

# Improving adherence in cardiovascular care

A toolkit for health professionals



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# Introduction

A key to success in the prevention and management of cardiovascular disease is adherence and persistence to prescribed medicines and lifestyle recommendations.

This applies equally to the management of symptomless risk factors, such as hypertension and dyslipidaemia, as it does to cardiovascular conditions, such as coronary heart disease and heart failure. However, research has shown that during long-term therapy for chronic illnesses in developed countries, adherence to medicines averages only 50%.

In response to this, the Heart Foundation has developed *Improving adherence in cardiovascular care*. This practical toolkit is designed to raise awareness among health professionals of the issues affecting patient adherence to cardiovascular medicines.\* It also aims to help health professionals develop strategies to identify and address these issues, to support better health outcomes for patients.

*Improving adherence in cardiovascular care* comprises six modules with six accompanying case studies and two supporting tables. These resources feature tips on how to establish practice systems, modes of communication and practical evidence-based interventions. Together, the modules, case studies and tables will help health professionals

to better communicate with patients, improve their recognition of non-adherence, and increase awareness of the factors that may contribute to it.

The toolkit also emphasises the importance of collaboration between health professionals, to maximise the likelihood of improving adherence to medicines.

Health professional training and educational organisations and institutions are encouraged to use this flexible resource to support their own educational requirements. The toolkit may be used in self-directed learning or in a small group setting with a facilitator. The modules and cases can be used independently, but for greatest benefit, we recommend using the toolkit as a complete learning package.

We hope *Improving adherence in cardiovascular care* will help health professionals work together to improve patient adherence to cardiovascular medicines and health outcomes.

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\* 'Cardiovascular medicines' refers to medicines used to treat cardiovascular diseases and conditions, as well as risk factors such as hypertension and dyslipidaemia.





# Module 1: Adherence to cardiovascular medicines – the principles

“Drugs don’t work in patients who don’t take them.”

– C. Everett Koop, MD<sup>1</sup>

“Approximately half of patients prescribed statins will stop taking them within six months of starting the medicines.”<sup>2</sup>

## The significance of adherence

- Higher levels of adherence in hypertension and hypercholesterolaemia lower overall healthcare costs, despite higher drug costs.<sup>3</sup>
- Patients with hypertension who take their medicine less than 20% of the time are twice as likely to be hospitalised as those who take their medicine more than 80% of the time.<sup>4</sup>
- Poor adherence in hypertension and hypercholesterolaemia results in higher rates of hospitalisation.<sup>4</sup>
- Thirty per cent of people who commence a lipid-lowering medicine stop taking the drug within six to seven months.<sup>5</sup>
- Poor adherence to a medicine regimen post-acute myocardial infarction results in a two to sixfold increase in the risk of death within a year of the event.<sup>6</sup>

## Objectives

The objectives of this module are to:

- promote awareness of the importance of adherence to cardiovascular medicines
- explore the reasons for non-adherence to cardiovascular medicines
- highlight the vital role of the health professional in improving patient adherence to cardiovascular medicines.

## Learning outcomes

By the end of this module, you will be able to:

- demonstrate an increased understanding of compliance, adherence, concordance, persistence and therapeutic alliances
- discuss the complexity of the reasons for non-adherence to cardiovascular medicines
- identify patient-related and other factors that influence adherence to cardiovascular medicines.

**Note:** this module includes case studies that facilitators may use to support the key points presented.



# Compliance, adherence, concordance, persistence and therapeutic alliances

## Facilitator notes

### Tasks

Present a short introduction to the module, including its content, objectives and learning outcomes.

Give participants an overview of adherence and its importance in cardiovascular disease (CVD) management.

Present the definitions of ‘compliance’, ‘adherence’, ‘concordance’, ‘persistence’ and ‘therapeutic alliances’.

### Activity

Divide participants into small groups.  
Ask them to:

- discuss their experiences of patients’ non-adherence to medicines
- identify non-adherence issues specific to cardiovascular medicines, and how ‘forgiving’ (see definition below) the medicines can be if patients are non-adherent.

### Feedback

Ask groups to give feedback on the non-adherence issues specific to CVD.

The ‘father of medicine’, Hippocrates (c. 460–370), told physicians to “keep watch for that fault in patients which makes them lie about the things prescribed”.<sup>7,8</sup>

Non-adherence to cardiovascular medicines has become a large burden on the healthcare system budget, as 30% of all prescriptions dispensed in community pharmacies are for CVD, with 20% being for hypertension.<sup>9</sup> However, patient adherence to cardiovascular medicines ranges from 11 to 83%, depending on the condition being treated and medicine type.<sup>10</sup>

Consequently, patients may have uncontrolled conditions that cause overall poorer health outcomes and place them at risk of more severe conditions. Non-adherence to risk-reducing lifestyle changes and cardiovascular medicines has a direct impact on patients’ absolute CVD risk levels.

There are several important terms used to describe patient medicine-taking behaviour, including ‘compliance’, ‘adherence’ and ‘persistence’.

### Compliance

Compliance is “the extent to which a patient’s actual history of drug administration, lifestyle and/or diet corresponds with the prescribed regimen. It concerns the timing, dosage and frequency of day-to-day treatment”.<sup>11</sup>

The term compliance is being used less and less, because of its paternalistic orientation and association with blame.<sup>12</sup> Instead, terms that acknowledge the active role patients play in their healthcare, particularly in chronic disease management, are being used more often. This is highlighted by the following comment from a patient: “As patients, we go to doctors for a second opinion, the first opinion being ours”.

### Adherence

Adherence can be summarised as “the extent to which a person’s behaviour – taking medication, following a diet, and/or executing lifestyle changes – corresponds with agreed recommendations from a healthcare provider”.<sup>12</sup>

In short, rather than obeying, patients collaborate with their health professionals.

### Persistence

Refers to the overall duration of treatment – how long patients continue to take their prescribed medicines.<sup>10</sup>

Other terms, such as ‘medication consistency’, ‘continuance’ and ‘treatment discontinuation’, have also been used to describe medicine-taking behaviour.

The importance and impact of patient non-adherence to medicines should be evaluated by considering the medicines’ ‘forgiveness’.

### Forgiveness

Forgiveness refers to a medicine’s ability to sustain its pharmacological action after a dose has been missed. It is the benefits of a medicine that exist even when a dose has been missed.<sup>13</sup>

### Facilitator notes

#### Task

Explain to participants the concept of ‘shared decision making’.

Explain and highlight to participants the importance of interprofessional collaboration.

#### Activity

Divide participants into small groups. Ask them to discuss the concept of shared decision making and identify the pros and cons of involving patients in their own healthcare, specifically in making decisions about their treatment.

#### Feedback

Ask groups to give feedback about the pros and cons of shared decision making, and what this means in their day-to-day practice.

For patients to be adherent to their medicines, they must be competent and motivated to do so. Therefore, patient beliefs and wishes about whether or not to take their medicines, and when and how to take them, must be respected and considered by health professionals if they are to achieve concordance.<sup>14</sup>

Concordance can be achieved through shared decision making. Shared decision making is when decisions are made by health professionals and patients together, using the available evidence and considering and respecting the patient’s

characteristics and values. It is also called ‘patient-centred care’. In shared decision making, health professionals should:<sup>15</sup>

- establish a context in which the patient’s beliefs and views about medicines options are valued
- identify patient preferences, so that appropriate therapeutic options can be discussed
- educate patients about their treatment options (e.g. risks and benefits), in a way that they can comprehend
- help patients make a treatment decision, and make sure that decisions are made based on the correct information and motives (facts, not misconceptions).

There are two concepts related to shared decision making (further explained in module 3).

### 1. Concordant relationship<sup>13,16</sup>

This type of relationship:

- frames patients as active and equal to health professionals
- aims to help patients make informed decisions
- involves health professionals and patients forming a partnership to develop solutions.

Through this partnership, health professionals and patients explore different options and openly exchange beliefs about the medicines that might be prescribed.

### 2. Therapeutic alliance

- This refers to the relationship between health professionals and patients, as well as between health professionals.
- Its goal is to provide best practice through the establishment of optimal treatment plans and ongoing support to follow these plans.
- We have extended the notion of therapeutic alliance to include concordance in interprofessional collaborations between health professionals.

‘Interprofessional collaboration’ involves each partner being aware of and valuing the contributions and perspectives of other professionals, while sharing common patient-centred goals or specific outcomes that they pursue as a team.<sup>17</sup> In this case, the goal is a better treatment outcome for patients through establishing treatment plans and supporting patient adherence to them.

# Categories of non-adherence

## Facilitator notes

### Task

Present and explain the different categories of patient non-adherence to medicines, giving cardiovascular medicine-related examples. Draw on earlier discussion and feedback from participants about the types of non-adherence issues they have encountered and/or addressed in their practices.

There are multiple factors that can lead to patients' non-adherence to medicines.

Non-adherence can be broadly defined as:

- **primary non-adherence:** patients don't get their prescription dispensed; community pharmacists don't often encounter this type of non-adherence
- **secondary non-adherence:** patients don't take their medicines as agreed with their health professionals.

Secondary non-adherence can be further classified as:

- **unintentional:** patients want to follow the treatment, but barriers beyond their control stop them from doing so (e.g. they are forgetful, don't understand how to take the medicine or have difficulties administering the medicine).

- **intentional:** patients decide to stop or change their agreed treatment regimen; their decision is often made through active reasoning, where the perceived benefits of the medicine are balanced against the perceived risks<sup>18,19</sup> (e.g. the improved quality of life versus side effects<sup>20</sup>).

The following sub-categories can be used to classify patients' non-adherence to medicines:

- **consistent under-doser:** patients who routinely skip scheduled doses or take lower doses than prescribed
- **consistent over-doser:** patients who routinely take medicines more often or at higher doses than prescribed
- **drug holiday taker:** patients who abruptly stop taking medicines for a short time and then restart
- **pre-visit adherent:** patients who start taking medicines before visiting their health professional
- **random adherent:** patients who take medicines whenever they remember
- **proportional-to-the-most-recent-visit-to-the-health-professional adherent:** patients who take medicines for a time after visiting their health professional
- **symptom-dependent adherent:** patients who take medicines when they have symptoms of their condition.

# Reasons for non-adherence

## Facilitator notes

### Activity

Divide participants into small groups. Ask them to identify and discuss reasons for patient non-adherence to cardiovascular medicines.

### Feedback

Ask groups to present reasons for patient non-adherence to cardiovascular medicines and help participants to help categorise the reasons into the five categories described below.

### Task

Present and discuss the five World Health Organization categories, giving examples related to cardiovascular care.

There are several reasons for patients to be non-adherent to their medicines. These reasons may relate to the:

- health condition
- treatment
- healthcare system
- socioeconomic context
- individual patient characteristics.<sup>12</sup>

Each of these categories is described on page 10, with some examples related to cardiovascular medicines. Note that there is greater emphasis given to the category of 'the patient'. This is not because the patient is the main reason for non-adherence, but because the patient has been the subject of more research. With a better understanding of the patients' role in their non-adherence to medicines, the health professional can have a positive impact on their medicine-taking behaviour.

## The health condition

There are several established factors related to the patient's health condition that may negatively impact his/her adherence to medicines.<sup>12</sup>

- **Permanent or chronic disease**

For example, heart failure, coronary heart disease, stroke, arrhythmias, hypertension, dyslipidaemia.

- **Co-morbidities**

For example, diabetes, depression, chronic kidney disease.

- **No symptoms/no severe symptoms**

For example, hypertension, dyslipidaemia.

- **Rate of progression and severity of the condition**

For example, heart failure is a progressive condition with the potential for gradual aggravation.

## The treatment

There are several established factors related to the patient's treatment regimen that may negatively impact his/her adherence to medicines. See Table 1 on page 87 for more information.

- **Complex prescribed regimen**

For example:

- patients, such as people with heart failure or hypertension, who are taking multiple medicines
- medicines that need to be administered three or more times per day, for example, captopril for patients with heart failure, and patients on multiple medicines after a stroke.

- **Long duration of treatment**

For example, the treatment of hypertension, dyslipidaemia, heart failure, coronary heart disease and the use of anti-thrombotics in atrial fibrillation require long-term or even lifelong use of medicines.

- **Previous treatment failure**

For example, previous anti-hypertensive medicines did not lower the patient's blood pressure.

- **Frequent changes in treatment**

For example:

- frequent changes in medicines, such as changes to antihypertensive medicines to find the optimum type of medicine for the patient
- frequent changes in doses, for example, changes in doses of angiotensin converting enzyme (ACE) inhibitors to get the optimum effect of the medicines without too many side effects, or changes in warfarin dose to maintain appropriate international normalised ratio (INR).

- **Lack of immediacy of beneficial effects**

For example:

- the effects of treatment are not immediately apparent to the patient, for example, use of anti-thrombotics, treatment for hypertension and/or dyslipidaemia
- the impact of treatment is not apparent, due to patients' past cardiovascular event experiences; for example, primary versus secondary prevention.

- **Side effects**

For example, some side effects can negatively affect adherence. See Table 2 on page 103 for more information.

- **Reduced access to medicines and/or medical support**

For example:

- rural and remote areas with minimal medical facilities
- the high cost of medicines
- the inability of older patients to actually get to the health professional.

## The healthcare system

### Facilitator notes

#### Task

Present and discuss the factors related to the healthcare system that may impact on patient adherence to cardiovascular medicines.

#### Activity

Divide participants into small groups. Ask them to discuss the factors related to the healthcare system that may impact on patient adherence to cardiovascular medicines which they can address in their practices. Ask them to outline the factors that are outside their scope.

**Note:** at this stage we are not interested in identifying ways to address the factors – we just need to focus on the factors themselves.

The healthcare system can also affect patient adherence to medicines by influencing access to care. The following factors may influence patient adherence.

- **Health professionals' lack of time**
  - Consultation times may be too short to adequately address patient medicine-taking behavior.
  - Health professionals may be overworked and stressed, and have increasing demands placed on them, leaving less time available for patients.
  - Health professionals may not have enough time to educate patients/don't spend enough time educating patients and/or following up with them about their adherence to medicines.
- **Lack of reimbursement**
  - Some health professionals don't receive direct financial reimbursement for patient counselling and education. This can result in reduced motivation and willingness to provide adherence-focused interventions.
- **Continuity of care**
  - Receiving care from the same provider over time will help to develop a better health professional–patient relationship.
  - Patients will be more willing to express possible problems if they see the same health professional consistently.
  - Communication breakdown often happens between the time a patient is discharged from the hospital and sees his/her general practitioner (GP).
  - There is also potential for communication breakdown between the patient's GP and specialists.
- **Interprofessional collaboration**
  - Good collaboration between health professionals (e.g. sharing information through patient records and letters) can result in better treatment plans and a better overview of patient adherence.
- **Ongoing communication**
  - Ongoing communication efforts (e.g. letters and telephone contacts) can be used to monitor patient progress and overall health.
  - Communication between health professionals can optimise patient treatment plans.
- **Poor medicine distribution and costs**
  - Pharmacies can be difficult to reach in rural and remote areas of Australia, thus patients may be less likely to visit their pharmacy to get medicine refills.

- **Health professionals' limited condition-relevant knowledge and training**

- Health professionals need good condition-related knowledge and training to create the best possible treatment plan and deliver interventions to improve patients' adherence to medicines.

- **Limited community support**

- Patients may not always have access to relevant and appropriate support organisations.

## The socioeconomic context

### Facilitator notes

#### Task

Present and further discuss factors that relate to the patient's socioeconomic context, which may have an impact on adherence to cardiovascular medicines.

Barriers to medicine taking, related to the patient's socioeconomic context, include the following.

- **Financial burden<sup>1,21</sup>**

For example:

- the cost of medicines, tests and transportation
- costs related to visiting the GP, pharmacist or other health professional (e.g. consultation fees, travel and parking costs).

- **Low levels of patient education and/or literacy (including health literacy)**

For example, patients with lower levels of education/literacy have, in general, less knowledge of their condition and the medicines used to treat it, which affects adherence. Patients may not be able to access information that is presented in a way that they can understand.

- **Language barriers**

For example, patients may not be able to understand the information health professionals give them because they have limited language skills. This will negatively impact their knowledge about their condition and the medicines used to treat it, which affects their adherence to medicines.

- **Lack of effective social support networks**

For example, it can be helpful for patients to have someone (e.g. a family member or friend) who can help them take their medicines.



- **Unstable living conditions**

For example:

- patients with problems at home (e.g. going through a divorce)
- patients who travel frequently for work
- patients who are homeless.

- **Access to medicines**

For example, see 'Poor medicine distribution and costs' under 'The healthcare system' on page 11. This also relates to accessing all health professionals for medical treatment.

- **Attitudes associated with poverty**

For example:

- lower levels of self-efficacy
- learned helplessness
- low levels of self-determination.

Although these factors have not been consistently associated with patient non-adherence,<sup>12</sup> it is important to monitor patients to whom these factors may apply.

Other psychosocial factors, such as language, religion, cultural background and lifestyle, as well as a patient's current circumstances, may also affect patient adherence to medicines.<sup>12</sup>

### Case study

Sixty-eight-year-old Richard retired in 2007, but lost over 60% of his superannuation in the global financial crisis in 2009. He is concerned for his future and feels depressed that he may not be able to provide for his children after his death.

Richard knows that he should take 10 mg atorvastatin for his high cholesterol level, but at \$34.20 a month<sup>22</sup> for the rest of his life, he has decided to stop taking this medicine for now. Richard's doctor told him that while he still smokes, there is little hope to improve his condition. Richard doesn't feel able to quit smoking, so rationalises that medicines will not help him anyway.

### Facilitator notes

#### Tasks

Revisit the patient-related factors affecting adherence, giving cardiovascular medicine and CVD-specific examples.

Explain the 'health belief model'.

Present and further discuss with participants patients' perceptions about medicines, health professionals/the healthcare system and themselves.

Explain to participants the 'health locus of control'.

#### Activity

Divide participants into small groups. Ask them to discuss the health belief model and whether or not it helps to explain non-adherent behaviours observed in their practices.

## Individual patient characteristics

Patients have been the primary target of research investigating the causes of non-adherence to medicines. Patient-related factors associated with non-adherence to medicines are listed below.

- **Actual or perceived side effects**

For example:

- atorvastatin may cause myalgias
- using ACE inhibitors can cause a persistent cough
- metoprolol can cause fatigue, dizziness and dyspnoea during exercise
- warfarin can cause excessive bleeding.

See Table 1 on page 87 for more information.

- **Rejection of the diagnosis**

For example, patients may not believe that they have hypertension, because they don't have any symptoms.

- **Limited understanding of the importance of medicines**

For example, patients with hypertension or dyslipidaemia are unlikely to have any health problems associated with their asymptomatic condition and therefore don't understand why they should take medicines.

- **Loss of faith in medicines**

For example, a patient is prescribed spironolactone because the use of diuretics, ACE inhibitors and beta-blockers doesn't improve his/her heart failure adequately. The patient may think that the spironolactone is also not going to work, so doesn't take spironolactone and/or stops taking another medicine, or medicines.

- **Poor sight**

For example, patients with poor sight (e.g. older people) can't read the medicine's label or Consumer Medicine Information (CMI).

- **Poor memory**

For example, patients with poor memory (e.g. older people) can't remember the information they read or that was given to them.

- **Lack of self-efficacy**

For example, patients may lack the confidence to make recommended behavioural changes, including taking medicines as prescribed.

- **Language or literacy barriers**

For example:

- CMIs may not be available in languages other than English
- the level of information may be too high for patients with low literacy levels.

## Factors that promote adherence to medicines

It is interesting to look at not only why patients are non-adherent to medicines, but what makes them adherent.

Patient adherence has been reported to be related to patients':

- **faith** in the physician or medicines
- **fear** of cardiovascular complications (e.g. a heart attack)
- **desire to control** their condition (more so in chronic disease states)
- **feeling of certainty** gained through using medicines<sup>19,23,24</sup>
- **personality type** – some people believe that following a treatment regimen does not warrant a need for decision or reflection<sup>23</sup>
- **motivation** to manage their condition<sup>12</sup>
- **confidence** in their ability to manage their illness<sup>12</sup>
- **expectations** regarding the outcomes of the treatment<sup>12</sup>

- **knowledge and understanding**, for example about the rationale for treatment

- **beliefs**, for example about the effectiveness of treatment.

Two factors that considerably influence adherence to medicines are the patient's knowledge and beliefs, which are discussed in more detail below.

## Patient knowledge and understanding

There may be gaps in the patient's knowledge that influence his/her adherence to medicines. Patients may have limited knowledge of, or skills for managing, their condition and its treatment.<sup>12</sup> They may also misunderstand or not accept their diagnosis. Patients may not understand the health risks associated with their condition, misunderstand the treatment instructions, and/or receive mixed messages from different health professionals.

Health professionals should address patients' limited knowledge, misinformation and misunderstandings, and give them easily understood information. Strategies for improving patient knowledge will be discussed further in modules 3 and 4.

### About absolute CVD risk

Explaining to patients the concept of absolute CVD risk may help them to understand the benefits of taking their medicines and making lifestyle changes, as well as the risks of non-adherence to treatment.

Absolute CVD risk is the numerical probability that an individual will develop CVD within a given period of time. It depends more closely on the combination and intensity of risk factors, rather than on the presence of any single risk factor, because the cumulative effects of multiple factors may be synergistic.<sup>25</sup>

## Patient beliefs

Exploring a patient's beliefs can often provide worthwhile information, because patients' perceptions of their treatment and condition can influence their decision to adhere to treatment.<sup>18</sup>

The **Health Belief Model** is a behavioural, theory-based model that describes the impact of patients' beliefs on their health behaviours. It suggests that a patient's willingness to change his/her behaviour is primarily due to the following factors.



### • Perceived susceptibility

This is the patient's belief about how susceptible he/she is to developing a condition, relapsing, developing severe symptoms or the condition worsening. The greater the perceived risk, the more likely patients will be to adhere to treatment. For example, a patient's neighbour had high cholesterol levels for years before he had a stroke. The patient becomes adherent because "it might happen to him".

### • Perceived severity

This is the patient's belief of how serious or severe the condition is if it is left untreated. Perceived severity is often based on the information health professionals give patients and the patient's existing knowledge. It may also be based on the patient's perceptions of the 'problems' caused by the condition or the effects it would have on his or her everyday life.

For example:

- a patient who is not adherent to his antihypertensive medicines because "he doesn't feel sick" and believes that "nothing will happen" to him if he doesn't regularly take his medicines
- a patient who always takes her maintenance dose of aspirin, because she remembers the myocardial infarction she had several months ago.

### • Perceived benefit

This is the patient's belief of the value of taking medicines to decrease the risk of developing a (more severe) condition, or the condition worsening.

For example:

- the non-adherent patient who doesn't see the benefits of taking ramipril to treat her hypertension
- the patient who believes that a prolonged life doesn't compensate for a reduced quality of life or the disruption to lifestyle that would result from taking medicines
- the patient with arrhythmias who takes diltiazem as prescribed because he feels significantly better when he does.

### • Perceived barriers

This is the patient's perception of the obstacles to using the medicines, including side effects and costs.

For example:

- the patient who heard that the medicine (e.g. warfarin) had many severe side effects, so is afraid to take it.

### • Cue to action

This refers to stimuli (e.g. events, people or things) that must occur to cause a behaviour change in the patient.

For example, a heart attack will trigger a patient's adherence to metoprolol and atorvastatin.

### • Self-efficacy

This is the patient's belief in his/her ability to accomplish something, in this case, adherence.

For example:

- patients with a low level of self-efficacy generally feel more helpless and don't believe they can adhere to their medicines
- patients with a high level of self-efficacy are more likely to engage in treatment, because they perceive themselves as being able to adhere to medicines and create change in relation to their condition.

High levels of self-efficacy can also cause intentional non-adherence, because some patients may decide against their health professionals' recommendations as they feel in control of making a different decision about their treatment. For example, a patient who needs to reduce his/her blood pressure may opt not to take the medicine prescribed, but make lifestyle changes instead.<sup>26</sup> While positive lifestyle changes are beneficial, it is important to explain to patients that lifestyle changes alone may not be enough to help them achieve optimum health outcomes.

In addition to these perceptions and beliefs, patients may also have beliefs about other issues that can affect adherence. These include perceptions about their medicines, the health professional/healthcare system and themselves, as outlined below.

### • Medicines

Patients' perceptions of their treatment and how it affects their condition can influence whether or not they decide to adhere to it.<sup>18</sup> Many people have reservations, dislikes or anxieties about medicines.<sup>24</sup> They often ask the following questions when prescribed a new medicine:

- how effective is the medicine?
- how likely am I to become addicted?
- should I try a more natural and 'safer' alternative?
- how likely am I to get side effects?
- can I become 'immune' to the medicine?
- can the medicine harm me?

- am I able to follow this complex treatment regimen?
- can I actually take the medicine?
- will the medicine make a difference to my condition?

#### Case study

Claire, 89-years-old, has heart failure and recently had a severe stroke. In hospital, her medicine regimen was changed to try to prevent further strokes. Now her medicines regimen is quite complex.

Claire doesn't like taking her medicines and often skips doses. To cut down on her perceived overdosing, each day she takes one instead of two combined aspirin/dipyridamole sustained-release capsules, which she thinks are too powerful. Claire's daughter, who looks after her, knows she is halving the dose, but sees no real harm in it.

#### • The health professional/healthcare system

Sometimes patients have negative perceptions about health professionals (prescribing) and/or the healthcare system. They may think:

- the health professional doesn't support them
- the health professional doesn't consider their lifestyle
- the health professional changes their medicines all the time
- the health professional doesn't give them any information about their medicines or condition
- it takes too much effort to go to the health professional.

#### Case study

Sam's doctor prescribed him a beta-blocker and the medicine makes him feel tired. Because of this, Sam can no longer participate in local football games or care for a loved one. Sam has started experimenting with doses so he can fit in daily chores and enjoy playing football again.

#### • The patient's self perception

Patients' perceptions and beliefs about themselves are complex and varied. They are also fundamental in understanding the patient's relationship to taking medicines. Three concepts help to explain patients' perceptions of themselves.

##### 1. Health locus of control

Health locus of control refers to patients' beliefs about whether their health is controlled by their behaviour or external factors.<sup>27</sup>

Patients with an **internal locus of control** believe that health outcomes are a direct result of their own behaviour.

Patients with an **external locus of control** believe that health outcomes are a result of chance or other people, such as health professionals.<sup>28</sup>

Patients with a high internal health locus of control may adhere better to medicines, because they are more likely to take health-improving actions.

##### 2. Self-reliance and stoicism

Some patients don't want to take medicines, because they believe they can "sort their own problems out". They feel that they should be stoic and would rather rely on inner strength or hardiness.<sup>18,19</sup>

Self-reliance, a facet of independence, can therefore negatively affect the patient's adherence.

##### 3. Self-efficacy

See the Health Belief Model on pages 13–14.

# Conclusion and key messages

## Facilitator notes

### Tasks

Review the objectives and learning outcomes of this module. Ask participants to summarise what they have learnt.

Introduce the next module.

Factors underlying non-adherence to medicines are diverse.

Non-adherence to medicines can result from condition-related factors, such as the chronic nature of the disease, and from patient-related factors, such as patients' self-beliefs. This makes non-adherence a complex and dynamic issue.

To help health professionals become aware of a patient's 'adherence problem', there are several established factors that can influence patient adherence to cardiovascular medicines.

These factors relate to the healthcare system, the condition, the medicine, patients' socioeconomic context and patients themselves. Although these factors haven't been consistently associated with non-adherence, it is important to recognise them and monitor patients accordingly.

To effectively lower a patient's absolute CVD risk, all health professionals should be able to:

- correctly identify non-adherence to cardiovascular medicines
- help patients overcome any problems and remain adherent to medicines.

Patients' non-adherence to cardiovascular medicines is problematic, but should not be viewed as the patients' problem. Instead, it should be considered a problem of the healthcare system.

'Patient-centred care', 'concordance' and 'therapeutic alliances' are fundamental to best practice for patient treatment and health management. Health professionals have an important role to play in identifying and addressing non-adherence to therapy.

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## Module 2: Identifying patients' non-adherence

“In a recent study, over half of the patients (57.1%) were found to be non-adherent. However, physicians failed to detect any non-adherence in these patients.”<sup>1</sup>

## Objectives

The objectives of this module are to:

- provide indicators to help you identify patients who are potentially non-adherent to their medicines
- present and discuss available tools and measures to help you identify patients who are non-adherent to their medicines.

## Learning outcomes

By the end of this module, you will be able to:

- demonstrate an increased understanding of indicators that can help to identify patients who are potentially non-adherent to their medicines
- demonstrate an increased understanding of the tools used to identify patients who are non-adherent to their medicines
- demonstrate the use of the tools in measuring and identifying patients who are non-adherent to their medicines.

It is very important for health professionals to identify patients who are non-adherent to their medicines. Most of the time, patients will not tell you if they are not taking their medicines as prescribed.

In this module, we will discuss indicators that may suggest a patient is not taking his/her medicines as prescribed, and tools that may help you identify and measure non-adherence.

## Important note

Non-adherence must be identified so you can help patients achieve better (or goal) clinical outcomes and lower their absolute cardiovascular disease (CVD) risk.

To make sure patients have a chance to achieve the best possible health outcomes, structured protocols and procedures to identify non-adherent patients (to pharmacological therapy and lifestyle changes) should be implemented in primary care practice.



# When to suspect non-adherence to medicines

## Facilitator notes

### Tasks

Present a short introduction to the module, including its content, objectives and learning outcomes.

Differentiate between how a health professional can:

- use a list of indicators to identify patients who may be non-adherent to their medicines
- use tools or measures to actually identify patients who are non-adherent to their medicines.

### Activity

Divide participants into small groups. Ask them to discuss the patient-, medicine- and condition-related indicators that could alert them to patients who are potentially non-adherent to their medicines.

### Feedback

Ask groups to present the indicators they identified.

### Task

Summarise the indicators and compare them with the indicators listed in the module.

There are many indicators that can highlight the possibility of non-adherence to prescribed treatment. They are largely related to the reasons for non-adherence (see module 1, 'Reasons for non-adherence' on page 9 for more information). The indicators may be patient-, condition- or medicine-related.

The presence of one or more indicators does not necessarily mean patients are not taking their medicines, though it should raise suspicions.

### Remember

- The first step in solving your patient's non-adherence to medicines is identifying it.
- Most health professionals overestimate their patients' adherence to medicines.
- Patients are generally reluctant to admit their non-adherence to medicines, unless health professionals regularly make specific efforts to ask about it.

## When suspicion should be raised

### If patients:

- aren't responding to treatment, or the response is less than anticipated
- have missed appointments, especially post-discharge from hospital
- have missed refilling a prescription
- consult you for a new condition, which may be a side effect of one of the cardiovascular medicines (see Table 2 on page 103 for more information)
- are older
- are forgetful or absent-minded
- are cognitively dissonant
- have poor eyesight
- are depressed
- have a mental disorder
- have dementia
- have emotional instability/are chronically maladaptive
- have poor coping strategies
- have multiple comorbidities
- lack social support
- have a low income
- are illiterate or have little formal education
- have low self-esteem
- have poor interpersonal skills
- don't speak English well and/or have difficulty communicating in English
- have little knowledge about their condition and/or treatment
- are confused about their medicines
- have little evident faith in, or satisfaction with, the treatment, health professional or patient–health professional interaction
- don't believe the treatment will benefit them
- can't see the 'common sense' of the treatment, or it doesn't align with their beliefs
- reject the diagnosis
- are about to travel
- work changing shifts or night shifts
- have a chaotic lifestyle.

### If the condition:

- is asymptomatic or symptoms are mild
- is chronic and needs ongoing treatment
- needs a large number of medicines and/or a complex treatment regimen
- incurs a high cost of medicines or other treatment
- impacts cognitive ability
- needs medicines with many and/or severe side effects (where the cure is worse than the condition)
- needs medicines that have received negative publicity in the media.

### If patients, when referring to their medicines:

- fail to mention target medicines
- can't answer questions about their medicine taking
- report interruption in or discontinuation of use
- report missed doses.

# Tools of the trade

## Facilitator notes

### Task

Introduce the next activity, which will focus on the methods and measures health professionals can use to identify patient non-adherence to medicines (and its extent).

### Activity

Divide participants into small groups. Ask them to discuss the methods they normally use to measure possible patient non-adherence to medicines (including the pros and cons of these methods), and how often they use them.

Participants should link the methods they use with the indicators of patient non-adherence to medicines discussed earlier.

### Feedback

Ask groups to present the various methods they identified, as well as the pros and cons of these methods. Groups should focus on how the methods can be integrated into routine practice.

### Task

Summarise the methods identified and their pros and cons, and link them to the indicators discussed earlier. Highlight that:

- tests of blood and urine samples are most accurate in measuring adherence, however, they are not often practical and are not possible with all medicines
- there are more practical measurement methods, which can be objective or subjective
- there is no 'gold standard' for measuring adherence.

If patient non-adherence to medicines is suspected, it is important to confirm it. There are several tools/measurement methods health professionals can use to help them do this.

There is no 'gold standard' for measuring patient adherence to medicines, and no single tool to detect all types of non-adherence to medicines.

One of the best methods uses blood or urine samples that show the level of the medicine, metabolite or a biological marker in the patient's body. However, these methods are expensive and not practical for routine use. Therefore, health professionals have to rely on less direct and less sensitive methods to get this information.

A patient's adherence to his/her medicines may be observed, such as through:

- **measurement of physiological markers**, for example blood pressure and lipid levels
- **clinical responses**, for example lower incidence of angina, stable international normalised ratio (INR) results
- **reaching treatment goals**, for example reaching goal blood pressure level.

More relevant measurement methods for everyday practice include:

- pill counts
- pharmacy refill records
- patient self-reporting, for example by questionnaire, interview or diary.

The main characteristics of the measures are summarised in the following table. More detailed information can be found in the following sections of this module.

## Tools to measure patients' adherence to their treatment regimen<sup>2</sup>

Method	How it works	Outcome measures	Pros	Cons
<b>Objective methods</b>				
Pharmacy refill records	Shows the frequency of prescription refills over a specific period.	<ul style="list-style-type: none"> <li>• Rates</li> </ul>	<ul style="list-style-type: none"> <li>• Non-invasive</li> <li>• Economical</li> </ul>	<ul style="list-style-type: none"> <li>• No information on patterns of medicine taking</li> <li>• Doesn't record actual consumption</li> <li>• Patients must get their medicines from the one pharmacy</li> </ul>
Pill counts	Count pill numbers taken out of packages over a dosing period.	<ul style="list-style-type: none"> <li>• Rates</li> </ul>	<ul style="list-style-type: none"> <li>• Easy to use</li> <li>• Inexpensive</li> </ul>	<ul style="list-style-type: none"> <li>• No information on patterns of medicine taking (though blister packs will provide some information)</li> <li>• Doesn't record actual consumption</li> <li>• Data can be manipulated by patients</li> <li>• Time consuming</li> </ul>
Medication event monitoring system (MEMS)	A microprocessor attached to the medicine bottle lid records the occurrence and time of each opening.	<ul style="list-style-type: none"> <li>• Rates</li> </ul>	<ul style="list-style-type: none"> <li>• Non-invasive</li> <li>• Accurate</li> <li>• Gives information on behavioural patterns</li> </ul>	<ul style="list-style-type: none"> <li>• Expensive</li> <li>• Doesn't record actual consumption</li> <li>• Not practical in everyday use</li> <li>• Can't be used for medicines that are not in bottles</li> </ul>
<b>Subjective methods</b>				
Brief medication questionnaire (BMQ)	Consists of a five-item regimen screen, a two-item belief screen and a two-item recall screen to measure patients' medicine-taking behaviour and possible barriers to adherence.	<ul style="list-style-type: none"> <li>• Rates</li> <li>• Barriers</li> <li>• Beliefs</li> </ul>	<ul style="list-style-type: none"> <li>• Brief and easy to use</li> <li>• Economical</li> </ul>	<ul style="list-style-type: none"> <li>• Can be biased by patients giving false information</li> </ul>
Morisky Scale	The scale consists of four 'yes or no' questions that measure patients' medicine-taking behaviour.	<ul style="list-style-type: none"> <li>• Rates</li> <li>• Barriers</li> <li>• Beliefs</li> </ul>	<ul style="list-style-type: none"> <li>• Brief and easy to use</li> <li>• Economical</li> </ul>	<ul style="list-style-type: none"> <li>• Can be biased by patients giving false information</li> </ul>

Method	How it works	Outcome measures	Pros	Cons
<b>Subjective methods</b> ( <i>continued</i> )				
Medication adherence report scale (MARS)	Items in the questionnaire are rated on a Likert scale, from 'never' to 'always', to indicate patients' medicine-taking behaviour.	<ul style="list-style-type: none"> <li>• Rates</li> <li>• Barriers</li> </ul>	<ul style="list-style-type: none"> <li>• Brief and easy to use</li> <li>• Economical</li> <li>• Places adherence on a scale (more sensitive)</li> </ul>	<ul style="list-style-type: none"> <li>• Only barrier identified is forgetfulness</li> <li>• Can be biased by patients giving false information</li> </ul>
Brief illness perception questionnaire (IPQ)	A nine-item scale designed to rapidly assess the cognitive and emotional representations of illness.	<ul style="list-style-type: none"> <li>• Rates</li> <li>• Barriers</li> <li>• Beliefs</li> </ul>	<ul style="list-style-type: none"> <li>• Easy to use</li> <li>• Economical</li> </ul>	<ul style="list-style-type: none"> <li>• Not created for clinical use, but can be adapted</li> <li>• Time consuming</li> <li>• Can be biased by patients giving false information</li> </ul>
Beliefs about medication questionnaire (BaMQ)	Consists of two five-item scales that assess patients' beliefs about the necessity of prescribed medicine for controlling their condition and their concerns about potential adverse consequences of taking it.	<ul style="list-style-type: none"> <li>• Rates</li> <li>• Barriers</li> <li>• Beliefs</li> </ul>	<ul style="list-style-type: none"> <li>• Easy to use</li> <li>• Can get detailed and relevant information in an unobtrusive and non-judgemental way</li> <li>• Places adherence on a scale (more sensitive) or simplified dichotomy</li> </ul>	<ul style="list-style-type: none"> <li>• Can be biased by patients giving false information</li> </ul>
Interview	Health professionals ask patients open or closed questions about their beliefs and/or behaviours.	<ul style="list-style-type: none"> <li>• Rates</li> <li>• Barriers</li> <li>• Beliefs</li> </ul>	<ul style="list-style-type: none"> <li>• Can be used in creating concordance with the patient</li> <li>• Can capture unanticipated information</li> <li>• Inexpensive</li> <li>• No extra resources needed</li> </ul>	<ul style="list-style-type: none"> <li>• Health professionals must be careful with the wording of questions and judgements</li> <li>• Time consuming</li> <li>• Can be biased by patients giving false information</li> </ul>
Diary	Structured or unstructured process to capture patient information, such as their beliefs and behaviours.	<ul style="list-style-type: none"> <li>• Rates</li> <li>• Barriers</li> <li>• Beliefs</li> </ul>	<ul style="list-style-type: none"> <li>• Cost effective</li> <li>• Includes regimen data</li> </ul>	<ul style="list-style-type: none"> <li>• Non-adherent patients are unlikely to fill in the diary</li> <li>• Can be biased by patients giving false information</li> </ul>

# Objective monitoring measures

## Facilitator notes

### Task

Present and discuss with participants the objective measures of adherence to medicines: pharmacy refill records, pill counts and MEMS.

### Activity

Divide participants into small groups. Ask them to consider pharmacy refill records, pill counts and MEMS, and how they could integrate these methods as routine measures in their practice for assessing patient adherence to medicines. Participants should also discuss which of these three methods is preferred, and why.

### Feedback

Ask participants to give feedback on the above activity to the larger group. Develop a protocol on how these methods can be routinely used by health professionals.

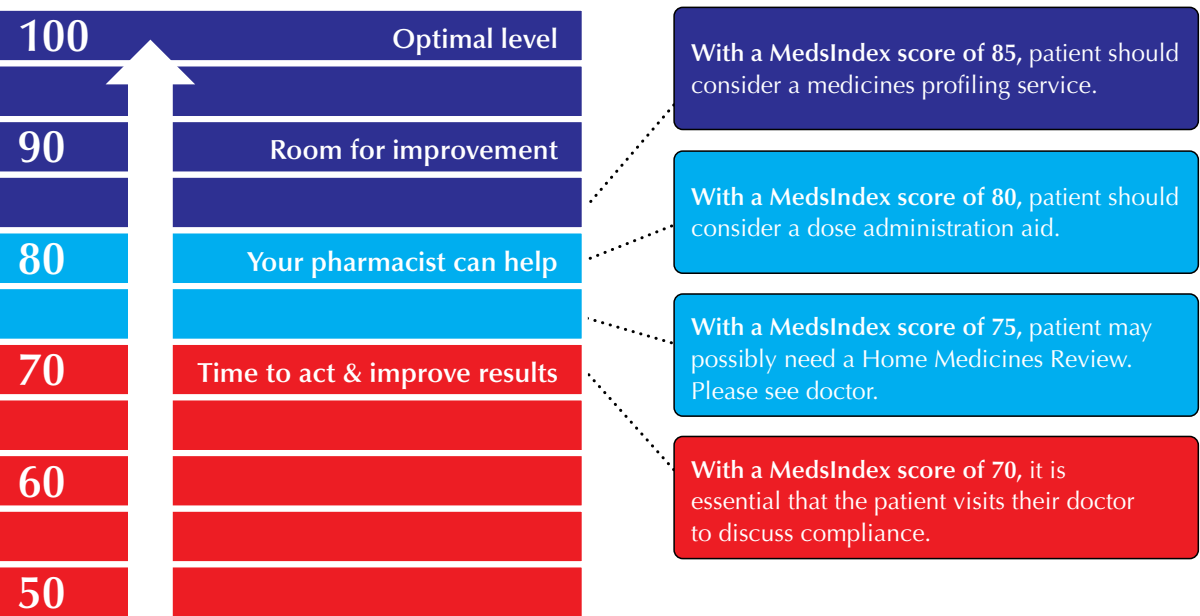
## Pharmacy refill records

Pharmacy refill records are relatively objective, unobtrusive and inexpensive as a source of information about patients' medicine-collecting behaviour. When a patient consistently uses one pharmacy, the pattern of his/her prescription filling gives an accurate estimate of adherence to medicines.

As with pill counts, pharmacy refill records don't account for pill dumping or pill sharing, and they can't give information about the timing and patterns of doses. Moreover, refill records need consistent access to all pharmacy data, significant back-end programming for calculations and a closed pharmacy system. They are also unstable over shorter intervals. A further limitation is that refill records don't take into account patients' use of over-the-counter medicines, which may impact on their adherence to cardiovascular medicines and/or health outcomes.

The Pharmacy Guild of Australia has developed an adherence monitoring system based on patients' refill intervals, which will be compared with the expected refill intervals based on the dose regimen. This system, MedsIndex, gives patients an adherence score out of 100 for each of their medicines for chronic conditions.

Figure 1: Recommended actions by the MedsIndex, based on patients' scores.<sup>4</sup>



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The score prompts pharmacists to initiate a conversation with the patient about their adherence. If the conversation validates the score, and poor adherence is confirmed, this is a call to action to the pharmacist to explore strategies for addressing adherence (see Figure 1 on page 26). For more information, visit [www.medsindex.com.au](http://www.medsindex.com.au).

## Pill counts

Pill counts are usually done in a patient's home (e.g. through a Home Medicines Review), but health professionals may ask patients to bring their medicines to consultations so a pill count can be done then.

Pills are counted at the end of a designated time to calculate the patient's rate of adherence to the medicines. Pill counts don't always give an accurate account of a patient's medicine taking, because they don't account for pill dumping, moving pills to another container or hoarding pills.

Furthermore, pill counts don't give any information about the patient's pattern of medicine taking, such as missing doses or timing variations.

## MEMS

The MEMS is a medicine container with a microprocessor that records the date and time of opening, creating a sensitive and accurate record of adherence to medicines. This tool can't measure the consumption of medicines, only indicating it through the opening of the container.

The MEMS system itself is not neutral. It can act as a behavioural intervention, enhancing adherence in some individuals.<sup>3</sup> More importantly, the high costs of the container, and the fact that the MEMS cap is for medicines that go into a bottle (and therefore, not useful for medicines that are in blister packs), make it impractical for routine use.

# Subjective monitoring measures

### Facilitator notes

#### Task

Present and discuss with participants the subjective measures of adherence to medicines: interviews, questionnaires and diaries.

#### Activity

Divide participants into small groups. Ask them to consider the subjective measures (interviews, questionnaires and diaries), the pros and cons of these, and how they could integrate them as routine measures in their practice for assessing patient adherence to medicines.

#### Feedback

Ask participants to give feedback on the above activity to the larger group. Develop a protocol on how these methods can be routinely used by health professionals.

#### Task

Outline the suggested protocol/s, finishing this session with a protocol that each participant can incorporate into his/her practice.

Interviewing, questionnaires and diaries are flexible and practical methods of getting information about patients':

- adherence to their medicines
- concerns about their medicines
- understanding of their condition.

These methods are easy to use, either in a professional setting or a patient's home (e.g. take-home questionnaires or telephone interviews).

Asking patients about their medicine taking should be routine practice.

Patient self-reporting is not very sensitive to non-adherence to medicines, due to a lack of patient recall or the patient's desire to appear to conform to the prescribed regimen. Patients may prefer to 'save face' than admit non-adherence to medicines to a health professional, who they may perceive to be judgemental. Health professionals are more likely to get accurate information from patients about their medicine-taking behaviour if they are non-judgemental.



Components of a good interviewing technique will be looked at in detail in the next module, but remember the importance of:

- appearing caring
- having enough time scheduled with a patient before starting to interview him/her
- being non-judgemental.

Patients will pick up on any stress in the interview, influencing the information they give. If you don't have enough time to really talk to a patient, think about what you **can** achieve, plan for further consultations or refer the patient to a colleague.

#### If you only have a couple of minutes...

Ask patients how they are going with their medicines.

If you think it would be beneficial, schedule another time to talk specifically about their treatment and how they are managing it.

## Patient questionnaires

### Facilitator notes

#### Task

Set the scene by letting participants know that the focus will now be on using questionnaires to measure patient adherence to medicines.

#### Activity

Divide participants into small groups. Ask them to discuss how and when they have used questionnaires to elicit information from patients about adherence to medicines. Participants should discuss their experiences and focus on what worked best and what did not.

If the facilitator feels that there is limited experience and the discussion is likely to be short, the facilitator should prompt discussions through using an example.

#### Task

Present and discuss with participants the different types of questionnaires, and what is practical to routinely use within their practices. The discussion should focus on the differences between the questionnaires (e.g. the different questions asked) and participants' preferences and the reasons for these preferences.

Although created for research, the following adherence questionnaires are available to health professionals and can provide insight into patients' adherence. While not providing the same richness of information gained through in-depth discussions (open-ended interviewing), questionnaires can still identify non-adherence and factors that contribute to it. You might provide the questionnaire to your patient outside of the consultation time, which might allow him/her to feel less threatened.

A number of research tools that can be adapted to the clinical setting are outlined in more detail below. It should be noted that one limitation of these tools is that they rely on self-reported data from patients, and some patients may give desirable, rather than truthful information about their adherence.

### Brief medication questionnaire (BMQ)<sup>5</sup>

The BMQ is short and easy to use, and can help to detect different types of non-adherence to medicines (i.e. repeat and sporadic). It can be used with patients taking multiple medicines, and can be self-administered by the patient.

The BMQ screens for current and potential non-adherence and barriers to adherence. It includes:

- a five-item 'regimen screen' that asks patients how they took each medicine in the past week
- a two-item 'belief screen' that asks about side effects and bothersome features
- a two-item 'recall screen' that looks at the potential difficulties in remembering to take medicines.

Ideally, the patient's medicines should be reviewed before the BMQ is administered, so that the patient's answers can be checked.

Indicators of non-adherence to medicines include patients:

- failing to mention target medicines (without prompting by a health professional)
- stating that they can't remember if they took their medicines, or that they forgot to take them
- not being able to answer questions about their medicine taking
- reporting interruption in, or discontinuation of, use
- reporting missed doses.

In the BMQ example below, although the patient could name all prescribed medicines and had a relatively good understanding of them, he/she would be considered non-adherent because he/she missed one dose of each medicine prescribed for that week.

### Example of a completed BMQ<sup>6</sup>

All answers provided unprompted by the patient.

a) What medicines do you currently take?	<i>Amlodipine</i>	<i>Atenolol</i>	<i>Irbesartan</i>
b) Medicine strength	<i>Don't know</i>	<i>50 mg</i>	<i>300 mg</i>
c) How many days did you take it?	<i>6</i>	<i>6</i>	<i>6</i>
d) How many times a day did you take it?	<i>1</i>	<i>1</i>	<i>1</i>
e) How many pills/injections did you take each time?	<i>1</i>	<i>1</i>	<i>1</i>
f) For what reason were you taking it?	<i>Blood pressure</i>	<i>Blood pressure</i>	<i>Blood pressure</i>
g) How many times did you miss taking it?	<i>1</i>	<i>1</i>	<i>1</i>
h) For what reasons did you miss taking it?	<i>Forgot</i>	<i>Forgot</i>	<i>Forgot</i>
i) How many times did you take less than the amount prescribed?	<i>1</i>	<i>1</i>	<i>1</i>
j) How many times did you take more than the amount prescribed or take extra doses?	<i>0</i>	<i>0</i>	<i>0</i>
k) How well does the medicine work for you? 1 = well      2 = okay 3 = not well    4 = don't know	<i>2</i>	<i>2</i>	<i>2</i>

Do any of your medicines bother you in any way? Yes / No

If yes, please name the medicines and check below how much it bothers you.

Medicine name	A lot	Some	A little	Never	In what way did it bother you?
Amlodipine		✓			Fatigue and flushed feelings
Irbesartan		✓			
Comment:	I don't know which of these medicines causes the side effects.				

Below is a list of problems that people sometimes have with their medicines. Please check how hard it is for you to do each of the following.

	Very hard	Somewhat hard	Not hard at all	Comment
Read the print on the bottle			✓	<i>All three</i>
Open or close the medicine bottle			✓	
Remember to take all pills		✓		
Get your refills in time			✓	
Take so many pills at the same time			✓	

## The Morisky Scale

The Morisky Scale<sup>7</sup> is a tool that is brief, easy to use and predicts non-adherence to medicines. It measures attitudinal and behavioural factors that underlie non-adherence to medicines and needs only 'yes' or 'no' responses. Patients are considered non-adherent if they answer 'yes' to one or more of the four questions.

### The Morisky Scale

1. Do you ever forget to take your medicine?
2. Are you careless at times about taking your medicine?
3. When you feel better, do you sometimes stop taking your medicine?
4. Sometimes, if you feel worse when you take your medicine, do you stop taking your medicine?

## Medication adherence report scale (MARS)

Rather than labelling patients as 'adherent' or 'non-adherent', this scale views medicine taking as a continuum.

The MARS<sup>8</sup> focuses on **specific acts of non-adherence** and **obstructions to adherence**.

It attempts to question patients about their adherence to medicines in as non-threatening a way as possible. Rather than asking if patients adhere to their recommended regimen, the MARS asks patients if they **have found a more suitable way of taking their medicines**.

Questions are based around five aspects of non-adherent behaviour, and patients place themselves on a scale from one to five (one being 'always', and five being 'never'). The total points are then calculated to show an indication of the patient's adherence to their medicines. Higher scores on the MARS suggest better adherence than lower scores (a score of 25 indicates perfect adherence).

### Example MARS statements

- I forget to take these medicines sometimes.
- I alter the dose of these medicines sometimes.
- I stopped taking these medicines for a while.
- I decided to miss out a dose.
- I take less than instructed sometimes.

# Patient beliefs as an indicator of adherence to medicines

## Facilitator notes

### Task

Summarise the key points from the module so far, focusing on the indicators for identifying potential patient non-adherence to medicines, and the tools that can be used to measure adherence to medicines.

Introduce the next section on patient beliefs by reviewing material from module 1 on patient beliefs as an important factor in influencing adherence to medicines.

### Activity

Divide participants into small groups. Ask them to use information from modules 1 and 2 as a basis for discussion of the factors that can impact patients' beliefs about their condition and medicine taking.

### Feedback

Ask groups to give feedback on their discussions.

### Task

Review the questionnaires available to measure patient beliefs.

Patients' adherence to their medicines is influenced by their beliefs and attitudes about their condition.<sup>9,10</sup> Moreover, patient beliefs about their medicines predict their adherence more strongly than socio-demographic or clinical factors.<sup>10</sup>

The Health Belief Model suggests that five key elements determine a patient's adherence to medicines. (For more information about the Health Belief Model, see module 1, pages 13–14.)<sup>9,10</sup>

- **Threat of the illness**

For example, the patient's perception of the severity and susceptibility of illness.

- **Positive outcome expectancy**

For example, the patient's perceived benefits from treatment.

- **Barriers to using the treatment**

For example, the patient's expected disadvantages of the treatment.

- **Intent**

For example, the patient's intention to adhere to their treatment regimen.

- **Self-efficacy**

For example, the patient's belief in their own ability to be adherent to the treatment regimen.

Two research tools that can be useful in gaining insight into patients' beliefs within a clinical setting are outlined below.

## Beliefs about medication questionnaire (BaMQ)<sup>10, 11</sup>

This questionnaire is constructed around four aspects of patients' relationship with their medicines:

1. medicines in general
2. medicines they are taking, or are contemplating taking
3. patient beliefs of use/overuse of medicines by health professionals
4. general harm involved in medicine use.

Using the BaMQ, health professionals ask patients a series of questions relating to their beliefs. This gives the health professional a snapshot of the framework of general beliefs that patients are working within.

Patients indicate their degree of agreement with each statement on a five-point Likert scale, ranging from 'strongly disagree' to 'strongly agree'. This is then correlated to their perceived need to take the medicine to control the condition, and the adverse consequences of using the medicine. By using this technique, the patient's score is placed within either an information-rich continuum (of adherence) or a simple dichotomy ('adherent' vs 'non-adherent').

#### BaMQ statements

##### *Necessity scale*

1. My health at present depends on my medicines.
2. My life would be impossible without my medicines.
3. Without my medicines, I would become very ill.
4. My health in the future will depend on my medicines.
5. My medicines protect me from becoming worse.

##### *Concerns scale*

1. Having to take medicines worries me.
2. I sometimes worry about the long-term effects of my medicines.
3. My medicines are a mystery to me.
4. My medicines disrupt my life.
5. I sometimes worry about becoming too dependent on my medicines.

## Illness perception questionnaire (IPQ) revised (IPQ-R)<sup>12</sup>

This questionnaire, based on Levanthal's self-regulatory model of health management that describes the process by which patients respond to a perceived health threat, explores five themes to give a picture of the patient's perception of his/her illness:

- 1. identity:** the label the patient uses to describe the condition and the symptoms he/she views as being part of it
- 2. cause:** the patient's personal ideas about the cause of the condition
- 3. timeline:** how long the patient believes the condition will last, including recurrence
- 4. consequences:** the expected effects and outcome of the condition
- 5. cure or control:** the extent to which the patient believes he/she can overcome or control the condition.

Two dimensions were added to the original five:

- 1. illness coherence:** whether or not the patient understands and has knowledge of the condition
- 2. emotional response:** negative reactions, such as fear, anger and distress.

High scores on the questions related to identity, timeline, consequences and cause show the patient's negative beliefs about the perceived symptoms of the condition: its chronic nature, negative consequences and cyclical nature. This may lead to non-adherence to medicines.

Conversely, high scores on questions about control/ cure (including personal control and treatment control) and illness coherence show positive beliefs about the controllability of the condition and the patient's understanding of the condition. This may lead to adherence to medicines.

As the IPQ-R contains over 80 items, its length can be prohibitive in certain situations. Therefore, a questionnaire based on the IPQ-R, the Brief IPQ, may be more useful in general practice. The Brief IPQ works in the same way as the IPQ-R, but is much shorter and simpler, and therefore, easier to integrate into a typical consultation.<sup>13</sup>

For more information, visit [www.uib.no/ipq/index.html](http://www.uib.no/ipq/index.html).

# A conversation to identify non-adherence

## Facilitator notes

### Task

Introduce the use of conversation within consultations with patients as a means of eliciting information about patient adherence to medicines.

### Activity

Divide participants into small groups. Ask them to identify the non-verbal and verbal skills needed to talk with their patients to get information about adherence to medicines in a non-judgemental manner.

Discussions should include examples of questions that health professionals can ask.

### Feedback

Ask groups to give feedback on their discussions. The key questions for health professionals to ask should be finalised and agreed by the group. It is important that participants agree with the wording of the questions and are comfortable asking them.

Talking with patients can be more informal and personal than asking them to complete a questionnaire on taking medicine. Their responses to questions can:

- give you insight into their behaviour
- help you to assess their educational needs
- give you the opportunity to ask more questions and tell them about any changes to their treatment (e.g. administration) and goals.

However, to establish an interactive conversation in which you elicit information about the patient's medicine-taking behaviour, you need effective communication skills.

Module 3 explores the skills you need to communicate effectively with patients, and to encourage patients to be more open and confident with you about how they take their medicines.

## Important tips to remember when talking with patients about adherence

Do	Don't
<ul style="list-style-type: none"> <li>• be open</li> <li>• be neutral</li> <li>• word sentences and information carefully (e.g. reduce memory errors and misunderstandings)</li> <li>• avoid ambiguous language</li> </ul>	<ul style="list-style-type: none"> <li>• be leading</li> <li>• be judgemental, threatening, embarrassing or emotional</li> <li>• ask about too many medicines at once</li> <li>• be too broad or too narrow</li> </ul>

For example, a well-constructed question might be "What do you think about taking those medicines every day?" or "Do you have any concerns or expectations about your medicines?"

However, asking your patient "Are you careless with taking your medicines?" could be seen as emotional and judgemental.

## Standard questions from adherence surveys

Identifying potential non-adherence to medicines may be achieved through a simple, straightforward and informal approach. Asking open-ended questions gives you an opportunity to get information about your patient's behaviour, opinions and issues that you may not have considered. The following table lists some good questions that you can ask patients.

Questions to ask patients to assess their adherence to medicines
<b>To assess medicine-taking behaviour...</b>
<ul style="list-style-type: none"> <li>→ How are you going with those tablets?</li> <li>→ How have you been taking these medicines?</li> </ul>
<b>To assess beliefs and attitudes...</b>
<ul style="list-style-type: none"> <li>→ How do you feel about taking these medicines?</li> <li>→ Have you ever thought about changing your medicines?</li> <li>→ How well does the medicine work for you?</li> </ul>
<b>To assess both...</b>
<ul style="list-style-type: none"> <li>→ It must be hard trying to remember to take the tablets every time. Do you ever forget? How do you feel about that?</li> <li>→ People often have difficulty taking their pills, and I am interested in finding out any problems that occur so that I can understand them better. Do you ever miss taking your medicine? How often?</li> <li>→ When you feel better, do you sometimes stop taking your medicine?</li> </ul>

## Creating your own questions

You may wish to create your own set of questions based on an existing model with some minor word changes to suit the patient or the context. Make sure that you remember the important points presented in the box above.

Alternatively, asking your patients "What is your most important problem or concern?" allows them to define their own problems. This can give you important information and open your eyes to things you hadn't considered.

Pausing and reflecting on your own adherence to medicines may help you to understand the patient's perspective. Health outcomes may be a health professional's priority, but not necessarily a patient's. For example, patients may fear loss of control, side effects or functional impairment.



# Conclusion and key messages

## Facilitator notes

### Tasks

Summarise this module.

Ask participants to develop their own practices and/or personal protocols for identifying non-adherence issues. The protocol can include, but should not be limited to the following:

- set up a register and/or collate a list of patients on cardiovascular medicines in your practice
- use an existing questionnaire, or develop a brief survey on cardiovascular medicines based on the tools reviewed in this module, for patients to complete while they are waiting to see you
- review the responses to the survey during the consultation with patients, or refer patients to another health professional with whom to discuss their responses
- write down up to three key questions to ask patients during a consultation to assess their adherence to cardiovascular medicines
- educate all staff about the practice protocol, and give staff roles to play in implementing it.

Introduce the next module.

Most health professionals overestimate their patients' adherence to medicines. They often do not recognise non-adherence to medicines, which may result in suboptimal treatment and health outcomes.

There are several characteristics related to patients, their condition and their medicines that should raise your suspicion about adherence. For example, when patients are not responding to treatment, have missed refilling a prescription or when their condition is chronic.

When a patient's non-adherence to medicines is suspected, it is essential to examine it. There are several measurement tools that can be used to do this. However, there is no 'gold standard' for measuring adherence to medicines, and no single tool to detect all types of non-adherence to medicines.

Practical, objective methods that can be used are pill counts and pharmacy refill records. However, these methods don't provide information about the timing and patterns of doses. The MEMS provides this information, but is not practical in most situations.

Subjective methods, such as a questionnaire, interview or diary, can also be used to examine a patient's adherence to medicines. However, these methods are less reliable than objective methods, because patients can give inaccurate information. Nevertheless, they are flexible and practical methods for getting information about patients':

- adherence to their medicines
- concerns about their medicines
- understanding of their condition.

All methods have their pros and cons, but all give information about a patient's adherence to medicines. Therefore, these methods can help health professionals optimise patient treatment and health outcomes.

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# Module 3: Creating concordance and making shared treatment decisions

It takes two to tango!

“Misunderstandings about the patient’s disease and medicines occur in 80% of consultations between doctors and patients.”<sup>1</sup>

## Objectives

The objectives of this module are to:

- increase your understanding of the concept of sharing treatment decisions with patients (creating concordance)
- increase your ability to involve patients in decisions about their treatments
- increase your ability to implement strategies to achieve concordance in consultations with patients
- improve your listening skills and explore ways to elicit information from your patients
- give you techniques to appropriately present information to patients
- increase your understanding of strategies to establish treatment plans, underpinned by the stages of change model, motivational interviewing and shared decision making.

## Learning outcomes

By the end of this module, you will be able to demonstrate:

- an increased understanding of concordance and the concept of shared decision making
- how to implement strategies to achieve concordance in your consultations with patients
- active listening skills and the ability to elicit information from patients
- how to provide information to patients in a way that they can understand and act on
- how to establish treatment plans involving the patient, underpinned by the stages of change model, motivational interviewing and shared decision making.

# Introduction

Module 1 presented the issue of non-adherence in healthcare. In the past, patients were seen as ‘the source’ of the adherence problem. Therefore, interventions were primarily designed to address patient-centred issues. More recently, it has been acknowledged that being adherent is a complex health behaviour, significantly influenced by health professionals in particular, and the healthcare system in general.<sup>2</sup>

Patient beliefs significantly influence patient behaviour. Therefore, it is important that patients’ beliefs, thoughts and emotions about their condition, treatments and ability to take medicines are respected, considered and explored by health professionals. In other words, health professionals should aim to reach agreement with their patients during consultations, as a first step in helping patients achieve adherence to their medicines.

Using a ‘stages of change’ approach can help you to achieve an effective treatment plan.

In this module, we will explore the concepts of concordance and shared decision making, and how you can use them in your consultations with patients.

## Concordance

### Facilitator notes

#### Tasks

Present a short introduction to the module, including its content, objectives and learning outcomes.

Give an overview of concordance and its importance in healthcare.

When trying to improve patient adherence, remember that the views of both patients and health professionals are of equal significance. As adherence to medicines is influenced by the patient’s beliefs and his/her ability to take the medicines, it is important to consider these things during consultations. When this is not done, it is difficult to reach concordance.

Non-concordance “denotes a failure of the patient and prescriber (or pharmacist) to come to an understanding, and not a failure of the patient to understand”.<sup>3</sup>

**Concordance** encompasses all relationships between patients, doctors, nurses and pharmacists.

The terms ‘compliance’ and ‘adherence’ have been inaccurately used as synonyms for concordance.

While reading this module, keep in mind that compliance and adherence refer to the notion of patients following the advice of their health professionals. They are a measure of patients’ medicine-taking behaviour. ‘Concordance’ is the cooperation between the patient and health professional, and is a measure of their interaction. Addressing patient needs is the primary focus of a concordant relationship.

# Why seek concordance?

There are several reasons why concordance should be sought in everyday practice to improve adherence.<sup>4</sup>

- **Underlying reasons for non-adherence are complex and diverse.**  
Reasons for non-adherence are more likely to be revealed when the patient's perspectives are considered and the information exchanged between the patient and health professional is unprejudiced.
- **Interventions to increase adherence are not always effective when targeted at large groups.**  
Interventions should address the specific problems of each patient and his/her individual circumstances.

- **The potential outcomes of concordance are diverse.**  
Concordance can result in improved patient satisfaction with care, increased adherence and better health outcomes.
- **Patients will develop a better understanding of their disease and medicines.**  
Information given by patients can be used to improve their wellbeing if it is incorporated in decision making processes.

## How to reach concordance

### Facilitator notes

#### Activity

Divide participants into small groups. Ask them to discuss how they would try to create concordance.

#### Feedback

Ask groups to present the skills they identified as being necessary to create concordance.

#### Task

Discuss with the participants how to reach concordance and the skills needed to do so.

**Health management** is more effective when gained through patient participation and joint responsibility.

Concordance can be accomplished through therapeutic alliance and negotiation between health professionals and patients. To reach concordance, four essential elements need to be addressed:

1. partnership
2. communication
3. information giving
4. agreement.<sup>5</sup>

### Building a partnership

"The relationship between the patient and the health care provider (be it physician, nurse or other health practitioner) must be a partnership that draws on the abilities of each."<sup>2</sup>

In a successful partnership, health professionals and patients come to an agreement about unhealthy behaviour and set goals to address that behaviour. As a health professional, you can convey your knowledge, uphold your professional responsibility and enhance rates of adherence to treatment. However, some health professionals find it difficult to relinquish power and to see patients as experts in their own care. Thus, they may find it difficult to acknowledge that a treatment plan is ultimately the patient's responsibility.



When asked, patients are often willing to share their views on their condition and medicines, even when they differ from the biomedical view. Discussions between health professionals and patients can lead to a greater congruence between them. This may lead to increased patient satisfaction and positively influence the likelihood of adherence.<sup>6</sup>

Before building a partnership, try to keep the following in mind.

- **Each patient is different – personalise care and communication.**
  - Not every patient wants the same level of participation.
  - Health professionals must be adaptable and respect patient beliefs.
- **Patients must trust you – trust of the health professional is crucial.**
  - When patients feel health professionals are trustworthy, they are more likely to give personal information, accept recommendations and maintain self-care.
- **Show empathy – empathy helps patient confidence and self-efficacy.**
  - Understand and accept the patient's position, beliefs and feelings, and be able to convey that understanding and reflect on it.

- **It does not necessarily take more time in the end<sup>7</sup> – you save time spent undoing misunderstandings.**
  - Many health professionals don't feel that they have the time to create partnerships with their patients. However, involving the patient in treatment decisions doesn't necessarily take more time.
  - Introducing discussions with a patient at an early stage in your relationship, or when treating a new condition, enables more succinct discussion later, which ultimately saves time.
- **Self-awareness is essential. How do your patients see you?**
  - Critique and reflect on your own behaviour when you communicate with other people. This will help you to see the messages you give and how other people receive them.
  - Focus on your own behaviour instead of trying to change your patients' behaviour.
- **Patients must feel in control of their condition and treatment.**
  - Make sure that patients are knowledgeable about their condition and treatments, and that they know how to self-monitor and manage their condition.

## Communication

The importance of good communication skills was established centuries ago by Plato, who described two types of physicians:

- the free doctor who enters into discourse with his patients and friends
- the slave doctor who does not let the patient talk about his individual complaints, but instead gives orders.<sup>8</sup>

Which sort of health professional are you? Think about how you appear when you are tired, stressed and/or short of time.

Communication between health professionals and patients can be problematic. We will explore some strategies that can help health professionals achieve good communication with their patients.

- **Think about time and space: when and where**
  - Before you even start communicating with patients, consider if the timing is suitable.
  - Patients may not be ready to communicate or may not be able to, often due to external constraints.
  - It is imperative that you find a private environment in which to speak with patients.
  - If you can't spend the necessary time to effectively communicate with a patient on a particular occasion, consider highlighting the most important points, suggesting the patient gain access to information through other avenues (e.g. another health professional) and/or scheduling another time for a longer discussion.
  - Use the skills of the whole practice team and of your colleagues from other disciplines.

- **Non-verbal communication**

- About 80% of communication is non-verbal.
- The non-verbal signals you send can tell patients if you are really listening and care about their problems.
- An appropriate tone of voice, attentive but varied eye contact, a relaxed posture, appropriate authentic gestures while facing the patient, will make you appear open, interested and caring.
- Non-verbal cues will tell patients if you are not interested.

- **Verbal communication**

- When appropriate, use simple language and terminology to make sure patients understand the information.
- Express your feelings appropriately.
- Give negative feedback in an acceptable way.
- Avoid judgemental language.
- Where practical, use open-ended questions, such as “What concerns do you have about the medicines I have prescribed?”
- Check that patients understand what you have told them.

- **Listening**

- Listening to patients is important in creating concordance in your relationship with them.  
To listen well:
  - stop talking
  - get rid of distractions
  - use eye contact
  - react to the ideas, not the person
  - listen to how patients say things
  - listen for the content provided and the feelings portrayed by patients
  - read non-verbal signs.

- When listening, try to resolve the following questions.
  - How does the patient interpret the perceived problem?
  - What are the patient’s health beliefs?
  - Who/what influences the patient’s ideas and decisions?
  - Does the patient believe his/her condition is minor or transitory?
- While doing this:
  - give the patient feedback to clarify any messages: summarise, paraphrase and reflect
  - respond empathically.

### Facilitator notes

#### Activity

Divide participants into small groups. Ask them to discuss what they believe their patients’ information needs and desires are, focusing on how this information is provided (e.g. verbal vs written) and the content of the information.

#### Feedback

Ask the groups to present:

- what they believe their patients’ information needs and wants are
- what information they give their patients with prescriptions/medicines
- what, if any, discrepancies exist between the information wanted/needed by patients and the information they give.

# Patient education

Adequately educating patients is a vital aspect of good treatment, especially when promoting adherence to medicines and reaching concordance about treatment. However, often when patients are diagnosed with a new condition or when they are non-adherent to regularly prescribed medicines, health professionals respond by providing (more) information. This is based on the assumption that if patients are properly informed, they will make a rational decision. While understanding their condition and treatment is important for patients, it is not always enough.

Patients vary in the amount of information they need. To best communicate information to patients, it is useful to first determine their level of knowledge and how much they want to know.<sup>9</sup> Information you give can then be adapted to the patient's capacity, wishes and emotional reactions.<sup>9</sup> Therefore, before you start giving patients information, do an 'educational diagnosis' of your patient. This involves:

- assessing what the patient needs to know
- assessing what the patient already knows
- assessing what the patient would like to know
- identifying information gaps between what the patient knows and needs to know

- assessing the patient's ability to learn
- determining the best way to instruct the patient
- determining the best time to instruct the patient
- determining if learning has occurred after instruction
- determining if there is anything else the patient needs to know after instruction.

Two complementary and interdependent types of patient education are needed:

1. disease or condition information (discussed on page 44)
2. self-management strategies (discussed in module 4).

## Remember

When prescribing or monitoring medicine-based treatment, it is important to identify the patient's experience and attitude to the disease and its treatment, and ascertain what the patient understands of why prescribed medicines are used and how they should be used.

# Providing information

High-quality information is essential. Medical advice should be easy to understand, unbiased and include technical facts. It should also be balanced, including both positive and negative information. When interpreting clinical data and lab results, explaining medicine taking and answering questions, it is important to remember that the goal of sharing this information is to help patients understand their condition and treatments so they can be active partners in managing their condition.

“Information empowers patients to make decisions, even if this decision is to ask the health professional to take responsibility for the decision making.”<sup>10</sup>

When giving patients information, keep in mind that information serves two major purposes. It helps patients:

1. make informed decisions about their treatment
2. achieve a clear picture of the benefits and risks of their treatment.

Information must be tailored to each patient's needs to achieve these goals. Patient information leaflets are inadequate as the only source of information.

Health professionals need to make sure that their patients know the below.

- **The expected benefits of a medicine, and how and in what time frame it will improve their health and quality of life.**

For example, explain that taking frusemide for chronic heart failure causes the kidneys to rid the body of salt and excess fluid (water). As a result, the patient will need to go to the toilet more often to pass urine. The benefit of reducing the amount of excess fluid in the body is to make it easier for the patient to breathe and undertake daily activities.

- **Possible side effects and what to do if they have a different reaction from that predicted.**

For example, explain that as with any medicine, frusemide may cause unwanted side effects. As well as passing urine more often, patients may experience dizziness, fatigue or a dry mouth. When a side effect bothers a patient, ask them to come back to see you.

- **How to take medicines correctly and fit their treatment regimen into their daily lives.**

For example, a patient may have to drive a lot for his/her job and not want to stop all the time to use the toilet. Suggest that the patient take frusemide at a time that is more suitable to his/her routine.

- **How to monitor and manage their treatment plan (discussed in modules 4 and 5).**

For example, suggest home blood pressure measuring or a weight diary, so that patients can check the effect of the frusemide (depending on the primary reason for taking the medicine).

# Establishing a treatment plan

## Facilitator notes

### Activity

Divide participants into small groups. Ask them to discuss how they would establish a treatment plan to which a patient is likely to adhere. The treatment plan should be underpinned by the concepts of shared decision making, readiness to change and goal setting.

### Feedback

Ask groups to present how they would establish a treatment plan.

### Task

Discuss with participants how to establish a treatment plan, including assessing the patient's beliefs and readiness to change, shared decision making and goal setting.

After you have given the patient all the relevant information, start developing his/her treatment plan. It should be a personalised treatment plan made through shared decision making, based on the patient's beliefs and readiness to change (see also module 1).

When finding a (new) treatment option:

- create an environment that is conducive to concordance – make the patient feel valued
- establish how much your patient wants to be part of the decision-making process – elicit each patient's preference for participation
- continually establish how your patient would like the process to proceed
- make sure that options discussed are compatible with the patient's lifestyle and values
- make sure the patient understands the associated risks and benefits
- make sure the patient's choices are respected and followed.

## Patient beliefs

When making a treatment plan, it is very important to consider the patient's beliefs, as they will provide you with information that will help you to know if the patient will adhere to a treatment plan.

The Health Belief Model illustrates the subjective interpretation of a health condition and the importance of this in managing disease and treatment. This model, and the key factors regarding patient beliefs that should be considered when speaking with a patient, are explained in module 1.

### Remember

- The stronger the patient's belief that he/she is capable of achieving the behaviour, the more likely it is that he/she will engage in self-care.
- An increase in self-efficacy equates to an increase in self-management.

# Readiness to change

Patient readiness to change may be used as a guide to how you, as a health professional, interact with patients. Ask open-ended questions to assess their position in the 'readiness-to-change' model. This model includes five stages of change related to health behaviour:

1. pre-contemplation
2. contemplation
3. preparation
4. action
5. maintenance.

People don't necessarily go through each stage in turn. They may also stay within one stage, never moving to the next.

Below are some ways that you might recognise where your patients are within the model and some suggestions for how to support them.

## Pre-contemplation

During pre-contemplation, it is often difficult for health professionals to talk with patients about taking medicines, because the patient is not considering making changes to his/her behaviour.

During this stage, it is helpful to bring patients' attention to their behaviour and its consequences. Give them helpful, general information to raise their awareness, such as "At the moment, you are not taking your simvastatin. This may increase your risk of a heart attack in the future".

Try to get information about their locus of control or who they believe (perhaps subconsciously) is in control of their treatment as well as their level of self-efficacy (see module 1). Find out how much they believe they can change their situation and take part in their treatment.

Don't argue or try to convince them to change.

## Contemplation

A patient in this stage may have been given a prescription, but not filled it.

Talk about the costs and benefits of treatment, starting with the costs. Outline what is good and bad about not taking action, and then what is good and bad about taking action. For example:

- "taking the simvastatin will cost you up to \$37.53 a month"\*
- "simvastatin significantly decreases the risk of a cardiac event"
- "taking simvastatin can occasionally cause some side effects, such as muscle pain".

Discuss treatment options with patients. For example:

- "we can first just try to lower your cholesterol with diet and more exercise"
- "if this does not work, we can try simvastatin – a cholesterol-lowering medicine".

At this stage, don't discuss how patients could change.

Commend any positive action patients take.

## Preparation

Preparation is where patients have intention and motivation to follow treatment.

Give patients practical advice.

Set goals with patients. Include dates, clear aims and a plan of action. For example:

- the patient's cholesterol should be lowered by X mmol/L within Y weeks (dependent on the patient) by eating healthier foods, being more physically active and taking medicines as prescribed
- the patient should take the simvastatin once a day at night – link taking the medicine to a daily activity, such as brushing teeth.

\* Australian Government Department of Health and Ageing. Pharmaceutical Benefits Scheme. Canberra: Australian Government Department of Health and Ageing, 2011. Available at: [www.pbs.gov.au](http://www.pbs.gov.au). Accessed 7 February 2011.



Self-efficacy is paramount. Make sure patients feel in control of their treatment decisions, and where possible, their treatment.

Schedule frequent meetings with patients.

Discuss with patients how you can help them adhere to their treatment plan. For example:

- “would you prefer it if we give you the simvastatin in a dose administration aid to help you remember to take it?”
- “would you like us to send you refill reminders to collect the medicine?”

Personalise the information you give patients.

## Action

During this stage, patients are actively and consciously adhering to their treatment plans.

Encourage and support your patient, for example:

- “you are doing a good job with taking your medicines – keep it up!”

Discuss with patients their progress and successes, even if they do not see these things. For example:

- “by taking your medicines, you have lowered your blood cholesterol levels and significantly decreased the chance of a cardiac event”.

Highlight your patients’ responsibility in their healthcare. For example:

- “It is important to keep taking your medicines to keep your cholesterol at this level”.

Establish strategies to support ongoing adherence.

## Maintenance

During the maintenance stage, patients adhere to their treatment plan automatically, without any conscious effort. Treatment management has become second nature to them, but they may relapse into previous non-adherent behaviour.

Continue to encourage your patients to adhere to their treatment plan.

Continue to reiterate to patients the benefits of their treatment.

Check that your patients are happy with their treatment plan and that they are adhering to it.

**Motivational interviewing** is based on the readiness-to-change model outlined above. In motivational interviewing, health professionals work with patients to facilitate movement from unhealthy behaviours to healthy behaviours. It is a patient-centred approach, upholding the patient’s autonomy and choice. Motivational interviewing aims to help patients explore options and resolve ambivalence. It is focused on the **patient’s** decision-making process.

For more information about this technique, see module 5.

# Shared decision making

When the patient's beliefs and stage of change are established, health professionals can develop a treatment plan through shared decision making with the patient.

Positive aspects of the shared decision making model include:

- increased patient adherence<sup>11</sup>
- increased number of patients actually taking their medicines, rather than just filling their prescription and not taking the medicine<sup>11</sup>
- helping patients to make an informed decision about their treatment by enabling them to weigh up the personal impact of the relevant risks and benefits.

True shared decision making represents one extreme of a spectrum that ranges from:

- patients or health professionals making treatment decisions independently
- one party acknowledging the decision of the other (but not necessarily agreeing)
- one party agreeing to the decision of the other
- sharing decision making equally.

A truly concordant relationship involves equally shared decision making. However, this is often not the case. Interestingly, one study found that 45% of doctors **overestimate** their patients' desire to be part of the decision-making process, while 23% **underestimate** it.<sup>12</sup>

Whether or not patients follow their treatment plan is partly dependent on **how** health professionals establish it. While shared decision making is a valuable process, there is no specific guide to achieve it. Shared decision making is achieved through alliances that are personal and trusting.<sup>13</sup> Individual needs and wishes must be taken into account.

To achieve shared decision making:

- listen and respond to patient concerns and goals
- establish and maintain two-way communication with patients
- make sure that patients know why they are being prescribed a medicine
- be aware that patients may change their ideas about a condition or treatment after the initial decisions are made
- be aware of any relevant non-medical actions or complementary medicines patients might be taking.

In addition to simply asking patients how they would like to be involved in making decisions about their treatment, there are also various research tools (but no clinical tools) to help assess this.\*

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\* Suggestions for tools to aid shared decision making that can be gleaned from research include the following:

- a decision board (for consultation) to encourage the patient to be active in the decision making process
- printed patient information, specifically encouraging active decision making
- questionnaires (e.g. The Autonomy Preference Index)
- a set of sort cards that reflects patients' perceived roles of themselves and their health professionals.<sup>14</sup>

# Goal setting

Begin establishing treatment goals with a patient by first setting out the treatment priorities as you see them, then making recommendations about changes that will enhance the patient's health.<sup>15</sup> For example, to achieve reductions in a patient's blood pressure or cholesterol levels, you may recommend that he/she:

- loses weight
- eats healthier foods
- quits smoking
- is more physically active and/or
- takes medicines as prescribed.

Then, ask your patient to set out his/her concerns and priorities. For example, the patient may:

- not want to quit smoking
- be afraid of forgetting to take his/her medicines every day.

In establishing goals, patients' priorities should lead the decision.<sup>15</sup> Stick to realistic goals, and remember to make goals SMART (specific, measurable, achievable, realistic and timely).

For example:

- if patients don't want to quit smoking, there is no point trying to convince them to quit – they won't change if they don't want to
- try to help patients take their medicines as prescribed (an achievable goal) by giving them support (e.g. a Webster-pak<sup>®</sup>).

You may wish to use a bubble diagram or other agenda setting tool to help discuss this with patients. An agenda setting chart is explained below.

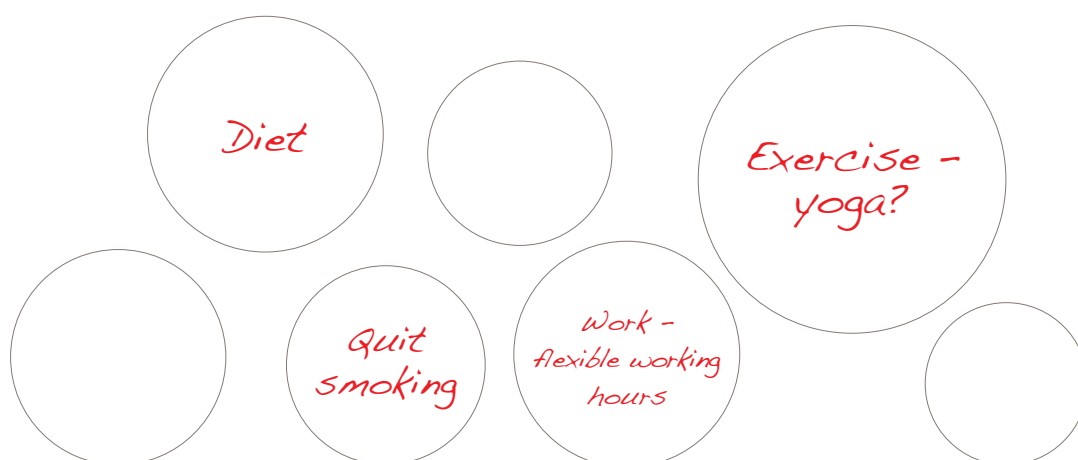
## Once you have reached an informed decision

The goal of the health professional–patient relationship is to achieve mutually understood and agreed outcomes to improve the patient's quality of life. All of your activities should be directed toward reaching that goal.

In the next module, we will address how to support patients in managing their treatment plans.

## Agenda setting chart

Draw multiple circles on a sheet of paper, filling each with behaviour changes that have been shown to improve the condition. For example, when talking with a patient about high cholesterol, 'dietary changes' will probably be in one circle.



Work with your patients to fill in the circles by asking what they think might help them better manage their condition, and write this information in the blank circles.

Then choose a priority area. You might ask: "Which of these do you feel most ready to change?"

### Facilitator notes

#### Activity

Ask participants to form pairs and take turns to role-play the following interactions between a patient with a cardiovascular condition (you choose which condition) and a health professional.

- Acting in your usual professional role, try to use the strategies outlined in this module to create concordance in your relationship with the patient and then conduct an 'educational diagnosis'.
- Work with your patient to create a treatment plan. Before you can do this, you will need to explore your patient's values and understanding of his/her condition and treatment options, and how much he/she wants to be a part of the decision-making process.

## Conclusion and key messages

### Facilitator notes

#### Tasks

Review the objectives of the module, and summarise the key messages.

Introduce the next module.

In today's clinical practice, health professionals are placing increasing emphasis on the importance of respecting patient beliefs and thoughts about their condition and medicines, and their ability to take medicines, when making a treatment plan.

To properly involve patients in decision making about their medicines, health professionals need to address four components during a consultation:

- building a partnership with patients
- establishing effective communication with patients
- giving information to patients
- reaching agreement with patients.

When creating a treatment plan, it must be personalised, made through shared decision making and take into account patient beliefs and readiness to change. The goals you set with the patient in the treatment plan should be specific, measurable, achievable, realistic and timely. Health professionals should continuously support patients in managing their treatment plan, because it is possible that patients may not follow it, either now or in the future, especially if their circumstances change.

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# Notes

## ► Module 3: Creating concordance and making shared treatment decisions



# Module 4: Aiding patient self-management in cardiovascular care

The question is not whether patients with chronic conditions manage their illness, but how they manage.<sup>1</sup>

“By effectively self-managing their healthcare, a group of heart failure patients experienced 75% fewer hospital admissions 30 days after discharge.”<sup>2</sup>

## Objectives

The objectives of this module are to:

- describe the principles of self-management
- list and describe the key skills that you need to effectively help patients self-manage their condition
- explain how you can upskill to help patients better self-manage their condition.

## Learning outcomes

By the end of this module, you will be able to:

- demonstrate an increased understanding of the principles of patient self-management
- describe and demonstrate the skills that are needed to effectively support patient self-management, specifically self-management of cardiovascular disease (CVD)
- describe the role health professionals play in helping patients to better self-manage their condition.

# The principles of self-management

## Facilitator notes

### Tasks

Present a short introduction to the module, including its content, objectives and learning outcomes.

### Activity

Divide participants into small groups. Ask them to discuss their understanding of self-management and prepare a definition of it.

### Feedback

Explain self-management and its importance in healthcare.

Self-management emphasises the importance of patients as key players in their care, with health professionals acting as facilitators to that care. All patients, including people with CVD, self-manage their lives and their condition every day. For example, they decide what to eat, when to eat, when/if they are physically active and whether or not to take their medicines.

Health professionals can help patients successfully self-manage their condition. Teaching patients self-management skills is essential to maximising their health outcomes. It is more effective than simply teaching them about their condition and treatment.

Effective self-management of CVD can decrease symptoms and complications, and reduce the burden on the healthcare system.

By helping patients to self-manage their condition, health professionals can increase their patients' ability and confidence in managing their condition, making informed decisions about care and adopting healthy behaviours.<sup>3</sup>

**Self-management support** is a conversation, not just the health professional giving the patient information.

## How to help patients self-manage their condition

There are seven key components to helping patients self-manage their condition.<sup>4</sup>

1. Give patients information about their disease state, medicines and relevant support groups.
2. Teach patients specific skills in managing their disease.
3. Promote healthy behaviour.
4. Help patients develop problem-solving skills.
5. Address patients' emotional and psychosocial issues related to having CVD.
6. Schedule regular follow-up visits/telephone calls with patients.
7. Encourage patients to actively manage their condition.

There are several strategies, techniques and tools that health professionals may use to help patients better self-manage their condition.

'Support in self-management' is a relatively new strategy and there is currently no 'gold standard' for its implementation. The approach described in this module is just one example of how to implement this strategy. This approach uses the five 'A's to improve patients' self-management.<sup>5</sup>

**Assess:** find out about the patient's health-related beliefs, behaviour and knowledge.

**Advise:** give patients specific information related to their disease and medicines. Outline the benefits of the recommended treatment.

**Agree:** set achievable goals based on the patient's needs and confidence in their ability to achieve the goals.

**Assist:** help patients create a self-management 'road map'. Address possible barriers to self-management and identify strategies and aids to overcome these barriers.

**Arrange:** specify a plan for follow up with the patient.

Each of these steps will be discussed in more detail in this module.

# Essential skills for health professionals

## Facilitator notes

### Activity

Divide participants into small groups. Ask them to identify and discuss the skills health professionals need to help patients better self-manage their condition.

### Feedback

Ask groups to present the skills they have identified.

### Task

Summarise the skills identified by the participants and give extra information about these and any other relevant skills not described by the participants.

There are some essential skills health professionals need to help them give patients the best possible support.<sup>6</sup>

## Communication skills

Good communication between health professionals and patients is fundamental to patients successfully self-managing their condition. The key skills health professionals need for effective communication with patients are:

- listening to patients (in terms of information and feelings/experiences)
- asking questions related to patients' experiences
- giving patients relevant information.

These skills can be improved through education and practice.<sup>6</sup>

It is common for patients to receive too much or too little information about their condition. This can cause misunderstandings and result in patients having a limited knowledge and understanding of their treatment.<sup>7</sup>

To help overcome this, try the 'ask, tell, ask' approach. This approach allows the health professional to assess patients' understanding of their condition or treatments before 'telling' them what they need to know, and correcting any misunderstandings. A second round of questions can confirm patients' understanding and identify areas for further education. Some questions that health professionals might ask patients to begin with are outlined below.

### For patients with a new diagnosis

- What do you know about... (the condition)?
- What would you like to know about... (the condition)?
- What do you know about the medicines used for... (the condition)?

### For patients with an established diagnosis

- What would you like to make sure we discuss today?
- Please tell me about the things that have been tough for you, in terms of your disease and medicine taking?
- What kinds of problems, if any, are you having with your medicines?

After receiving answers to the first round of questions, health professionals can then give patients relevant information, ask if extra information is needed and check that the information given has been understood.

To make sure patients understand the information given to them, health professionals could ask questions such as:

- please explain to me in your own words how you will take your medicine?
- what side effects will you look for, and what will you do if they occur?

Remember to also use the communication/ interviewing skills discussed in modules 1 and 3.

The 'ask, tell, ask' approach will help you to give patients information in a way that is directed by the individual patient, thereby overcoming the problem of giving too much or too little information.

**Listen** more than you talk!

## Knowledge of available support services

Teamwork in primary healthcare is viewed as more effective than relying on the input of one health professional.<sup>6</sup> It may be helpful for health professionals to increase their knowledge of other available services and use them to support a patient's treatment plan. Strategies that may assist include:

- **Communicate with each other often**

There should be good communication between health professionals (e.g. general practitioners (GPs), nurses and pharmacists). Each can provide different and complementary input into a patient's care to optimise both treatment and adherence to medicine. It is also important that health professionals understand each other's skills and limitations.

- **Identify relevant patient-support organisations**

Patient-support organisations are often overlooked by health professionals; however, they should be seen as a potential supplement to the information health professionals give. Patient-support organisations give different types of information to that given by health professionals, give information specially designed for patients, and offer opportunities for patients to talk with other patients. Health professionals can inform patients about relevant patient-support organisations. In practice, coordinated care systems for chronic diseases, such as CVD, are lacking. Health professionals should appreciate that patients seek out, and will benefit from, alternative support to the support they can give.

## Psychosocial skills

To support patients, health professionals need to understand the impact of CVD on the patient's life. Consider:

- viewing the situation from the patient's perspective – how would you feel?
- taking a public health perspective
- involving patients in their own care
- giving comprehensive or 'whole-of-patient' care
- acknowledging the stress and demands that CVD places on a person, their family and friends
- planning appropriately timed consultations (your reception staff can help, e.g. by asking patients if they would like a double appointment).

## Identification of patients' strengths

It is important for health professionals to identify a patient's strengths and current capacities. However, this is not a skill that comes naturally to all health professionals.<sup>6</sup> Identifying patients' strengths is important to:

- make sure that health professionals are not trying to improve a patient's capacities in areas where he/she is already proficient – time is better spent helping where it is needed
- use the patient's strengths to optimise his/her treatment plan and encourage adherence to medicines.

# How can health professionals help patients better self-manage their condition?<sup>8</sup>

## Facilitator notes

### Activity

Divide participants into small groups. Ask them to discuss approaches they've used to improve patient self-management and how effective these approaches were.

### Feedback

Ask groups to present the approaches that did and didn't improve patients' self-management.

### Task

Explain the five As approach.

The five As approach (assess, advise, agree, assist, arrange) to improving patients' self-management is further explored in this section.

## Assess

Before health professionals can improve a patient's self-management of his/her condition, it is important for them to assess and identify any issues that are troubling the patient.

### • Verify the patient's feelings and issues

For example:

- the patient is having problems taking his/her medicines regularly/on time
- the patient's blood pressure is still too high, despite all the efforts made to lower it, and the patient is feeling depressed or discouraged by this
- the patient has experienced a significant life event, such as a divorce or retrenchment.

### • Listen actively and show interest in the patient's perspective

- The patient will be more willing to tell you about possible problems.
- It can help you to understand the choices the patient makes.
- It helps you to look at the problems from the patient's perspective.
- Patients will be more open to your advice when they see sincere interest.
- Remember the importance and impact of non-verbal cues.

### • Identify changes that need to be made to improve the patient's health outcomes

- It can be difficult for patients to identify what they can improve – a health professional's knowledge can help.
- Make sure that the patient is willing and able to make the proposed change – patients may set goals they believe they 'ought to achieve', however, they may not be really committed to them.
- When patients are not committed, it is impossible to make a change.

## Advise

When there is a gap in a patient's knowledge of his/her condition or treatment, give the patient the information needed to fill the gap. Use the communication tips given in module 3.

### Some key points for giving advice

- Do not forget that the patient is not an expert – give information in an easily understood way.
- Do not be judgemental.
- Speak directly to the patient and focus on his/her specific needs and circumstances. Be specific and avoid generalising.
- Repeat important information about the patient's disease and medicines.



Health professionals can do the following to help patients self-manage their condition.

- Suggest to patients ways they can manage their condition by reducing or removing modifiable risk factors. For example:
  - quitting smoking
  - following a healthy or personalised diet
  - being more physically active.
- Explain to patients how to monitor their own care. For example:
  - weighing themselves regularly
  - monitoring their blood pressure at home (see module 5).
- Make sure patients understand what the symptoms of their condition are and when to seek medical help. For example:
  - tell patients what the symptoms of their disease are
  - tell patients when and how to seek help if symptoms do not improve, such as calling Triple Zero (000) if they have any warning signs of heart attack
  - ask patients to repeat the information you have given them about symptoms, and when and how to seek help if they don't improve.
- Tell patients about what community support is available to them. For example:
  - other health professionals
  - patient-support organisations
  - community programs.
- Engage carers (e.g. partners or children) in patients' treatment.

Remember to only give extra information if the patient wants it. Otherwise the patient may just 'turn off' to anything else you are saying. Consider asking questions such as "I have some information about how people can self-manage their high blood pressure. Would you be interested in this sort of information?"

## Agree

The importance of reaching concordance was discussed in module 3. With regard to self-management, it is important to collaborate to develop a patient-specific, achievable action plan that describes:

- **what:** the specific task the patient is going to undertake before the next meeting
- **when:** a specific time to perform the task
- **how often:** how often the patient should do the task
- **where:** the best location to do the task
- **possible problems:** discuss the problems a patient can run into while undertaking the task and how to overcome them
- **confidence:** the confidence the patient has to undertake the task.

Quite often, the patient's ideas and feelings are different to yours. Health professionals often want their patients to quit smoking, be more physically active or eat healthier foods. However, patients can be cautious about making changes in their daily life.

It is important to recognise that patients may have different ideas and priorities to health professionals, or simply lack the time, motivation or skills to change their behaviour. Therefore, the initial action plan you agree may not have a significant impact on clinical outcomes. For example, very small changes in physical activity levels may have little effect to start with. However, health professionals should encourage these changes, no matter how small, to help build a better relationship with the patient and increase patient confidence in setting further goals that are more likely to improve his/her health outcomes.

An action plan based on what the patient wants and is willing to do will help to empower the patient.

It is always useful to have a checklist, so that nothing on an action plan is forgotten. See page 60 for a good example.<sup>9</sup>

→ The change I want to make is: (be very specific, what, when, how?)

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→ My goal for the next month is:

---

→ How convinced are you that this is the right work for you:



→ The steps I will take to reach the goal:

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

→ The things that will make it hard to reach the goal:

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

→ The ways I can overcome those things that might get in the way:

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→ My confidence that I can reach my goal:



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## Assist

Health professionals are responsible for helping patients when they have a problem with their treatment and aren't able to help themselves. Ways health professionals can help patients include:

- identifying the barriers to self-management that patients perceive or experience
- working with the patient to overcome these barriers
- reviewing treatment action plans with patients and adjusting them if patient views, aims or capacity have changed
- identifying aids that can help patients with adherence to medicines (e.g. a Webster-pak®, further discussed in module 5)
- referring patients to a problem-solving website for more information (e.g. [www.howsyourhealth.com](http://www.howsyourhealth.com)).

If the strategies to overcome barriers to self-management are not helping the patient, identify others. If there are no strategies left, accept that the problem may not be solvable now and make plans for revisiting the issue at a later date.

Do not forget to reach concordance. Always negotiate achievable goals with the patient. For example, you could say:

- “You mentioned that you forget to take your medicines regularly. What do you think about using a special container for your medicines?”

When patients are sticking to their action plans and reaching the agreed goals, it is important to encourage them. For example, you could say:

- “You’ve done a good job”
- “Now that you are taking your medicines regularly, you have considerably reduced your risk of developing heart disease in the future”.

## Arrange

Maintain your interest in your patient's self-management action plan and provide ongoing follow-up. For example:

- use telephone, email or staff to follow up on the action plan
- refer the patient to helpful resources, such as support groups.

Be aware that your patients may relapse and lose motivation if they can't see any positive results, despite their adherence to their plan. When patients report setbacks, help them to focus on what they have learnt about themselves and the process of changing behaviour.

# Conclusion and key messages

### Facilitator notes

#### Tasks

Summarise this module and the key messages.

Introduce the next module.

Helping patients to better self-manage their condition can decrease their symptoms and complications, improve their health outcomes and reduce the burden of care on the health system. To improve patient self-management, use the five As:

- assess
- advise
- agree
- assist
- arrange.

To support patient self-management, it is important for health professionals to have good communication and psychosocial skills. It is also important to have a good knowledge of appropriate support services, and be capable of identifying patients' strengths.

To develop a successful self-management action plan, it is important to:

- make the action plan patient-centred – focus on what patients want to improve
- be specific about what, when, where, how often and how long
- make sure patients are confident about improving the problem
- follow up with the patient – set a date to find out how the patient is doing.

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# Module 5: Interventions to improve your patients' adherence

What you can do to improve your patients' adherence to medicines and achieve better health outcomes for them

Just by using the motivational counselling technique, your patients' adherence can be almost doubled, and their total cholesterol can decrease by 20%.<sup>1</sup>

## Objectives

The objectives of this module are to present:

- evidence-based interventions that have been shown to improve clinical outcomes and adherence to cardiovascular medicines
- practical interventions for health professionals to use in daily practice to improve patient adherence to medicines.

## Learning outcomes

By the end of this module, you will be able to:

- identify evidence-based interventions that have been shown to improve adherence to cardiovascular medicines and clinical outcomes
- describe practical interventions that can be integrated into daily practice to improve patient adherence to cardiovascular medicines.

# Interventions that improve adherence

## Facilitator notes

### Task

Present a short introduction to this module, including its content, objectives and learning outcomes.

### Activity

Divide participants into small groups. Ask them to discuss the strategies they have used to improve patient adherence to medicines, focusing on cardiovascular medicines.

### Feedback

Ask participants to give feedback on the strategies that have or have not worked to improve patient adherence.

### Tasks

Explain the different types of interventions and their goals:

- informational: to motivate patients by educating them about their condition and its treatment
- behavioural: to change patients' health-related behaviour by reminding, rewarding or shaping them
- social: involving family or friends to improve patient adherence to medicines
- combined: interventions that include a mix of the above strategies.

Use the feedback from the participants as examples to illustrate the different categories of interventions.

Give more examples of interventions that can change patient behaviour.

If you have concluded that a patient is non-adherent, there are several strategies you can implement to remedy the situation. The literature on adherence to medicines in cardiovascular care (e.g. hypertension, dyslipidaemia, chronic heart failure and coronary heart disease) highlights several interventions that have significantly improved adherence to medicines. However, evidence on the effectiveness of such interventions is inconsistent. This may be due to the considerable differences in patient populations and methods (e.g. the care that comparison groups received and the way in which data were collected).



## Interventions that improve adherence

Intervention	Disease	Effect on adherence (compared with control/comparison group)	Effect on clinical outcomes (compared with control/comparison group)
<b>Information giving</b>			
Patient-centred verbal instructions and written information about medicines	Heart failure	After the intervention period, 10.9% more doses taken; 5.9% more doses taken on time; 4.2% more refills. However, this effect faded over time. <sup>2</sup>	19.4% fewer exacerbations of heart failure. <sup>2</sup>
<b>Behavioural interventions</b>			
Motivational counselling	Heart failure	A day without the patient using medicines was three times less likely to occur. <sup>3</sup>	No significant changes in percentage of patients re-admitted or death. <sup>3</sup>
	Dyslipidaemia	Patients took 24% more of their lovastatin and 23% more of their colestipol after two years. <sup>1</sup>	After two years, total cholesterol was 6.8% lower, LDL 9.4% lower and triglycerides 6.3% lower, with no significant change in HDL level. <sup>1</sup>
	Hypertension	Percentage of adherent patients was 6% higher. <sup>4</sup>	DBP was 4.4 mmHg lower. No significant change in SBP. <sup>4</sup>
Calendar blister packages	Hypertension	There were 12.8% more doses taken. <sup>5</sup>	No significant changes in SBP and DBP. <sup>5</sup>
	Hypertension	Percentage of patients that had their prescription refilled on time was 14.3% higher. The MPR* was 0.06 points higher. <sup>6</sup>	No significant changes in SBP and DBP. <sup>6</sup>
The transtheoretical model (TTM)-based expert system	Hypertension	Percentage of patients in the action or maintenance stage of change was 9.9% higher and the questionnaire score indicated better adherence. <sup>7</sup>	No clinical outcomes measured. <sup>7</sup>
Telephone calls and mailings to encourage patients and remind them of their next visit	Hypertension	Percentage of adherent patients was 30% higher in the group that received telephone calls, and 22.1% higher in the group that received mailings. <sup>8</sup>	In the telephone group, the SBP was 9.5 mmHg lower and DBP 7 mmHg lower. No significant changes in SBP and DBP in the mail group. <sup>8</sup>

## Interventions that improve adherence (continued)

Intervention	Disease	Effect on adherence (compared with control/comparison group)	Effect on clinical outcomes (compared with control/comparison group)
<b>Combined interventions</b>			
Reinforcing adherence plus education	Heart failure	There were 10.2% fewer patients who stopped taking medicines (improved persistence). <sup>9</sup>	Heart failure hospital admission was 5.5% lower, cardiovascular hospital admission was 6% lower and all cause hospital admission was 4.8% lower, with no significant change in all-cause mortality. <sup>9</sup>
Refill reminders and education	Hypertension	The MPR* was 0.40 points higher. <sup>10</sup>	No clinical outcomes measured. <sup>10</sup>
Adherence packages and education	Hypertension and dyslipidaemia	Percentage of patients that took $\geq 80\%$ of their medicines improved from 5 to 98.7%. <sup>11</sup>	SBP was 5.9 mmHg lower, with no significant changes in DBP and LDL. <sup>11</sup>
Social support and education	Ischaemic heart disease	Significantly better adherence rates. <sup>12</sup>	No significant change in total events. <sup>12</sup>
	Hypertension	A questionnaire score indicated better adherence. <sup>13</sup>	After one year, SBP was 18.5 mmHg lower, DBP 6.9 mmHg lower, BMI 0.9 lower and HDL 5.6 mg/dL higher. No significant changes in LDL, total cholesterol or triglyceride levels. <sup>13</sup>
Dose-intake reminders, education and social support	Hypertension	After the intervention period, 8% more patients were adherent. However, this effect faded over time. <sup>14</sup>	No significant change in blood pressure reduction or normalisation. <sup>14</sup>

**Abbreviations:** BMI: body mass index; DBP: diastolic blood pressure; HDL: high-density lipoprotein; LDL: low-density lipoprotein; MPR: medicines possession ratio; SBP: systolic blood pressure.

\* The MPR calculates the percentage of time a patient has access to medicines. The number of doses that a patient obtained over a period of time is divided by the number of doses that should have been obtained.

## Interventions with contradictory results

Intervention	Disease	Effect on adherence (compared with control/comparison group)	Effect on clinical outcomes (compared with control/comparison group)
<b>Behavioural interventions</b>			
Home blood pressure measuring	Hypertension	Percentage of adherent patients was 18% higher. <sup>15</sup>  There were 7% fewer doses taken. <sup>16</sup>	DBP was 3.1 mmHg lower. No significant change in SBP. <sup>15</sup>  DBP was 6.7 mmHg lower; mean arterial pressure was 7.8 mmHg lower. No significant change in SBP. <sup>16</sup>
Regimen simplification	Hypertension and dyslipidaemia	Percentage of patients with medicines supplied for 80% of the days was at least 20.3% higher and the percentage of persistent patients was at least 10% higher (intervention group compared with four comparison groups). <sup>17</sup>	No clinical outcomes measured. <sup>17</sup>
	Dyslipidaemia and ischaemic heart disease	There were 11% more doses taken. <sup>18</sup>	Total cholesterol was 14 mg/dL lower, LDL was 13 mg/dL lower and HDL was 4 mg/dL lower. No significant change in triglycerides. <sup>18</sup>
	Heart failure	Percentage of doses taken did not improve as a result of the intervention. <sup>19</sup>	No significant changes in SBP, DBP, hospitalisations and BNP levels. <sup>19</sup>

**Abbreviations:** BNP: brain natriuretic peptide; DBP: diastolic blood pressure; HDL: high-density lipoprotein; LDL: low-density lipoprotein; SBP: systolic blood pressure.

# Information giving

## Facilitator notes

### Task

Introduce this section and its objectives.

### Activity

Divide participants into small groups. Ask them to discuss the types and formats of information they routinely give patients with cardiovascular disease to make sure they understand their disease and treatment.

### Feedback

Ask participants to outline five key pieces of information that should be given to patients with cardiovascular disease.

### Task

Present and discuss the types of information that impact on adherence.

## Patient-centred verbal instructions and written information about medicines

As mentioned in modules 1 and 3, educating patients is very important.

Patients should know what kind of medicines they are taking for which disease, the importance of taking them, what to expect from each medicine, how to monitor the impact of each medicine, what side effects to look for, and what to do if they experience side effects.

However, giving patients information doesn't necessarily result in improved adherence to medicines. This is because there are many different factors that influence medicine-taking behaviour, and a lack of information is often not the key problem.

Most of the studies outlined in the table on page 87 evaluated interventions that involved handing out educational booklets designed specifically for the research projects. The content often included:

- general information about the condition, e.g. what it is, myths and facts about it, what causes it, how it affects people, what patients can do to improve their condition

- information about the medicines used to treat the condition, e.g. what medicines, how they work, possible side effects, how patients can improve their adherence
- lifestyle advice, e.g. good nutrition, physical activity.

Similar booklets about hypertension can be found online at [www.hypertensionfoundation.org/booklets.cfm](http://www.hypertensionfoundation.org/booklets.cfm).

Other interventions are outlined below.

### • Face-to-face discussion

A specific consultation can be used to give patients personalised information about their condition and the medicines used to manage or treat it (e.g. medicine names, indications for use, strengths, side effects, and how and when to take it).

### • Newsletters

Send patients regular newsletters that include information about medicines and conditions.

### • Fact cards

The Pharmaceutical Society of Australia produces a suite of patient information fact cards. Those that are relevant to cardiovascular disease include:

- high blood pressure
- fats and cholesterol
- weight and health
- exercise and the heart
- smoking and staying a non-smoker.

These fact cards are available at Pharmacy Self Care member pharmacies.

### • Information leaflets/brochures

Patient information leaflets/brochures about different conditions can be downloaded from the internet. For example at:

- [www.heartfoundation.org.au](http://www.heartfoundation.org.au)
- [www.patient.co.uk/pils.asp](http://www.patient.co.uk/pils.asp).

### • Specific information leaflets

Some pharmacies and surgeries prepare their own medicine/condition/lifestyle information leaflets for patients. Pharmaceutical companies also prepare specific patient information leaflets, to be distributed either directly to patients or through pharmacies and doctors' surgeries.

### • Information in languages other than English

Leaflets in languages other than English are available on the internet, for example through the NSW Department of Health website.

### • Consumer Medicine Information (CMI)

Consumer Medicine Information (CMI) provides patients with information about their medicines. It is available from different sources, such as:

- inserts in the medicine's package/box
- pharmacy dispensing software – pharmacists can print out CMI from their dispensing system at the point of dispensing
- prescribing software – CMI is also integrated in some prescribing software, e.g. Medical Director
- websites, for example, [www.medicinesaustralia.com.au](http://www.medicinesaustralia.com.au), [www.nps.org.au](http://www.nps.org.au), [www.ebs.tga.gov.au](http://www.ebs.tga.gov.au), [www.medicines.org.au](http://www.medicines.org.au) and [www.guild.org.au](http://www.guild.org.au).

### Things to remember when giving patients health information

- The patient's literacy and/or health literacy is probably not as high as yours.
- Don't use difficult words or jargon.
- Giving information to patients shouldn't be the only strategy to increase their adherence to medicines.

## Behavioural interventions

### Facilitator notes

#### Task

Briefly introduce this section and the activity.

#### Activity

Divide participants into small groups. Ask them to discuss any behavioural interventions that they have used to promote patient adherence to cardiovascular medicines.

#### Feedback

Ask groups to give feedback on the behavioural interventions they think would improve and maintain patient adherence to medicines.

#### Task

In receiving and reviewing the feedback, focus on motivational counselling and the transtheoretical model (TTM)-based expert system. In particular, look at the advantages of these interventions, the barriers to their use and how these interventions can be implemented in practice.

### Motivational interviewing

Motivational interviewing (also called 'motivational counselling'), has shown positive results in improving patient adherence to cardiovascular disease treatment. Patients with heart failure, dyslipidaemia and hypertension have all benefited from this approach.

However, to integrate motivational interviewing into consultations, health professionals need to allocate extra time.

Motivational interviewing is a directive, client-centred counselling style for eliciting behaviour change by helping clients to explore and resolve ambivalence.<sup>20</sup>

Motivational interviewing is a complex skill that takes time and practice to learn. It is based on the Stages of Change ('readiness-to-change') model outlined in module 3.

In motivational interviewing, health professionals work with patients to help patients move from unhealthy behaviour to healthy behaviour, through the stages of change. Motivational interviewing is more focused and goal directed than non-directive counselling.

While implementing motivational interviewing you should:<sup>21</sup>

- **Express empathy**
  - Empathy will help you to understand the patient's perspective.
  - It will help the patient to feel comfortable and open up to you.
  - Empathy also helps you to identify which points the patient needs support with.
- **Support self-efficacy**
  - Self-efficacy is important in helping patients maintain their motivation to change.
- **Value the patient's perspective**
  - Keep in mind that it is not your role to change the patient's perspective.
  - Introduce alternative perspectives without telling the patient how to think.
- **Develop discrepancy**
  - Focusing on the differences between patients' current behaviour and their intentions will help them to understand that their current behaviour is not helping them to reach their goals. This discrepancy will help patients to generate motivation for change.

Keep these things in mind when you are talking with patients about medicine use and their reasons for non-adherence (e.g. side effects and difficulties in integrating medicine use in daily routines).

#### Remember

- The patient's motivation to change is fundamental.
- Don't be judgemental.
- Let the patient do the talking.
- Encourage assertiveness in your patient.

If your patient isn't confident or doesn't see treatment as important, you should try to support his/her self-efficacy and highlight the benefits of moving towards a treatment management plan. This can be done through techniques such as:

- encouraging the patient to look to the future
- reviewing past successes
- finding intrinsic motivations to manage the condition.

For example, you might ask patients what they think will happen in the future if they don't adhere to treatment, and what they think will happen if they do. Ask what they think about the differences in those two possible scenarios.

The Heart Foundation has developed the *Motivational interviewing professional development kit* to help health professionals adopt this technique. The kit contains two DVDs and a health professional reflection tool. Visit [www.heartfoundation.org.au](http://www.heartfoundation.org.au) or call the Heart Foundation's Health Information Service on 1300 36 27 87 for more information and to order the kit.

## The transtheoretical model (TTM)-based expert system

The TTM is also based on the Stages of Change model. It incorporates process-related variables to explain and predict when and how a patient will change his or her health behaviour.

Additionally, the TTM integrates the following behavioural characteristics to individualise the intervention.

- **Decisional balance**

Patients balance the pros and cons of a change before making it. For example, they consider the pros and cons of taking a cardiovascular medicine.
- **Self-efficacy**

The motivation to change and persistence of this change are influenced by the patient's confidence to make and sustain changes, and the temptation to relapse into old behaviours.
- **Process of change**

The process of change represents all of the activities the patient does to make a behaviour change.

The Pro-Change Program for High Blood Pressure Medication is a computer-generated expert system based on the TTM.<sup>7</sup> At baseline, the system generates printed reports comparing a patient's adherence to medicines with his/her previous results as well as with other patients' results. It also suggests personalised and stage-matched interventions, and a stage-based manual for improved patient adherence to medicines. The system provides health professionals with information on the following areas (this example is of a patient in 'preparation' stage).

- **The stage of change**

The patient's current stage of change for adherence. For example, the patient is in the preparation stage and is ready to start taking action in the next 30 days. The patient will take small steps that he/she believes will help with adherence to medicines.



- **Decisional balance**

The patient's thought processes about adhering to medicines – the patient starts to evaluate the pros and cons of adherence to medicines. The patient is becoming aware that the advantages of being adherent outweigh the disadvantages. For example, the high cost of the medicines no longer stop the patient from taking them. The patient better understands the consequences of not taking the medicines and the impact that would have on his/her health.

- **Process of change**

Feedback indicating whether or not a patient is appropriately using each of 10 strategies for improving adherence, according to his/her stage of change. For example, the patient knows enough about his/her condition and medicines, and the reasons for adherence, but does not get enough social support.

- **Self-efficacy**

The extent to which the patient is confident that he/she can adhere to his/her medicines, and not return to non-adherent behaviour. For example, the patient is confident that he/she can be adherent, but is not confident that he/she will not fall back to non-adherent behaviour. The TTM employs an overall confidence score to assess each patient's self-efficacy.

- **Strategies**

The strategies that can be used to help the patient through the stages of change. For example, encourage patients to seek support from family and friends, because the main concern of patients at this stage is "Will I fail when I try to become adherent?" Talking with family and friends can help the patient. Give patients aids to help them to take their medicines.

Remember that this is a simplified example. Personalised advice is necessary for optimum results.

Paper and online versions of the Pro-Change behaviour systems are available at [www.prochange.com/meds](http://www.prochange.com/meds).

## Calendar blister packages

Calendar blister packages are already in use for some cardiovascular medicines. These packages help patients see if they have already taken their dose for that day. Calendar blister packages can improve patient adherence to medicine and are highly recommended.

Unfortunately, not all cardiovascular medicines come in these packages. For medicines that don't, it may help to give patients their medicines in a Webster-pak®. Webster-pak® aids adherence to medicines, especially among patients taking multiple medicines.

"One patient started having dizzy spells and passing out as soon as he started using a Webster-pak®. This culminated in him passing out while driving. The reason was because he was taking four tablets for blood pressure, but his adherence had been so poor, that his doctor thought he had a very resistant type of hypertension (hence four medicines). Once on the Webster-pak®, his adherence improved markedly."

– Deniliquin Pharmacy<sup>22</sup>

## Telephone calls and letters to provide positive reinforcement and to remind patients of their next visit to the health professional

This intervention involves two behavioural approaches: encouraging patients to be adherent and the use of visit reminders.

- **Positive reinforcement**

Telephone calls and letters to patients can positively reinforce the messages patients have been given about adhering to their medicines.

- **Visit reminders**

These can improve patients' refill adherence.



These interventions can be conducted at regular intervals, forward planned and undertaken at quieter times within a practice. A specific staff member can be allocated to contact and send reminders to patients.

A system for recording details of telephone calls in which a need for more advice is identified should be implemented.

## Home blood pressure monitoring

Home blood pressure monitoring lets patients participate in the management of their hypertension. Self-measurement every morning may be more accurate in describing overall blood pressure control than the occasionally measured office-based values.<sup>16</sup> However, home blood pressure monitoring should not be a substitute for regular appointments with health professionals, but be used in addition to these.

For this intervention to work, it is important that patients are in the preparation or action stage of change, and believe that they are able to monitor their own blood pressure.

Although it can be a useful way to monitor hypertension, research has shown that home blood pressure monitoring does not always result in better outcomes. However, it can have a positive effect on several aspects related to hypertension.

- **The patient's insight into his/her condition**

Home blood pressure monitoring can motivate patients to change their lifestyle and to take their medicines.

- **It gives health professionals more blood pressure measurements**

The extra measurements can be used to monitor a patient's hypertension and make it easier for health professionals to adjust the doses of antihypertensive medicines.

- **It can prevent 'white-coat hypertension'**

Patients can be nervous when visiting a doctor, and this nervousness increases their blood pressure. It can be more relaxing for patients to measure their blood pressure at home, resulting in more accurate measurements.

Before patients start measuring their blood pressure at home, it is important to instruct them on how to do it. Some important points to tell patients are to:

- measure their blood pressure every morning
- measure their blood pressure before consuming any food, coffee or medicines
- measure their blood pressure after a five-minute rest in a seated position
- measure their blood pressure for a second time after two to five minutes
- document the readings each time.

Blood pressure monitoring machines can be bought from pharmacies. The more features a machine has, the more it costs. Match the model and its cost to the patient's needs. Consider having a hiring or lending system, so that patients can see if they want to continue home blood pressure monitoring. Some health insurance companies may reimburse the purchase of a blood pressure-measuring machine.

## Regimen simplification

One big problem related to adherence to cardiovascular medicines is the dose regimen – patients may have to take several medicines every day. Therefore, health professionals should review patient medicines to see if it is possible to:

- remove unnecessary medicines
- consider non-pharmacological alternatives
- coordinate administration times with routine daily activities
- decrease the administration frequency by using sustained-release or long-acting medicines
- reduce the number of medicines by using formulations that combine two or more medicines in one tablet or capsule.

It can be helpful to ask a patient to go to a regular pharmacy, so the pharmacist can review and monitor the patient's treatment regimen. Alternatively, if the patient qualifies, ask the patient to agree to a Home Medicines Review (HMR) to be completed by a pharmacist. If the patient doesn't qualify for a HMR, suggest a patient medicine profile. A HMR will give a complete, up-to-date summary of all the medicines the patient is using, including complementary and over-the-counter medicines, devices and prescriptions refilled in other pharmacies. For more information, visit [www.medicareaustralia.gov.au/provider/pbs/fourth-agreement/hmr.jsp](http://www.medicareaustralia.gov.au/provider/pbs/fourth-agreement/hmr.jsp).

# Combined interventions

## Facilitator notes

### Task

Review the interventions discussed. Summarise the categories and interventions that can help patients improve their adherence to medicines.

### Activity

Divide participants into small groups. Ask them to select combinations of interventions that they think would be most effective in improving patient adherence to medicines.

Combined interventions combine features of informational, behavioural or social interventions.

## Reinforcing adherence, plus education

This intervention for heart failure combines educational and behavioural features. It is based on five main objectives:

1. adherence to diet
2. adherence to medicines
3. monitoring of symptoms (especially progression of dyspnoea and fatigue)
4. controlling signs of salt retention (daily weight and oedema)
5. daily physical activity.

### Education

- Educate patients about their condition, medicines and lifestyle.
- For practical options, see 'Informational interventions' on page 69.

## Reinforcing adherence with telephone calls

- Explain to patients the information they were given about their condition, medicines and lifestyle, and repeat this information during subsequent contacts.
- Reinforce with patients the importance of adherence.

## Refill reminders plus education

This intervention also combines educational and behavioural components. It is based on three main subjects:

1. the importance of adherence to antihypertensive medicines
2. good nutrition
3. lifestyle changes.

### Education

- Educate patients about their condition, medicines and lifestyle.
- For practical options, see 'Informational interventions' on page 69.

### Refill reminders

- Send patients refill reminders so they remember their next refill. This can be done by telephone (when you can also ask if they need more information about their administration schedule) or by letter.

## Adherence packages, plus education

This intervention also combines educational and behavioural components.

### Education

- Educate patients about their condition, medicines and lifestyle.
- For practical options, see 'Informational interventions' on page 69.

## Adherence package (e.g. Webster-pak®)

- These packages make it easier for patients to take multiple medicines.
- They can also give you information about how patients take their medicines.
- For more information, see 'Calendar blister packages' on page 72.

## Social support plus education

This intervention combines educational and social components.

### Education

- Educate patients about their condition, medicines and lifestyle.
- For practical options, see 'Informational interventions' on page 69.

### Social support

- It is important to emphasise interactions between patients and their health professionals, family and friends.
- The quality of these relationships is built upon mutual respect, clear expectations and recognition of each other's roles and responsibilities.
- All parties play a key role in improving patient adherence to medicines:
  - friends and family can remind patients to take their medicines
  - health professionals can encourage patients and help them believe that 'they can do it'
  - all parties can help patients understand their condition and medicines.

### Social support: findings from research

Research has shown that patient adherence to medicines improves as a result of social support from volunteer lay health mentors and health professionals.

#### *Volunteer lay health mentors<sup>12</sup>*

The intervention involved participation in a mentor-led group. Issues relating to coronary heart disease, its management and self-help were discussed and included:

- smoking
- diet and exercise
- blood pressure and cholesterol
- understanding of, and ability to cope with, coronary heart disease
- adherence to medicines.

Each mentor-led group was encouraged to develop its own agenda, and health professionals gave the groups advice.

#### *Health professionals<sup>13</sup>*

Partnership meetings were led by a nurse and included discussion of:

- the nature, causes and complications of hypertension
- non-medicinal therapy
- medicines
- the importance of continuous measurement and recording of blood pressure
- encouraging and evaluating patients' adherence and participation.

A good social support system needs health professional input to build good relationships and to motivate and educate patients. All participants need to actively contribute to the support groups for them to be successful.

## Dose-intake reminders plus social support plus education

This intervention combines the features of informational, behavioural and social interventions. It uses tools developed for patients and health professionals.

Patients should be given the opportunity to choose the measure which suits them.

### For health professionals

When you are talking with patients (e.g. about hypertension), remember to discuss the:

- possible causes of their condition, such as being overweight, high salt intake, lack of physical activity and stress
- consequences of their condition (e.g. risk of stroke, coronary heart disease and heart failure)
- necessity for long-term medical treatment.

### For patients

Give patients the opportunity to choose from several supportive measures, such as:

- a 24-hour timer – the timer can be set to an appropriate time and an alarm will sound at the set time to remind the patient to take his/her medicines (this can also be done on mobile phones)
- a set of 10 reminder stickers to be positioned in prominent places in the patient's home (e.g. refrigerator and bathroom mirror)
- an information leaflet/brochure about the patient's condition or treatment
- an information letter the patient can give to someone who can help him/her take his/her medicines.

# Conclusion and key messages

### Facilitator notes

#### Task

Summarise the information in and learnings from this module.

#### Activity

Divide participants into small groups. Ask them to develop a plan for implementing at least three adherence interventions in their practice, taking into account the overall practice structure and activities. Participants should also outline a process for evaluating how well the interventions are working to improve patient adherence to medicines.

#### Feedback

Ask participants to give feedback on the:

- intervention strategies selected
- methods for implementing the strategies in their practice
- methods for evaluating the effectiveness of the interventions.

#### Task

Introduce the next module.

As this module has outlined, interventions can improve patients' adherence. However, at present, it is not possible to identify the most effective intervention due to variations in study populations and methods.

According to the evidence, behavioural interventions based on the Stages of Change model are effective. Therefore, these interventions are a good option for you to use in your practice to improve patient adherence to medicines. Although such behavioural interventions may involve more time and money, it is clear that their benefits outweigh their costs. Implementing just one of these interventions can significantly improve patient health.

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# Module 6: Specific roles of health professionals

Each health professional can help the patient improve adherence in a different way.

“Consultation and collaboration within the healthcare team optimise patient outcomes.”



## Objectives

The objectives of this module are to present:

- the specific roles of health professionals in improving patients' adherence to medicines
- a timeline of suggested critical intervention points to promote adherence to medicines.

## Learning outcomes

By the end of this module, you will be able to:

- describe the importance of adherence to improving outcomes in cardiovascular care
- individualise patient communications that focus on adherence
- describe the specific roles of health professionals in improving patients' adherence
- using a multidisciplinary approach, identify the systems change needed to improve the identification and management of sub-optimal adherence in your practice.

# Introduction

Now that you are equipped with the knowledge and skills needed to support and improve your patients' adherence, it is important to consider what each health professional can specifically contribute. General practitioners (GPs), nurses and pharmacists each have a specific role in a patient's treatment.

How health professionals can work together to improve patient adherence will be explored in this module.

# What you can do to help patients adhere to their medicines

## Facilitator notes

### Task

Present a short introduction to this module, including its content, objectives and learning outcomes.

### Activity

Divide participants into small groups. Ask them to brainstorm all the ways that each health professional can help patient adherence to medicines.

### Feedback

Discuss with the participants the general roles of health professionals in addressing adherence and then each one's specific role.

GPs, nurses and pharmacists each have a role in healthcare and adherence to medicines. Effective healthcare calls for partnerships within and outside of your own profession.

Consultation and collaboration with colleagues will help you provide optimal care for your patients.

Below are strategies that all health professionals can adopt to improve patient adherence to medicines.

## Promoting adherence

- Ask what each patient's concerns and questions are at each appointment/consultation.
- Respond to concerns and answer questions.
- Provide a safe environment for your patients to talk about confidential concerns.
- Check your patients' knowledge and understanding of their condition and treatments.
- Explore your patients' beliefs, values, ideas and expectations.
- Listen reflectively.

- Ask your patients about any psychological and/or physical symptoms.
- Ask your patients about any changes in their circumstances, side effects or medicine-taking behaviour since the last visit.
- Ask your patients how they are going with their treatment plan.
- Ask your patients if they have seen any other clinicians. Make sure you share medical information with other appropriate providers and institutions (with the patient's consent).
- Respond to cues that might indicate your patients' non-adherence to their medicines.
- Recognise where there is a need for action to improve adherence.
- If patients are non-adherent to their medicines, establish whether or not they are aware of their non-adherence.
- Be aware of how your patients perceive their treatment.
- Be clear on your position on a patient's treatment options, but do not assume your position is 'right'.
- Give your patients positive reinforcement.
- Explore any barriers to your patients' adherence.
- Give your patients personalised information in manageable amounts.
- Adjust your patients' treatment plans when necessary.
- Suggest new strategies to facilitate adherence.
- Flag and follow up any issues.
- Build on your patients' experience of self-efficacy.
- Equip your patients with knowledge and skills to aid self-management.
- Find out what support your patients want or need.

There are specific actions each health professional can take to further support patient adherence to medicines and healthcare programs.<sup>1</sup>

## Community nurses

Community nurses provide:

- basic medical follow up (e.g. blood pressure management)
- emotional care to patients in what is often an uncertain and confusing time.

Community nurses should also endeavour to:

- be aware of patients' medicines and prescribed treatment regimen, and their adherence to these
- be informed about any complementary medicines patients are taking
- be aware of any stresses that surround the patient that might affect them taking their medicine (e.g. homelessness, alcoholism, lack of social support<sup>2</sup>)
- be aware of patients' beliefs about medicines
- liaise with and support other health professionals.<sup>3</sup>

## Practice nurses

Practice nurses can:

- regularly contact patients to check their treatment management, including side effects, medicine administration, issues with, and barriers to, adherence to medicines, as well as patient experiences of their condition
- give positive feedback or suggest steps to follow up on issues encountered (if appropriate)
- help patients find and access extra social support through community groups
- manage mail outs to remind patients of consultations or to give condition-related or self-management-related educational material
- manage pre-consultation forms, where the form is made available either in the waiting room or is mailed out prior to the consultation. The practice nurse can make this form available to the GP before the GP meets with the patient.

## GPs

It is likely that patients have a closer relationship with their GP than with other health professionals. Therefore, GPs have greater responsibility in finding a treatment plan that is suitable for the patient and in helping him/her manage it. This includes engaging patients in decision making, establishing a treatment plan, communicating well with patients and with other health professionals, eliminating unnecessary medicines and simplifying dose regimens.

During a consultation it is important to:

- introduce a collaborative approach
- be aware of a patient's beliefs surrounding medicines and take this into account in treatment planning<sup>4</sup>
- make an active attempt to elicit patient views<sup>5</sup>
- be empathic and understand that medicines can be difficult to take as prescribed
- make sure that patients are adequately educated about their condition and treatment
- engage patients in the decision-making process
- check a patient's understanding of, and satisfaction with, their treatment<sup>6</sup>
- promote the self-efficacy of the patient
- be aware of different types of non-adherence (e.g. experimenting with doses, omitting medicines when experiencing side effects)<sup>5</sup>
- simplify doses (once or twice a day) if possible<sup>7,8</sup>
- ascertain the optimal timing of doses
- intervene when necessary to change medicines or doses to improve adherence
- follow up with the patient: assess his/her response to treatment, reassess adherence and difficulties in taking medicine, problem solve difficulties using the patient's preferences and solutions, adjust treatment to achieve optimal outcomes and facilitate medicine refills and follow-up care<sup>9</sup>
- be aware of cost and access barriers
- motivate patients
- be aware of red flags/indicators of non-adherence
- suggest adherence aids, for example, memory prompts, and dose administration aids such as the Webster-paks<sup>®</sup> or Dosetts<sup>9</sup>
- stress the importance of medicine taking in chronic conditions
- stress the importance of lifestyle changes.

When explaining a prescribed medicine to a patient (if possible, include a family member), address the key information: what, why, when, how and for how long:

- name the medicine
- state its purpose and potential role in the treatment
- explain the number of tablets or units (how many), and the frequency to be taken (how often)
- explain the duration of therapy: such as daily and long term
- mention common side effects.<sup>9</sup>

Written instructions must be simple. Give the patient a copy of the instructions on the medicines in a larger printed format (such as A4), and go through them with him/her carefully.<sup>9</sup>

During a follow-up consultation:

- assess the patient's response to treatment
- reassess his/her adherence and any difficulties in taking the medicines
- problem solve difficulties using the patient's preferences
- adjust treatment to achieve an optimal outcome
- facilitate medicine refills and follow-up care.

GPs may initiate a Home Medicines Review (HMR, MBS Item 900) when non-adherence is suspected. The HMR is initiated by writing a referral to the patient's pharmacy. The referral should include relevant clinical information (i.e. diagnosis, recent laboratory results and list of prescribed medicines). An accredited pharmacist conducts the review and writes a report, with results and recommendations, for the GP. The GP consults with both the pharmacist and the patient to create a new medication management plan, which is signed by the patient. A copy of the new plan should be sent to the patient's pharmacy.

## Pharmacists

Pharmacists usually have more frequent interactions with a patient than other health professionals, because patients usually visit pharmacies on at least a monthly basis to have their refill prescriptions dispensed.

Education is a vital part of making sure patients understand their treatments, and it has a proven effect on patient adherence. Pharmacists are well-positioned to identify non-adherence and give patients information on their condition, treatment and self-management strategies in a timely and personal way.

Pharmacists should:

- ask patients how they are going with their medicines at each pharmacy visit
- use pharmacy software, such as MedsIndex, to keep track of patients' refill behaviour, and therefore, their adherence to their treatment plans
- monitor and discuss refill rates
- create concordance – involve patients in actively planning their treatment<sup>10</sup> and medicine-taking strategies

- reinforce important information, provide additional information and clear up misunderstandings
- monitor the effectiveness of medicines
- use telephone reminder systems to prompt patients to fill repeat prescriptions
- measure patient blood pressure, cholesterol and international normalised ratio, to help monitor the effectiveness of medicines and support patient adherence to medicine
- conduct a medicine review, if applicable
- tailor treatment to fit patients' lifestyles
- counsel patients, for example, using motivational interviewing
- educate patients about their condition, the risks and benefits of treatment, lifestyle information, the medicine that has been prescribed, its dose and potential side effects<sup>11,12</sup>
- give patients information and advice about the use of tools, such as dose management, reminders and calendar/weekly pill boxes
- make dose-administration aids and other adherence tools available to patients.

Pharmacists can make sure patients have a satisfactory knowledge of their medicines by:

- checking patients know the name of their medicine, its strength and purpose
- checking patients know how to take their medicine and what to do if a dose is missed
- demonstrating devices to patients
- giving patients specific information as required, that is, special directions, drug–food interactions and drug–drug interactions
- giving patients information about common and serious side effects, and what to do if they occur
- giving patients tips on self-monitoring techniques
- checking patients know the duration of their treatment
- checking patients know the benefits of their medicine and its impact on their condition
- giving patients information that addresses concerns about their condition and/or therapy
- giving patients strategies to address barriers to taking their medicine<sup>10</sup>
- conducting a HMR (at the GP's request).

# Putting it all together

## Facilitator notes

### Task

Introduce this section of the module.

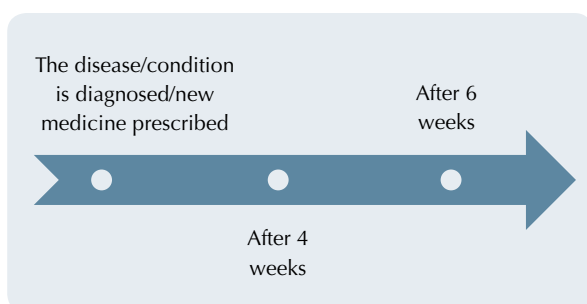
### Activity

Divide participants into small, multi-professional groups. Ask them to discuss when it is important to perform which task.

### Feedback

Present the timeline and discuss when each activity should be performed.

When trying to improve your patients' adherence to medicines, it is important to make sure they get the right information/support at the right time. This timeline gives suggestions about when to do what.



## When the disease/condition is diagnosed/new medicine prescribed

The GP/nurse should:

- give patients written and verbal information about their condition and relevant medicines
- give patients information about relevant support services
- suggest patients talk to their pharmacist about their medicine.

The pharmacist should give patients:

- specific information about their medicines
- the Consumer Medicine Information for their medicines.

## At four weeks

The patient should collect a refill of his or her medicines. It is then important for the pharmacist to:

- ask patients if they are experiencing any side effects from their medicines
- evaluate gaps in patient knowledge about their condition and medicines, and if they need more information
- assess patients' adherence to medicines, reinforcing adherence and addressing non-adherence (performing an intervention if/when necessary)
- contact the GP or nurse if/when a patient is not adherent, and come to an agreement about any adjustments to the patient's treatment plan to help his/her adherence to medicines.

## After six weeks

It is important that all health professionals generally follow up patients to check how they are going with their medicines. After six weeks, health professionals should:

- check with their patients at regular intervals
- perform interventions if a patient is non-adherent
- adjust the patient's treatment plan if/when necessary
- communicate with each other.

## Ongoing monitoring

Patients' adherence to medicines should be monitored on an ongoing basis at frequent intervals by all health professionals involved in their care. The intervals will depend on the patients' circumstances (e.g. changes in therapy, condition and personal circumstances).

Ongoing monitoring should occur at every interaction with the patient and can start by simply asking the patient "How have you been? How are you going with your medicines?"

# Conclusion and key messages

## Facilitator notes

### Task

Review the objectives of the module and summarise the key messages.

In addition to the general tasks a health professional can undertake to improve patients' adherence, such as checking patients' knowledge and understanding and giving personalised information and support, each health professional has his/her own role in improving adherence to medicines.

Community nurses should do a basic follow up and find out if there are issues that may affect the patient's medicine-taking behaviour. Practice nurses are also responsible for helping patients become adherent. They can check patients' treatment management and should take steps when a patient appears to be non-adherent (e.g. arranging refill reminders and helping the patient find extra social support).

GPs and pharmacists have the greatest contact with patients in general. Therefore, they have an important role in discovering patients' non-adherence to their medicines and helping patients to improve it. GPs are responsible for finding a suitable treatment plan and helping the patient manage it. This should be accomplished through shared decision making, good communication with the patient and other health professionals, and simplifying the dose regimen as much as possible.

Pharmacists can also identify non-adherence by checking how often patients refill their prescriptions through the dispensed medicine history or direct patient questioning. When patients appear to be non-adherent, pharmacists are in a good position to give them information on their condition, medicines and self-management strategies.

As each role is important, it is necessary for health professionals to work together. Remember that each intervention is a supplement to another. Adherence to medicines can't be improved by simply giving the patient information.



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# Table 1: Barriers to medicine adherence and treatment strategies

## Condition-related

Barriers: categories	Barriers: subcategories	Cardiovascular examples	Strategies
Long duration of therapy		<ul style="list-style-type: none"> <li>• Long-term treatment of hypertension to maintain target blood pressure (BP).</li> <li>• Long-term treatment of dyslipidaemia to maintain target lipid levels.</li> <li>• Use of angiotensin-converting enzyme inhibitors (ACEI), or angiotensin II receptor antagonists (ARA), and beta-blockers in systolic heart failure.</li> <li>• Use of beta-blockers, calcium channel blockers (CCB) or long-acting nitrates in stable angina.</li> <li>• Use of antiplatelet agents, beta-blockers, ACEIs (or ARAs) or statins post-myocardial infarction (MI).</li> </ul>	<ul style="list-style-type: none"> <li>→ Begin patient education at time of diagnosis. Use risk communication tools. Education should include the rationale for therapy, risk vs benefit discussions, clarification of the patient's expectations and identification of useful treatment outcome markers.</li> <li>→ Share with the patient the decision of whether or not to treat and which option to use.</li> <li>→ Involve the patient in actively planning his/her treatment.</li> <li>→ Educate the patient about ways to adhere to his/her medicines regimen, for example, how to incorporate medicine taking into a daily routine.</li> <li>→ Educate the patient on how to recognise and manage possible side effects.</li> <li>→ Give the patient personalised written information about his/her treatment regimen.</li> <li>→ Set evidence-based treatment goals (e.g. BP and lipid levels) for the patient to work towards.</li> <li>→ Provide supportive consultations between health professionals and the patient, using positive reinforcement; referral to key resources (e.g. Heart Foundation website) or support groups to help reinforce treatment goals and benefits.</li> <li>→ Regularly monitor treatment (e.g. assess efficacy and side effects).</li> <li>→ Monitor patient adherence (may use a validated instrument, such as the Morisky Scale<sup>4</sup>).</li> </ul>
Long duration of prophylactic treatment		<ul style="list-style-type: none"> <li>• Statin therapy, antiplatelet agents or ACEIs (or ARAs) in preventing future cardiovascular events in people with coronary heart disease (CHD) or at high absolute risk of CVD.</li> <li>• Use of beta-blockers post-MI.</li> <li>• Use of warfarin or antiplatelet agents in atrial fibrillation (AF).</li> </ul>	<ul style="list-style-type: none"> <li>→ Make sure the patient understands how the benefit of treatment (e.g. prevention of cardiovascular disease (CVD), transient ischaemic attack (TIA), stroke) outweighs the inconvenience of the treatment (e.g. cost, alteration of lifestyle). Use specific risk communication tools.</li> <li>→ Agree on a management plan with the patient.</li> <li>→ Educate the patient on how to use and manage his/her medicines.</li> <li>→ Educate the patient on how to prevent, recognise and manage possible side effects.</li> <li>→ Educate the patient about ways to adhere to his/her medicines regimen, such as incorporating medicine taking into daily routines.</li> <li>→ Regularly monitor treatment (e.g. assess efficacy and side effects, keep a BP diary, keep daily charts, record international normalised ratio (INR) in warfarin booklets).</li> </ul>

Table 1: Barriers to medicine adherence and treatment strategies (continued)

Barriers: categories	Barriers: subcategories	Cardiovascular examples	Strategies
Large number of medicines	Multiple medicines for one disease state	<ul style="list-style-type: none"> <li>• Use of beta-blockers, CCBs, and/or long-acting nitrates in stable angina.</li> <li>• Use of ACEIs, beta-blockers and/or diuretics in heart failure.</li> <li>• Use of beta-blocker, aspirin, statin, ozetimibe, clopidogrel, long-acting nitrate, nicorandil, fish oil, ACEI (or ARA) in advanced CVD.</li> </ul>	<ul style="list-style-type: none"> <li>→ Educate the patient on the use of medicines and rationale for using more than one medicine.</li> <li>→ Simplify medicine regimens (e.g. reduce the number or frequency of medicines taken per day). Consider longer-acting and combination medicines. Make sure the patient is fully aware when changed to a combination dose form. This option may not be appropriate in older people.</li> <li>→ Give the patient clear instructions.</li> <li>→ Prepare a MedList for the patient to use as a guide to the therapeutic regimen.</li> <li>→ Use adherence aids (e.g. dose-administration aids, such as pharmacy-dispensed Webster-paks®), reminders at home (e.g. alarms) or associate taking medicines with a routine event (e.g. take morning medicines after breakfast or after brushing teeth).</li> <li>→ Follow up by health professionals (e.g. the patient makes regular appointments with prescribers, pharmacists and prescribers monitor rates of prescription refills and/or conduct a Home Medicines Review).</li> </ul>
Therapy-related			
Barriers: categories	Barriers: subcategories	Cardiovascular examples	Strategies
Large number of medicines	<ul style="list-style-type: none"> <li>• Multiple medicines for one disease state</li> <li>• Multiple medicines for several conditions</li> <li>• Patients' concerns about interactions</li> </ul>	<ul style="list-style-type: none"> <li>• Statin therapy, antiplatelet agents or ACEIs (or ARAs) in preventing future cardiovascular events in patients with CHD.</li> <li>• Antiplatelet agent, beta-blocker, ACEI (or ARA) or statin post-MI as well as diabetes medicine.</li> <li>• Some ACEIs and beta-blockers require more than one dose per day.</li> </ul>	<ul style="list-style-type: none"> <li>→ Begin patient education at diagnosis. Offer suitable websites for support.</li> <li>→ Rationalise/simplify treatment regimen (e.g. medicine review services).</li> <li>→ Continually monitor and reassess treatment.</li> <li>→ See strategies above in 'Condition-related factors'</li> </ul>
Multiple doses per day			<ul style="list-style-type: none"> <li>→ Choose an alternative from the same class that requires less frequent administration (long half-life alternatives), a sustained release (SR) form or combination formulations/products, where appropriate.</li> <li>→ Consider using non-oral formulations, where appropriate and available (e.g. patches), that may help patients who tend to forget to take oral formulations on a daily basis adhere to their medicines regimen.</li> </ul>

Table 1: Barriers to medicine adherence and treatment strategies (continued)

Barriers: categories	Barriers: subcategories	Cardiovascular examples	Strategies
<b>Side effects</b>	<ul style="list-style-type: none"> <li>• Side effects that make the patient feel uncomfortable</li> <li>• Side effects that impact on the patient's lifestyle</li> <li>• Patient incorrectly thinks symptoms are side effects</li> </ul>	<ul style="list-style-type: none"> <li>• Cough with ACEIs.</li> <li>• Swollen ankles, reflux and constipation with CCBs.</li> <li>• Muscle pain with statins.</li> <li>• Fatigue with beta-blockers.</li> <li>• Skin discolouration and bruising with anti-thrombotics.</li> <li>• Diuresis at inconvenient times from diuretics.</li> <li>• Sexual dysfunction with beta-blockers.</li> </ul>	<ul style="list-style-type: none"> <li>→ Regularly assess and manage side effects, including monitoring processes.</li> <li>→ Explain to the patient how side effects can be recognised and managed.</li> <li>→ Give the patient an alternative medicine from a different drug class.</li> <li>→ Discuss with the patient the risks vs benefits of each medicine.</li> <li>→ Establish that a side effect is due to the medicine in question and not coincidental (e.g. check BP for suspected orthostatic hypotension, discontinue and restart treatment to see if symptom returns, question if it is due to the disease of interest or comorbidity).</li> <li>→ Encourage discussion/feedback on how the patient feels, so that he/she won't discontinue or choose when not to take the medicine (e.g. not before sport, special occasions).</li> </ul>
<b>Frequent changes in medicines</b>		Changes in drug class for the treatment of hypertension.	<ul style="list-style-type: none"> <li>→ Minimise changes in antihypertensive medicines.</li> <li>→ Monitor the patient's adherence to make sure that lack of response is not due to non-adherence.</li> <li>→ Remember that low-dose combinations are superior to high-dose monotherapy for BP control and side effect profile.</li> <li>→ Update the patient's MedList to reflect changes in medicines (MediList should be updated by the doctor or pharmacist and dated according to the most recent update).</li> </ul>

## Patient-related: intentional

Barriers: categories	Barriers: subcategories	Cardiovascular examples	Strategies
<b>Lack of symptoms</b>	<ul style="list-style-type: none"> <li>• Patient feels well</li> </ul>	<ul style="list-style-type: none"> <li>• Patient doesn't believe high BP is serious because there are no symptoms.</li> <li>• Patient doesn't believe high lipid levels are serious because there are no symptoms.</li> <li>• Patient doesn't believe stroke prevention is a serious issue because of dissociated diagnosis (i.e. stroke affects brain, but proposed treatment is for CHD).</li> </ul>	<ul style="list-style-type: none"> <li>→ Educate the patient about the necessity and benefits of adherence for the prevention of CVD (focusing on long-term benefits). Refer to relevant resources.</li> <li>→ Clarify the patient's expectations of therapy and identify useful treatment outcome markers (e.g. lipid and BP levels, target INRs for warfarin).</li> <li>→ Use risk communication tools.</li> <li>→ Use meaningful numbers/statistics to clarify to the patient the reason for taking the prescribed medicines.</li> </ul>

Table 1: Barriers to medicine adherence and treatment strategies (continued)

Barriers: categories	Barriers: subcategories	Cardiovascular examples	Strategies
Perceived side effects	<ul style="list-style-type: none"> <li>• Patient misinterprets media reports</li> <li>• Patient misinterprets Consumer Medicine Information (CMI)</li> <li>• Patient believes that he/she will experience the side effects the doctor or pharmacist mentioned</li> <li>• Patient has experienced side effects with other medicines</li> <li>• Patient incorrectly interprets symptoms as side effects</li> <li>• Mythology regarding medicine</li> <li>• Patient insists that drug is causing side effects</li> </ul>	<ul style="list-style-type: none"> <li>• Patient belief that warfarin is 'ratsak'.</li> <li>• Patient belief that aspirin gives you ulcers, kidney stones etc.</li> <li>• Patient belief that beta-blockers 'block' everything (make people 'slow').</li> </ul>	<ul style="list-style-type: none"> <li>→ Explore the patient's concerns and correct any misunderstandings, especially when the medicine is first prescribed.</li> <li>→ Investigate possible side effects.</li> <li>→ Address perceived barriers to following the treatment. For example, can the patient open the medicine bottle with a child-proof lid (rheumatoid arthritis in finger joints)? Can he/she read the instructions clearly on the label (eye problems)?</li> <li>→ Clarify to the patient therapeutic management and a monitoring plan to prevent or manage any side effects.</li> </ul>
Rejection of diagnosis		<ul style="list-style-type: none"> <li>• Patient doesn't believe that he/she has dyslipidaemia, because there are no symptoms.</li> <li>• Patient doesn't believe that he/she has hypertension, because there are no symptoms.</li> <li>• Patient doesn't believe that he/she has had a heart attack or stroke.</li> </ul>	<ul style="list-style-type: none"> <li>→ Show the patient his/her pathology results. Explain the results and what the related targets/goals are.</li> <li>→ Explore the patient's ideas and concerns about diagnosis and why he/she has rejected it.</li> <li>→ Calculate the patient's CVD risk, and show him/her how CVD risk is reduced with a reduction in risk factors.</li> <li>→ Educate the patient about the role of dyslipidaemia in atherosclerosis and CVD.</li> <li>→ Refer to patient stories/journeys through illness.</li> <li>→ Establish the patient's lay epidemiology (i.e. what he/she believes is causing the problem), and address this.</li> </ul>

Table 1: Barriers to medicine adherence and treatment strategies (continued)

Barriers: categories	Barriers: subcategories	Cardiovascular examples	Strategies
<b>Not understanding the importance of medicines</b>	<ul style="list-style-type: none"> <li>• Patient feels well without the medicine</li> <li>• Patient doesn't appreciate the consequences of not taking his/her medicines</li> <li>• Patient believes that the problem can be fixed simply by improving his/her diet and exercising</li> </ul>	<ul style="list-style-type: none"> <li>• Patient belief that dyslipidaemia has negative health consequences that are far in the future.</li> <li>• Patient doesn't appreciate the importance of reaching target BP.</li> <li>• Use of statins in all patients with CHD may be misunderstood.</li> </ul>	<ul style="list-style-type: none"> <li>→ Educate the patient about the role of his/her risk factors in atherosclerosis and CVD.</li> <li>→ Calculate the patient's CVD risk and show him/her how CVD risk is reduced with a reduction in risk factors.</li> <li>→ Explore the patient's understanding of CVD and how his/her medicine works.</li> <li>→ Reinforce to the patient that treatment is based on lifestyle changes, but medicines bring additional benefits. Lifestyle changes can minimise the dose of medicines he/she needs to take.</li> </ul>
<b>Interpersonal skills</b>	<ul style="list-style-type: none"> <li>• Patient's inability to communicate his/her understanding of their condition with the prescriber</li> </ul>	<ul style="list-style-type: none"> <li>• Patient has language problems, is a poor communicator, or does not want to upset the health professional.</li> </ul>	<ul style="list-style-type: none"> <li>→ Ask the patient to explain any concerns he/she has about their health or medicines.</li> <li>→ Use good interview and active listening skills to find out what the patient's concerns are.</li> <li>→ Counsel the patient constructively and non-judgementally.</li> </ul>
<b>Loss of faith in medicines</b>	<ul style="list-style-type: none"> <li>• Patient's belief that there is little improvement in his/her condition</li> </ul>	<ul style="list-style-type: none"> <li>• Patient has a CVD event (e.g. an MI or a stroke) while taking medicine.</li> </ul>	<ul style="list-style-type: none"> <li>→ Clarify what the patient's expectations of treatment are and use a risks vs benefits equation (especially refined risks/benefits ratio if the patient has had a primary event).</li> <li>→ Review medicines and adherence to medicines.</li> <li>→ Continually monitor and reassess treatment.</li> <li>→ Explain to the patient that an event while taking medicine does not mean that the medicine has failed entirely (e.g. it may have delayed or lessened the severity of the event).</li> </ul>
<b>Cost</b>		<ul style="list-style-type: none"> <li>• Some brands attract a brand premium on the Pharmaceuticals Benefit Scheme (PBS) (e.g. ACEI brands).</li> <li>• Multiple medicines for CVD and/or other conditions.</li> </ul>	<ul style="list-style-type: none"> <li>→ Simplify the treatment regimen.</li> <li>→ Prescribe generic equivalents when appropriate (remember that changes can confuse some patients).</li> <li>→ Avoid brands where PBS brand premium applies.</li> <li>→ Consider fixed-dose combination products once patients have been stabilised with single-ingredient preparations.</li> <li>→ Review the medicines regularly (e.g. Medication Management Review (MMR)).</li> </ul>

Table 1: Barriers to medicine adherence and treatment strategies (continued)

Barriers: categories	Barriers: subcategories	Cardiovascular examples	Strategies
Burden of therapeutic regimen		<ul style="list-style-type: none"> <li>• Use of antiplatelet agent plus ACEI or ARA, beta-blocker and statin post-MI.</li> <li>• Patient may have other co-existing conditions requiring medicines.</li> </ul>	<ul style="list-style-type: none"> <li>→ Tailor the patient's medicines regimen to his/her daily activities.</li> <li>→ Make sure the patient understands how the benefits of treatment outweigh the inconvenience.</li> <li>→ Help the patient compare the perceived risks of treatment versus the risk of developing CVD.</li> <li>→ Offer the patient a dose-administration aid (e.g. Webster-pak®).</li> <li>→ Discuss with the patient ways of incorporating monitoring activities (e.g. INR monitoring for warfarin) into daily/weekly/monthly routines, or alternative modes of monitoring (e.g. point-of-care testing devices).</li> <li>→ Consider prescribing fixed dose combination products that reduce pill count (e.g. statin/CCB).</li> <li>→ Consider prescribing agents that have indications for comorbidities (e.g. alpha-blocker for males with hypertension and lower urinary tract symptoms).</li> </ul>
Patient-related: unintentional			
Barriers: categories	Barriers: subcategories	Cardiovascular examples	Strategies
Administration difficulties	<ul style="list-style-type: none"> <li>• Patient can't swallow tablets/capsules (especially SR formulations)</li> <li>• Patient can't open medicine containers</li> <li>• Patient can't pop the pill out of blister packaging</li> <li>• Patient doesn't understand or remember information provided verbally</li> <li>• Patient can't understand the written instructions provided on the label or in CMI due to language or literacy barriers</li> </ul>	<ul style="list-style-type: none"> <li>• Large tablets (e.g. potassium supplement).</li> <li>• Patient doesn't know that diuretics should be taken in the morning.</li> <li>• Patient doesn't understand the need for a 10–12-hour nitrate-free period each day.</li> <li>• Patient doesn't understand the dietary precautions needed with warfarin.</li> <li>• Patient doesn't understand that SR formulations must not be crushed.</li> </ul>	<ul style="list-style-type: none"> <li>→ Prescribe an alternative formulation (e.g. liquid form, patch) if available.</li> <li>→ Avoid child-proof containers or ask the pharmacist to repack the medicine.</li> <li>→ Use an alternative dose-administration aid that is easier for the patient to open.</li> <li>→ Ask carers (professional carer support and/or family/friends) to help the patient take his/her medicine.</li> <li>→ Give the patient clear verbal instructions about his/her medicines, using a translation service if necessary. This is especially important for people with poor literacy and older people.</li> <li>→ Keep information simple and straightforward.</li> <li>→ Give the patient written instructions and/or dose tables/schedules.</li> <li>→ Give the patient a translated version of written information and dispensed medicine labels if necessary.</li> <li>→ Use pictograms where appropriate (e.g. for the administration of SR tablets or awareness of vitamin K-containing foods).</li> </ul>



Table 1: Barriers to medicine adherence and treatment strategies (continued)

Barriers: categories	Barriers: subcategories	Cardiovascular examples	Strategies
<b>Not knowing how to take the medicine because of language or literacy barriers</b>	<ul style="list-style-type: none"> <li>• Patient can't understand or remember the information provided verbally</li> <li>• Patient can't understand the written instructions on the label or in CMI due to language or literacy barriers</li> </ul>	<ul style="list-style-type: none"> <li>• Patient doesn't know that diuretics should be taken in the morning.</li> <li>• Patient doesn't understand the need for a 10–12-hour nitrate-free period each day.</li> <li>• Patient doesn't understand the dietary precautions needed with warfarin.</li> <li>• Patient doesn't understand that SR formulations must not be crushed.</li> <li>• Some statins need to be given at night, and BP medicines taken in the morning.</li> <li>• Some beta-blockers need to be taken twice a day.</li> <li>• Frequent dose adjustment in warfarin therapy.</li> </ul>	<ul style="list-style-type: none"> <li>→ Give the patient clear verbal instructions about his/her medicines, using a translation service if necessary. This is especially important for people with poor literacy and older people.</li> <li>→ Keep information simple and straightforward.</li> <li>→ Use written instructions.</li> <li>→ Simplify dose schedules.</li> <li>→ Use medicines that need fewer doses per day or once-daily administration.</li> <li>→ Tailor the patient's medicines regimen to his/her daily activities.</li> <li>→ Give the patient personalised written information about his/her treatment regimen and/or dose tables/schedules.</li> <li>→ Give the patient a translated version of written information and dispensed medicine labels if necessary.</li> <li>→ Use pictograms where appropriate (e.g. for the administration of SR tablets or awareness of vitamin K foods).</li> <li>→ Speak with the patient's primary carer about the patient's medicines.</li> <li>→ Clarify with the patient the link between treatment outcomes/goals and the medicines regimen (e.g. INR and warfarin dose).</li> <li>→ Recommend dosing aids.</li> </ul>
<b>Regimen complexity</b>	<ul style="list-style-type: none"> <li>• Older patient</li> <li>• Patient has a busy lifestyle</li> </ul>	<ul style="list-style-type: none"> <li>• Some statins need to be given at night, and BP medicines taken in the morning.</li> <li>• Some beta-blockers need to be taken twice a day.</li> <li>• Frequent dose adjustment in warfarin therapy.</li> </ul>	<ul style="list-style-type: none"> <li>→ Simplify dose schedules.</li> <li>→ Use medicines that need fewer doses per day or once-daily administration.</li> <li>→ Tailor the patient's medicines regimen to his/her daily activities (e.g. meals).</li> <li>→ Give the patient personalised written information about his/her medicine regimen and/or dose tables/schedules.</li> <li>→ Clarify with the patient the link between treatment outcomes/goals and the dose regimen (e.g. INR and warfarin dose).</li> <li>→ Recommend dose-administration aids.</li> <li>→ Suggest the use of reminders, e.g. a diary, alarms, text messages or telephone reminder services, where available.</li> <li>→ Ask carers (professional carer support and/or family/friends) to help the patient take his/her medicine.</li> <li>→ Remind the patient of prescription repeat dates.</li> <li>→ Tell the patient how to deal with missed doses.</li> </ul>



Table 1: Barriers to medicine adherence and treatment strategies (continued)

Barriers: categories	Barriers: subcategories	Cardiovascular examples	Strategies
<b>Forgetfulness</b>	<ul style="list-style-type: none"> <li>• Older patient</li> <li>• Patient has a busy lifestyle</li> <li>• Patient doesn't understand prescriber's intentions</li> </ul>	<ul style="list-style-type: none"> <li>• Patient stops taking antihypertensive medicines when the prescriber says that target BP has been achieved.</li> <li>• Patient doesn't understand medical terminology.</li> </ul>	<ul style="list-style-type: none"> <li>→ Recommend dose-administration aids or reminders, e.g. a diary, alarms, text messages or telephone reminder services, where available.</li> <li>→ Ask carers (professional carer support and/or family/friends) to help the patient take his/her medicine.</li> <li>→ Remind the patient of prescription repeat dates.</li> <li>→ Tell the patient how to deal with missed doses.</li> <li>→ Choose times for taking medicines that correlate with the patient's daily activities (e.g. meals).</li> <li>→ Verify (during the professional consultation) the patient's understanding of how and why he/she should take the prescribed medicine.</li> <li>→ Help the patient understand health advice, particularly if he/she has language or literacy difficulties.</li> <li>→ Actively refer the patient to the initial treatment plan to confirm the duration and goals of therapy, and how this relates to therapeutic monitoring.</li> </ul>
<b>Miscommunication</b>	<ul style="list-style-type: none"> <li>• Patient doesn't understand the prescriber's intentions</li> <li>• Patient can't read the directions on the medicine label</li> <li>• Patient can't identify the strength of tablets (e.g. warfarin)</li> </ul>	<ul style="list-style-type: none"> <li>• Patient stops taking antihypertensive medicines when the prescriber says that target BP has been achieved.</li> <li>• Patient doesn't understand medical terminology.</li> </ul>	<ul style="list-style-type: none"> <li>→ Verify (during the professional consultation) the patient's understanding of how and why he/she should take the prescribed medicine.</li> <li>→ Help the patient understand health advice, particularly if he/she has language or literacy difficulties.</li> <li>→ Actively refer the patient to the initial treatment plan to confirm the duration and goals of therapy, and how this relates to therapeutic monitoring.</li> <li>→ Use larger print on dispensing labels.</li> <li>→ Use larger print for CMI.</li> <li>→ Facilitate the use of tactile prompts on product packaging (e.g. 'bubble' stickers, colour-coded stickers or ribbed pill containers).</li> <li>→ Ask carers (professional carer support and/or family/friends) to help the patient take his/her medicine.</li> </ul>

Table 1: Barriers to medicine adherence and treatment strategies (continued)

Barriers: categories	Barriers: subcategories	Cardiovascular examples	Strategies
<b>Poor eyesight</b>	<ul style="list-style-type: none"> <li>• Patient can't read the directions on the medicine label</li> <li>• Patient can't identify the strength of tablets (e.g. warfarin)</li> <li>• Patient doesn't understand the prescriber's intentions</li> </ul>		<ul style="list-style-type: none"> <li>→ Use larger print on dispensing labels.</li> <li>→ Use larger print for CMI.</li> <li>→ Facilitate the use of tactile prompts on product packaging (e.g. 'bubble' stickers, colour-coded stickers or ribbed pill containers).</li> <li>→ Suggest the patient use a coloured highlighter to identify different strengths of the same medicine; for example, warfarin 2 mg (purple highlighter) and warfarin 5 mg (green highlighter).</li> <li>→ Ask carers (professional carer support and/or family/friends) to help the patient take his/her medicine.</li> <li>→ Give the patient written information.</li> </ul>
<b>Deafness</b>	<ul style="list-style-type: none"> <li>• Patient doesn't understand the prescriber's intentions</li> <li>• Patient can't take medicines as prescribed</li> <li>• Patient can't remember to take medicines</li> <li>• Patient can't understand treatment instructions</li> </ul>		<ul style="list-style-type: none"> <li>→ Give the patient written information.</li> <li>→ Ask carers (professional carer support and/or family/friends) to help the patient take his/her medicine.</li> <li>→ Recommend the patient use a dose-administration aid.</li> <li>→ Consider alternative therapy, where appropriate (where carer support and/or supervision is unavailable or unfeasible).</li> </ul>
<b>Cognitive impairment</b>	<ul style="list-style-type: none"> <li>• Patient can't take medicines as prescribed</li> <li>• Patient can't remember to take medicines</li> <li>• Patient can't understand the treatment instructions</li> <li>• Patient doesn't believe he/she can reach the goals set by the prescriber</li> </ul>		<ul style="list-style-type: none"> <li>→ Ask carers (professional carer support and/or family/friends) to help the patient take his/her medicine.</li> <li>→ Recommend the patient use a dose-administration aid.</li> <li>→ Consider using alternative therapy, where appropriate (where carer support and/or supervision is unavailable or unfeasible).</li> <li>→ Refer the patient to self-management programs that include educational and behavioural components.</li> <li>→ Set achievable goals (e.g. BP level) for the patient to work towards, and give positive feedback when he/she achieves targets.</li> <li>→ Counsel the patient constructively and non-judgementally.</li> <li>→ See the patient regularly to review his/her health.</li> </ul>

Table 1: Barriers to medicine adherence and treatment strategies (continued)

Barriers: categories	Barriers: subcategories	Cardiovascular examples	Strategies
Lack of self-efficacy	<ul style="list-style-type: none"> <li>• Patient doesn't believe he/she can reach the goals set by the prescriber</li> </ul>	<ul style="list-style-type: none"> <li>• Patient doesn't believe that he/she can achieve target BP or lipid levels.</li> </ul>	<ul style="list-style-type: none"> <li>→ Refer patient to self-management programs that include educational and behavioural components.</li> <li>→ Set achievable goals (e.g. BP level) for the patient to work towards, and give positive feedback when he/she achieves targets.</li> <li>→ Counsel the patient constructively and non-judgementally.</li> <li>→ See the patient regularly to review his/her health.</li> </ul>

## Social or economic factors

Barriers: categories	Barriers: subcategories	Cardiovascular examples	Strategies
High cost of treatment	<ul style="list-style-type: none"> <li>• Patient is taking multiple medicines</li> <li>• Patient has a low income</li> </ul>	<ul style="list-style-type: none"> <li>• Some brands attract a brand premium on the PBS (e.g. ACEI brands).</li> </ul>	<ul style="list-style-type: none"> <li>→ Prescribe generic equivalents.</li> <li>→ Avoid brands where PBS brand premium applies.</li> <li>→ Consider prescribing fixed-dose combination products once the patient has been stabilised with single-ingredient preparations.</li> <li>→ Advise the patient about the PBS Safety Net scheme.</li> <li>→ Do an MMR to identify medicine priorities and the need for therapy.</li> </ul>
Health beliefs and attitudes	<ul style="list-style-type: none"> <li>• Patient belief that complementary medicines are better/safer than Western medicines</li> <li>• Patient belief that 'folklore' remedies are effective</li> </ul>	<ul style="list-style-type: none"> <li>• Patient belief that policosanol or plant sterols are preferable to medicines for managing dyslipidaemia.</li> <li>• Patient belief that vitamin E reduces the risk of CVD.</li> <li>• Patient belief that garlic protects against CVD.</li> <li>• Patient belief that drinking more alcohol helps to burn/dissolve fat in the blood vessels.</li> </ul>	<ul style="list-style-type: none"> <li>→ Give the patient advice targeted at his/her individual needs and concerns.</li> <li>→ Tell the patient about the current evidence for the efficacy of the relevant complementary medicine.</li> <li>→ Support the patient's use of complementary medicines where it may benefit him/her (highlighting benefits, where relevant) and there are no implications for harm with other recommended treatments.</li> </ul>

Table 1: Barriers to medicine adherence and treatment strategies (continued)

Barriers: categories	Barriers: subcategories	Cardiovascular examples	Strategies
Poor health literacy	<ul style="list-style-type: none"> <li>• Patient doesn't understand key information about taking his/her medicines and the importance of the medicines in the short and long term</li> </ul>	<ul style="list-style-type: none"> <li>• Patient doesn't understand the importance of reaching his/her target BP to help reduce cardiovascular risk.</li> </ul>	<ul style="list-style-type: none"> <li>→ Give the patient simple instructions about his/her medicines. This is especially important for people with poor literacy and older people.</li> <li>→ Make sure that patient information is culturally and linguistically appropriate.</li> <li>→ Verify (during the professional consultation) the patient's understanding of how and why he/she should take the prescribed medicine.</li> </ul>
Suboptimal interpersonal skills of the health professional	<ul style="list-style-type: none"> <li>• Prescriber is unable to assess the patient's beliefs and understanding of medicines and/or disease</li> <li>• Pharmacist is unable to assess the patient's beliefs and understanding of medicines and/or disease</li> </ul>		<ul style="list-style-type: none"> <li>→ Health professional to improve active listening skills (see module 3).</li> <li>→ Use open-ended questions to assess the patient's understanding.</li> <li>→ Listen and respond to the patient's concerns.</li> <li>→ Adopt a non-judgemental attitude.</li> </ul>

Table 1: Barriers to medicine adherence and treatment strategies (continued)

## Health system or healthcare team-related

Barriers: categories	Barriers: subcategories	Cardiovascular examples	Strategies
Patient doesn't know how to take his/her medicines	<ul style="list-style-type: none"> <li>Neither pharmacist nor physician have explained to the patient the proper use of the medicine</li> </ul>	<ul style="list-style-type: none"> <li>Patient doesn't take simvastatin in the evening, take warfarin at the same time each day, dissolve glyceryl trinitrate (GTN) tablets under the tongue (i.e. swallows them instead), take diuretics in the morning, or have a nitrate-free period.</li> <li>Patient doesn't understand the warfarin dose changes relative to blood test results.</li> <li>Patient doesn't understand the difference between taking medicines as needed versus long-term maintenance therapy (e.g. nitrates).</li> </ul>	<ul style="list-style-type: none"> <li>→ Tell the patient how to take the medicine correctly and check he/she understands by asking him/her to paraphrase what you have said (verification).</li> <li>→ Don't assume that another health professional has given the patient the necessary information.</li> <li>→ Use multidisciplinary care to reinforce key messages to the patient.</li> <li>→ Give the patient written information and instructions, where possible, to clarify key messages during verbal counselling.</li> <li>→ Show patients how to use the medicine, where appropriate.</li> <li>→ Encourage the patient to write down instructions in his/her own words.</li> </ul>
Patient lacks confidence in the prescriber	<ul style="list-style-type: none"> <li>Patient's lack of confidence in the prescriber may make him/her doubt the prescriber's ability and lead to non-adherence</li> <li>Patient belief that the prescriber has initiated therapy without adequately establishing the health problem</li> <li>Patient belief that medicine is not an appropriate form of therapy</li> </ul>	<ul style="list-style-type: none"> <li>Patient doesn't believe it is necessary to take medicines to lower BP.</li> <li>Patient gets a prescription from a locum doctor.</li> </ul>	<ul style="list-style-type: none"> <li>→ Develop interpersonal and communication skills to create a trusting relationship with the patient.</li> <li>→ Convey health professional beliefs and knowledge about the therapy to the patient.</li> <li>→ Explore the patient's health beliefs by listening to him/her. Provide reflective feedback to clarify any messages.</li> </ul>

Table 1: Barriers to medicine adherence and treatment strategies (continued)

Barriers: categories	Barriers: subcategories	Cardiovascular examples	Strategies
Health professionals have suboptimal interpersonal skills	<ul style="list-style-type: none"> <li>Health professionals are unable to communicate or facilitate discussion with the patient</li> </ul>	<ul style="list-style-type: none"> <li>Health professional is unaware of his/her impact on the patient's behaviour.</li> </ul>	<ul style="list-style-type: none"> <li>Health professional should reflect on and develop appropriate communication skills.</li> </ul>
Health professionals' lack of knowledge and training on managing chronic diseases	<ul style="list-style-type: none"> <li>Health professionals don't engage with available services</li> <li>Health professionals are unaware of current treatment guidelines</li> </ul>	<ul style="list-style-type: none"> <li>Health professional is not familiar with current treatment guidelines (e.g. for reducing risk in heart disease, management of chronic heart failure).</li> <li>Health professional doesn't refer the patient to available review or support services (e.g. HMR, disease self-management services, clinics).</li> </ul>	<ul style="list-style-type: none"> <li>Reflect on and address health professional knowledge gaps.</li> <li>Improve communication with other local health professionals and service providers to establish referral processes.</li> <li>Identify efficient reference sources to keep informed of practice and guidelines changes (e.g. Heart Foundation guidelines, NPS).</li> </ul>
Patient lacks confidence in the pharmacist	<ul style="list-style-type: none"> <li>Patient belief that repeat prescriptions are dispensed without assessing his/her need</li> <li>Patient belief that the information the pharmacist gives is not accurate and/or is different to information the prescriber gave</li> </ul>		<ul style="list-style-type: none"> <li>Develop interpersonal and communication skills to establish rapport with the patient.</li> <li>Make sure patients are familiar with their treatment plans and agree with the prescriber about them. Give positive reinforcement.</li> <li>Reflect on and address knowledge gaps.</li> </ul>
Patient has poor access to prescriber	<ul style="list-style-type: none"> <li>Patient is immobile</li> <li>Patient has poor access to public transport</li> <li>Patient lives in a rural or remote area</li> </ul>		<ul style="list-style-type: none"> <li>Ask family/friends or carers to help the patient access the prescriber.</li> <li>Arrange help from home and community care services.</li> <li>Arrange mobile clinic or home follow-up services, where available.</li> <li>Arrange home visits, where provided.</li> <li>Use telehealth services, where available.</li> <li>Facilitate telephone/other request for ongoing medicine prescribing without consultation.</li> </ul>

Table 1: Barriers to medicine adherence and treatment strategies (continued)

Barriers: categories	Barriers: subcategories	Cardiovascular examples	Strategies
Patient has poor access to pharmacy	<ul style="list-style-type: none"> <li>• Patient is immobile</li> <li>• Patient has poor access to public transport</li> <li>• Patient lives in a rural or remote area</li> </ul>		<ul style="list-style-type: none"> <li>→ Ask family/friends or carers to help the patient access the pharmacy.</li> <li>→ Arrange help from home and community care services.</li> <li>→ Arrange mobile clinic or home follow-up services, where available.</li> <li>→ Arrange home visits, including medicine delivery, where provided.</li> <li>→ Use telehealth services, where available.</li> <li>→ Use mail order/internet pharmacy for medicine supply, where available.</li> </ul>
Patient misses appointments		<ul style="list-style-type: none"> <li>• Patient doesn't make or keep appointments with general practitioner (GP).</li> <li>• Patient doesn't get repeat prescriptions filled.</li> </ul>	<ul style="list-style-type: none"> <li>→ Prompt the patient with written reminders, phone calls, text messages or emails.</li> </ul>
Patient has multiple prescribers	<ul style="list-style-type: none"> <li>• Patient consults different prescribers for different disease states</li> <li>• Patient consults different prescribers because of frequently changing place of residence</li> <li>• Lack of continuity because health professionals work part time</li> <li>• A complete medical record may not be available at the time of consultation</li> <li>• Patient sees multiple GPs</li> </ul>		<ul style="list-style-type: none"> <li>→ Arrange an HMR to clarify total medicine use.</li> <li>→ Explain to the patient the importance of using a limited number of health professionals, especially in primary care.</li> <li>→ Develop integrated electronic records.</li> <li>→ Use communication tools to keep track of therapeutic regimen changes (e.g. Medilist, medicine diaries).</li> </ul>



Table 1: Barriers to medicine adherence and treatment strategies (continued)

Barriers: categories	Barriers: subcategories	Cardiovascular examples	Strategies
Patient visits multiple pharmacies	<ul style="list-style-type: none"> <li>• Visiting different pharmacies leads to an incomplete medicine history</li> </ul>	<ul style="list-style-type: none"> <li>• Pharmacist dispensing cardiovascular medicines may not know about other medicines the patient is taking that may interact or affect cardiovascular management.</li> <li>• Pharmacist may not know if the patient is also taking over-the-counter or complementary medicines.</li> </ul>	<ul style="list-style-type: none"> <li>→ Arrange an HMR to clarify total medicine use.</li> <li>→ Explain to the patient the importance of using a limited number of health professionals.</li> <li>→ Use communication tools to keep track of therapeutic regimen changes and/or medicines purchased or dispensed elsewhere (e.g. MediList, medicine diaries).</li> <li>→ Encourage the patient to get the health professional to update his/her MediList at each visit.</li> <li>→ Encourage the patient to play an active role in his/her medicine management (refer to the NPS consumer guide to taking medicines and questions to ask health professionals).<sup>5</sup></li> </ul>

Adapted from the World Health Organization, Pharmaceutical Society of Australia and Faculty of Pharmacy, University of Sydney.

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# Table 2: Adherence to cardiovascular medicines

## Hypertension medicines

Drug class <sup>1</sup>	Common long-term adverse effects of drug classes <sup>2,3</sup>	Rates of adherence/persistence
<b>Angiotensin-converting enzyme inhibitors (ACEI)</b>	<ul style="list-style-type: none"> <li>cough (10–20% of patients)</li> <li>headache</li> <li>fatigue</li> </ul>	<ul style="list-style-type: none"> <li>45% of patients persisted with all ACEI at 33 months</li> <li>median persistence = 23 months</li> <li>18% failed to collect second prescription<sup>4</sup></li> </ul>
<b>Angiotensin II receptor antagonists (ARA)</b>	<ul style="list-style-type: none"> <li>dizziness, headache</li> </ul>	<ul style="list-style-type: none"> <li>47% of patients persisted with ARA at 33 months</li> <li>median persistence = 26 months</li> <li>18% failed to collect second prescription<sup>4</sup></li> </ul>
<b>Beta-blockers</b>	<ul style="list-style-type: none"> <li>lethargy</li> <li>cold extremities</li> <li>decreased exercise tolerance</li> <li>depression</li> <li>nightmares</li> <li>erectile dysfunction</li> </ul>	<ul style="list-style-type: none"> <li>46% of patients consistently took beta-blockers six to 12 months after diagnosis of coronary artery disease<sup>5</sup></li> </ul>
<b>Calcium channel blockers (CCB)</b>	<ul style="list-style-type: none"> <li>headache</li> <li>oedema</li> <li>constipation (not all CCBs, mainly verapamil)</li> <li>flushing</li> </ul>	<ul style="list-style-type: none"> <li>31% of patients persisted with all CCBs at 33 months</li> <li>median persistence = seven months</li> <li>28% failed to collect second prescription<sup>4</sup></li> </ul>
<b>Thiazide and related diuretics</b>	<ul style="list-style-type: none"> <li>dizziness</li> <li>gout</li> <li>muscle cramps</li> <li>inconvenient timing of diuresis</li> </ul>	<ul style="list-style-type: none"> <li>38% of patients persisted with thiazides 12 months after initiation<sup>6</sup></li> </ul>

## Angina medicines

Drug class <sup>1</sup>	Common long-term adverse effects of drug classes <sup>2</sup>	Rates of adherence/persistence
<b>Nitrates</b>	<ul style="list-style-type: none"> <li>headache</li> <li>flushing</li> <li>tolerance</li> <li>contact dermatitis (patches)</li> </ul>	n/a
<b>Nicorandil</b>	<ul style="list-style-type: none"> <li>headache</li> <li>flushing</li> </ul>	n/a

Table 2: Adherence to cardiovascular medicines (continued)

## Heart failure medicines

Drug class <sup>1</sup>	Common long-term adverse effects of drug classes <sup>2</sup>	Rates of adherence/persistence
<b>Loop diuretics</b>	<ul style="list-style-type: none"> <li>• vertigo</li> <li>• tinnitus</li> <li>• gout</li> <li>• inconvenient timing of diuresis</li> <li>• hypokalaemia</li> </ul>	n/a
<b>Aldosterone antagonists</b>	<ul style="list-style-type: none"> <li>• headache</li> <li>• nausea</li> <li>• mastalgia</li> </ul>	n/a

## Arrhythmia medicines

Drug class <sup>1</sup>	Common long-term adverse effects of drug classes <sup>2</sup>	Rates of adherence/persistence
<b>Amiodarone</b>	<ul style="list-style-type: none"> <li>• nausea</li> <li>• constipation</li> <li>• disturbances to taste</li> <li>• skin pigmentation</li> <li>• headache</li> <li>• nightmares</li> </ul>	n/a
<b>Digoxin</b>	<ul style="list-style-type: none"> <li>• nausea</li> <li>• diarrhoea</li> <li>• visual disturbances</li> <li>• nightmares</li> </ul>	n/a

## Dyslipidaemia medicines

Drug class <sup>1</sup>	Common long-term adverse effects of drug classes <sup>2</sup>	Rates of adherence/persistence
<b>Statins</b>	<ul style="list-style-type: none"> <li>• myalgia (0.1% of users)</li> <li>• headache (4–9% of users)</li> <li>• gastrointestinal disturbances (5% of users)<sup>7</sup></li> </ul>	<ul style="list-style-type: none"> <li>• 25% of patients were adherent after two years in primary prevention</li> <li>• 40% of patients with acute coronary syndrome were adherent after two years</li> <li>• 36% of patients with chronic coronary artery disease were adherent after two years<sup>7</sup></li> </ul>
<b>Fibrates</b>	<ul style="list-style-type: none"> <li>• dyspepsia (20% of users)</li> <li>• abdominal pain (10% of users)</li> <li>• diarrhoea (7% of users)<sup>7</sup></li> </ul>	n/a
<b>Ezetimibe</b>	<ul style="list-style-type: none"> <li>• headache</li> <li>• diarrhoea</li> </ul>	n/a

Table 2: Adherence to cardiovascular medicines (continued)

## Antiplatelet medicines

Drug class <sup>1</sup>	Common long-term adverse effects of drug classes <sup>2</sup>	Rates of adherence/persistence
<b>Aspirin</b>	<ul style="list-style-type: none"> <li>• gastrointestinal irritation</li> <li>• bleeding</li> </ul>	<ul style="list-style-type: none"> <li>• 71% of patients persisted with aspirin use six to 12 months after diagnosis of coronary artery disease<sup>5</sup></li> </ul>
<b>Clopidogrel</b>	<ul style="list-style-type: none"> <li>• diarrhoea</li> <li>• bleeding</li> </ul>	n/a
<b>Dipyridamole</b>	<ul style="list-style-type: none"> <li>• headache</li> <li>• diarrhoea</li> <li>• nausea</li> <li>• hot flushes</li> </ul>	n/a

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# Case study 1

## Learning objectives

After completing this case, you should be able to:

- recognise the value of a patient's dispensed medicine history as one indicator of medicine-taking behaviour
- apply appropriate communication skills and strategies to obtain information about the barriers to adherence to medicine
- appropriately educate patients to correct misconceptions about the need for medicines
- explain the complementary roles of general practitioners (GPs), pharmacists and practice nurses in identifying and addressing non-adherence to medicine
- describe the best interdisciplinary approach for the ongoing monitoring of adherence to medicine.

Mr AB is a 45-year-old real estate agent who lives with his wife. He has smoked one packet of cigarettes a day since his teens, and consumes, on average, two standard alcoholic drinks per day. Six months ago, he went to his GP for a check-up for an insurance policy. Dr GB, his GP, was concerned that Mr AB's blood pressure was high (155/95 mmHg). Blood tests revealed that his lipids were also elevated.

**Blood pressure:** 155/95 mmHg

### **Lipid levels:**

- total cholesterol (TC) – 7.2 mmol/L
- low-density lipoprotein cholesterol (LDL-C) – 5.5 mmol/L
- high-density lipoprotein cholesterol (HDL-C) – 0.9 mmol/L
- triglycerides (TG) – 1.8 mmol/L
- TC:HDL ratio – 8.0

Dr GB gave Mr AB dietary and lifestyle advice. Mr AB went back to see Dr GB for a review three months later.

After three months, Mr AB had lost 5 kg after following a low fat diet and going to the gym five nights a week for about 30 to 45 minutes each time. His blood pressure was 150/95 mmHg, TC level was 6.2 mmol/L, LDL-C level was 4.5 mmol/L, HDL-C level was 0.9 mmol/L, TG level was 1.8 mmol/L and TC:HDL ratio was 6.9.

Dr GB explained to Mr AB that he was at high risk of developing cardiovascular disease and recommended starting perindopril arginine 2.5 mg and atorvastatin 20 mg. He also suggested that Mr AB consider quitting smoking, because this would reduce his cardiovascular risk more. Mr AB agreed to start treatment and come back to see Dr GB in one month.

At the follow-up appointment, one month after starting the medicines, Mr AB reported no problems with the medicines. Dr GB increased the dose of perindopril to 5 mg daily, because Mr AB's blood pressure was still too high.

Two months later, Mr AB went to his pharmacy with a prescription from the medical centre near his work for medicine to treat an eye infection. He is a regular customer at the pharmacy, and the pharmacist remembered helping him with nicotine-replacement therapy a few weeks before. She dispensed the prescription for chloramphenicol eye drops.



As part of the dispensing process, the pharmacist reviews Mr AB's dispensing history on the pharmacy computer and notes the following.

**Three months ago:**

- perindopril 2.5 mg, one in the morning m30
- atorvastatin 20 mg, one in the morning m30

**Two months ago:**

- perindopril 5 mg, one in the morning m30 and repeat x 2
- atorvastatin 20 mg, one in the morning m30 and repeat x 2

→ **Trigger for action**

The pharmacist can see that no repeats for these medicines have been dispensed in the last month. If Mr AB is adherent with his new medicines, he would have had another repeat dispensed by now. It is possible that the repeat prescriptions were supplied by another pharmacy, or Mr AB may not have been taking his medicines regularly. The pharmacist asks Mr AB to come to the counselling area.

"Hi, Mr AB. You are looking great these days. You've lost a lot of weight. How are you going with the nicotine patches?"

"It's been a bit rough. I have cut back, but I still enjoy a smoke with a beer after work. I'm enjoying my morning run much better these days. Evelyn is thinking of quitting now, too."

"That's a great start!

When you are ready for the next stage, we'll look at trying to get you off them for good.

Cutting back on the cigarettes, doing regular physical activity and the medicines will help you to reach your targets.

How are you going with the new medicines?"

"Everything's fine."

"That's good, Mr AB. Before you go, do you need another repeat dispensed today or have you already picked them up from another pharmacy?"

"No, I don't need them anymore. I have decided to let them go for a while."

"Oh, okay. What made you decide to let them go for a while?"

"I just don't think it's necessary. Now that I've cut back on the cigarettes and lost some weight, I feel much fitter."

→ Follow up on previous intervention using an open-ended question. Example of positive reinforcement.

→ Positive reinforcement

→ Establishing a treatment goal

→ Reinforcing positive behaviour

→ Open-ended question to check adherence

→ Response to the trigger, which may indicate an adherence issue. Use of non-judgemental language

→ Open-ended question to explore adherence barrier

→ **The pharmacist has identified an adherence barrier and recognises a need for action**

→ **Discussion point**

- What action could the pharmacist take at this stage?

The pharmacist needs to find out if Dr GB knows that Mr AB has stopped taking his medicines.

“Mr AB, I know you are in a rush, but can you spare a few more minutes?”

→ Request to engage

“Okay.”

“What did you mention to the doctor this morning about stopping your tablets?”

→ Establishing whether or not prescriber is aware of the non-adherence

“I saw a different doctor and he seemed very busy. I didn’t mention it. I didn’t think it was important.”

The pharmacist needs to find out what Mr AB understands about why his GP has prescribed these medicines. She probably wouldn’t have access to Mr AB’s lab results or blood pressure readings.

“Yes, they seem very busy at the medical centre these days. Before you started these medicines, what did Dr GB tell you about why you should take them?”

→ Exploring patient knowledge about medical condition and treatment

“Just that my blood pressure was a bit high and so was my cholesterol. He seemed concerned that I lost my father to a heart attack. I don’t think this is relevant to me – Dad was 63 when he died and I’m only 45. I don’t want to be taking pills for the rest of my life.”

“It seems like you are unconvinced about taking the medicines. What concerns you exactly?”

→ Reflective listening  
→ Exploring patient beliefs

“It’s just a hassle to take pills every day, and I don’t want to get into that.”

“What exactly makes it a hassle for you?”

→ Further exploring adherence barrier

“I just don’t want to have to think about it every day.”

“I can understand that. When you’re not used to taking tablets, it can be a hassle. Perhaps you could make it part of your morning routine, say, taking them before you shower?”

→ Suggesting adherence strategy

“I guess so.”

The pharmacist concludes from the duration of Mr AB’s latest prescription (one month’s supply with two repeats) that Dr GB would want to review his treatment three months after the last consultation (i.e. in one month’s time). The pharmacist believes it is important for Dr GB to be aware of the current situation and address Mr AB’s concerns. As Mr AB is not taking his medicines, he may not return to his GP for follow up as planned.

The pharmacist needs to encourage Mr AB to return to his GP as soon as possible, so that the barriers to taking his medicines can be identified and managed.

"I think that Dr GB would consider it very important for you to keep taking your medicines, because high blood pressure and cholesterol can put you at risk of heart disease, even at your age.

I think that he probably wants to see you in the next month to check how things are going, but maybe you should make an appointment a bit sooner to talk to him about your concerns.

To save you some time, you can use our phone and arrange an appointment now."

→ Reinforcing the risk of non-adherence and supporting other health professional

→ Strategy to initiate resolution of adherence issue

→ Facilitating action

The pharmacist makes a note in the pharmacy dispensing software to speak to Mr AB the next time he is at the pharmacy so that she can follow up on whether or not he:

- has been back to his GP
- is taking his medicines
- wants to clarify any information about his medicine or condition.

#### → Discussion points

- What is the role of the pharmacist in this situation?
- What systems should the pharmacy have in place to identify problems with adherence to medicines?
- Is the current infrastructure adequate for identifying and monitoring adherence issues?
- Should this situation have been handled differently? What other options did the pharmacist have?
- Was the dialogue between this patient and pharmacist appropriate?
- What are the barriers and facilitators to interprofessional collaboration? For example, to the pharmacist discussing this patient's situation with the GP?

Mr AB makes an appointment to see Dr GB the following week.

On reading Mr AB's notes before the consultation, Dr GB sees that he has returned before his scheduled review date.

"Hi, Mr AB. I didn't see you at the match last Saturday. How can I help you today?"

"I didn't want to waste your time, but the pharmacist said I should come and see you. It's about the new tablets."

"How are you going with them?"

"Well, actually, I haven't been taking them for a few weeks."

"Oh really? Were you having any problems with them?"

"None, really. It's just that I can't believe that I need to take tablets for the rest of my life."

"I understand that taking tablets every day can seem like a big change. Can you tell me what concerns you exactly?"

"Having to take pills every day makes me feel like a sick, old man!"

→ Open-ended question to explore adherence

→ Exploring barrier

→ Exploring beliefs

Dr GB needs to explore Mr AB's reasons for not adhering to his medicine management plan and find out exactly what the barriers are.

→ **Discussion points**

- What questions could the GP ask to find out why this patient is not taking his medicines?
- What questions could the GP ask to find out if there are other barriers to taking medicine?
- Should the GP have handled this differently?

Dr GB acknowledges that Mr AB has adhered to his healthy eating and physical activity regimen, as demonstrated by his 5 kg weight loss and his efforts to quit smoking. Dr GB might reinforce this by asking if Mr AB would like more information about quitting smoking and support organisations.

Dr GB needs to address Mr AB's concerns and make sure that Mr AB understands the consequence of not taking his medicines.

Dr GB shows Mr AB the Australian cardiovascular risk tables (see next page). Dr GB shows him that because of his blood pressure and lipid levels, and because he still smokes, he has a moderately high (16–19%) risk of developing cardiovascular disease within the next five years. He uses the tables to demonstrate to Mr AB how, by reducing his blood pressure and/or lipid levels, his risk will be reduced, and that quitting smoking will reduce his risk even more.

→ **Discussion points**

- How would you explain Mr AB's cardiovascular risk to him?
- How would you explain to Mr AB the reasons why he should keep taking his medicines?
- How could the GP deal with Mr AB's reasons for not taking his medicines?
- How would you handle this situation?

During the consultation, Dr GB convinces Mr AB that taking medicines to lower his blood pressure and lipid levels is necessary. Mr AB agrees to a management plan that includes:

- re-starting his medicines
- making an appointment with Dr GB in one month so they can discuss his progress and any problems he may have
- continuing with his efforts to quit smoking
- continuing with his healthy eating and physical activity regimen.

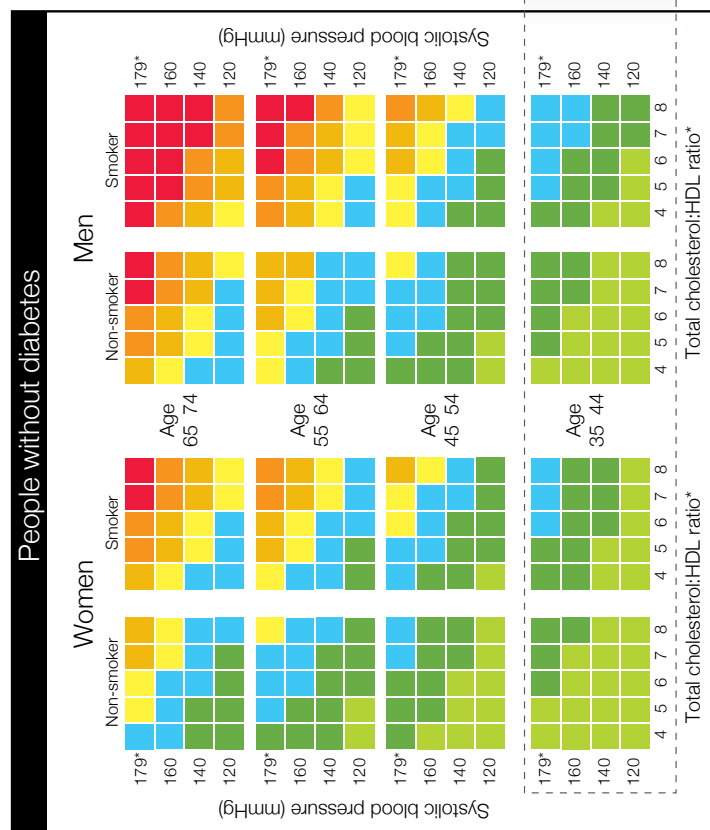
With Mr AB's permission, Dr GB will contact the pharmacist to:

- request that she monitor Mr AB's adherence to his medicines
- give Mr AB the relevant Consumer Medicine Information (CMI) and explain it to him
- reinforce to Mr AB information about nicotine replacement therapy and quit smoking support groups.

Dr GB will also ask the practice nurse to:

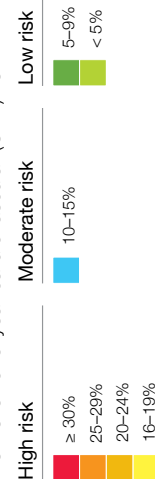
- remind Mr AB about future doctor's appointments by phoning him
- monitor Mr AB's blood pressure when he is next in
- help Mr AB to quit smoking.

# Australian cardiovascular risk charts



\*In accordance with Australian guidelines, patients with systolic blood pressure  $\geq 180$  mmHg, or a total cholesterol of  $> 7.5$  mmol/L, should be considered at increased absolute risk of CVD.

Risk level for 5-year cardiovascular (CVD) risk



## How to use the risk charts

1. Identify the chart relating to the person's sex, diabetes status, smoking history and age. The charts should be used for all adults aged 45–74 years (and all Aboriginal and Torres Strait Islander adults aged 35 years or older) without known history of CVD or already known to be at high risk.
2. Within the chart, choose the cell nearest to the person's age, systolic blood pressure (SBP) and total cholesterol (TC):HDL ratio. For example, the lower left cell contains all non-smokers without diabetes who are 35–44 years and have a TC:HDL ratio of less than 4.5 and a SBP of less than 130 mmHg.
3. The colour of the cell that the person falls into provides their 5-year absolute cardiovascular risk level (see legend for risk category). People who fall exactly on a threshold between cells are placed in the cell indicating higher risk.

**Notes:** The risk charts include values for SBP alone, as this is the most informative of conventionally measured blood pressure parameters for cardiovascular risk. For certain groups CVD risk may be underestimated using these charts; please see page 3 of *Absolute cardiovascular disease risk assessment – quick reference guide for health professionals* for recommendations.

CVD refers collectively to coronary heart disease (CHD), stroke and other vascular disease including peripheral arterial disease and renovascular disease.

Charts are based on the NVDPA's *Guidelines for the assessment of absolute cardiovascular disease risk* and adapted with permission from New Zealand Guidelines Group, New Zealand Cardiovascular Guidelines Handbook: A Summary Resource for Primary Care Practitioners, Second edition, Wellington, NZ: 2009, [www.nzgg.org.nz](http://www.nzgg.org.nz).

These charts are taken from *Absolute cardiovascular disease risk assessment – quick reference guide for health professionals*, © 2009–2011 National Heart Foundation of Australia.

→ Discussion points

- Should this situation have been handled differently?
- What strategies could the GP use if this patient was unwilling to start treatment?
- What are the advantages of engaging the pharmacist and practice nurse in this situation?
- How could the health professionals work together to manage this situation?
- What is the importance of other health professionals knowing the treatment plan agreed between the patient and prescriber?

After his appointment with Dr GB, Mr AB calls into the pharmacy to have his prescriptions dispensed.

"Hi, Mr AB. It's good to see that you went back to your GP. What did he tell you about your medicines?"

"He really made me realise that if I don't take them now, I stand a fair chance of getting heart disease in the next five years, especially because my dad had it."

"I'm sure you'll get into a routine. You could take them both when you get up in the morning. You can make it part of your morning routine. For example, take them straight after breakfast, so you won't forget to take them."

I'll just go through the information sheets I have printed out for you. It will only take a few minutes."

"That would be good. All the information looked a bit daunting last time. I also need some more nicotine patches. It's hard, but I realise that I really should quit."

"I know. It's difficult for everyone. I'll also give you details of support phone numbers that you can call if you need help."

Mr AB, your new scripts are only for one month's supply. This means that Dr GB wants to see you again before the month is up. Have you made another appointment?"

"Yes, I did before I left the surgery. Thanks for the information. I'll let you know how I get on."

→ Positive reinforcement  
→ Eliciting the patient's understanding

→ Providing a strategy for adherence

→ Providing patient education and checking understanding

→ Providing education and support

→ Reinforcing the need for action and confirming follow up

In Mr AB's pharmacy record, the pharmacist notes:

- the conversation with Dr GB regarding Mr AB's adherence, provision of CMI and assistance with nicotine-replacement therapy
- details of counselling and information provided to Mr AB by the pharmacist
- details of nicotine replacement therapy supplied.

The pharmacist will, with Mr AB's agreement and consent:

- send Mr AB a reminder if he does not come back with a new prescription within a month
- set a reminder to monitor his progress with quitting smoking.

#### → Discussion points

- Were the actions of the pharmacist appropriate?
- Is there anything the pharmacist should have done differently?
- What systems should the pharmacy have in place to monitor adherence to medicines?
- What is the best way for the GP, pharmacist and practice nurse to communicate regarding follow up for Mr AB?
- What are the roles of the GP, pharmacist and practice nurse in the ongoing management of this patient's adherence to medicines?

### Tips for time-poor GPs

- Give patients brief information on the risks and benefits of adhering to medicines.
- Refer to another health professional, such as a:
  - **pharmacist for:**
    - CMI
    - information on the proper use of medicines and managing side effects
  - **practice nurse for:**
    - lifestyle advice
    - monitoring patient treatment
    - measuring patient blood pressure
    - reminding patients of future appointments.
- Ask the patient to make a double appointment in the near future when there will be more time to address adherence issues.



## More information and resources

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# Case study 2

## Learning objectives

After completing this case, you should be able to:

- explore patients' health beliefs as barriers to adherence to medicines
- consider non-adherence to medicine as a potential cause of suboptimal/non-response to treatment
- clarify patients' perceptions of side effects
- recognise the complementary roles different health professionals can play in monitoring and managing adherence to medicines.

Ms CD, aged 64, is a retired public servant who has a routine appointment with Dr RS, her general practitioner (GP). Ms CD does not drink, has never smoked and prefers organic foods. She enjoys gardening and baking. Since she was diagnosed with type 2 diabetes three years ago, she has modified her diet, lost weight and follows a healthy eating plan. She does regular moderate-intensity physical activity, including walking and swimming regularly. Ms CD believes in complementary medicines and sees a counsellor to manage depression.

Today, she attends the surgery for a routine blood pressure check.

### → Discussion point

- What information is required from the patient?

Before the consultation, Dr RS checks Ms CD's medical record.

**Height:** 155 cm

**Weight:** 63 kg

**Body mass index:** 26

#### Medical history:

- diabetes – diagnosed three years ago
- hypertension – diagnosed four months ago

#### Medicines:

- metformin 500 mg, twice a day with meals
- aspirin 100 mg, daily
- fosinopril 10 mg, daily, started 4 months ago
- fosinopril 20 mg, daily, started 3 months ago
- indapamide s/r 1.5 mg, daily, started one month ago

#### Lab results from one month ago (fasting):

- total cholesterol – 4.2 mmol/L
- low-density lipoprotein cholesterol – 2.7 mmol/L
- high-density lipoprotein cholesterol – 1.0 mmol/L
- triglycerides – 1.2 mmol/L
- blood glucose – 4.8 mmol/L
- HbA1c – 6.7%

#### Blood pressure:

- four months ago – 150/85 mmHg
- three months ago – 148/86 mmHg
- one month ago – 149/88 mmHg

From the medical record, Dr RS can see that:

- Ms CD started taking fosinopril 10 mg four months ago, and was advised to make lifestyle changes, including healthy eating and increased physical activity levels to reduce her cardiovascular disease risk
- one month later, the dose of fosinopril was increased to 20 mg daily
- two months after that, Ms CD saw a locum doctor who added indapamide s/r 1.5 mg daily to her medicines regimen because the agreed blood pressure target of 130/80 mmHg had still not been achieved.

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“Good morning, Ms CD. How can I help you today?”

“I just came for my regular blood pressure check.”

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Ms CD’s current blood pressure is 143/89 mmHg.

→ **Trigger for action**

Despite using two antihypertensive medicines from different drug classes, Ms CD’s blood pressure is not responding as would be expected. Dr RS is aware that Ms CD likes to take vitamins and supplements, though she is not sure which ones Ms CD currently takes.

→ **Discussion point**

- What possible factors could be contributing to this patient’s lack of response to antihypertensive medicines?

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“Ms CD, your blood pressure is still a little high. I was hoping that your new medicine would bring your blood pressure down more than it has. How are you getting on with the tablets?”

“Okay. I started the new tablets after my last visit.”

“Could you tell me how you take your blood pressure medicines?”

“I take them in the morning.”

“Is that every morning?”

“Well, maybe not every morning.”

“Okay. How many days would you miss in an average week?”

“I’m not sure.”

“So would you take them 50% of the time?”

“Lately, I haven’t taken them so often.”

“Why is that?”

“I guess I didn’t feel like it.”

“Could you tell me how you are feeling?”

“A bit down at the moment.”

“Do you want to talk about what’s making you feel down?”

“I don’t know. I just feel down from time to time.”

“Can I help you with this?”

“Not really. I see a counsellor and that helps a bit. To tell the truth, I prefer to take some natural medicines to give me a boost when I’m feeling down. I’m concerned that the blood pressure pills make the down days worse.”

“Do you think they are affecting your mood?”

“Maybe. The pamphlet in the packet said they may make me feel tired.”

“Have you been feeling worse since you started taking the blood pressure tablets?”

“Yes. I think it did get worse around that time. I’ve tried not taking any of the blood pressure pills to see if it makes a difference.”

“And do you think it helps?”

“Pills don’t agree with me. I know I have to take the diabetes ones, but would really prefer to find a natural solution.”

“I can see that you prefer not to take the medicines. What advice has your counsellor given you?”

“I haven’t really discussed my blood pressure and diabetes with her. She just helps me cope with feeling down.”

“Can you tell me what natural or complementary medicines you take?”

“I just take something for general wellbeing.”

“So you are not taking either of your blood pressure medicines because you think they have a negative effect on your mood and you don’t really like taking medicines anyway.”

“Yes. I know you wouldn’t agree, but I just prefer to have natural things.”

“You need to be comfortable with your treatment, so we need to find a solution that is right for you.”

“That sounds like a good idea.”

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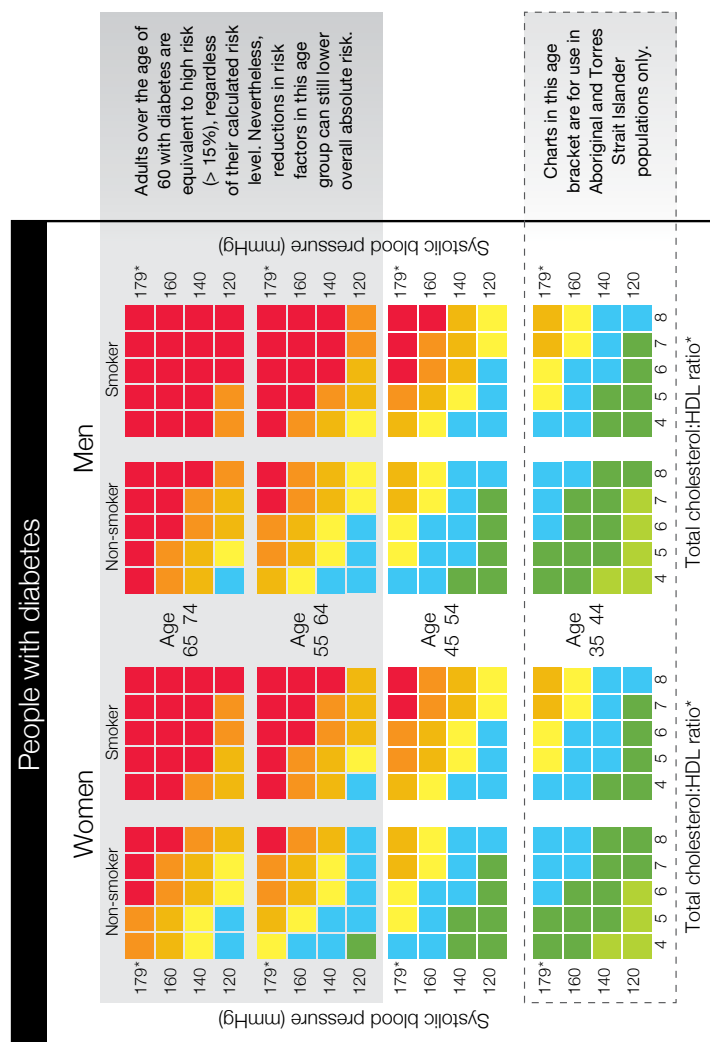
Dr RS refers to an electronic resource on her computer and sees that depression or mood changes are not listed side effects in the class statement for angiotensin-converting enzyme (ACE) inhibitors, indapamide or metformin.

Dr RS can see that the most likely reason why Ms CD’s blood pressure is not responding is because she is partially non-adherent to her antihypertensive medicines.

Dr RS:

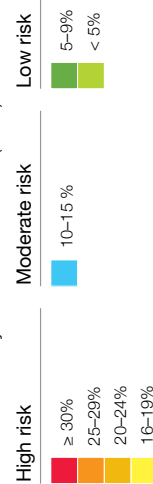
- reassures Ms CD that her antihypertensive medicines are unlikely to affect her mood
- finds out what Ms CD knows about the risks of not lowering her blood pressure
- tells Ms CD that because she is aged over 60 years, has diabetes and high blood pressure, she has a high risk of developing cardiovascular disease
- explains to Ms CD that by reducing her blood pressure, she can lower her overall absolute risk
- discusses with Ms CD the potential risks versus the benefits of taking the medicine.

# Australian cardiovascular risk charts



\* In accordance with Australian guidelines, patients with systolic blood pressure  $\geq 180$  mmHg, or a total cholesterol of  $> 7.5$  mmol/L, should be considered at increased absolute risk of CVD.

Risk level for 5-year cardiovascular (CVD) risk



## How to use the risk charts

1. Identify the chart relating to the person's sex, diabetes status, smoking history and age. The charts should be used for all adults aged 45-74 years (and all Aboriginal and Torres Strait Islander adults aged 35 years or older) without known history of CVD or already known to be at high risk.
2. Within the chart, choose the cell nearest to the person's age, systolic blood pressure (SBP) and total cholesterol (TC):HDL ratio. For example, the lower left cell contains all non-smokers with diabetes who are 35-44 years and have a TC:HDL ratio of less than 4.5 and a SBP of less than 130 mmHg.
3. The colour of the cell that the person falls into provides their 5-year absolute cardiovascular risk level (see legend for risk category). People who fall exactly on a threshold between cells are placed in the cell indicating higher risk.

**Notes:** The risk charts include values for SBP alone, as this is the most informative of conventionally measured blood pressure parameters for cardiovascular risk. For certain groups CVD risk may be underestimated using these charts; please see page 3 of *Absolute cardiovascular disease risk assessment - quick reference guide for health professionals* for recommendations.

CVD refers collectively to coronary heart disease (CHD), stroke and other vascular disease including peripheral arterial disease and renovascular disease.

Charts are based on the NVDPA's *Guidelines for the assessment of absolute cardiovascular disease risk* and adapted with permission from New Zealand Guidelines Group, New Zealand Cardiovascular Guidelines Handbook: A Summary Resource for Primary Care Practitioners, Second edition, Wellington, NZ: 2009, [www.nzgg.org.nz](http://www.nzgg.org.nz).

These charts are taken from *Absolute cardiovascular disease risk assessment - quick reference guide for health professionals*, © 2009-2011 National Heart Foundation of Australia.

Dr RS acknowledges Ms CD's achievements in controlling her blood glucose and lipid levels. She shows Ms CD the cardiovascular risk charts and, although Ms CD's cardiovascular risk is high, her absolute risk of cardiovascular disease can be reduced by reducing her blood pressure.

→ **Discussion points**

- What are the barriers to Ms CD's adherence to her medicines?
- What strategies would be appropriate to manage the barriers Ms CD has to adhering to her medicines?
- What questions should the GP ask Ms CD to find out what she believes about Western medicines and on what her beliefs are founded?
- How can the GP explore what type of counselling Ms CD is having?
- What strategy can the GP use to find out more about Ms CD's belief about taking Western versus complementary medicines?
- How should the GP explain to Ms CD about high cardiovascular disease risk and the benefits of reducing her blood pressure?
- What strategies can the GP use to find out if mood change is a real or perceived side effect?

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"Ms CD, just like with the diabetes, it is important that we control your blood pressure to prevent problems in the future."

"Yes, I realise that, but I don't want to take pills that will make me feel bad."

"I have checked and it is unlikely that your blood pressure tablets are affecting your mood. However, we need to make sure that this is the case with you. How would you feel about taking just the fosinopril to start with and we can monitor your mood, perhaps by using a diary?"

"I guess I could try it."

"Okay, that's good. Let's try taking them for one week and I will ring you to find out how you are going. Would that be okay?"

"I'm willing to try, but I don't want to keep taking them if they make me feel down."

"I can understand that. If everything is okay when I ring you next week, perhaps you could make an appointment for two weeks' time and we can discuss how your mood has been and whether or not we need to find an alternative that you are happy with. How does that sound?"

"Okay. I guess that's the only way to find out if the pills are affecting me or not."

---

Dr RS rings Ms CD a week after their consultation and discovers that she is taking her fosinopril 20 mg in the morning on a regular basis. She is also keeping a diary of her mood and any other issues that concern her. She has made an appointment to see Dr RS in a week's time and agreed to continue taking the tablets and bring her diary to the consultation.

→ **Discussion points**

- How would you approach the conversation with this patient? What information would you need to gather? What questions would you ask? What else could be done?
- Would a Home Medicines Review (HMR) be helpful?



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“Hello, Ms CD. How have you been feeling since I saw you last?”

“Not too bad. I have been taking the tablets regularly and keeping a note of how I’ve been feeling, like you said.”

“That’s good. Let’s see how your blood pressure is going.”

---

Dr RS still needs to determine if the complementary medicines that Ms CD takes are likely to interact with her Western medicines.

Dr RS is aware that a HMR can help to find out:

- how patients actually take their medicines at home
- the level of adherence to medicines from a patient’s dispensing history
- what over-the-counter or complementary medicines are being used
- any possible interactions between Western, complementary and over-the-counter medicines.

Dr RS knows that a HMR is a Medicare item (900) and can be offered to any patient if a GP feels it is necessary to ensure Quality Use of Medicines (QUM) or to address patient needs. Although Ms CD takes fewer than five regular medicines, she does exhibit some risk factors known to predispose people to medicine-related problems, namely:

- subtherapeutic response to treatment with medicines
- non-adherence.

Dr RS discusses the benefits of a HMR with Ms CD. She agrees that it would help her strike a balance between the need to manage her prescribed Western medicines and her desire to take complementary medicines. Dr RS points out that the pharmacist who undertakes the HMR will be able to identify which complementary medicines might be better suited to her Western medicine regimen to avoid interactions.

Dr RS obtains Ms CD’s consent to give the pharmacist doing the review the relevant information. She prints a referral for a HMR that will be sent to the pharmacy of Ms CD’s choice.

Ms CD agrees to Dr RS’s suggestion to have a HMR. She agrees to keep taking her prescribed Western medicines regularly and keep a diary of her mood. She also says she will make another appointment with Dr RS in one month so that they can discuss the pharmacist’s review report and agree on a medicine management plan.

Dr RS asks the practice nurse or receptionist to:

- forward the HMR referral to Ms CD’s pharmacy
- tell her when the pharmacist’s HMR report is received
- call Ms CD in one month to remind her of her appointment.

#### → Discussion points

- Should the GP have used other communication strategies to explore Ms CD’s beliefs and attitudes towards her antihypertensive medicines?
- How could the GP explore Ms CD’s acceptance of taking her metformin, but not her antihypertensive medicines?
- What are the potential risks of non-adherence to medicines and how could the GP explain these?
- Should the GP have dealt with the situation differently?

On receipt of the HMR referral, the pharmacy's accredited pharmacist contacts Ms CD to make an appointment to visit her at home and discuss her medicines within the next few days.

The pharmacy tells Dr RS the arrangements for the review and contact details of the accredited pharmacist who will be conducting the review. Before the review, the accredited pharmacist:

- notes Dr RS's reasons for the review
- reviews Ms CD's dispensing history to get information about her adherence
- notes questions she will ask Ms CD regarding her Western, complementary and over-the-counter medicines, any side effects she may have and the timeline of any side effects to see if they are medicine or disease related.

Two days later, the accredited pharmacist visits Ms CD at home. She:

- discusses Ms CD's beliefs about her antihypertensive medicines and the association she has made with her feeling of depression
- identifies issues Ms CD may have with her medicines; for example, adherence, storage or administration
- determines which complementary medicines Ms CD is taking and if they are likely to interact with her Western medicines.

After the interview, the accredited pharmacist clinically assesses the information gathered from Dr RS's referral and the interview with Ms CD. She then writes a report that includes her findings and recommendations.

The following day, the accredited pharmacist sends the review report to Dr RS. The report:

- confirms that Ms CD believed her antihypertensive medicines contributed to her depressed mood and that she had stopped taking them for periods of up to a week (however, she has been taking them regularly over the past few weeks)
- identifies the complementary medicines Ms CD takes (multivitamin supplements)
- finds no interaction between Ms CD's complementary and Western medicines
- confirms that the complementary medicines Ms CD takes are unlikely to affect her mood.

Dr RS rings the accredited pharmacist to discuss the findings outlined in the report.

Three weeks later, Ms CD returns to Dr RS as planned.

→ **Discussion point**

- How would you talk to this patient about her review results?

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"Ms CD, I have spoken to the pharmacist about your medicines. Shall we talk about what she said?"

"Yes. She gave me some useful information and told me that it is unlikely the pills are making me depressed. She also reassured me that the vitamin tablets I take won't react with my pills."

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First, Dr RS and Ms CD discuss the possibilities for managing her mood and agree on a non-pharmacological strategy.

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“At your last visit, we agreed to come up with a plan to manage your medicines that you are happy with.”

“Yes, I remember.”

“Shall we agree that you will try taking the tablets regularly for the next month, and then you can come back and tell me how you are getting on?”

“Yes. That seems fine.”

“In the meantime, if you have any side effects that you think may be due to the medicines, have a chat to the pharmacist about them.”

“That sounds good.”

---

Dr RS and Ms CD agree on a medication management plan that involves Ms CD taking foscinopril, as well as aspirin and metformin, regularly for one month. They agree to a target blood pressure level of 130/80 mmHg.

Ms CD agrees to a non-pharmacological strategy to manage her mood, such as interpersonal therapy, problem-solving therapy or cognitive behavioural therapy. She keeps a copy of the management plan and, with her permission, a copy of the plan is sent to her pharmacist.

Ms CD agrees to make an appointment in one month so Dr RS can check her progress and discuss any possible side effects or other issues she may have.

→ **Discussion points**

- What are the benefits of having a medication management plan?
- What are the benefits of this patient keeping a copy of her medication management plan?
- What are the benefits of the pharmacy having a copy of Ms CD’s medication management plan?
- What follow up would be appropriate?

**The GP:**

- monitors Ms CD’s progress towards her treatment goals
- makes sure she sees Ms CD for regular follow up.

**The practice nurse:**

- reminds Ms CD of her appointments
- advises Ms CD about home blood pressure monitoring.

**The community pharmacist:**

- keeps a copy of Ms CD’s medication management plan
- monitors Ms CD’s ongoing adherence by checking the dispensing history in the pharmacy computer
- advises Ms CD about using complementary medicines in combination with Western medicines.

### → Discussion points

- What were the barriers to adherence in this case?
- What other strategies could have been used to address adherence in this case?
- What systems should the pharmacy and GP practice have in place to monitor adherence?
- What is the best way for the GP, pharmacist and practice nurse to communicate about following up with this patient?
- What are the roles of the GP, pharmacist and practice nurse in the ongoing management of this patient's adherence to medicines?

## Tips for time-poor GPs

- Give patients brief information about the risks and benefits of adhering to medicines.
- Give patients information about the likelihood of side effects.
- Refer to another health professional, such as:
  - **a pharmacist who could provide:**
    - information about possible side effects and how to manage them
    - a review of the patient's complementary medicines and the likelihood of any interactions with Western medicines
    - a HMR
  - **a psychologist who could:**
    - assess the patient's mood
  - **a practice nurse who could:**
    - help with home blood pressure monitoring
    - remind patients of future appointments
    - talk with patients about how they are managing their medicines and to explore their attitudes to Western medicines (if the practice nurse has the skills to do so).
- Ask the patient to make another appointment in the near future when there will be more time to address adherence issues.

## More information and resources

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# Case study 3

## Learning objectives

After completing this case, you should be able to:

- distinguish between intentional and non-intentional adherence to medicines
- recognise post-discharge from hospital as a critical time to monitor adherence to medicines
- identify the unique and complementary roles health professionals play in managing adherence to medicines in people living in residential aged-care facilities
- consider non-adherence to medicines as a sign of the need to review the level of care provided/required in the aged-care facility.

Mrs FH is an 86-year-old widow. Since her husband died 10 years ago, Mrs FH has found it increasingly difficult to manage at home on her own, especially with the steep steps to her front door and a large garden to maintain. Mrs FH gave up driving when she was 80 years old, because she found the increasing volume of traffic intimidating. Because she didn't live near public transport, Mrs FH became increasingly isolated at home and found it difficult to do her shopping. About four years ago, Mrs FH was assessed by an Aged Care Assessment Team (ACAT) and moved into Sunnybanks, a low-care residential aged-care facility. She is a cheerful and independent woman who enjoys participating in the social activities at Sunnybanks, especially the bridge club. Mrs FH has never smoked, and enjoys a glass of wine with dinner. Her son is her only family, and he lives on the other side of the city. He and his wife take Mrs FH out to lunch every other Sunday.

When Mrs FH moved to Sunnybanks, Dr VG, her general practitioner (GP), conducted a comprehensive medical assessment. Dr VG noted the following in the assessment.

**Height:** 162 cm

**Weight:** 56 kg

**Medical history:**

- osteoporosis (six years)
- osteoarthritis (10 years)
- knee replacement (eight years)

**Medicines:**

- alendronate 70 mg, one weekly
- calcium carbonate 1500 mg, one daily
- cholecalciferol 25 µg, one daily
- paracetamol 500 mg, two every day

Mrs FH was assessed as competent to administer her own medicines.

A few weeks ago, Mrs FH was admitted to hospital after experiencing dizziness and fainting. She was diagnosed with atrial fibrillation and while in hospital, she started taking atenolol 50 mg daily and warfarin 3 mg daily.

Mrs FH was discharged from hospital and returned to Sunnybanks. Her international normalised ratio (INR) on discharge was 2.5.

**→ Trigger for action**

Last Sunday, when Mrs FH's son collected her, he mentioned to one of the Sunnybanks' nurses that he thought his mother was becoming more forgetful.

The nurse is aware that Mrs FH's forgetfulness may impact on her care, in particular, on her ability to manage her own medicines. She needs to determine if Mrs FH is becoming forgetful and if so, if this is affecting adherence to her medicines regimen. The nurse needs to find out what medicines Mrs FH is taking to determine whether non-adherence is an immediate concern.

→ **Discussion points**

- How should the possible causes of Mrs FH's memory decline be assessed?
- Could the decline in memory be attributed to the new medicines or dementia?
- Is Mrs FH's current level of care appropriate?

The nurse checks Mrs FH's medicines record and sees that she has started taking new medicines, including warfarin, since her return from hospital. The nurse knows warfarin needs careful administration and monitoring. She remembers that the pharmacist is due to call at Sunnybanks that day and asks him to check if Mrs FH is managing her medicines properly, and document his findings in her health record.

→ **Discussion points**

- Was the action taken by the nurse appropriate?
- What other action should be taken?

The pharmacist needs to determine what medicines Mrs FH is taking. He checks her health record to see if there is any indication that she is not adhering to her regimen. He also sees that the latest recorded INR result (two weeks ago) was 2.0.

The pharmacist speaks to Mrs FH that afternoon to see if she is having a problem with her medicines.

"Hello, Mrs FH. Have you been enjoying a bit of sun out in the garden this afternoon?"

"Yes, the roses are lovely, but I do miss my garden sometimes."

"I hear that you have come back from hospital recently and the doctors started you on some new tablets. Could I have a word with you about them?"

"Yes, that would be fine. They are in my room. I'll show you."

"Mrs FH, what did the doctor tell you about your medicines when you were in hospital?"

"Just that I have two new pills for my heart. The pharmacist at the hospital gave me information and a booklet, but I can't remember everything she said."

"Can you show me your new tablets and tell me how you take them?"

"Now, let me see. I take the white ones in the morning with my other pills. Here are the coloured ones. She said to take these after dinner."

"And what about the other ones? Can you tell me how you take those?"

→ Establishing rapport

→ Follow up on previous intervention using an open ended question. Example of positive reinforcement.

→ Open-ended question



Mrs FH explains how she takes her other medicines.

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“How often do the nursing staff here ask you if you have taken your tablets?”

“Usually after dinner, but I often can’t remember if I’ve taken the pills or not, so I say just say ‘yes’.”

“Sometimes it is difficult to remember, especially when you take your pills every day.”

“I do find I forget things more easily these days, but that’s just my age.”

“There are a number of ways we can help you remember to take your tablets. Perhaps we could have a chat and work out the best way to help you take your pills at the right time every day.”

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The pharmacist records the details of his meeting with Mrs FH in her health record and informs the Sunnybanks nurse. He needs to determine the extent of Mrs FH’s non-adherence. He does this by checking her dispensing history at the pharmacy that supplies Sunnybanks’ residents.

The pharmacist consults Mrs FH’s health record and sees that she is due for her annual medicines review (Residential Medication Management Review – RMMR). This review is a high priority because of Mrs FH’s possible non-adherence to her medicines regimen, recent discharge from hospital, changes to her medicines and because she is taking a medicine with a low therapeutic index that requires monitoring.

→ **Discussion points**

- Were the actions of the pharmacist appropriate?
- What other action should have been taken?

In the meantime, the pharmacist talks to the Sunnybanks nurse about his findings. The Sunnybanks nurse contacts Dr VG’s surgery and speaks to the practice nurse, who coordinates calls from aged-care facilities. She asks the practice nurse to talk to Dr VG about a collaborative medicines review (MBS Item 903) for Mrs FH and a case conference (MBS Items 735, 739, 743) between Dr VG, Sunnybanks staff, the pharmacist and the physiotherapist.

In the meantime, the Sunnybanks nurse assesses Mrs FH’s ability to self-medicate.

→ **Discussion points**

- Were the actions taken to manage this situation appropriate?
- What is the advantage of nominating a GP practice member to liaise with aged-care facilities?

Mrs FH is consulted and agrees to a case conference, which is planned for the following week.

At the case conference, the pharmacist’s findings and the nurse’s assessment of Mrs FH’s ability to self-medicate are discussed.

The group decide that Mrs FH can initially use a diary or calendar for recording her doses of medicines, and the Sunnybanks nurse can help her and monitor the process. The pharmacist has already discussed this with Mrs FH, and she agrees that it would help her to take her tablets regularly. Mrs FH would like to continue to manage them herself, and the group agrees that this is an important part of maintaining a level of independence. Dr VG agrees to promptly tell Sunnybanks staff of any changes to Mrs FH’s medicines.

The team proposes a medication management plan that will be discussed with Mrs FH.

#### → Discussion points

- What are the benefits of holding a case conference?
- What other information could have been discussed?
- What other tools are available to facilitate collaboration between health professionals?
- What were the barriers to adherence to medicines in this case?
- How could the adherence issue have been resolved using a different strategy?
- Did this patient's level of care need review?
- What are the roles of the various health professionals in resolving this adherence to medicines issue?

#### **The GP:**

- arranges more frequent testing of the INR initially, as improved adherence may result in change in the INR
- reviews timing of the INR test
- monitors Mrs FH's cognitive state, for example, mini-mental state examination
- assesses pain management
- discusses with the supplying pharmacist any dose changes, and arranges the supply of any new prescriptions.

#### **Sunnybanks staff:**

- monitor Mrs FH's progress with the new arrangement for managing her medicines
- arrange hospital follow up.

#### **The pharmacist:**

- monitors Mrs FH's progress with the arrangement for her medicines management and recommends alternative strategies, if necessary
- gives Mrs FH advice on taking warfarin, as well as other regular medicines.

#### **The practice nurse at Dr VG's practice:**

- makes a note in Mrs FH's pharmacy record to arrange a follow-up case conference
- notifies Sunnybanks staff of any dose changes and arranges the supply of any new prescriptions, if necessary.

## More information and resources

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# Case study 4

## Learning objectives

After completing this case, you should be able to:

- identify intentional non-adherence
- apply an active listening approach to elicit causes of non-adherence
- implement a collaborative strategy to address intentional non-adherence.

Mrs JK is a retired seamstress, aged 72 years, who lives with her husband. They have lived in the same suburb for all of their married life, and have four children and six grandchildren. They enjoy meeting friends down at the local senior citizens club every Friday lunchtime.

Mrs JK calls into her pharmacy to have repeats of her blood pressure medicines (perindopril and atenolol) dispensed.

As part of the dispensing process, the pharmacist reviews Mrs JK's dispensing history.

<b>Ten weeks ago:</b>	perindopril 5 mg/indapamide 1.25 mg, one daily m30 atenolol 50 mg, one daily m30
<b>Eight weeks ago:</b>	atorvastatin 20 mg, one daily m30 calcium carbonate 1500 mg, two daily m60 alendronate 70 mg/cholecalciferol 70 µg, one tablet once each week m4
<b>Six weeks ago:</b>	perindopril 5 mg/indapamide 1.25 mg, one daily m30 atenolol 50 mg, one daily m30 isosorbide mononitrate S/R 60 mg, one daily m30
<b>Four weeks ago:</b>	glyceryl trinitrate s/l spray 400 µg/dose, 200 doses m1 atorvastatin 20 mg, one daily m30 calcium carbonate 1500 mg, two daily m60 alendronate 70 mg/cholecalciferol 70 µg, one tablet once each week m4

## → Trigger for action

The pharmacist sees from the dispensing history that Mrs JK appears to be adherent with most of her medicines. However, he notes that she was started on a new medicine, isosorbide mononitrate 60 mg, six weeks ago. This new medicine was dispensed by a locum pharmacist and there is no record in the pharmacy software of Mrs JK being given any counselling about the new medicine. No repeats were written, so the pharmacist concludes that the prescribing doctor, Dr MB, expects Mrs JK to return for a review.

The pharmacist needs to determine:

- if Mrs JK has obtained a subsequent supply of isosorbide mononitrate 60 mg from another pharmacy
- if the isosorbide mononitrate 60 mg has been stopped by Dr MB
- how Mrs JK is/isn't taking the isosorbide mononitrate
- if Mrs JK is intentionally non-adherent
- if Mrs JK is unintentionally non-adherent.

---

“Mrs JK, your scripts are ready. I can see that you started some new tablets for your angina six weeks ago. How are you going with those?”

“They didn’t suit me at all. The spray is much better for the chest pain.”

“That’s interesting. Can you tell me why they didn’t suit you?”

“Dr MB put me on them because I’ve been having pain more often recently, but they made me feel awful. Quite honestly, they’re not as good as the spray. I only need one puff of the spray and the pain goes away.”

“We have to make sure that you are getting the best out of your medicine, so I would like to ask you a few more questions. Would that be alright?”

---

The pharmacist takes Mrs K to the counselling area where it is private and they can sit down away from other customers.

---

“Mrs JK, what exactly did Dr MB tell you about the new tablets?”

“She said that I should take one every morning and that I wouldn’t have to use the spray so much.”

“Can you explain to me how exactly you took them?”

“I took them with my other morning tablets. My husband brings me a cup of tea in bed and I take them all before I get up. The new tablets were awful though, so I only took them for a few days.”

“Can you tell me exactly how they made you feel?”

“They made me very dizzy. I was afraid I would fall over. I can’t see how that was any good.”

“Did you mention this to Dr MB when you went back to see her?”

“She’s been away on holiday and I didn’t want to bother the other doctors. I thought I would just keep using the spray. I’ve been using it for years.”

“I think Dr MB would like you to go back and talk to her. It seems that you have been experiencing a fairly common side effect of these tablets. We can give you some advice about things you can do to prevent the dizziness, but perhaps you should talk to Dr MB first. Shall I ring to arrange for you to have the next available appointment with her?”

“Yes, if you think I should. I didn’t want to bother her.”

---

The pharmacist notes his conversation with Mrs JK and the actions he has taken in her pharmacy record. He also inserts a reminder to follow up when Mrs JK is next in the pharmacy. This will alert the pharmacist on duty to talk to her if he happens to be away.

→ **Discussion points**

- What are the barriers to adherence?
- Were the pharmacist’s actions appropriate?
- Should the pharmacist have used any other strategy to address the adherence issue?

Before Mrs JK's appointment, Dr MB reviews her medical record.

**Medical history:**

- angina
- hypertension
- osteoporosis

**Medicines:**

- perindopril 5 mg/indapamide 1.25 mg, one daily
- atenolol 50 mg, daily
- atorvastatin 20 mg, daily
- aspirin 150 mg, daily
- glyceryl trinitrate s/l spray 400 µg/dose, one spray s/l at onset of attack. May repeat once if no relief within five minutes
- alendronate 70 mg/cholecalciferol 70 µg, once each week
- calcium carbonate 1500 mg, two daily
- isosorbide mononitrate S/R 60 mg, one daily (started six weeks ago)

She can see that at the last consultation, Mrs JK reported more frequent chest pain and was prescribed isosorbide mononitrate S/R 60 mg daily. Because Mrs JK has daytime angina, she was instructed to take the new tablets in the morning.

---

*"Good afternoon Mrs JK. How can I help you today?"*

*"I didn't want to bother you, but the pharmacist said I should speak to you because I haven't been getting on with the new pills."*

*"Can you tell me what the problem is?"*

*"I took them in the morning, like you said, but they made me feel awful."*

*"Can you describe exactly how they made you feel?"*

*"I felt very dizzy when I got out of bed in the morning and I got a pounding headache. I know you told me that these new pills are for my chest pain, but I have never had this problem with the spray."*

*"I'm sorry to hear that. Are you still taking them?"*

*"No, I didn't take them for very long. I trust the spray. It always stops the pain and doesn't make me feel bad."*

*"So you started taking the new tablets, but stopped them after a few days because they made you feel dizzy, and you prefer to use the spray. Is that correct?"*

---

Dr MB knows that orthostatic hypotension and headache are common side effects of nitrate medicines.

**→ Discussion point**

- How would you proceed?



---

“Mrs JK, I can understand that you prefer to use the spray, because it has worked for you in the past, but because you are having pain more often, we agreed that you should try these tablets to stop the pain from happening. Do you remember?”

“Yes, I remember, but I didn’t think they would make me feel bad.”

“Did I explain to you that the tablets work by preventing the angina pain, whereas the spray relieves the pain once it happens?”

“Yes, I do remember that now.”

---

Dr MB talks to Mrs JK about the risks of taking isosorbide mononitrate (possible side effects) versus the benefits expected from the treatment (improved capacity for physical activity).

---

“It sounds as though you have been experiencing a common side effect of these tablets. What did the pharmacist tell you when he supplied them?”

“I think I saw a different pharmacist and I can’t remember what she said. I never bother to read all the paper that comes in the box.”

“If we can help you avoid the dizziness you were experiencing before, would you agree to try again?”

“From what you told me, it would be better to take the tablets. I suppose I should have another go.”

“That’s good. I know that you have always been very careful to take your other tablets regularly. I will explain what you can do to prevent the dizziness.”

---

Dr MB:

- explains to Mrs JK that the dizziness could be caused by a sudden fall in blood pressure when getting up
- gives Mrs JK strategies to minimise dizziness, for example, gradually getting out of bed, gradually getting up from sitting
- tells Mrs JK that alcohol can lower blood pressure and increase the likelihood of dizziness
- reassures Mrs JK that side effects may resolve with continued use of the medicine
- reminds Mrs JK that she can speak to her pharmacist if she would like more information about her medicines.

Mrs JK agrees to take the isosorbide mononitrate 60 mg daily and come back to see Dr MB in two weeks’ time, or sooner if she is having any other problems or if her angina occurs more frequently. She agrees to have the practice nurse ring her in a few days to find out how she is getting on. She also agrees to Dr MB contacting her pharmacy.

#### → Discussion points

- What are the barriers to adherence in this case?
- What other strategies could the GP use to address the adherence issue?
- Could this situation have been avoided?
- What are the risks of health professionals assuming that health information has been provided by another health professional?
- Who is responsible for discussing the possible side effects of medicine?

Dr MB asks Mrs JK to contact the clinic immediately if she is concerned about side effects or other problems when she starts taking a new medicine. Dr MB asks the practice nurse to call Mrs JK in a few days to see how she is going with the new tablets.

The practice nurse or Dr MB contacts the pharmacist and asks him to reinforce the messages she has received from the GP and to further counsel Mrs JK.

**The GP:**

- monitors Mrs JK's progress with the new medicine, and offers an alternative if side effects are not tolerated.

**The pharmacist:**

- reinforces the information Dr MB gave Mrs JK on how to manage side effects
- gives Mrs JK more information and support on the proper use and interactions of long-acting nitrates
- records any counselling provided to Mrs JK or communication with other health professionals about Mrs JK.

**The practice nurse:**

- phones Mrs JK and schedules an early appointment if necessary
- reminds Mrs JK of her forthcoming appointments
- gives Mrs JK an action plan for using her angina medicine.

## Tips for time-poor GPs

- Provide brief information on the risks versus benefits of adhering to medicines.
- Refer to another health professional, such as a:
  - pharmacist for information, including management of adverse effects, provision and explanation of Consumer Medicine Information
  - practice nurse for monitoring progress with treatment, scheduling an early appointment if necessary, and providing reminders of future appointments.
- Ask the patient to make another appointment in the near future when there will be more time to address adherence issues.

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# Case study 5

## Learning objectives

After completing this case, you should be able to:

- recognise patient health beliefs as potential barriers to optimal adherence to medicines
- identify and use appropriate resources and strategies to overcome communication barriers with patients from non-English-speaking backgrounds
- elicit family support to help patients take their medicines
- develop an interprofessional strategy to address non-adherence to medicines
- recognise potential difficulties when working with culturally and linguistically diverse people.

Mr YZ came to Australia from Macedonia in 1997. He lives with his wife and works for the local council as a gardener. He and his wife speak very little English, but their daughter lives nearby and always goes with them when they visit the doctor.

Mr YZ comes into the pharmacy with his daughter, Mrs TW, who gives the pharmacist a prescription for her father. She tells the pharmacist that she has just taken her father to see Dr SB at the medical centre. She has noticed that lately her father has less energy to play with his grandchildren and often gets breathless. Mr YZ had some blood tests, and after seeing the results today, Dr SB prescribed him some new tablets.

### → Trigger for action

The pharmacist consults Mr YZ's dispensing history and notes that he is currently taking irbesartan 300 mg. Pharmacy records show that he has been taking this for about one year, although it has not been dispensed on a regular basis.

The pharmacist dispenses the new prescription for:

- hydrochlorothiazide 25 mg, half a tablet daily x 100
- simvastatin 20 mg, one daily x 30
- aspirin 100 mg, one daily x 30.

---

"Your prescriptions are ready, Mr YZ. If you would like to sit down over here in the counselling area, I can explain them to you."

"Talk my daughter. English no good."

---

The pharmacist explains to Mrs TW what the medicines are for and how to take them. She goes through the Consumer Medicine Information (CMI) for each one, and translates the information for her father.

---

"I noticed Mr YZ does not have his other medicine dispensed regularly from us. Perhaps he goes to another pharmacy?"

"No, I don't think so. He doesn't always take them. The doctor said I should speak to you about nicotine replacement. Dad has been smoking ever since I can remember, so I think it is going to be difficult for him to quit."

"I know it is not easy. Is he ready to give up smoking?"

"He is just thinking about what the doctor told him. Dr SB said it is very important to stop smoking, lose weight and do more moderate-intensity exercise, even though his work is physical, because of his heart."

"I know it's not easy, but many people successfully quit with a combination of the right strategies. I will give you some information to talk about with your dad, and I can certainly help him choose the right method when he is ready to quit."

---

The pharmacist tells Mrs TW that because Dr SB has not written any repeats for the new medicines, it is important for Mr YZ to go back and see him before the medicines are finished in one month.

The pharmacist makes a record of her discussions with Mr YZ and Mrs TW in Mr YZ's pharmacy record.

→ **Discussion points**

- Were the pharmacist's actions appropriate in this situation?
- What other action could the pharmacist have taken?

Four weeks later, the nurse in Dr SB's practice is checking which patients have missed their appointments. She sees that Mr YZ was scheduled to see Dr SB two weeks before, but didn't keep his appointment. She rings Mr YZ and arranges an appointment in a few days.

Before his appointment, Dr SB checks Mr YZ's medical record and notes the following.

**Age:** 62

**Height:** 173 cm

**Weight:** 92 kg

**Waist circumference:** 104 cm

**Smoker:** 1 pack of cigarettes per day for 45 years

**Four weeks ago:**

- blood pressure (BP) – 145/90 mmHg
- total cholesterol – 6.8 mmol/L
- low-density lipoprotein cholesterol – 4.95 mmol/L
- high-density lipoprotein cholesterol – 0.85 mmol/L
- triglycerides – 2.2 mmol/L
- HbA1C – normal

**Medicines:**

- irbesartan 300 mg, one daily (started one year ago)
- hydrochlorothiazide 12.5 mg, daily (started four weeks ago)
- simvastatin 20 mg, one daily (started four weeks ago)
- aspirin 100 mg, one daily (started four weeks ago)

---

“Good morning, Mr YZ. I think last time we offered to have a translator for you, but you prefer your daughter to come with you. Is that right?”

“Yes. She explain me.”

“How are you going with the new medicines?”

---

Mrs TW explains that her father has not been taking his medicines regularly. She noticed that there were many tablets remaining, although the pharmacist had said that they would only last one month.

Dr SB needs to:

- explore the reasons for Mr YZ not taking his medicines and find out exactly what the barriers to his adherence are
- find out what Mr YZ understands about why his medicines should be taken.

→ **Discussion points**

- What questions could the GP ask Mr YZ to find out why he is not taking his medicines?
- What are the advantages and disadvantages of using a professional interpreter, rather than a family member?
- What multilingual resources are available to help patients?
- How can the problem of limited multilingual resources be overcome?

When asked why her father is not taking his medicines, Mrs TW says she thinks that her father does not believe so many medicines are necessary, and that he finds cost is a problem because of his limited income.

Dr SB needs to explore Mr YZ's health beliefs so that he can address the barriers to adherence.

Dr SB shows Mr YZ the Australian cardiovascular risk tables and explains that because of his high blood pressure, lipid levels, age and smoking, Mr YZ has a high risk (25–29%) of developing cardiovascular disease in the next five years. He uses the chart to show Mr YZ that by achieving healthy blood pressure and lipid levels, the risk can be halved. He tells Mr YZ that quitting smoking will reduce his risk even more, and that by losing weight as well, Mr YZ will better enjoy playing with his grandchildren.

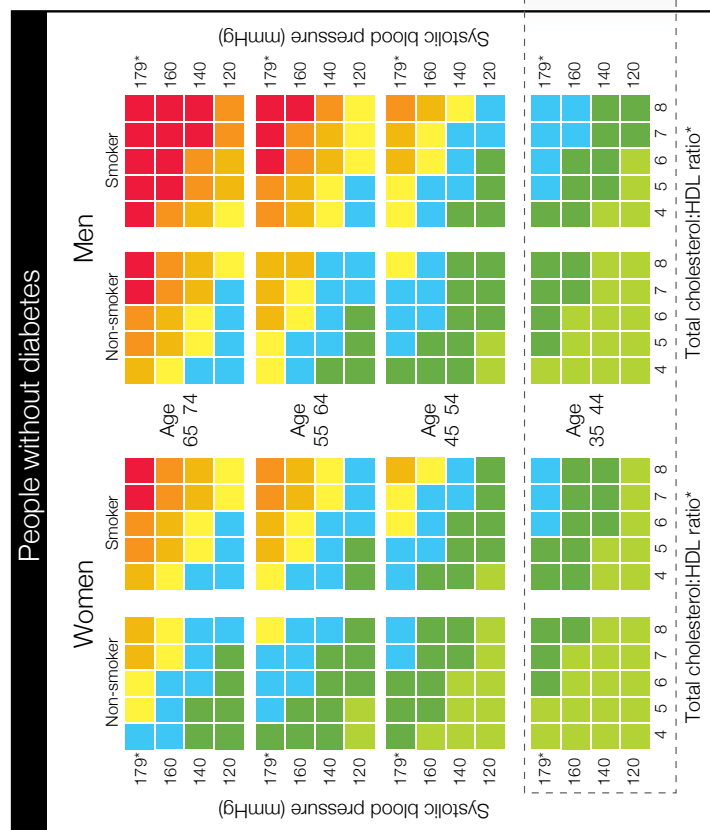
Dr SB explains to Mr YZ the benefits of following his medicine regimen and the consequences of not doing so in terms of his absolute cardiovascular disease risk. Dr SB also explains that they can minimise the cost of the medicines by using a fixed-dose combination medicine for blood pressure and a generic medicine for dyslipidaemia.

He also asks if Mr YZ has considered quitting smoking, to see if he is ready to quit.

→ **Discussion points**

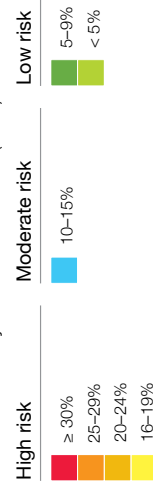
- How could Mr YZ's cardiovascular risk be explained to him?
- How would you explain the reasons for taking the prescribed medicines?
- How could the benefits of treatment versus the financial cost of the medicine be explained?
- What other ways can the cost of medicines be minimised?
- How can the GP help Mr YZ to quit smoking?

# Australian cardiovascular risk charts



\*In accordance with Australian guidelines, patients with systolic blood pressure  $\geq 180$  mmHg, or a total cholesterol of  $> 7.5$  mmol/L, should be considered at increased absolute risk of CVD.

Risk level for 5-year cardiovascular (CVD) risk



## How to use the risk charts

1. Identify the chart relating to the person's sex, diabetes status, smoking history and age. The charts should be used for all adults aged 45–74 years (and all Aboriginal and Torres Strait Islander adults aged 35 years or older) without known history of CVD or already known to be at high risk.
2. Within the chart, choose the cell nearest to the person's age, systolic blood pressure (SBP) and total cholesterol (TC):HDL ratio. For example, the lower left cell contains all non-smokers without diabetes who are 35–44 years and have a TC:HDL ratio of less than 4.5 and a SBP of less than 130 mmHg.
3. The colour of the cell that the person falls into provides their 5-year absolute cardiovascular risk level (see legend for risk category). People who fall exactly on a threshold between cells are placed in the cell indicating higher risk.

**Notes:** The risk charts include values for SBP alone, as this is the most informative of conventionally measured blood pressure parameters for cardiovascular risk. For certain groups CVD risk may be underestimated using these charts; please see page 3 of *Absolute cardiovascular disease risk assessment – quick reference guide for health professionals* for recommendations.

CVD refers collectively to coronary heart disease (CHD), stroke and other vascular disease including peripheral arterial disease and renovascular disease.

Charts are based on the NVDPA's *Guidelines for the assessment of absolute cardiovascular disease risk* and adapted with permission from New Zealand Guidelines Group, New Zealand Cardiovascular Guidelines Handbook: A Summary Resource for Primary Care Practitioners, Second edition, Wellington, NZ: 2009, [www.nzgg.org.nz](http://www.nzgg.org.nz).

These charts are taken from *Absolute cardiovascular disease risk assessment – quick reference guide for health professionals*, © 2009–2011 National Heart Foundation of Australia.



During the consultation, Mr YZ agrees that he needs to take his medicines and quit smoking. Dr SB and Mr YZ agree to a management plan that includes:

- adhering to the medicine regimen
- adhering to a healthy eating and physical activity program
- considering quitting smoking
- making an appointment with Dr SB in one month to discuss his progress and any problems he may have.

With Mr YZ's permission, Dr SB contacts the pharmacist and asks her to:

- monitor Mr YZ's adherence with medicines
- advise Mr YZ about managing possible side effects from the new medicines
- advise Mr YZ about generic substitution and brand premiums
- counsel Mr YZ about using fixed-dose combination medicines
- provide/reinforce information about quitting smoking
- advise Mr YZ about nicotine replacement therapy.

Dr SB asks the practice nurse to:

- remind Mr YZ of any upcoming appointments
- counsel Mr YZ on the importance of quitting smoking, referring Mr YZ to the pharmacist for information about quitting smoking and nicotine replacement therapy
- give Mr YZ regular ongoing counselling and support once he has made a commitment to quit
- in staged consultations, advise Mr YZ about healthy eating and physical activity
- communicate with the pharmacist to reinforce the messages about not smoking
- with consent, ask the pharmacist to monitor Mr YZ's adherence, and follow up with the pharmacist every three months to see if Mr YZ is collecting his prescriptions regularly.

In ongoing follow up, Dr SB:

- supports and monitors Mr YZ's progress through regular appointments, and follows up if he does not attend
- agrees achievable targets for BP and lipid levels with Mr YZ
- gets agreement from Mr YZ that he will take action to quit smoking.

#### → Discussion points

- What are the barriers to adherence in this case?
- What other strategies could the GP have used to address these barriers?
- What could the GP have done if this patient was unwilling to undertake ongoing treatment?
- What is the advantage of involving family members in this patient's ongoing management?
- What are the roles of other health professionals in the follow up of this patient?

## Tips for time-poor GPs

- Give patients brief information on the risks and benefits of adhering to medicines.
- Ask patients about smoking. Briefly tell them what the benefits of quitting are and refer them to a pharmacist, a nurse and Quitline.
- Refer patients to other health professionals, such as:
  - a pharmacist for information on the proper use of medicines, including generic or non-brand premium products
  - a practice nurse for lifestyle advice, monitoring of blood pressure, reminders of future appointments, discussion of ways to improve adherence to medicine regimens
  - a pharmacist for help with quitting smoking.
- Ask the patient to make another appointment in the near future when there will be more time to explore barriers to adherence to medicines, and his/her motivation to adhere.

## More information and resources

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# Case study 6

## Learning objectives

After completing this case, you should be able to:

- recognise the causes of non-adherence
- assess barriers to adherence
- develop strategies to address non-adherence that are tailored to the patient's needs
- systematically assess medicine-taking behaviour.

Mr JD is a 66-year-old retired bus driver who lives with his wife. Mr JD went home from hospital six days ago. His wife had made him go to hospital after what he thought was unusually bad indigestion. However, hospital staff told Mr JD that he had had a heart attack. Before Mr JD was discharged from hospital, the pharmacist gave him some medicines and told him what they were for and how to take them. Mr JD also remembers being told that the new medicines would only last three days and that he had to make an appointment to see his doctor as soon as he got home. At the hospital, Mr JD saw so many people and was given so much information that he became confused, which was made worse by the shock of being told he had had a heart attack.

When Mr JD got home, he took his new medicines as instructed. However, they looked different to the ones he had taken before and he wasn't sure if he was supposed to stop taking his previous medicines. Mr JD remembered his general practitioner (GP) and pharmacist telling him it was important to take his blood pressure and cholesterol tablets regularly, so he kept taking his previous medicines as well as the new ones. When the new medicines ran out, he wasn't too concerned because he had plenty of his previous medicines at home. Anyway, he had an appointment with his GP, Dr DP, the next week.

At the medical centre, while waiting to see Dr DP, the practice nurse asked Mr JD to fill in a pre-consultation questionnaire. The practice nurse explained that this was a new initiative to help the staff update his details and provide a better service.

Before the consultation, Dr DP reviews Mr JD's notes and the pre-consultation questionnaire.

**Age:** 66

**Height:** 178 cm

**Weight:** 88 kg

**Medical history:**

- hypertension
- dyslipidaemia

**Medicines:**

- candesartan 16 mg/hydrochlorothiazide 12.5 mg, one daily
- atorvastatin 40 mg, one daily

**Last appointment:** two months ago

## → Trigger for action

Dr DP sees from the questionnaire that Mr JD has recently been in hospital. She can see from his notes that he has not been referred for any elective surgery and there is no correspondence on file from the hospital.

Dr DP needs to know the circumstance surrounding Mr JD's admission and the treatment plan the cardiologist proposes for his ongoing management. She asks Mr JD what he understands about his condition. Dr DP also asks one of the practice staff to contact the hospital and have Mr JD's discharge summary faxed to her.

→ **Discussion point**

- How would you proceed with this patient?

---

"Hello, Mr JD. I see that you have been in hospital recently. What happened?"

"Nora took me to casualty with indigestion and I ended up in the hospital. They did some tests and told me I had had a heart attack. I was in there a few days. I thought they would have told you."

"No. I haven't heard from the hospital. When were you discharged?"

"Last week. They told me to come and see you when I got home, but I didn't make the appointment until yesterday."

"While we are waiting for the hospital to send me your details, can you tell me what changes they made to your medicines?"

"I was given some extra ones. The pharmacist came to see me and told me what they were for. I can't remember exactly what he said. They couldn't have been very important as they only gave me a few of each. I went on taking my regular ones when I got home."

"Are you still taking the new ones?"

"They ran out a few days ago, but I'm still taking my regular ones."

---

When Dr DP receives Mr JD's discharge summary, she can see that his medicines have been changed to:

- perindopril 4 mg, one daily
- metoprolol 50 mg, half a tablet twice daily
- simvastatin 40 mg, one daily
- ezetimibe 10 mg, one daily
- aspirin 300 mg, half a tablet daily.

Dr DP can see that Mr JD's medicine regimen is appropriate. She writes a prescription for the new medicines and explains to Mr JD what they are all for. Dr DP also tells him to stop taking any previous medicines he still has at home.

→ **Discussion points**

- What should the GP do next?
- What are the barriers to adherence to medicines in this case?
- Were the GP's actions appropriate?
- How could this situation have been avoided?
- Discuss the difficulties with the transition of patients from the hospital to the home environment.
- What are the benefits of a pre-consultation questionnaire?
- What strategies could the GP use to improve Mr JD's adherence?

Dr DP contacts the hospital's cardiac rehabilitation coordinator to enrol Mr JD in a cardiac rehabilitation program.

Dr DP tells Mr JD about the cardiac rehabilitation program and his ongoing management. They agree on a management plan, and Mr JD agrees to make another appointment in two weeks. Dr DP tells him that the practice nurse can give him more information about his rehabilitation.

On the way home, Mr JD calls into the pharmacy with his new prescription.

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*"Good morning, Mr JD. How have you been?"*

*"Not too good. I have been in hospital with my heart, and now the doc says I have to take all these tablets."*

*"I'm sorry to hear that. What did Dr DP tell you about these medicines?"*

*"She told me all about them, but it wouldn't hurt to go over them again. I have so much to think about. It's all been a shock."*

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→ **Discussion point**

- What should the pharmacist do?

The pharmacist reviews Mr JD's medicines history. He can see:

- Mr JD doesn't appear to have any allergies, and there is no indication that he has had an adverse effect from his medicines in the past
- what medicines Mr JD was taking before he was admitted to hospital
- that Mr JD has always been adherent with his medicines
- that Mr JD was counselled about his previous medicines.

The pharmacist invites Mr JD to the counselling area to discuss his new medicines.

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*"Mr JD, here are your new tablets. Would you tell me what Dr DP told you about each one?"*

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→ **Discussion point**

- How would the pharmacist explore Mr JD's understanding?

The pharmacist explores Mr JD's understanding of his medicines and fills in any gaps. He uses the Consumer Medicine Information (CMI) sheets as a guide, emphasising the relevant points. The pharmacist also tells Mr JD the best time to take the medicines and how he can fit them into his daily routine. He gives advice about possible side effects and what Mr JD should do if he experiences any side effects.

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“I think Dr DP told you that these medicines replace the ones you used to take. Perhaps you would like to bring any leftover old medicines to the pharmacy so we can safely dispose of them for you?”

“That would be a good idea. I’ll ask Nora to bring them in, and my old repeats too, so I don’t get mixed up.”

“That’s a good idea. We can also help you to make a complete list of all the medicines you are taking, whether they are prescribed by your doctor or specialist, or are vitamins, herbal medicines or over-the-counter medicines. You can carry the list with you. It will be useful when you visit doctors, specialists or the hospital.”

“That would be terrific.”

“Now, don’t forget to let me know if you have any difficulties taking the new medicines or call me if you have any questions.”

“Okay, I will.”

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In Mr JD’s pharmacy record, the pharmacist notes that Mr JD:

- had his medicines regimen changed after being admitted to hospital
- will return his old medicines to the pharmacy for disposal
- was counselled on the new medicines and how to manage them
- was given information on possible side effects and how to manage them.

→ **Discussion points**

- Were the pharmacist’s actions appropriate?
- What could the pharmacist have done differently?
- What are the advantages of notifying the community pharmacy when a patient is discharged from hospital?
- What are the benefits of a Home Medicines Review (HMR) for patients recently discharged from hospital?
- What are the benefits of a patient carrying a medicines list?

**The GP:**

- arranges regular follow-up appointments with Mr JD
- communicates any changes in medicines regimen to the pharmacist.

**The pharmacist:**

- advises Mr JD of possible side effects and how to manage them
- gives Mr JD advice on managing his medicines
- adds any medicines changes to Mr JD’s new MediList and dates it.

**The practice nurse:**

- reminds Mr JD of forthcoming appointments
- liaises with a cardiac rehabilitation coordinator
- gives Mr JD advice and support post-discharge, and refers him to the GP as required.

## Tips for time-poor GPs

- Reinforce the importance of adhering to a new medicines regimen.
- Ask the practice nurse to:
  - organise cardiac rehabilitation for the patient
  - give the patient advice on lifestyle changes post-myocardial infarction
  - contact the hospital to obtain details of the patient's discharge summary (an administrative staff member could also do this).
- Ask the pharmacist to:
  - explain changes in the medicine regimen to the patient
  - tell the patient about possible side effects and how to minimise them
  - give the patient strategies to facilitate adherence to medicines.
- Ask the patient to make another appointment in the near future when there will be more time to discuss his/her situation.

## More information and resources

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