td>1996</td>
<td>921</td>
<td>1718</td>
<td>1839</td>
<td>936</td>
<td>604</td>
<td>686</td>
<td>43</td>
</tr>
<tr>
<td>Nothing recorded</td>
<td>28.8%</td>
<td>16.4</td>
<td>36.5</td>
<td>28.1</td>
<td>51.2</td>
<td>9.4</td>
<td>21.5</td>
<td>24.3</td>
<td>4.1</td>
<td>30.2</td>
</tr>
<tr>
<td>Active population</td>
<td>9576</td>
<td>1866</td>
<td>1628</td>
<td>684</td>
<td>1192</td>
<td>1445</td>
<td>795</td>
<td>397</td>
<td>514</td>
<td>30</td>
</tr>
<tr>
<td>Nothing recorded</td>
<td>17.7</td>
<td>29.5</td>
<td>28.5</td>
<td>19.7</td>
<td>39.9</td>
<td>4.2</td>
<td>13.8</td>
<td>14.9</td>
<td>0.1</td>
<td>10.0</td>
</tr>
</tbody>
</table>

| **2. Gender not recorded** | |      |      |      |      |      |      |      |      |      |
| Total population     | 141            | 28   | 11   | 13   | 21   | 6    | 12   | 5    | 6    | 0    |
| Active population    | 35             | 5    | 2    | 3    | 11   | 2    | 7    | 0    | 3    | 0    |

| **3. Smoking – nothing recorded** | |      |      |      |      |      |      |      |      |      |
| Active population over 16 (Active (3x > 2 years)) | 27% | 15.7 | 63.9 | 60.4 | 76.4 | 11.5 | 44.6 | 41.0 | 21.2 | 39.7 |

| **4. Recording of ATSI patients** | |      |      |      |      |      |      |      |      |      |
| Total population      | 0              | 0    | 0    | 1    | 0    | 0    | 0    | 0    | 0    | 0    |
| Active population     | 1              | 0    | 0    | 1    | 0    | 0    | 0    | 0    | 0    | 0    |

| **5. Diabetes Prevalence** | |      |      |      |      |      |      |      |      |      |
| Total population      | 3.5%           | 2.9  | 2.8  | 1.4  | 8.8  | 5.1  | 2.5  | 1.2  | 4.2  | 4.7  |
| Active population     | 4.6%           | 3.8  | 3.2  | 1.9  | 11.7 | 6.2  | 2.9  | 1.8  | 5.5  | 6.7  |
| Diabetics 65+, 8+ medications (Active (3x > 2 years)) | 60.9% | 61.4 | 74.2% | 93.6% | 50% | 77.8% | 63.6% | 81.3% | 60% | 62.5% |
| Diabetics 65+, 5+ medications (Active (3x > 2 years)) | 90.9% | 88.7 | 83.6% | 92.9% | 90.8% | 100% | 100% | 80% | 75% | 100% |

| **6. Diabetes “at risk” *” | |      |      |      |      |      |      |      |      |      |
| 40-49 year olds       | 94             | 5    | 2    | 3    | 0    | 12   | 2    | 1    | 2    | 0    |
| 50+ year olds         | 288            | 29   | 55   | 6    | 8    | 131  | 10   | 6    | 17   | 1    |
### Example of Cumulative Pen Clinical Audit Reports

1. **Allergy Recorded**

<table>
<thead>
<tr>
<th></th>
<th>October 2008</th>
<th>March 3 2009</th>
<th>April 21 2009</th>
<th>August 2009</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total population</strong></td>
<td>7127</td>
<td>6993</td>
<td>8019</td>
<td>7138</td>
</tr>
<tr>
<td>Nothing recorded</td>
<td>22.6%</td>
<td>14.8%</td>
<td>23.3%</td>
<td>11.1%</td>
</tr>
<tr>
<td><strong>Active population</strong></td>
<td>5439</td>
<td>5530</td>
<td>5558</td>
<td>5086</td>
</tr>
<tr>
<td>Nothing recorded</td>
<td>15.5%</td>
<td>8.7%</td>
<td>7.6%</td>
<td>4%</td>
</tr>
</tbody>
</table>

2. **Gender not recorded**

<table>
<thead>
<tr>
<th></th>
<th>Total population</th>
<th>Active population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total population</td>
<td>84</td>
<td>0</td>
</tr>
<tr>
<td>Active population</td>
<td>26</td>
<td>0</td>
</tr>
</tbody>
</table>

3. **Smoking – nothing recorded**

| Total population over 16 (Active (3x > 2 years)) | 33.8% | 17.4% | 14.2% | 8.4% |

4. **Recording of ATSI patients**

| Total population | 3   | 3   | 3   | 3   |
| Active population| 2   | 3   | 3   | 3   |

5. **Diabetes Prevalence**

| Total population | 4.5% | 4.8% | 4%  | 4%  |
| Active population| 5.8% | 6.0% | 5.6%| 5.7%|
| % Diabetes in postcode area | 5.6% | 5.6% | 5.6% | 5.6% |
Immunisations
This has reports for Influenza, Pneumococcal, HPV (Gardasil) and Pertussis.

1. Gardasil – this provides graphs on which patients have had 0, 1, 2 or 3 injections – this makes it easy to recall those patients who have not completed the course of 3 injections.

![Graph showing Gardasil immunisation doses](image)

2. Influenza, Pneumococcal - display the most recent date the patient had the immunisation and the report can identify which patients have not yet been immunised.

3. Pertussis – works the same way as Influenza and Pneumococcal above.

Exercises
1. Gardasil – find those patients who have not completed the 3 injection course. Identify those eligible women who have not commenced the course of injections
   General Filter – Female, 18-27, Active
   [Recalculate]
   Immunisation tab >Gardasil

2. Fluvax – identify those patients who have haven’t had their Fluvax this year
   General Filter – Age 65+, Active
   [Recalculate]
   Immunisation tab >Influenza
   Nothing recorded slice
Standard reports
This is a series of statistical reports where no identified patient information is given. Click the **Summary Report Card**.

1. **APPC report** – for use of those practices involved in the Collaboratives program with reports on diabetes and CHD (see also Section 5 pp)

2. **NPI Report** – information required by divisions for their annual reporting on National Performance Indicators to the Commonwealth.
   a. **CDM 2** – Chronic Disease Management - the number of patients within the division with diabetes – last recorded HbA1c within the last 12 months
   b. **CDM 3** – Chronic Disease Management – the number of patients within the division with CHD whose last blood pressure within the previous 12 months was less than 13/80
   c. **PREV 4** – the number and proportion of female patients aged 20-69 whose patient record shows they have had a Pap smear during the previous 2 year period

3. **Summary Report Card** - this report provides an instant snapshot of practice data quality across most of the graphs provided. The report can be exported to Excel so the user can create a month by month set of figures if they choose. The user can also use the filters to target specific populations or by provider.

---

**CAT Summary Report Card**

<table>
<thead>
<tr>
<th>Measure</th>
<th>Total Population</th>
<th>Active Population *&lt;sup&gt;1&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Demographics</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Population</td>
<td>847</td>
<td>783</td>
</tr>
<tr>
<td>Data of Birth Not Recorded</td>
<td>0.00 %</td>
<td>0.00 %</td>
</tr>
<tr>
<td>Gender Not Recorded</td>
<td>0.00 %</td>
<td>0.00 %</td>
</tr>
<tr>
<td>ATSI Recorded</td>
<td>0.00 %</td>
<td>0.00 %</td>
</tr>
<tr>
<td>DNA Recorded</td>
<td>164</td>
<td>103</td>
</tr>
<tr>
<td><strong>Allergies</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nothing Recorded</td>
<td>42</td>
<td>16</td>
</tr>
<tr>
<td>10+ and Nothing Recorded</td>
<td>83</td>
<td>2.04 %</td>
</tr>
<tr>
<td><strong>Height and Weight Measures</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Height Only Not Recorded</td>
<td>104</td>
<td>12.16 %</td>
</tr>
<tr>
<td>Weight Only Not Recorded</td>
<td>1</td>
<td>0.12 %</td>
</tr>
<tr>
<td>Neither Height nor Weight Recorded</td>
<td>395</td>
<td>46.45 %</td>
</tr>
<tr>
<td>BMIs Completed (Both Recorded)</td>
<td>357</td>
<td>42.15 %</td>
</tr>
<tr>
<td><strong>Conditions</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Underfied Diabetes</td>
<td>2</td>
<td>0.02 %</td>
</tr>
<tr>
<td>Pregnancies Currently Ovov</td>
<td>0.00 %</td>
<td>0.00 %</td>
</tr>
<tr>
<td><strong>H/N</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patients with &gt;= 5 medications</td>
<td>785</td>
<td>90.97 %</td>
</tr>
<tr>
<td><strong>Pap Smear Population</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eligible Females aged 19-70</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Pap Smear Not Recorded</td>
<td>0.00 %</td>
<td>0.00 %</td>
</tr>
<tr>
<td>Pap Smear Date 4 years ago</td>
<td>0.00 %</td>
<td>0.00 %</td>
</tr>
<tr>
<td>Pap Smear Date 3.4 years ago</td>
<td>0.00 %</td>
<td>0.00 %</td>
</tr>
<tr>
<td>Pap Smear Date 2.5 years ago</td>
<td>0.00 %</td>
<td>0.00 %</td>
</tr>
</tbody>
</table>

---

**At Risk Population – Diabetes / CHD / 45-59**

<table>
<thead>
<tr>
<th>Measure</th>
<th>Total At Risk Population</th>
<th>At Risk %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total At Risk Population</td>
<td>355</td>
<td>343</td>
</tr>
</tbody>
</table>

**Lipids for At Risk**

<table>
<thead>
<tr>
<th>Measure</th>
<th>Lipids for At Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cholesterol Not Recorded</td>
<td>104</td>
</tr>
<tr>
<td>HDL Not Recorded</td>
<td>179</td>
</tr>
<tr>
<td>LDL Not Recorded</td>
<td>255</td>
</tr>
<tr>
<td>Triglycerides Not Recorded</td>
<td>104</td>
</tr>
</tbody>
</table>

**Creatinine for At Risk**

<table>
<thead>
<tr>
<th>Measure</th>
<th>Creatinine</th>
</tr>
</thead>
<tbody>
<tr>
<td>creatinine Not Recorded</td>
<td>36</td>
</tr>
</tbody>
</table>

**Triglycerides Not Recorded**

<table>
<thead>
<tr>
<th>Measure</th>
<th>Triglycerides</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triglycerides Not Recorded</td>
<td>48</td>
</tr>
</tbody>
</table>

**Total 18+ Population**

<table>
<thead>
<tr>
<th>Measure</th>
<th>Total 18+ Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total 18+ Population</td>
<td>847</td>
</tr>
</tbody>
</table>

**BP (18+ over)**

<table>
<thead>
<tr>
<th>Measure</th>
<th>BP (18+ over)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total BP Not Recorded</td>
<td>114</td>
</tr>
</tbody>
</table>

**Diabetes Population**

<table>
<thead>
<tr>
<th>Measure</th>
<th>Diabetes Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Diabetes Population</td>
<td>145</td>
</tr>
</tbody>
</table>

**HbA1c (Diabetes only)**

<table>
<thead>
<tr>
<th>Measure</th>
<th>HbA1c (Diabetes only)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetes and HbA1c Not Recorded</td>
<td>11</td>
</tr>
</tbody>
</table>

**Diabetes SJP (Diabetes only)**

<table>
<thead>
<tr>
<th>Measure</th>
<th>Diabetes SJP (Diabetes only)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HbA1c &gt; 12 mths or Not Recorded</td>
<td>36</td>
</tr>
</tbody>
</table>

**Total**

<table>
<thead>
<tr>
<th>Measure</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>total cards</td>
<td>108</td>
</tr>
</tbody>
</table>

---

**North East Valley Division of General Practice**
Pen Clinical Audit Tool

Cross-Tabulation
This is very exciting!!! A cross tabulation report will provide the ability to find patients who appear on more than one graph - this will assist with the identification of target population risk groups.

For example: Create a list of diabetes Type II patients that are daily smokers and overweight or obese.

1. Click on the Smoking tab and select: Daily smoker from the pie chart
2. Click on the Disease tab and select Diabetes Type II from the bar chart – you will notice how the tabs are marked with a dot.

3. Click on the BMI tab and select the overweight, obese and morbidly obese chart legends
4. Click on the Report button (this is new – found near top left of screen) – this will list the patients that fit the criteria.
5. Add additional criteria if you wish, such as high blood pressure.
6. Print or Save the report.

To clear the report:
Simply click on the Clear Filters button (top right of screen).

Ensure there is a tick in the Clear all Report Selections and then press OK.
**Part 3 – Additional activities using CAT**

Understand your practice population. What is the disease prevalence in the practice population? Understand the “skill” or “interest” mix of your GPs and nurses. For example, target a specific area such as diabetes and do it well. Build up your skill areas and later, move to another area.

**Diabetes exercises**

1. **Finding the patients with “Undefined diabetes”**
   - **Disease** tab – Undefined Diabetes
   - Double click on Undefined Diabetes bar chart to identify patients

2. **Diabetes no BP recorded**
   - **View Filter**
   - **Active**
   - **Conditions**: Diabetes Yes
   - [Recalculate]
   - **Measures**: BP - None recorded

3. **Type II Diabetes who are underweight**
   - are they LADA?, Type I
   - **Conditions**: Diabetes Yes
   - [Recalculate]
   - **Measures**: BMI - underweight

4. **Diabetes Hba1c Control**
   - **View Filter**
   - **Conditions**: Diabetes Yes
   - [Recalculate]
   - **Hba1c Tab** - identify those with no Hba1c recorded
   - **Hba1c Tab** - identify those with poor control

5. **Diabetes and smoking**
   - **Active**
   - **Conditions**: Diabetes – Yes
   - **Smoking tab** – Daily smoker
   - **Measures tab** – BMI overweight to morbidly obese

6. **Diabetic patients who are hypertensive**
   - **View Filter**
   - **Conditions**: Diabetes Yes
   - **Conditions**: Cardiovascular  ✔ Hypertension
   - [Recalculate]

7. **Diabetes and poorly controlled lipids**
   - **Active**
   - **Conditions**: Diabetes Yes
   - [Recalculate]
   - **Pathology**: Lipids - Cholesterol
8. Which diabetic patients have depression – can be given a mental health care plan
   View Filter
   Conditions: Mental Health ☑ Depression
   [Recalculate]

9. Finding patients “at risk” of developing diabetes
   View Filter
   Conditions: Diabetes No
   Medications: antidiabetic agents No
   Conditions: Cardiovascular – Hypertension
   [Recalculate]
   BMI: overweight to morbidly obese. (Add age ranges 40-49 for item 713 – referral to a Lifestyle Modification Program)

10. Which patients with CVD and/or Diabetes have a BMI greater than 30?

11. Identify diabetic patients on 5+ medicines and over 65 – can be referred for a HMR. Do the search by provider to direct the patients to their usual doctor.

**Women’s health**

1. Identify female patients over 18 who are eligible for a pap smear. If too many to manage, break up into age groups. Designate a staff member (nurse) to contact patients.
   General Filter: Female, Age 20-69, Active
   [Recalculate]
   Pap Smear tab – Click No Pap Smear recorded slice

**Other**

What else?
Part 4 – Benchmarking
Comparing the record keeping by individual GP

In order to measure the improvements accurately it is an absolute imperative that the practice clinical information is “clean” and all members of the general practice team are “swimming in the same direction” to achieve improvements in the quality of practice data.

One way to help resolve these issues is to encourage benchmarking by using the PEN Clinical Audit Tool to create a table every month that displays the statistical analysis for every GP in the practice. This can be presented at a team meeting for discussion.

Each month a personal copy of the table can be placed in an envelope and given to each GP - all the other GPs are de-identified. A completely de-identified copy of the table could be pinned to the staffroom noticeboard. This need not be threatening as it encourages the “under-performing” GPs to come into line with better recording of patient clinical data. In short, a measurable improvement in the quality of the practice data can be achieved in a short period of time whilst also encouraging the GPs to be enthusiastic about their improved clinical recording.

Exercise
1. Complete the table on the next page – if time is a problem just complete the Whole Practice and the GP1 columns.

Please note: expanded versions of these templates are available for download on the NEV website

<table>
<thead>
<tr>
<th>Report by Individual GP</th>
<th>Whole Practice</th>
<th>GP1</th>
<th>GP2</th>
<th>GP3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Allergy - nothing recorded</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Active patients</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>(Active (3x &gt; 2 years)</td>
<td>%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Smoking – nothing recorded</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Active patients Age&gt;10 Nothing recorded</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>(Active (3x &gt; 2 years)</td>
<td>%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Diabetes prevalence</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Active patients</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>(Active (3x &gt; 2 years)</td>
<td>%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undefined diabetics</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>(Active (3x &gt; 2 years)</td>
<td>%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No HbA1c recorded</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>(Active (3x &gt; 2 years)</td>
<td>%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HbA1c &gt;8%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>(Active (3x &gt; 2 years)</td>
<td>%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Other measurements</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BP not recorded</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>(Active (3x &gt; 2 years)</td>
<td>%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMI not recorded</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>(Active (3x &gt; 2 years)</td>
<td>%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waist not recorded</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>(Active (3x &gt; 2 years)</td>
<td>%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pap smear not recorded</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>(Active (3x &gt; 2 years)</td>
<td>%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Pen Clinical Audit Tool

Setting targets
By filling out the following table at a clinical staff meeting you will be able to encourage both the practice and the individual doctor to set targets for the following month – in this way you have a month by month way of measuring improvement in record keeping.

Suggested targets for next month: (Replace the % figures below with realistic and achievable targets)

<table>
<thead>
<tr>
<th>Report by Individual GP</th>
<th>Whole Practice</th>
<th>GP1</th>
<th>GP2</th>
<th>GP3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allergy - nothing recorded</td>
<td>5%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>Smoking – nothing recorded</td>
<td>15%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>Undefined diabetics</td>
<td>0%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>BP Not recorded</td>
<td>35%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>No waist recorded</td>
<td>60%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
</tbody>
</table>

Measuring improvements
You can use the following table for both whole practice and individual GP to record cumulative progress, or lack thereof of the suggested measurements. A practice is quite free to add and/or subtract different measurements.

My Practice – Cumulative Report by Practice or Individual GP using PEN Clinical Audit Tool
Report on active patients only – 3 visits in 2 years

Extract Date:

<table>
<thead>
<tr>
<th>Whole of Practice or name of Individual GP</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Allergy - nothing recorded</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Active patients</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Active (3x &gt; 2 years)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Smoking – nothing recorded</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Active patients over 16</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Active (3x &gt; 2 years)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Diabetes prevalence</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Active patients</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Active (3x &gt; 2 years)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undefined diabetics</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Active (3x &gt; 2 years)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No HbA1c recorded</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Active (3x &gt; 2 years)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HbA1c &gt;8%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Active (3x &gt; 2 years)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Other measurements</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BP not recorded</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Active (3x &gt; 2 years)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waist not recorded</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Active (3x &gt; 2 years)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No pap smear recorded</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Active (3x &gt; 2 years)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Section 5 – Other Features

Making CAT available to multiple users

In many cases when CAT was installed, it was on the C drive of a single PC and all extracts were saved only to that PC. You are however, able to save the extracts to the server and then access those extracts from any PC on the network.

1. On the C drive of the server and create a folder called ClinicalAudit.
2. Open Clinical Audit on your local PC and from the Edit menu select Preferences.
3. Next to Extract Directory click on the Browse button and navigate your way to the ClinicalAudit folder on the server and then click OK (you may want to copy any previous extracts from the ClinicalAudit folder on your C drive to the ClinicalAudit folder on the server.
4. You need to install CAT on the other computers. Instructions to do this are here. Make sure on the new installations you change the extract folder to the server as outlined in points 2-3 above.

Saving a search

This is best shown by example. We will create a search for all active CHD patients, not on beta-blockers or diuretics, and then save the search.

1. General Tab: Last Visit = Active
2. Conditions Tab: Cardiovascular = Yes
3. Medications Tab: Beta-blockers/Anti-hypertensives = No; Diuretics = No
4. Click on Recalculate
5. Click on the Saved Filters tab and then click on the Save New Filter
6. Give the filter a name.

Retrieving a Saved Search

1. Click on the Saved Filters tab
2. Click once on the Filter Name
3. Click on Recalculate button
Filter results by date
This is best shown by example. We will create a search for patients with diabetes who have had results in the last 12 months.

1. General Tab: Last Visit = Active2
2. Conditions tab: Diabetes = Yes
3. Results tab: <= 6 months
4. Click on Recalculate
5. Click on the HbA1c tab and you can identify the patients with No HbA1c Recorded – you may wish to compare this with last recorded result in last 24 months.