



CENTRAL QUEENSLAND, WIDE BAY,  
SUNSHINE COAST PHN

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# CARDIOVASCULAR DISEASE PREVENTION - A QUALITY IMPROVEMENT TOOLKIT

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# QUALITY IMPROVEMENT FOR CARDIOVASCULAR DISEASE PREVENTION

This toolkit is intended as a guide for how quality improvement can be used to improve outcomes for people at risk of developing cardiovascular disease (CVD). Undertaking systematic risk assessment, which identifies individuals who have risk factors that might lead to a chronic condition in the future, provides an opportunity to educate and encourage preventative behaviours to decrease the risk of these individuals developing CVD.

General practices and health services are complex environments therefore, you should test any system changes that you are planning to make using the Model for Improvement, including Plan, Do, Study, Act (PDSA) cycles.

This toolkit does not set out to provide a clinical resource for the prevention of CVD. Such information can be found in CVD clinical guidelines produced by relevant clinical advisory organisations, as noted on the following page.

## Cardiovascular Disease Prevention Guidelines

Primary prevention of CVD refers to the measures taken to prevent the onset of CVD. This includes use of the Absolute risk assessment tool to determine an individual's risk of developing CVD, and targeted interventions based on the results of the assessment.

Absolute risk is the numerical probability of a cardiovascular event occurring within a five year period. Absolute risk reflects an individual's overall risk of developing CVD on the basis of the combined effect of multiple risk factors. It is the contemporary method for assessing CVD risk, replacing the previous approach of assessing individual risk factors in isolation.

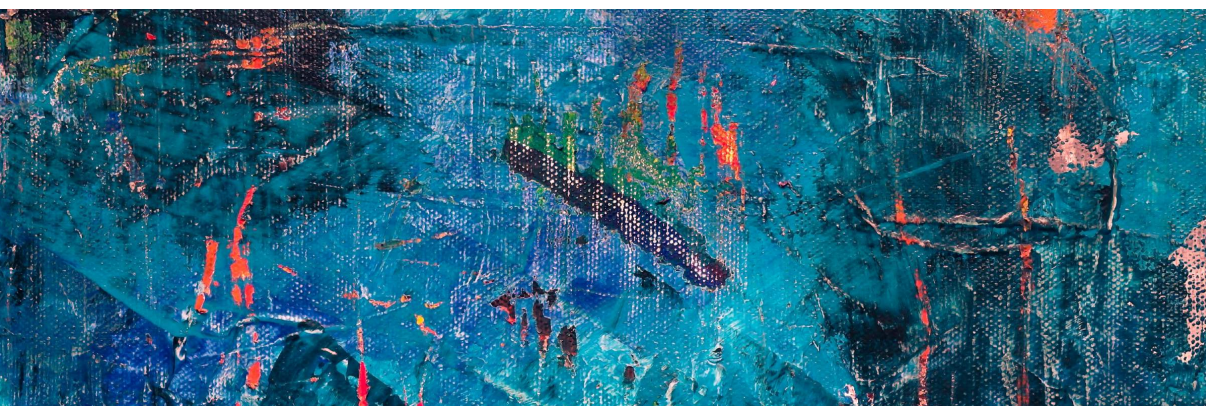
Absolute risk assessment is a simple approach that can enhance clinical judgement, patient education, and motivate better self-management. The use of the Absolute risk assessment tool is recommended for adults over 45 years of age, and over 35 years of age for Aboriginal and Torres Strait Islander people, who are not known to have CVD. There is a subgroup of individuals who are recognised as having an increased risk of developing CVD and, therefore, do not require risk assessment using the tool. These individuals include those with specific conditions and co-morbidities (such as patients aged over 60 years with diabetes), which fall into the high-risk category.

The National Vascular Disease Prevention Alliance (which consists of Diabetes Australia, Kidney Health Australia, the National Heart Foundation of Australia and the National Stroke Foundation) has developed an evidence-based guide to reduce the burden of CVD in Australia titled 'Guidelines for the management of Absolute cardiovascular disease risk', (2012)[1]. The guidelines contained within this resource make recommendations for assessing, and managing, absolute cardiovascular risk in adults without a diagnosis of CVD.

The guidelines also provide advice on preventing cardiovascular risk for Aboriginal and Torres Strait Islander peoples and populations requiring special consideration, such as individuals with diabetes and chronic kidney disease.

Guidelines are also available in the Royal Australian College of General Practitioners 'Red Book' ('Guidelines for preventive activities in general practice').

These guidelines have been succinctly captured in HealthPathways point-of-care resources.



## Planning for Improvement

Ideally, before embarking on your quality improvement journey, you will have engaged your team and there is agreement to focus on a particular area (e.g. prevention of CVD) for a period of time. This is best documented in a Quality Improvement Plan.

A Quality Improvement Plan is a valuable document for guiding your quality improvement work and keeping your effort focused. If you have not already developed a Quality Improvement Plan, refer to the 'Continuous Quality Improvement Fundamentals' QI Toolkit.

### Example Aim for CVD Prevention

An example aim for the prevention of CVD in a Quality Improvement Plan might be:

'Within one year, 60% of our eligible population will have an Absolute Risk assessment completed.'

This aim (or goal as it is sometimes referred to) is at a high level and ideally presents a reasonable challenge for the team over a period of 12 months or 18 months. The target set in the aim needs to reflect your organisation's population and current performance. If you set the target too high or too low, the aim may not resonate with the team and you could lose engagement.

As primary care is a very busy and complex environment, it is recommended that your plan has one area of focus for the period.

### Example Measurement for this Aim

It is important at this point to ensure that your eligible population is accurately defined so you can consistently measure over time. For example, your eligible population could be:

Active Clients (seen 3 x in the past 2 years) aged 45 to 74 years (or 35 and older for Aboriginal and Torres Strait Islander) without cardiovascular disease (**Eligible Client**).

This definition is up to you, however, you will need to be clear about the population you are targeting with your improvement work.

- Absolute Risk Assessments
  - > Description: The proportion of Eligible Clients who have had an Absolute Risk Assessment
  - > Numerator = The number of Eligible Clients who have had an Absolute Risk Assessment performed in the past year.
  - > Denominator = The number of Eligible Clients.

This measure exists in some software, in which case you may not need the calculation. Simply dividing the numerator result by the denominator result will produce a proportion (e.g. 220 (numerator) divided by 1,200 (denominator) equals 18%).

This measure is a direct measure of the example aim and will allow monitoring of progress over time. This measure should respond to early process changes, however, is unlikely to improve quickly. As such, additional measurement is recommended to understand the impact of processes changes that are made to your local systems. The choice of additional measurement will depend on where you choose to start.

The new Practice Incentive Payment Quality Improvement (PIP QI) provides some quality improvement measures that can be used, including:

- Measure 2: “Proportion of patients with a smoking status”
- Measure 8: “Proportion of patients with the necessary risk factors assessed to enable CVD assessment.”

You could also use other measurement, such as blood pressure (BP) recorded and cholesterol recorded, to monitor early process changes in the Eligible Client cohort.

### **Quality Improvement Plans**

Your Quality Improvement Plan should already have an established understanding of your population and your organisation’s performance. Following this, a decision to focus on CVD prevention and establish an aim and measures will provide a framework for you to monitor over time and report progress to your team.

This document provides example activities. Although they are presented in a linear fashion, knowledge of your organisation’s performance with regard to CVD prevention should guide where you will start and the activities you choose to undertake.

The below activities are detailed in the following pages, with example Model for Improvement cycles (where relevant) to stimulate thinking:

1. Ensure the accuracy of our clinical database
2. Develop systems to stratify CVD risk in our patients using the Absolute risk assessment tool
3. Develop systems to update accurate information for the ‘at risk’ population
4. Deliver lifestyle modification interventions and education
5. Integrate the perspectives of patients and carers in the design of services.

### **Making Changes to your Systems**

At this stage you should have established an aim for your CVD prevention work and decided on how you will measure your progress over time. This toolkit will provide a range of ideas that can be tested to improve the work your general practice or health services does to prevent the onset of CVD.

#### **Ensure the accuracy of your clinical database**

Before commencing improvement work on CVD prevention, you will need to fully understand your patient population. While some of this work may have been done to guide your decision to focus on CVD prevention, a more detailed understanding of your organisation’s population is now needed to help inform your early improvement activities.

Some of the questions that you may want to answer are:

- How many Eligible Clients are identified within your clinical information system? Do these figures seem about right, taking into account the demographics in your catchment area?
- What proportion of Eligible Clients have not had their ethnicity recorded?
- Does the practice or health service have a consistent approach or policy to identify which of the patients in your clinical database are 'Active' patients?
- Does the practice or health service have a policy to proactively 'inactivate' those patients who are no longer under your care?
- What proportion of Eligible Clients have not had their smoking status recorded?
- What proportion of Eligible Clients have not had their blood pressure recorded in the past 12 months?
- What proportion of Eligible Clients have not had their total cholesterol recorded within the previous 12 months?
- What proportion of Eligible Clients have not had their total high-density lipoprotein (HDL) recorded within the previous 12 months?

Once you have a good understanding of how your organisation is performing with regard to the accuracy of your clinical database, you will be able to consider where to start your work.

### **Data Quality and Clinically Coded Diagnosis**

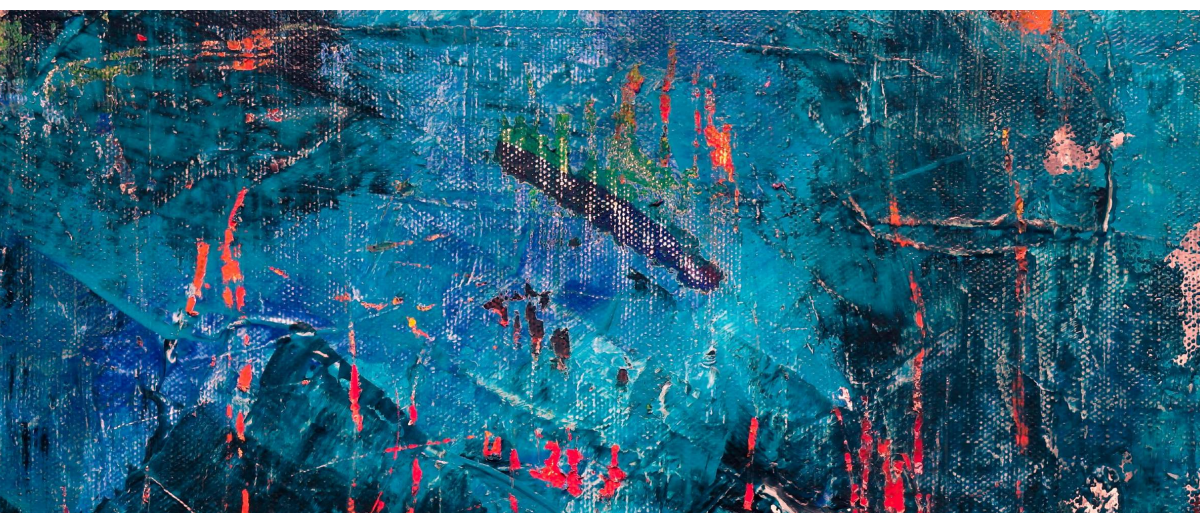
Coding is critical to quality and safety, and your computer systems cannot perform at their best without it. While there is a place for contextual notes using free text, these notes should be in addition to appropriate coding.

By clinically coding diagnoses you can produce a register, or list, of patients which allows you to more easily monitor how you are progressing with regards to data quality; assessment of patients for CVD and follow-up for those at high risk.

### ***Achieving and Maintaining Data Quality***

Data quality is more than just coding. It means that data, relevant to the patient's care needs, are accurate, complete and up-to-date.

A team approach is critical. Every person on your team has a responsibility to ensure that data quality is maintained. If each person is doing their part, your organisation will have a sustainable process in place resulting in the achievement and maintenance of quality data. If not, inevitably, data quality will not improve and if you undertake once off data cleaning, over time data quality will erode in the absence of a sustainable process.



## Once off Data Cleaning

There is a place for once off data cleaning, but this should be done after the team has developed an agreed approach to maintaining data quality. If not, your cleaning efforts will be eroded over time.

As you are focusing on CVD prevention, there are specific data cleaning exercises you can undertake in your clinical software, PenCS CAT4 and Cleansing CAT.

- CAT4 - Identify elevated CVD risk
- CAT4 - select this CAT Recipe for QIM 8 – CVD Risk to identify patients at risk of developing CVD[2] or use the CAT4 Recipe “Identify elevated CV Risk – Part A”
- CAT4 – select this recipe “QIM 2 – Smoking Status” to identify patients that have a smoking status recorded
- Undertake a bulk clean-up of free text diagnoses in your clinical software.

For specific advice on data cleansing exercises in your clinical software, please refer to your provider.



## Where to Start your Improvement Activities

By this stage you should have in place:

- commitment from your team to focus on CVD prevention
- a Quality Improvement Plan related to CVD prevention with:
  - a clear aim
  - measures (about 3) to guide your work over the year
  - High level strategies, ideas or tactics for change
  - identified members of the quality team or at least a coordinator for the Quality Improvement Plan
- protected time to carry out essential coordination activities
- a sound understanding of your population and your organisation's current performance relating to identification of patients at risk of CVD and the delivery of risk modification activities to those at higher risk.

You will need to decide what to do first and this will depend on where you are starting. For example, if your organisation's performance with the systematic undertaking of CVD risk assessments is poor, but you also have missing or out of date data, then you may need to commence with data quality. If your data quality is reasonable, then you could commence with process changes to improve your performance with undertaking CVD risk assessments, such as increasing the proportion of patients in certain age groups that have had a CVD risk assessment.

### System Changes vs Tasks

Some of your change ideas will be a task in nature, whereas others will relate to system change.

#### Tasks

These are generally actions that can be undertaken (such as data cleansing activities) but are not really a system change. The system change will come after you have cleaned your database and it is accurate and up to date.

#### System Change

System change (or process change) is typically where you will seek to change the way people (staff, patients or suppliers) change the way they routinely behave. For example, the way your organisation/staff routinely ensure that all Active patients have their smoking status recorded.

Identifying which of the change ideas (as they come up) is a task and which is a system change, will help you determine whether you use the Model for Improvement. The Model for Improvement is best used to test a system change, whereas tasks can simply be undertaken at the appropriate time.



## Change Ideas

When making changes to your systems, it is advised that you make small changes over time in a planned and coordinated way. The following change ideas are provided as suggested activities to improve the proportion of Eligible Clients who are assessed for their risk of developing CVD. The change ideas are not intended to be implemented at once, or necessarily in the order below. It would be best to start on just one change idea that is most suited to your team and organisation.

Model for Improvement examples are also provided, where appropriate, to help you understand how to break change down into small incremental steps and ensure the change is an improvement before scaling or implementing.

### Model for Improvement Example – Improving smoking status recording

**Goal:** Over the next two months, increase the proportion of Eligible Clients who have their smoking status recorded to 80%.

Note: you can use the PIP QI measure QIM 2 – Smoking Status to directly measure this goal and the target above (80%) is based current performance being 70%. Therefore, a 10% improvement in two months.

#### Measures:

PIP QI measure QIM 2 – Smoking Status

#### Ideas:

- Make a list of Eligible Clients who have not had their smoking status recorded
- Send out letters or SMSs to selected Eligible Clients, who had not had their smoking status recorded, requesting them to come in to speak with their GP
- Work with the receptionist(s) to proactively identify Eligible Clients on the list (above) who have booked an appointment in the near future.

So far, we have established the first part of the Model for Improvement (the goal, measurement and ideas for change).

The next step is to test system changes using PDSA cycles. From the ideas above, or using a combination of these, you can decide on a PDSA cycle for testing. Ideally the PDSA cycle will help you understand what changes you can make to your systems and/or processes that will improve on the current result and be sustainable over time.

To undertake the test in a small way, you could initially search in the clinical software to identify all Eligible Clients who have not had their smoking status recorded. This is not a PDSA, but it will help you quantify the scope of the work that will be involved and will identify individual patients. Once you have this list, you could undertake a series of PDSA cycles by:

- Working with one GP to identify which patients on the list generated above are usually seen by that GP

- Recalling an agreed number of these patients on a particular day and ask them to contact the practice to make an appointment
- Providing a list of the patients recalled to reception so that they can note who has contacted the practice and who has made an appointment
- Following an agreed period of time, say two weeks, you could assess the outcome of the tests, see how effective they were and consider any changes to your process.

### **Model for Improvement Example – Improving blood pressure recording**

**Goal:** Over the next two months, increase the proportion of Eligible Clients who have had their blood pressure recorded within the past year by 20%.

#### **Measure(s):**

- The proportion of Eligible Clients who have had their blood pressure recorded within the past year (it is important to record this at baseline, i.e. before the improvement activities).

#### **Ideas:**

- Make a list of Eligible Clients who have NOT had their blood pressure recorded within the past year.
- Set up a prompt on GP's desktops reminding them to record blood pressure when patients attend for appointment
- Send out letters or SMSs to selected Eligible Clients who have NOT had their blood pressure recorded within the past year, requesting them to come in to speak with their GP or a Practice Nurse (PN).
- Present data at the next clinical, or team, meeting to ask for ideas on how recording of blood pressure can be improved.

Once you have created a list of Eligible Clients who do not have blood pressure recorded, you could undertake a series of PDSA cycles by:

- Working with one GP to test adding a prompt on their desktop to remind them to record blood pressure when their patients attend for appointments
- Working with the same GP to recall an agreed number of patients via SMS on a particular day
- Working with the same GP to recall an agreed number of patients via letter on a particular day
- Following an agreed period of time, say two weeks, you could assess the outcome of the tests, see how effective they were and consider any changes to your process.



## **Develop Systems to Stratify CVD Risk in our Patients Using the Absolute Risk Assessment Tool**

The population of patients for whom risk assessment is recommended is likely to be quite large. Therefore, your general practice or health service will need to establish a system for managing the risk assessment process. Initially, you may choose to undertake Absolute risk assessments for appropriate individuals as part of a health assessment, or you may choose to prioritise certain cohorts.

For example, you may choose to prioritise individuals based on specific considerations, such as:

- clinical history – including individuals who are known to have high blood pressure, cholesterol, BMI or waist circumference
- lifestyle – including individuals that have a recorded history of smoking, consume greater than the recommended safe level of alcohol or lead a sedentary lifestyle
- patients who are eligible for a care planning rebate, and
- patients from hard to reach groups.

It is well recognised that socio-economic factors influence the risk of developing CVD and impact on the ability of individuals to access health care services. Therefore, consider assessing your patient demographics to better understand the patient profiles for your general practice or health service, and whether you have patients at high risk of developing CVD.

After conducting such an assessment you may consider focusing on hard to reach groups, including Aboriginal and Torres Strait Islander peoples, individuals from low socio-economic backgrounds, individuals from culturally and linguistically diverse backgrounds, and individuals from rural and remote communities who may be less likely to routinely access health care.

### **Model for Improvement Example – Increasing the completion of Absolute risk assessments**

The goal identified earlier for the QI plan was: 'Within one year, 60% of our eligible population will have an Absolute Risk assessment completed.' This goal is ambitious, as achieving this rate will involve assessment of a large number of patients. However, using the Model for Improvement you can break this aim down into smaller pieces of work to test how your system is working and identify opportunities for improvement. Therefore, your Model for Improvement (MFI) goal related to increasing completion of Absolute risk assessments is almost certainly going to be different to what is stated in the QI plan.

**MFI Goal:** Over the next two months, increase the proportion of Eligible Clients, regularly under the care of Dr Smith, who have had an Absolute risk assessment completed by 10%.

In the goal example above, the scope has been reduced to working with one GP and focusing on that GP's Eligible Clients. The stated target (increase of 10%) is an example and the target you identify should be an attainable one, taking into account local factors. Working with a GP who has a strong interest in CVD prevention is recommended in the first instance.

### **Measurement:**

In this example, the goal can be directly measured by:

- The proportion of Eligible Clients regularly under the care of Dr Smith who have had an Absolute risk assessment completed (B divided by A).
- The number of Eligible Clients regularly under the care of Dr Smith who have had an Absolute risk assessment completed (A)
- The number Eligible Clients regularly under the care of Dr Smith (B)

You have now developed a goal at a small level which can be easily tested and selected measures that can be used to directly assess your progress. The third fundamental question in the Model for Improvement asks, 'What changes can we make that will result in an improvement?' Remember that ideas generated here need to be within the context of this goal.

### **Ideas:**

- Create a list of Dr Smith's Eligible Clients.
- Recall Eligible Clients who have not had an Absolute risk assessment.
- Identify Dr Smith's Eligible Clients who are booked to attend the clinic over the next fortnight and place a reminder to conduct an Absolute risk assessment.
- Work with Dr Smith and the PN to streamline the risk assessment process.

### **PDSA Cycles**

After establishing the goal, measurement and ideas for change, you will begin to test ideas using a PDSA cycle or cycles. Some of the ideas above may not be suitable for PDSA cycles, such as identifying Dr Smith's Eligible Clients and identifying those who have not had an Absolute risk assessment. This is a task that can be completed by someone and then checked with Dr Smith. Although this activity is important, it can be undertaken as a straightforward task.

When considering where to start, and using the examples above, you might begin by working with Dr Smith and the PN to streamline the risk assessment process and then recalling 5 patients to test the new process and recall system. Subsequent PDSA cycles can help refine the process and recall system before scaling by including patients that are regular clients of other GPs.



It's important to keep PDSA cycles small so that they can be completed over a very short period of time, such as a week.

Once you have streamlined the risk assessment process for Dr Smith, it's likely that this is scalable and can be implemented for other GPs. Once you have improved your work with Dr Smith, you will have data from the PDSA cycles and the MFI to help demonstrate a case for change to other GPs and staff.

### **Develop systems to update accurate information for Eligible Clients**

Once the Absolute Risk Assessment has been completed, a score is calculated which will indicate whether the individual has a low, moderate or high risk of a cardiovascular event within 5 years. By stratifying patients in this way, you can target resources into intervention strategies for those in the higher risk groups in the first instance.

Although identification of individuals at varying risk levels for developing CVD is not a formal 'register', systems within your general practice or health service need to be established to ensure the accuracy of this information is maintained. For example, some practices have modified their clinical software to enable a new 'diagnosis' to be added (CVD risk low, CVD risk medium or CVD risk high). In this way, the patients who require follow up or re-assessment can be searched according to their risk status. The system also enables practitioners to identify and record new patients at risk of developing CVD in the clinical software.

### **Deliver lifestyle modification interventions and education**

Those at risk should be encouraged to adopt behavioural change to reduce lifestyle risk factors and may, or may not, require prescribed medicines. For patients with a high risk of developing CVD, it is imperative that education and interventions are provided to reduce the risk of this occurring. Patients who are at high risk of developing CVD (an Absolute Risk Assessment score  $\geq 15\%$  who have had CVD excluded) can be referred to lifestyle risk modification programs. Generally, these programs involve group education and motivation sessions that support lifestyle change. These sessions address:

- the risk of developing CVD and the importance of regular risk assessment
- dietary advice
- physical activity advice
- behavioural strategies to support lifestyle changes
- smoking cessation and alcohol reduction
- community resources.

If required, contact your PHN to determine what programs are available in your community and what the referral pathways are. However, if there are limited services available, education and lifestyle intervention can be effectively developed and delivered within the general practice or health service. Existing staff could be trained, a specific skill set could be bought in, or local partnerships could be formed in order to provide a lifestyle modification pathway for your patients.

It is valuable for patients with an intermediate or low risk of developing CVD to receive information regarding lifestyle modification to prevent them progressing into the high risk category. A number of behavioural or biomedical risk factors are avoidable or modifiable. Risk factors such as smoking, inadequate physical activity, obesity, high blood pressure and high cholesterol are significant contributors to developing a chronic disease such as CVD. Even small improvements in these risk factors will have significant benefits for the patient. General practices and health services can help their patients to address these risk factors by following guidelines recommended by organisations such as the National Health and Medical Research Council.

### **Integrate the perspectives of patients, families and carers in the design of service provision**

A truly patient-centred practice/service encourages patients to be more involved in decisions about their care, and in the management of their health. Collaborating with patients, their carers and/or families can bring their voices into the planning and delivery of health care and has been shown to improve quality and safety, as well as addressing patients' needs more effectively.

There are a number of core principles that support the involvement of patients, carers and families in the redesign of service provision, regardless of the level of their engagement:

1. Respect – listening to and valuing patient and family/carer perspectives and choices helps ensure their knowledge, values, beliefs, and cultural backgrounds are incorporated into the planning and delivery of care.
2. Information sharing – this involves sharing complete, unbiased and timely information with patients and families/carers to enable them to participate in, and make, decisions about their care.
3. Participation – patients and families/carers are encouraged and supported to participate in care and decision-making at the level they choose.
4. Collaboration – patients, families/carers, health care practitioners, and health care leaders collaborate in the development, implementation, and evaluation of education initiatives and resources, as well as the support offered to patients more broadly to reduce their risk of developing CVD.

The level that patients, carers and families are engaged in service redesign depends on how much they want to be involved and how ready the practice or health service is to offer meaningful engagement. Involving patients, carers and families in improving the quality of care for all patients takes time and commitment to move in small steps toward a more patient-centred culture. There are several ways in which practices and health services can pragmatically apply patient engagement principles in service redesign and delivery relating to this topic area:



- State your commitment to a patient-centred service through literature such as publicly visible mission or values statement in the form of a patient charter.
- Develop a policy and process regarding communication with patients for all staff. Considerations include the use of warm, welcoming and clear language that avoids unnecessary medical jargon, repeating key messages and using graphic representation.
- Agree on a policy and process around collaborative goal setting to assist patients to develop written action plans to reduce their risk of developing CVD in small steps.
- Involve patients in the design of resources such as awareness raising literature and healthy lifestyle guidance.
- Seek patient input into identifying community resources that will enhance healthy lifestyles, such as exercise classes, walking groups, etc. Patients may also be involved in creating a local directory of relevant services.
- Conduct small surveys by inviting patients in the waiting room or via mailing lists to identify specific areas for improvement. The practice can then use the Model for Improvement to test relevant changes that have been suggested.