



The Royal Australian  
College of General  
Practitioners

QA&CPD Category 1 activity  
*Rapid PDSA cycles – improving  
practice processes for the care of  
patients with diabetes*

**QA&CPD Category 1 activity**  
**Rapid PDSA cycles – improving practice processes**  
**for the care of patients with diabetes**

**Disclaimer**

These activities have been designed for information purposes only and are intended to assist practices to implement changes in practice systems which improve the care of patients with type 2 diabetes.

Further clinical information should be obtained from the RACGP publication Diabetes management in general practice: Guidelines for type 2 diabetes.

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# QA&CPD Category 1 activity

## Rapid PDSA cycles – improving practice processes for the care of patients with diabetes

### Introduction

This activity is designed to support general practitioners and practice teams in undertaking a Category 1 QA&CPD activity using the PCS Clinical Audit Tool™ (CAT) to implement a rapid ‘plan, do, study, act’ (PDSA) cycle based on the RACGP, Diabetes Australia publication *Diabetes management in general practice guidelines*.

It is designed as a guide only, and participants may choose to undertake the cycles as outlined, or identify other topics or change principles based on their own needs or the results of the study.

In order to obtain 40 Category 1 points for each GP involved, the following should be completed and submitted to your state QA&CPD unit for adjudication:

- Rapid PDSA application form (at completion of module). The PDSA application form includes the completion of the three PDSA cycle forms and individual GP review form
- PDSA cycle forms (minimum three)
- Individual GP review form (one per GP participant).

Please read the application guide before commencing to ensure that you meet the necessary requirements. Practice nurses and practice managers participating in the activity should contact the Australian Practice Nurses Association or the Australian Association of Practice Managers regarding continuing professional development points.

### What is quality improvement?

Since Berwick’s landmark 1989 paper on continuous quality improvement (CQI), as applied to the healthcare setting, there has been awareness that the processes within a general practice setting affect patient outcomes. There is now an acceptance that repeated measurement of both process and outcomes helps to identify current performance and areas of concern.

Berwick describes a number of ‘steps’ in a model for quality improvement:

- identifying what is to be accomplished
- measuring change and recognising whether this change constitutes improvement
- identifying potential alternatives to current practice
- the ability to test real changes on a small scale.

This flexible model recognises a number of important elements for general practice, including the range of diverse practice styles and varying demographic areas within which general practices operate. The nonstandard practice size, including differing numbers of GPs, practice nurses and practice managers and a range of other influencing factors, mean wholesale changes across general practice are not possible. Each general practice needs to be able to explore its individual systems to find out what makes it tick.

One of the elements of the CQI model that has been lacking in general practice is the ability to measure improvement efficiently and effectively against a number of indicators. Self assessment of performance, while necessary, often

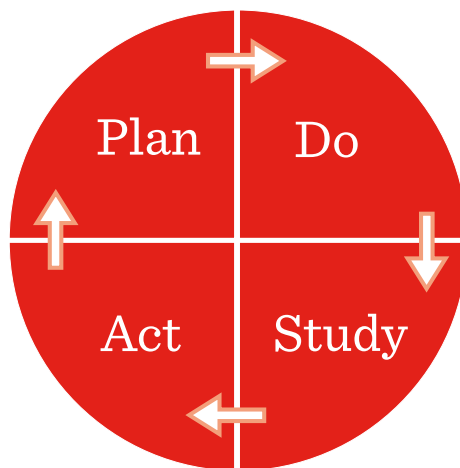
overestimates performance and may be neither accurate nor sufficient.

The current trend toward audit tools, such as the CAT and the Canning Division tool, are beginning to increase

practices' awareness of practice population data and its utility in CQI. By using a PDSA cycle in conjunction with an audit tool, practices can easily develop reflective CQI processes.

## What is a rapid PDSA cycle?

The PDSA cycle (*Figure 1*) uses simple measurements to monitor the effects of change over time. The cycle encourages starting with small changes, which can be built into larger improvements via successive cycles. The process emphasises an unambitious start, reflecting and building as learning occurs. A PDSA cycle can be used to test suggestions for improvement quickly and easily based on existing ideas and research, or through practical ideas that have been proven to work elsewhere. Not requiring wholesale change, and being able to complete cycles over relatively short periods of time (eg. 1 month), work well within the general practice setting.



**Figure 1. The PDSA cycle**

### Plan

The first step in a PDSA cycle is to figure out what you want to do. What do you wish to improve, observe or change? Plan the test or an observation and what data you will need to measure its impact.

- State the aim of the test or observation
- Predict the possible outcome
- Develop a plan to test the changes.

Once you have decided on the issue you would like to explore, give some thought to:

- which actions need to happen (eg. recall, reminders, practice brief, training) and in what order?
- who will be responsible for each step?
- who needs to be informed or consulted?

Berwick DM. Continuous improvement as an ideal in health care. *New England Journal of Medicine* 1989;320:53–56.

Grol R. *Improving practice. A systematic approach to implementation of change in patient care.* Oxford: Elsevier Science, 2004.

- How will you measure the change (eg. CAT, Canning Tool, *ad hoc* search)?
- What do you expect/hope to see as a result of the change?
- How will you know whether the change has worked?

Some example of research questions are:

- How do I improve the rate of Pap tests among eligible female patients?
- What items do I need to complete in order to claim an Service Incentive Payment (SIP) for my patients with diabetes?
- Do I have patients that would benefit from a Home Medications Review (HMR)?
- Are my asthma patients who use inhalers receiving a yearly flu vaccination?

### Do

Once you have planned the change, the second step is to undertake the test on a small scale. This may be an activity with just a sole patient or one process within the practice. It is important that the 'do' stage is kept as short as possible, although there will be some changes that can only be measured over a longer period of time.

This stage allows you to:

- undertake the test
- document the process, taking note of practice staff and patients' reactions, any problems or unexpected observations
- collect all measurements, data and observations.

This minor test is undertaken to:

- substantiate the probability that a change in this area is possible
- decide whether the change will produce an acceptable outcome
- decide on the scope of the change and if it is viable in the actual practice setting
- decide if a combination of changes is required to achieve the outcome
- understand the cost, resources and patient/practice staff impact of changes
- enable a smooth transition to any changes implemented.

### Study

The third step is to review and analyse the data and observations. You will need to:

- set aside time for all persons involved in the process to discuss the outcomes of the small scale test
- review all data and observations against expected outcomes. Did the practices' expectations match what really happened?
- consider what could be done differently
- reflect on what has been learnt
- reach a consensus on subsequent action(s).

### Act

The 'act' step is to make any necessary adaptations or improvements, and acknowledge and celebrate successes. It allows the practice to refine the changes against any broader knowledge achieved from the small scale test, or if further change is needed, to use the information to enter another planning cycle.

Small promising changes are tested in a rapid series of PDSA processes. These will refine the methodology and determine the most promising results.

## What is the PCS Clinical Audit Tool™?

The PCS Clinical Audit Tool™ (CAT) is a population health software program that enables general practice staff to look at the totality of their practice population. By doing so, general practices can quickly and easily identify patient groups that may not be getting optimal care and use this information to better direct practice activities. In addition, practices can identify missing data or patients at risk, enabling targeted care.

For example, a practice can quickly identify how many eligible female patients are overdue for, or have never had, a Pap test; how many patients with diabetes do not have an HbA1c on record; or a range of other practical clinical or business administrative questions. These patients can then be recalled and/or managed using the practice's standard procedures.

CAT works with Medical Director (2 and 3), Best Practice, Genie and Zedmed. It takes a 'snapshot' of patient data and allows you to view it via easy-to-read pie and line charts, and reports.

In addition to CAT, there are a range of other population health tools on the market. This Category 1 activity assists the practice in using CAT to complete rapid PDSA cycles. While this activity provides a guide to using CAT, it can be also undertaken using similar tools or adapted to your clinical software system.

## Rapid PDSA cycle

This example of a rapid PDSA cycle will take the practice through some data cleansing and administrative functions that will allow practice data to be used in a range of ways. If the practice is particularly interested in improving diabetes care, there are a range of other diabetes indicators that can be explored.

### PDSA cycle 1

#### Plan

- **State the aim of the test or observation**  
To improve practice processes for the care of patients with diabetes.
- **What do you want to achieve, what actions need to happen and in what order?**  
To establish the number of people within the practice's clinical database coded with a diagnosis of diabetes and compare this to expected numbers.  
This will result in, for example:
  - an easily accessible, accurate and current diabetes register
  - reflection on range of coding/information recording practices of different clinical staff
  - information coding changes to standardise recording of diagnoses.

Once the practice agrees on the aim and the possible outcomes, it is important to thoroughly plan the 'do' stage.

- Install an appropriate audit tool onto the practice IT system
- Ensure members of staff are trained in the use of CAT
- Select patients with a diagnosis of diabetes
- Does this represent all patients with a diagnosis of diabetes? Reflect on the number of patients with diabetes within the practice and compare with population prevalence
- Check diagnostic coding in the medical record for discrepancies.
- **Who will be responsible for each step and when will it be completed?**

The practice team needs to meet to determine who is responsible for each step.

- **What resources are required?**

The practice team needs to meet to determine what resources are required.

- **Who else needs to be kept informed or consulted?**

Consider whether there are others who need to be consulted, eg. practice nurses, practice managers, patients, allied health staff.

- **How will you measure changes to practice?**

For example, use of CAT, Canning Tool, *ad hoc* search?

Determine the system that fits within the practice profile.

- **What observations would be expected as a result of this change?**

Using CAT, the practice is able to identify and explore details of those patients with a correctly entered diagnosis of diabetes.

You would expect to have about 7.5% of patients with diabetes. The AusDiab study found that the prevalence of diabetes in the Australian population aged 25 years and over was 7.5%: 8% males, 7% females.

This may vary depending on your practice population, as some population groups have a higher prevalence of diabetes. For example :

- Aboriginal and Torres Strait Islander people are estimated to have a prevalence of diabetes of over two times the rate of nonindigenous people
- People from lower socioeconomic groups have a higher prevalence rate
- Hospitalisation rates for diabetes are higher in people living in remote and very remote areas
- Diabetes increases with age. Prevalence is:
  - 2.5% in the 35–44 years age group
  - 6.2% in the 45–54 years age group
  - 13.1% in the 55–64 years age group
  - 18.6% in the 65–74 years age group
  - 23.6% in those aged 75 years and over.
- **What data needs to be collected to check the outcome of the change?**

Number of patients coded with diabetes on the practice clinical database.
- **How will it be known whether the change has worked or not?**

Subsequent audits identify all patients with a diagnosis of diabetes.  
Coding for diabetes remains constant.

### Do

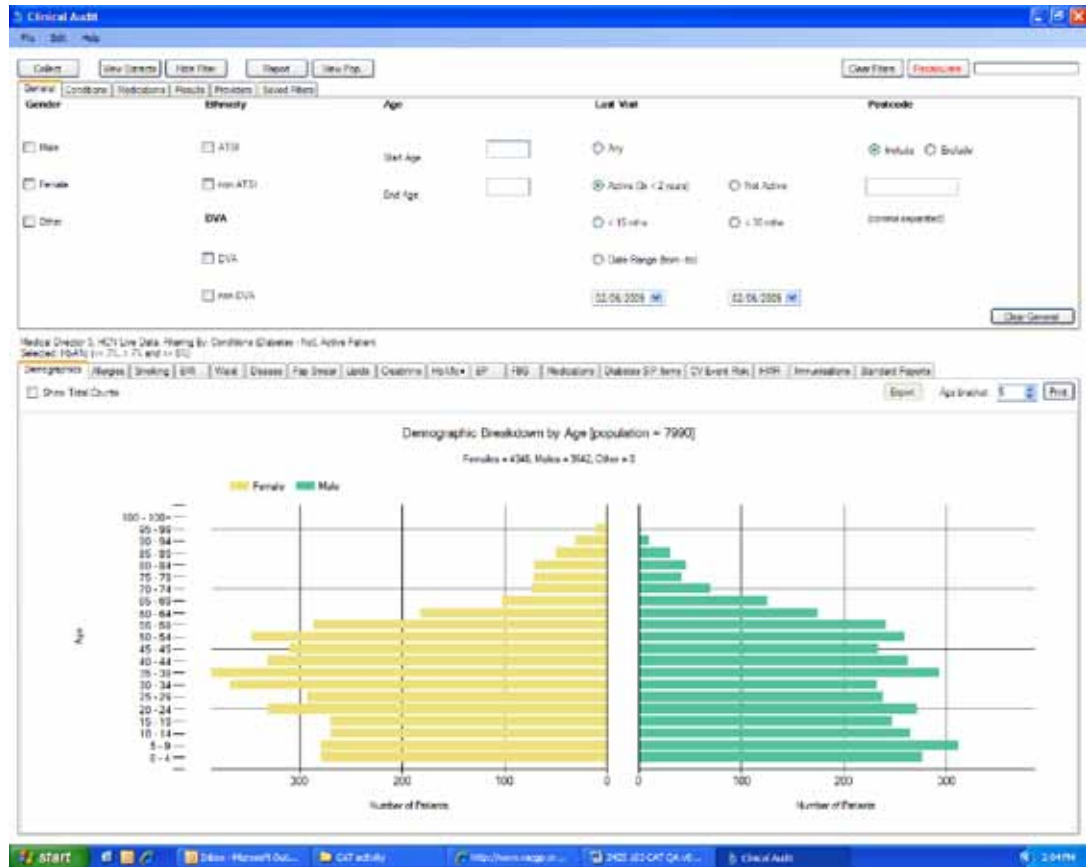
The second step is to undertake the test on a small scale using the CAT. Using CAT, the practice will be able to address the aim of identifying the number of people within the practice's clinical database that are coded with a diagnosis of diabetes.

Note that CAT enables the practice to search their entire database, or only those that meet the RACGP *Standards for general practices* definition of 'active', which is patients who have visited a minimum of three times in the past 2 years. This will assist the practice in identifying their core patients.

Dunstan D, Zimmet P, Welborn T, Sicree R, Armstrong T, Atkins R, Cameron A, Shaw J, and Chadban S on behalf of the AusDiab Steering Committee. Diabetes & Associated Disorders in Australia – 2000. The accelerating epidemic: The Australian Diabetes, Obesity and Lifestyle Study (AusDiab). Available at [www.diabetes.com.au/pdf/AusDiab\\_Report.pdf](http://www.diabetes.com.au/pdf/AusDiab_Report.pdf). Australian Institute of Health and Welfare 2008. Diabetes: Australian facts 2008. Diabetes series No. 8. Cat. No. CVD 40. Canberra: AIHW, 2008.

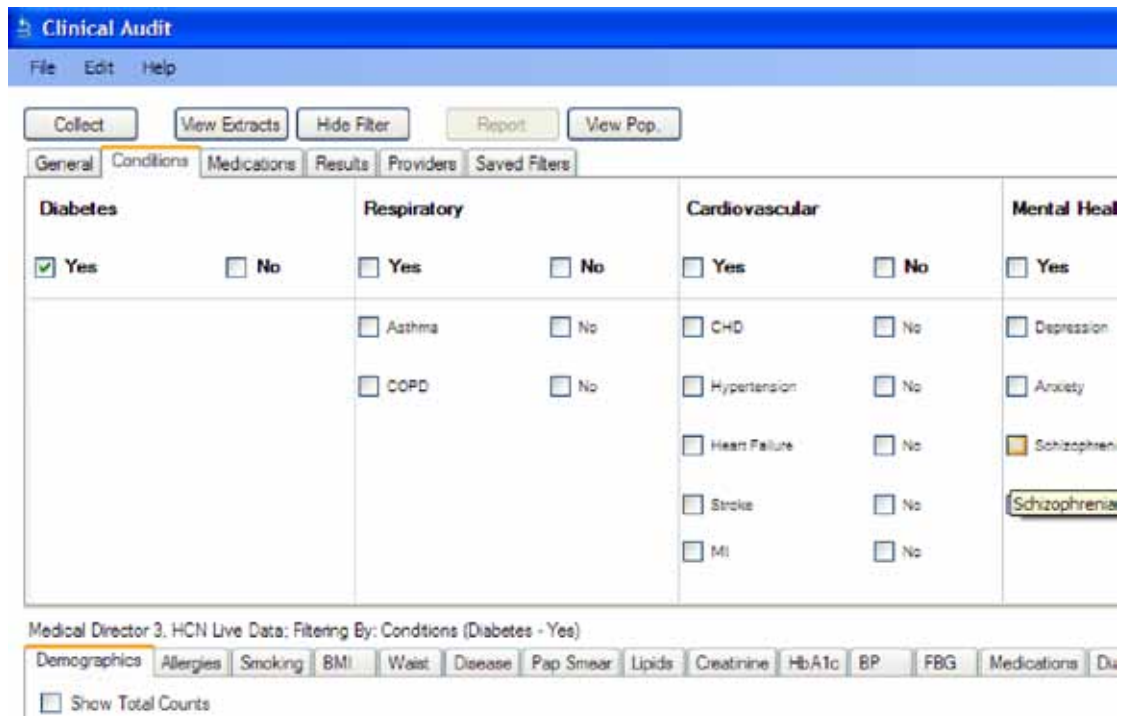
### CAT starting point

1. CAT open
2. Population extract loaded and extract pane 'hidden'
3. Filter pane open and, under the general tab
4. OPTIONAL: active (three visits <2 years).



### Identify patients

1. In the 'Conditions' tab select 'diabetes' – Yes
2. Click 'recalculate'
3. Click 'hide filters'
4. You will see the demographic breakdown for your diabetic population in the age breakdown graph.



- Document the process, taking note of any problems or unexpected observations
- Collect all measurements, data and observations.

### Study

Set aside time for all people involved in the process to discuss the outcomes of the small scale test.

What were the results?

Did they differ from the group's expectations? Did you expect to see this number of patients with diabetes? Is it higher or lower than expected?

What has the group learned from completing this cycle?

- Consider what could be done differently
- Reflect on what has been learnt
- Reach a consensus on subsequent action(s). If the numbers are lower than expected, this could be a coding issue. Is there a standard process for coding patients with diabetes?

### Act

**What action will you take now?**

Cycle 2 enables you to examine your database to identify patients with diabetes who are not correctly coded.

## PDSA cycle 2

### Plan

- **State the aim of the test or observation**  
To improve practice processes for the care of patients with diabetes.
- **What do you want to achieve, what actions need to happen and in what order?**  
To establish the number of people within the practice's clinical database that have an HbA1c recorded, but are not coded as diabetic.  
This will result in, for example:
  - an easily accessible, accurate and current diabetes register
  - reflection on a range of coding/information recording practices of different clinical staff
  - practice ability to offer appropriate care to those with diabetes
  - information coding changes to standardise recording of diagnoses.Once the practice agrees on the aim and the possible outcomes, it is important to thoroughly plan the 'do' stage.
  - Select patients without a diagnosis of diabetes
  - Determine if any of these have had an HbA1c
  - Check diagnostic coding in the medical record for discrepancies.If you do not receive pathology results in HL7 format:
  - select patients with a diagnosis of diabetes
  - compare this to a list of patients from your pathology provider who have had an HbA1c
  - are the numbers the same?
  - check diagnostic coding in the medical record for discrepancies.
- **Who will be responsible for each step and when will it be completed?**  
The practice team needs to meet to determine who is responsible for each step.
- **What resources are required?**  
The practice team needs to meet to determine who is responsible for each step.
- **Who else needs to be informed or consulted?**  
Are there others who need to be consulted (eg. practice nurses, practice managers, patients, allied health staff)?
- **How will you measure the change (eg. CAT, Canning Tool, *ad hoc* search)?**  
Determine the system that fits within the practice profile.
- **What observations would be expected as a result of this change?**  
Using CAT the practice is able to identify those patients with diabetes who are not correctly coded in their electronic health record.  
Expectations will depend on the team's perception of the accuracy of their database.
- **What data needs to be collected to check the outcome of the change?**  
Number of patients who have had an HbA1c but are not recorded as diabetic.
  - How will it be known whether the change has worked or not?
  - Subsequent audits identify all patients with a diagnosis of diabetes
  - Subsequent audits to ensure diabetic patients are receiving appropriate care
  - Coding for diabetes remains constant.

**Do**

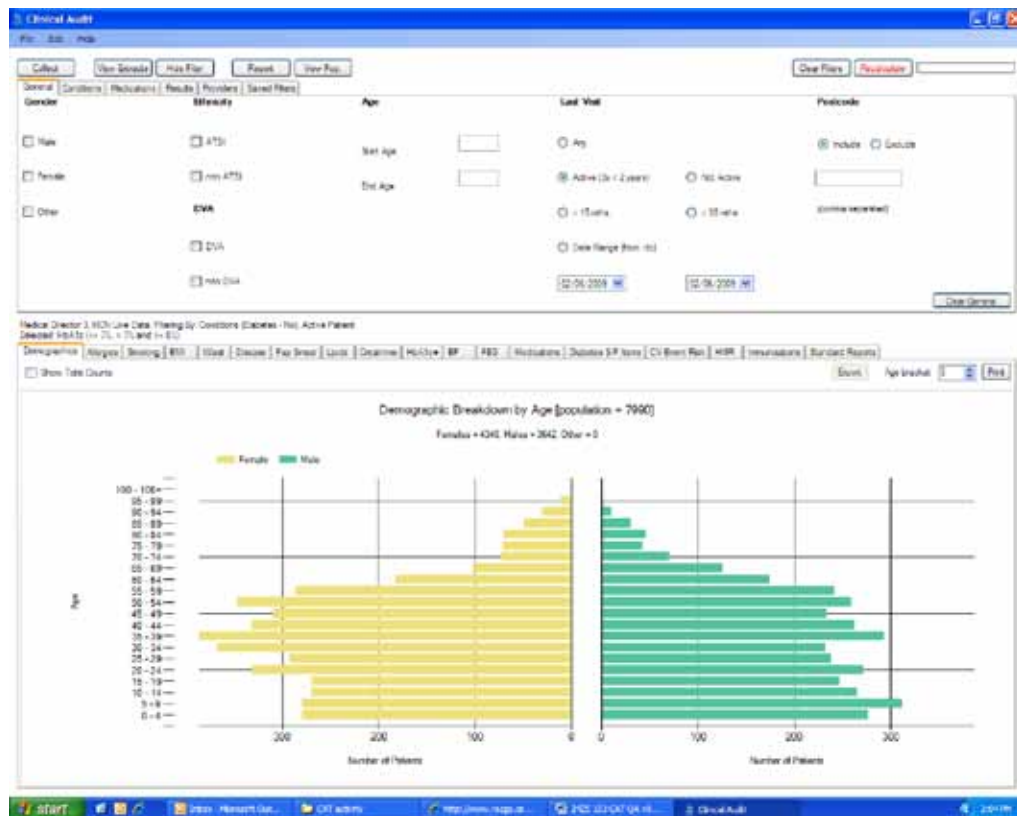
The second step is to undertake the test on a small scale using CAT. Using CAT, the practice will be able to address the aim of identifying the number of people within the practice’s clinical database that are, or are not, coded with a diagnosis of diabetes.

Note: CAT enables the practice to search either its entire database, or only those records that meet the RACGP *Standards for general practices* definition of ‘active’, ie. patients who have visited a minimum of three times in the past 2 years. This will assist the practice in identifying its core patients.

Note: if you do not receive pathology results in HL7 format, you can ask your pathology provider to give you a list of patients who have had an HbA1c in the past 2 years (or whatever time period you wish to examine). You can then compare this to your list of patients with diabetes.

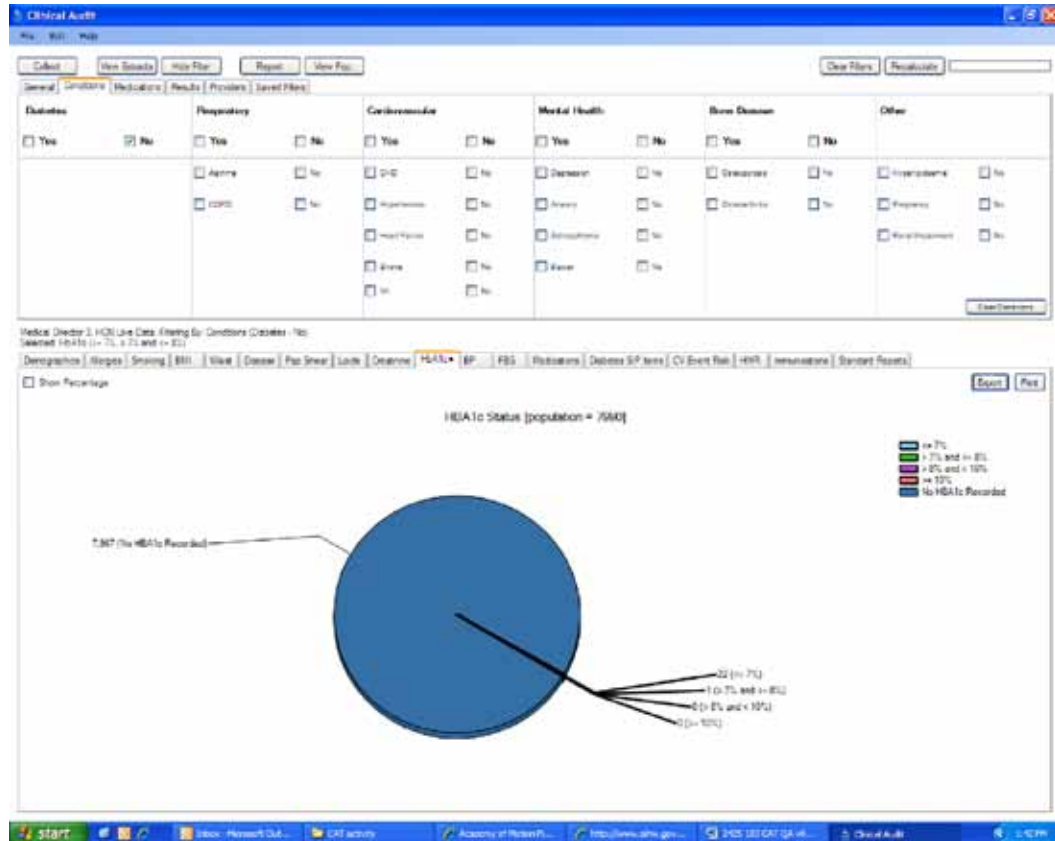
**CAT starting point**

1. CAT open
2. Population extract loaded and extract pane ‘hidden’
3. Filter pane open and, under the general tab
4. OPTIONAL: active (three visits <2 years).



### Identify patients

5. In the 'conditions' tab select 'diabetes' – no
6. Click 'recalculate'
7. Click 'hide filters'
8. After it has recalculated, in 'HbA1c' tab select m '<=7%' AND '>7%' and '<=8%' AND '>8%' and '<10%' AND '>=10%'
9. Select 'export' in the top right hand corner of the graph pane.



### Explore the patient list

10. Using the export list, visit the patient files in your clinical desktop system (eg. Medical Director, Best Practice)
11. Examine the patient file, under diagnosis, results and patient history
  - Document the process, taking note of any problems or unexpected observations
  - Collect all measurements, data and observations.

### Study

Set aside time for all people involved in the process to discuss the outcomes of the small scale test.

What were the results?

Did they differ from the group's expectations? Did you expect to see this number of patients with a HbA1c, despite having no diagnosis of diabetes? Did you expect to see more or less? What does this tell you about your database?

When you explored patient records, could you easily identify why they were not diagnosed? Were there accurate and relevant notes in patient files to identify them as diabetic?

How would you go about standardising the coding of diagnosis in your practice?

What has the group learnt from completing this cycle?

- Consider what could be done differently
- Reflect on what has been learnt
- Reach a consensus on subsequent action(s). Is there a standard process for coding patients with diabetes?

### Act

What action will you take now?

This might involve updating the register to include patients not identified, and developing standard procedures for coding of patients.

## PDSA cycle 3

### Plan

- **State the aim of the test or observation**  
To improve practice processes for the care of patients with diabetes.
- **What do you want to achieve, what actions need to happen and in what order?**  
To identify outstanding Diabetes Cycle Of Care items for each patient with diabetes.

This will result in, for example:

- an awareness of the number of Diabetes Cycle of Care items that have not been completed
- an awareness of the number of Diabetes Cycle of Care items that have been completed but have not been claimed
- an ability to recall patients to complete these items
- an improvement in the practice systems for managing cycles of care
- ability to claim Practice Incentives Program (PIP) payments for completed Diabetes Annual Cycles of Care.

Once the practice agrees on the aim and the possible outcomes, it is important to thoroughly plan the 'do' stage.

1. Identify diabetes patients
  2. Using CAT, identify SIP items that have not been completed
  3. Discuss how these patients could be recalled
  4. Discuss how practice would address this from a staffing and resourcing angle.
- **Who will be responsible for each step and when will it be completed?**  
The practice team needs to meet to determine who is responsible for each step.
  - **What resources are required?**  
The practice team needs to meet to determine what resources are required.
  - **Who else needs to be informed or consulted?**  
Are there others who need to be consulted, eg. practice nurses, practice managers, patients, allied health staff?
  - **How will you measure the change (eg. CAT, Canning Tool, *ad hoc* search)?**  
Determine the system that fits within the practice profile.
  - **What observations would be expected as a result of the change?**  
Using CAT, the practice is able to identify and recall patients who have outstanding Diabetes Cycle of Care items, enabling more effective patient management. Expectations will depend on the practice's perception of the status of their patients.

- **What data needs to be collected to check the outcome of the change?**  
Outstanding Diabetes Annual Cycle of Care items.
- **How will it be known whether the change has worked?**
  - Increased number of completed cycle of care items
  - Increased PIP payments.

### Do

The second step is to undertake the test on a small scale using CAT. Using CAT, the practice will be able to address the aim of identifying the number of people within the practice's clinical database that are, or are not, coded with a diagnosis of diabetes.

Note: CAT enables the practice to search its entire database, or only those records that meet the RACGP *Standards for general practices* definition of 'active', which is patients who have visited a minimum of three times in the past 2 years. This will assist the practice in identifying its core patients.

### CAT starting point:

5. CAT open
6. Population extract loaded and extract pane 'hidden'
7. OPTIONAL filter pane open and, under the general tab: active (three visits <2 years) selected.

### Identify patients

12. In the 'conditions' tab select 'diabetes' – yes
13. Click 'recalculate'
14. Click 'hide filters'
15. In the report pane, select 'diabetes SIP items' tab
16. Select 'items completed per patient' subtab
17. You will see the count of Diabetes SIP items completed per patient
18. Click each of the bars in the graph
19. Click 'worksheet'
20. You will see a list of patients with diabetes including a matrix of complete and incomplete cycle of care items
21. Export the patient list for potential patient recall.
  - Document the process, taking note of any problems or unexpected observations
  - Did you expect to see this number of incomplete items?
  - How will the practice manage the recall of these patients?
  - What systems could the practice implement to ensure these items are routinely completed?
  - Collect all measurements, data and observations.

This minor test is undertaken to:

- substantiate the probability that a change in this area is possible
- decide on which of several proposed changes will have the best outcome
- decide on the scope of the change and if it is viable in the actual practice setting
- decide if a combination of changes is required to achieve the outcome
- understand the cost, resources and patient impact of changes
- enable a smooth transition to any changes implemented.

### Study

Set aside time for all people involved in the process to discuss the outcomes of the small scale test.

What were the results?

Did they differ from the group's expectations?

- Did you expect to see this number of incomplete items?
- How will the practice manage the recall of these patients?
- What systems could the practice implement to ensure these items are routinely completed?

What has the group learnt from completing this cycle?

- Consider what could be done differently
- Reflect on what has been learnt
- Reach a consensus on subsequent action(s). Is there a system for completing cycles of care?

### Act

What action will you take now?

This might involve developing systems and processes for ensuring cycles of care are completed, or for recalling patients.

## Where can I find more information?

#### Clinical Audit Tool:

[www.clinicalaudit.com.au](http://www.clinicalaudit.com.au)

#### Australian Primary Care Collaboratives Program:

[www.apcc.org.au](http://www.apcc.org.au)

#### Diabetes Australia and the RACGP *Diabetes management in general practice*:

[www.racgp.org.au/guidelines/diabetes](http://www.racgp.org.au/guidelines/diabetes)

#### The RACGP QA&CPD information relating to PDSA:

[www.racgp.org.au/QACPD](http://www.racgp.org.au/QACPD)

#### Your local division of general practice:

[www.agpn.com.au/divisions-directory](http://www.agpn.com.au/divisions-directory)