

Reframing the Role and Impact of Pharmacy in Chronic Disease Care

eLearning Module

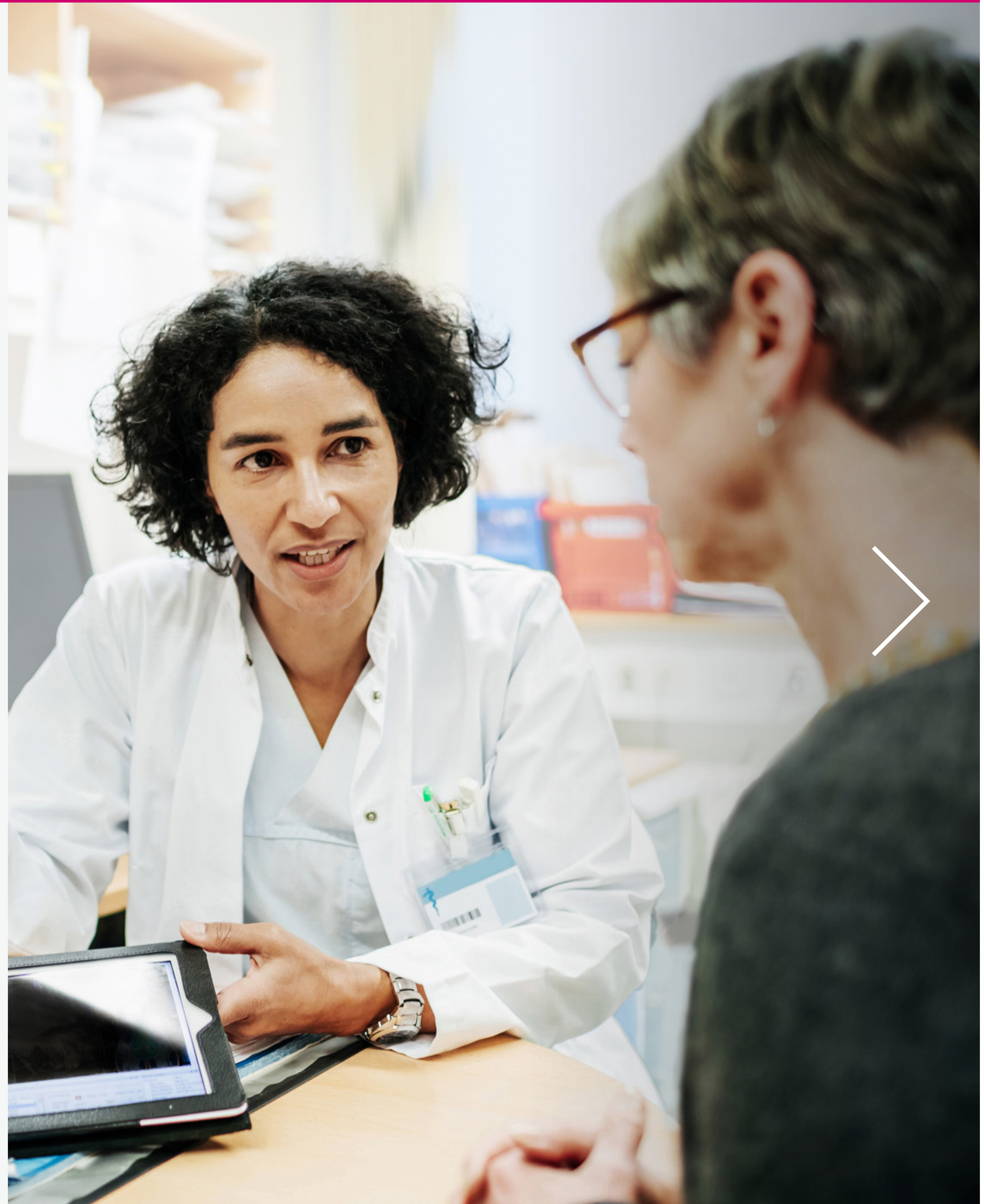
These materials are created to support pharmacists in their interactions with patients and do not take into account a particular jurisdiction. The role and the responsibilities which a pharmacist can legitimately perform vary from one country to another. If you consider using these materials in full or in part, please ensure you understand and adhere to the legal and regulatory requirements in your country, including but not limited to the National Drug Act, data privacy legislation, professional code of conduct and any other.

If you are interested in receiving a localised version for your country, which is compliant with the local rules and regulations, please contact us.

These materials were commissioned and funded by AstraZeneca. AstraZeneca have provided an education grant to FIP to raise awareness and dissemination of this toolkit in line with FIP's mission to advance pharmacy worldwide.

This material is intended for pharmacists with an interest in chronic disease management.

Obtain local nominated signatory approval before use.



Welcome

Welcome to the Chronic Disease Service Framework eLearning Module for pharmacists and pharmacy team members.

Reframing the Role and Impact of Pharmacy in Chronic Disease Care

Why Focus on Chronic Disease?

- Pharmacy can make a difference

Practice Reflection

A Framework for Care

- Making moments matter
- Introducing the Chronic Disease Service Framework

Understanding Chronic Disease

- What is a chronic disease?
- Burden of chronic disease
- Chronic disease risk factors

Your Role in Chronic Disease Care

- Value and impact of pharmacy
- Early identification, timely intervention, and primary care referral

Chronic Disease Service Framework

- Components of the Chronic Disease Service Framework
- Service framework objectives
- Benefits and outcomes
- Enhancing pharmacy-based services
- Service Initiation Toolkit resources
- Disease State Pharmacy Toolkit: Resources across the service delivery journey
- Service framework implementation tips
- FIP + Chronic Disease Service Framework: Support across the service delivery journey

Chronic Disease Service Initiation Toolkit

- Case Study 1
- How to Use the Service Initiation Toolkit
- Revisit Case Study 1

Chronic Disease State Pharmacy Toolkits

- Caring for chronic disease patients in the pharmacy
- Use of the Disease State Pharmacy Toolkit resources in the care journey
- Case Study 2
- How to Use the Disease State Pharmacy Toolkits
- Revisit Case Study 2

Module Key Learnings

Module Learning Checkpoints

Glossary of Common Terms



Learning objectives

Upon successful completion of this continuing education learning module, you will be able to:

- Define chronic disease and understand the impact of chronic diseases on global health
- Describe the risk factors for chronic disease
- Recognise the important role that pharmacists can play in chronic disease care
- Identify opportunities to facilitate and strengthen pharmacy-based chronic disease services
- Understand the components of the Chronic Disease Service Framework and their benefits
- Identify how to seamlessly integrate the Chronic Disease Service Initiation Toolkit and the Chronic Disease State Pharmacy Toolkits into practice
- Describe how to optimise collaboration opportunities with other healthcare professionals in enhanced chronic disease care



Understanding CKD



Pharmacy can make a difference

The global burden of chronic diseases, also known as noncommunicable diseases (NCDs), is expected to worsen with continued population growth and ageing populations.^{1,2}

Unfortunately, many of the gains made in the past several decades due to reductions in tobacco smoking, hypertension, and elevated total cholesterol, have been partly offset by rising rates of overweight and obesity.³ Thus, the need for early chronic disease screening, identification, and intervention is greater than ever.

Building on the key roles community pharmacists already play as primary healthcare professionals in many countries, pharmacists can provide focused interventions, specialised counselling, and/or care coordination. Pharmacists can help improve patient engagement and adherence to achieve better outcomes in the global chronic disease battle.⁴

Evidence has highlighted the positive impact community pharmacies can have on the health of chronic disease patients. Key study findings include^{2,5,6}:

- Patient-centred and interdisciplinary community pharmacist interventions led to **significantly improved glycaemic control in patients with type 1 and type 2 diabetes**
- Pharmacist and physician collaboration resulted in **reductions in both systolic and diastolic blood pressure over time, improved medication, and cardiovascular (CV) risk reduction (10-year calculated risk)**
- Compared to a traditional health education, drug therapy monitoring by community pharmacists in patients with CV risk factors showed statistically greater **reductions in systolic blood pressure, heart rate, weight, body mass index (BMI), fasting glucose, total cholesterol, waist measurement, and waist-to-height ratio**
- Compared to usual care, community pharmacist interventions to facilitate self-management in patients at risk of poorly controlled asthma showed **improved control, inhaler technique, and action plan decisions**
- Pharmacy care **improved adherence to heart failure medications and quality of life**

1. World Health Organization (WHO). World health statistics 2023: monitoring health for the SDGs, sustainable development goals. Available at: <https://www.who.int/publications/i/item/9789240074323>. Accessed August 2024.

2. International Pharmaceutical Federation (FIP). Beating non-communicable diseases in the community: The contribution of pharmacists. Available at: <https://www.fip.org/file/4694>. Accessed August 2024.

3. World Heart Foundation. Improving prevention and control of raised cholesterol: A call to action. Available at: <https://world-heart-federation.org/wp-content/uploads/2021/05/World-Heart-Federation-Cholesterol-White-paper.pdf>. Accessed August 2024.

4. International Pharmaceutical Federation (FIP). FIP statement of policy; The role of pharmacists in non-communicable diseases. Available at: <https://www.fip.org/file/4338>. Accessed August 2024.

5. Nguyen TS, et al. *Int J Chron Obstruct Pulmon Dis*. 2018;11;13:1863-1872.

6. Schulz M et al. *Eur J Heart Fail*. 2019;21:1012-1021.

To learn more about chronic diseases and the expanded role of pharmacists in chronic disease management, visit: <https://ncd.fip.org/>.

Practice Reflection



Practice reflection

Reflecting on your own practice, take a moment to answer the question below.

Do you speak to patients about their chronic disease risk and/or management?

A Yes. I regularly and consistently perform these activities at a level I'm happy with.

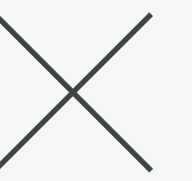
B Yes. I occasionally discuss chronic disease risk and/or management with my patients but I would like to do more to help my patients.

C No. Discussing chronic disease is not part of my typical practice.

D No. I am unsure of where to start.

[Next page >](#)





Feedback

While most pharmacists and pharmacy team members would like to answer A, many may not. They may only occasionally speak to their at-risk or diagnosed chronic disease patients or they may not know where to start.

A care framework with pharmacy-based resources that are designed to enhance patient interactions and minimise the burden on workload and workflow would help pharmacies start chronic disease conversations and make their moments spent with patients matter.

The good news is that there is such a framework for community pharmacy that can help enhance chronic disease care – the **Chronic Disease Service Framework!**

This eLearning Module is one component of the Chronic Disease Service Framework's **Service Initiation Toolkit.**

Let's learn more!



A Framework for Care



Making moments matter

Pharmacy-based, patient-centred care can go well beyond medication optimisation. Pharmacists are also experts in health and well-being.¹

Due to their unique role and accessibility, pharmacists can play an essential part in chronic disease care by focusing on²:

- public health promotion, including vaccination
- disease prevention education and intervention
- healthy lifestyle promotion
- risk factor education and intervention
- early identification and referral for diagnosis
- disease management
- medication effectiveness, adherence, and safety

As one of the most accessible and knowledgeable primary healthcare providers, pharmacists are ideally placed to fill gaps in chronic disease care.¹

Pharmacy teams in many countries have been conducting some level of chronic disease care as a part of their day-to-day practice for many years. **However, some teams are only minimally involved in chronic disease care or involved at a level they are not happy with.**

Pharmacists and their team members are continually searching for ways to maximise the time they already spend with patients without placing an additional burden on workflow or workload.

A practice framework that is designed to enhance patient interactions and minimise the time burden would help pharmacies make their moments spent with at-risk and diagnosed patients matter.

The great news is that there is such a framework – the **Chronic Disease Service Framework** for community pharmacy.

1. International Pharmaceutical Federation (FIP). Beating non-communicable diseases in the community: The contribution of pharmacists. Available at: <https://www.fip.org/files/content/publications/2019/beating-ncds-in-the-community-the-contribution-of-pharmacists.pdf>. Accessed August 2024.

2. International Pharmaceutical Federation (FIP). Cardiovascular diseases: A handbook for pharmacists. Available at: <https://www.fip.org/file/5251>. Accessed August 2024.

Introducing the Chronic Disease Service Framework

The **Chronic Disease Service Framework** is a cross-therapeutic approach to chronic disease care within the pharmacy.

The service framework is an opportunity for pharmacy to play a meaningful role in the management of chronic diseases by enhancing the quality of patient interactions, optimising collaboration with primary care, and, ultimately, improving the health of their community.

The framework consists of 2 key components:

1. There is a foundational **Chronic Disease Service Initiation Toolkit** to facilitate starting, expanding, promoting, and/or integrating a chronic disease pharmacy-based service
2. The various **Chronic Disease–Specific Pharmacy Toolkits** are designed to support, streamline, and enhance pharmacy-led early identification of chronic disease and timely intervention and management

The **Chronic Disease Service Framework** can be used to **structure and streamline** the pathway for chronic disease patients in the pharmacy to be identified, referred, and cared for throughout their disease journey.



Next page >





What's next?

Before we dive deeper into how the **Chronic Disease Service Framework** can be implemented in your pharmacy, let's first:

- define what chronic diseases are
- explore the growing global burden of chronic disease
- review common behavioural and metabolic chronic disease risk factors
- discuss your role in chronic disease care



Understanding Chronic Disease



What is a chronic disease?

Chronic diseases, or noncommunicable diseases (NCDs) as they are broadly defined as “conditions that last one year or more and require ongoing medical attention or limit activities of daily living or both.”¹ These multifactorial diseases affect patients from all walks of life and in all parts of the world.²

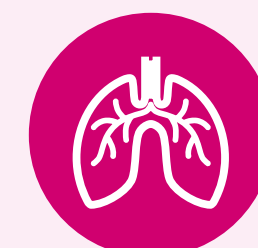
Chronic diseases cause the highest disease burden worldwide.³

Globally, greater than two in five of all adults are diagnosed with multiple chronic conditions (MCCs), defined as the presence of more than 1 chronic disease.⁴

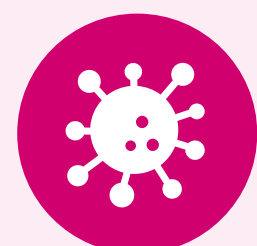
The four major types of chronic disease include⁵:



Cardiovascular diseases (CVDs), such as hypertension, heart failure, and stroke



Chronic respiratory diseases, such as chronic obstructive pulmonary disease (COPD) and asthma



Cancers



Diabetes

1. Centers for Disease Control and Prevention (CDC). About Chronic Diseases. Available at: [cdc.gov/chronic-disease/about/?CDC_AAref_Val=https://www.cdc.gov/chronicdisease/about/index.htm](https://www.cdc.gov/chronicdisease/about/index.htm). Accessed August 2024.

2. World Health Organization (WHO). World health statistics 2023: monitoring health for the SDGs, sustainable development goals. Available at: <https://www.who.int/publications/i/item/9789240074323>. Accessed August 2024.

3. Foo KM, Sundram M., Legido-Quigley H. BMC Public Health (2020) 20:273.

4. Chowdhury RF et al. *thelancet*. 2023;57:101860.

5. World Health Organization (WHO). Noncommunicable diseases - Fact Sheet. Available at: <https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases>. Accessed August 2024.

Burden of chronic disease

Globally, chronic diseases have become the leading causes of mortality and disability, challenging both population health and health care systems.^{1,2}

Several chronic diseases have been prioritised by the World Health Organization (WHO), including CVDs, cancer, chronic respiratory disease, and diabetes, which significantly contribute to mortality and disability^{3,4}:

- **CVDs** – account for most chronic disease deaths or 17.9 million people annually
- **Cancers** – account for 9.3 million deaths annually
- **Chronic respiratory diseases** – account for 4.1 million deaths annually
- **Diabetes** – accounts for 2.0 million deaths annually, including kidney disease deaths caused by diabetes

Chronic diseases represent a **worldwide health challenge**⁴:



41 million people die each year from chronic diseases, accounting for 74% of all deaths globally



77% of all chronic disease deaths occur in low- and middle-income countries



17 million people die annually from a chronic disease before age 70, with 86% of these premature deaths occurring in low- and middle-income countries



CVDs, cancers, chronic respiratory diseases, and diabetes account for **>80%** of premature chronic disease deaths

Did you know?

It is predicted that chronic disease will account for 86% of the 90 million annual deaths each year by 2048: a staggering 90% increase in absolute numbers over 2019.¹

CVDs, cardiovascular diseases

1. World Health Organization (WHO). World health statistics 2023: monitoring health for the SDGs, sustainable development goals. Available at: <https://www.who.int/publications/i/item/9789240074323>. Accessed August 2024.

2. Centers for Disease Control and Prevention (CDC). About Chronic Diseases. Available at: <https://www.cdc.gov/chronicdisease/about/index.htm>. Accessed August 2024.

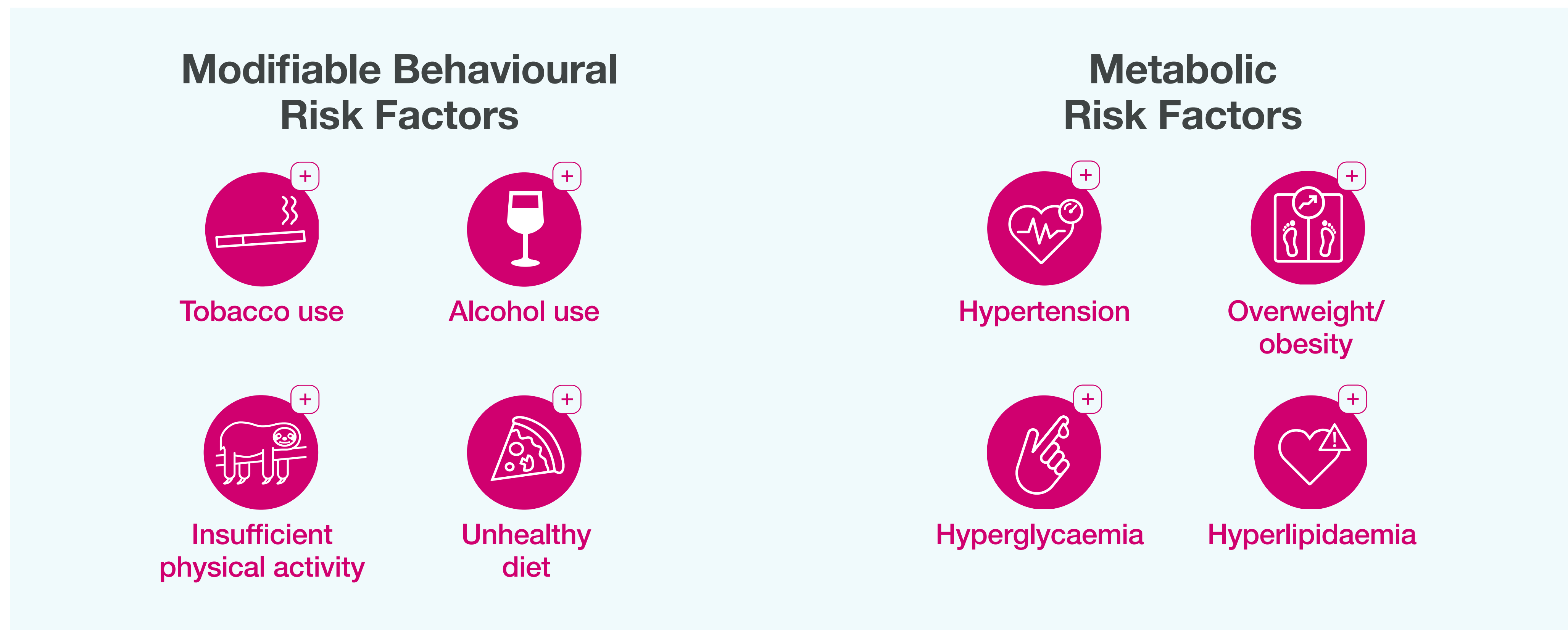
3. International Pharmaceutical Federation (FIP). Beating non-communicable diseases in the community: The contribution of pharmacists. Available at: <https://www.fip.org/files/content/publications/2019/beating-ncds-in-the-community-the-contribution-of-pharmacists.pdf>. Accessed August 2024.

4. World Health Organization (WHO). Noncommunicable diseases – Fact Sheet. Available at: <https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases>. Accessed August 2024.

Chronic disease risk factors

Chronic diseases are caused by a combination of genetic, physiological, environmental, and behavioural factors. Below are some of the most common behavioural and metabolic risk factors that prematurely place patients at risk of chronic disease.¹

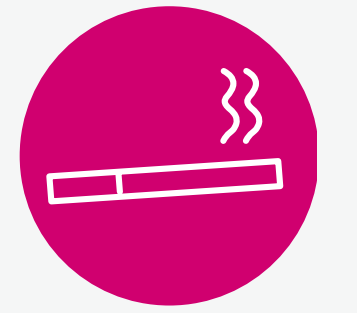
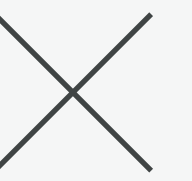
Prevention and management of chronic diseases is dependent on reducing underlying risk factors.² Monitoring these patient risk factors can also help support early identification of chronic disease.



[Click to learn more](#) about each risk factor

1. World Health Organization (WHO). Noncommunicable diseases – Fact sheet. Available at: <https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases>. Accessed August 2024.

2. World Health Organization (WHO). World health statistics 2023: monitoring health for the SDGs, sustainable development goals. Available at: <https://www.who.int/publications/item/9789240074323>. Accessed August 2024.



Tobacco use | Modifiable behavioural risks

Tobacco use harms nearly every organ of the body. It causes CVDs, cancers, chronic lung diseases, type 2 diabetes, and many other diseases. Second-hand smoke can lead to stroke, lung cancer, and heart disease in adults.^{1,2}

Cigarette smoking is linked with all of the ways by which atherothrombotic events (eg, heart attacks and stroke) occur^{2,3}:

- **endothelial dysfunction** – Tobacco use reduces nitric oxide, which the vascular endothelium (a layer of cells that line the blood vessels) requires for vasodilation. It can lead to high levels of reactive oxygen species (ROS), which also contributes to endothelial dysfunction. Tobacco use reduces the anti-adhesive properties of the vascular endothelium. Damage can lead to the buildup of plaque and cause blood vessels to thicken and narrow (a process known as atherosclerosis)
- **thrombosis** – Exposure to tobacco smoking creates a prothrombotic state where blood becomes “sticky” and more likely to clot. Smoking can contribute to the formation of a blood clot inside of a blood vessel or chamber of the heart by activating platelets and promoting the effects of the clotting factors
- **inflammation** – Tobacco use can result in a chronic systemic inflammatory response through multiple pathways. Exposure to second-hand smoke has also been shown to be associated with chronic inflammation. Inflammation, in turn, plays an important role in both atherosclerosis and acute coronary syndromes
- **altered lipid metabolism** – Smoking can lead to a rise of triglycerides (type of fat in the blood) and a lowering of high-density lipoprotein cholesterol (HDL-C), or “good” cholesterol

Did you know?

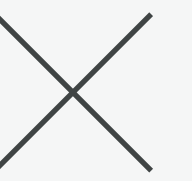
Tobacco use is the world’s leading cause of preventable disease, death, and illness. It kills over 8 million people each year, including about 1.3 million non-smokers who are exposed to second-hand smoke.¹

CVDs, cardiovascular diseases

1. World Health Organization (WHO). Tobacco – Fact sheet. Available at: <https://www.who.int/news-room/fact-sheets/detail/tobacco>. Accessed August 2024.

2. Centers for Disease Control and Prevention (CDC). Tobacco use. Available at: <https://www.cdc.gov/tobacco/about/index.html>. Accessed August 2024.

3. U.S. Department of Health and Human Services. The health consequences of smoking—50 years of progress: A report of the Surgeon General. Available at: https://www.ncbi.nlm.nih.gov/books/NBK179276/pdf/Bookshelf_NBK179276.pdf. Accessed August 2024.



Alcohol use | Modifiable behavioural risks

Alcohol is a psychoactive substance that can have considerable **toxic** effects on the body, particularly the digestive and cardiovascular systems.^{1,2} For many years, it was widely believed drinking alcohol in moderation offered protection against coronary artery disease (CAD), which is the most common type of heart disease.^{3,5} Recent research has shown that **drinking a little alcohol neither decreases nor increases the risk of CAD**. However, alcohol use is a risk factor for **most other types of CVD**, including hypertension, heart failure, atrial fibrillation, and haemorrhagic stroke.³

Alcohol is a **carcinogen** (cancer-causing agent) and has been **linked to many types of cancer**, including cancers of the mouth and throat, larynx (voice box), oesophagus, rectum, colon, and breast.^{2,3,6} Drinking less alcohol has been recognised as one of the top behaviours to reduce cancer risk in some countries.³

Drinking a large amount of alcohol, even for just a few days, can lead to **alcohol-associated fatty liver** (build-up of fat in the liver). Excessive alcohol use and, less commonly, binge drinking (consuming a large amount of alcohol in a short period of time) can lead to a more severe form of liver disease called **alcohol-associated hepatitis**. Over time, alcohol-related liver damage can cause fibrosis (scar tissue in the liver), which can lead to **cirrhosis** and **liver cancer**.^{3,6}

Did you know?

Alcohol use is a leading cause of preventable death, disability, and social problems.³ Globally, alcohol use contributes to 3 million deaths each year.¹ More than half of those 3 million deaths are from chronic diseases, including cancer.⁴ For people aged 15 to 49 years, alcohol accounts for 10% of all deaths in this age group.¹

CVD, cardiovascular disease

1. World Health Organization (WHO). Alcohol: Overview. Available at: https://www.who.int/health-topics/alcohol#tab=tab_1. Accessed August 2024.

2. World Health Organization (WHO). Alcohol: Impact. Available at: https://www.who.int/health-topics/alcohol#tab=tab_2. Accessed August 2024.

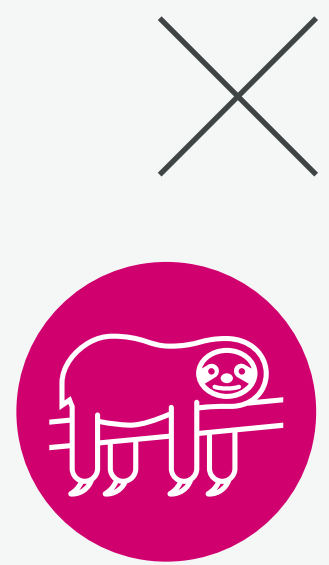
3. Canadian Centre on Substance Use and Addiction (CCSA). Canada's guidance on alcohol and health: Final report. Available at: https://www.ccsa.ca/sites/default/files/2023-01/CCSA_Canadas_Guidance_on_Alcohol_and_Health_Final_Report_en.pdf. Accessed August 2024.

4. World Health Organization (WHO). Noncommunicable diseases – Fact sheet. Available at: <https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases>. Accessed August 2024.

5. U.S. Department of Health and Human Services. The health consequences of smoking—50 years of progress: A report of the Surgeon General. Available at: https://www.ncbi.nlm.nih.gov/books/NBK179276/pdf/Bookshelf_NBK179276.pdf. Accessed August 2024.

6. Centers for Disease Control and Prevention (CDC). Excessive alcohol use. Available at: <https://www.cdc.gov/alcohol/about-alcohol-use/index.html>. Accessed August 2024.

Insufficient physical activity | Modifiable behavioural risks



It is estimated that one in four adults **do not meet the global recommended weekly levels of physical activity** due to changing transport patterns, growing use of technology, increasing sedentary behaviours, and cultural values^{1,2}:

- at least 150–300 minutes of moderate-intensity aerobic physical activity; or
- at least 75–150 minutes of vigorous-intensity aerobic physical activity; or
- an equivalent combination of moderate- and vigorous-intensity activity

Being physically inactive can **lead to CVD**, even for people who have no other risk factors.³ Physical inactivity can increase the **risk of developing other CVD risk** factors, including hypertension, hyperlipidaemia, obesity, and diabetes.^{3,4}

Being physically inactive **increases the risk of type 2 diabetes**, primarily by inducing **insulin resistance**. Insulin-dependent glucose may be unable to leave the bloodstream and enter fat and muscle cells due to reduced sensitivity to insulin.^{4,5} However, being physically active helps control blood sugar (glucose), weight, and blood pressure and helps raise high-density lipoprotein cholesterol (HDL-C) and reduce low-density lipoprotein cholesterol (LDL-C). Sufficient activity can also help reduce the risk of CVD, CVD death, and nerve damage, all of which are common in people with diabetes.^{1,3}

Getting the recommended amount of physical activity can lower the risk of many cancers, including site-specific cancers such as bladder, breast, colon, endometrial, oesophageal, gastric, and renal cancers.^{1,3}

Did you know?

Globally, 830,000 deaths each year can be attributed to insufficient physical activity.⁴ People who are insufficiently active have a 20% to 30% increased risk of death compared to people who obtain sufficient levels of physical activity.¹

CVD, cardiovascular disease

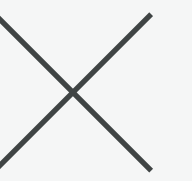
1. World Health Organization (WHO). Physical activity – Fact sheet. Available at: <https://www.who.int/news-room/fact-sheets/detail/physical-activity>. Accessed August 2024.

2. World Health Organization (WHO). Physical activity: Overview. Available at: https://www.who.int/health-topics/physical-activity#tab=tab_1. Accessed August 2024.

3. Centers for Disease Control and Prevention (CDC). Physical Inactivity. Available at: <https://www.cdc.gov/physical-activity/php/about/index.html>. Accessed August 2024.

4. World Health Organization (WHO). Noncommunicable diseases – Fact sheet. Available at: <https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases>. Accessed August 2024.

5. Yaribeygi H et al. *J. Diabetes Res.* 2021;7:7796727.



Unhealthy diet | Modifiable behavioural risks

Unhealthy diets constitute a major global public health and development challenge. People should consider modifying their eating habits, especially the overconsumption of foods and beverages that do not have a healthy nutritional profile. More specifically, excess consumption of sodium, sugars, and unhealthy fats (ie, trans- and saturated-fatty acids), low consumption of whole grains, pulses, vegetables, and fruits.

For example: Excess salt/sodium intake

Overconsumption of sodium contributes significantly to the burden of chronic disease. Unfortunately, nearly all populations worldwide are **exceeding the recommended daily intake** of sodium. In many high-income countries, and increasingly in low- and middle-income countries, most of the sodium consumed comes from **processed foods**.¹

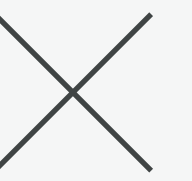
For adults, the WHO recommends less than 2000 mg/day of sodium (equivalent to <5 g/day of salt). This is just under a teaspoon of salt each day. However, the global mean intake of adults is almost double that amount at 4310 mg/day of sodium (equivalent to 10.78 g/day of salt). This is over two teaspoons of salt each day.¹

The primary adverse health outcome related to diets high in sodium is **hypertension** (elevated blood pressure), which, in turn, **increases the risk** of^{1,2}:

- cardiovascular morbidity and mortality
- obesity
- kidney disease
- gastric cancer
- osteoporosis

Did you know?

Globally, an estimated 1.89 million deaths each year are associated with consuming too much sodium.¹



Hypertension | Metabolic risks

Globally, an estimated 1.28 billion adults aged 30-79 years have hypertension, with two-thirds residing in low- and middle-income countries. However, ~46% of those adults are unaware that they have the condition. Less than half (42%) of adults with hypertension are diagnosed and treated, and only 1 in 5 adults (21%) with hypertension have it under control.¹

Hypertension is both a chronic disease and a risk for other chronic diseases. It increases the workload on the heart, leading to structural and functional changes. Sustained hypertension can cause **left ventricular hypertrophy** (thickening of the wall of the ventricle).² It can also lead to **atherosclerosis**, which can result in decreased blood flow to the heart.^{1,3,4} Such structural and functional changes can result in¹⁻³:

- angina (chest pain or discomfort)
- myocardial infarction (heart attack)
- heart failure (heart can't pump enough blood to the organs)
- atrial fibrillation (irregular heartbeat)
- ischaemic stroke (stroke caused by a blocked blood vessel supplying the brain)
- haemorrhagic stroke (stroke caused by a ruptured blood vessel supplying the brain)
- kidney damage, leading to kidney failure if left untreated

The reduction of the prevalence of hypertension by 33% between 2010 and 2030 is a global chronic disease target.¹

Did you know?

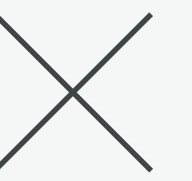
Hypertension (high blood pressure) is a leading cause of premature death worldwide.¹ In fact, it is the leading chronic disease metabolic risk factor globally in terms of attributable deaths, accounting for 19% of all deaths worldwide.⁴

1. World Health Organization (WHO). Hypertension – Fact sheet. Available at: <https://www.who.int/news-room/fact-sheets/detail/hypertension>. Accessed August 2024.

2. Tackling et al. Hypertensive Heart Disease. Available at: <https://www.ncbi.nlm.nih.gov/books/NBK539800/#:~:text=Hypertensive%20heart%20disease%20refers%20to,inducing%20structural%20and%20functional%20changes>. Accessed August 2024.

3. U.S. Department of Health and Human Services. The health consequences of smoking—50 years of progress: A report of the Surgeon General. Available at: https://www.ncbi.nlm.nih.gov/books/NBK179276/pdf/Bookshelf_NBK179276.pdf. Accessed August 2024.

4. World Health Organization (WHO). Noncommunicable diseases – Fact sheet. Available at: <https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases>. Accessed August 2024.



Overweight/obesity | Metabolic risks

The terms overweight and obesity are defined as “abnormal or excessive fat accumulation that may impair health”.¹ For adults, a BMI ≥ 25 kg/m² is considered overweight, and a BMI ≥ 30 kg/m² is considered obese.¹

While obesity is preventable, the global prevalence nearly tripled between 1975 and 2016. Of the 1.9 billion overweight adults in 2016, 650 million of them were obese.¹ Once considered a problem in high-income countries only, overweight and obesity are now dramatically increasing in low- and middle-income countries, especially in urban settings.²

Evidence has shown that overweight and obesity are major risk factors for chronic diseases, with the risk increasing as BMI increases.¹ Compared to adults of a healthy weight, overweight and obese adults are at an increased risk of^{1,3}:

- CVDs, particularly heart disease and stroke – due primarily to an increased risk of **hypertension** and **hyperlipidaemia**
- type 2 diabetes – due primarily to **insulin resistance**
- osteoarthritis
- cancer, including endometrial, breast, ovarian, prostate, liver, gallbladder, kidney, and colon
- breathing problems, such as asthma and sleep apnoea

Some countries, including Canada, Germany, Italy, Portugal, and the United States of America, have recognised obesity as a chronic disease itself.⁴

Did you know?

Over 4 million deaths each year are attributed to overweight and obesity.²

BMI, body mass index

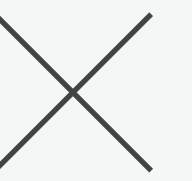
CVDs, cardiovascular diseases

1. World Health Organization (WHO). Obesity and overweight – Fact sheet. Available at: <https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight>. Accessed August 2024.

2. World Health Organization (WHO). Obesity: Overview. Available at: https://www.who.int/health-topics/obesity#tab=tab_1. Accessed August 2024.

3. Centers for Disease Control and Prevention (CDC). Consequences of obesity. Available at: <https://www.cdc.gov/obesity/basics/consequences.html>. Accessed August 2024.

4. Luli M et al. *eClinicalMedicine*. 2023;58:101962.



Hyperglycaemia | Metabolic risks

Hyperglycaemia, also known as high blood glucose or high blood sugar, refers to an elevated level of glucose in the blood (random venous plasma glucose ≥ 11.1 mmol/l [200 mg/dL], fasting plasma glucose ≥ 7.0 mmol/l [126 mg/dL], or two-hour plasma glucose ≥ 11.1 mmol/l [200 mg/dL] two hours after 75g oral glucose tolerance test [OGTT]).¹⁻³

As of 2021, 537 million adults (age 20-79) were living with diabetes (1 in 10). Over 3 in 4 adults with diabetes live in low- and middle-income countries.⁴

Like other metabolic risk factors, diabetes is both a **chronic disease** and a **risk for other chronic diseases**, particularly **CVD**. Prolonged hyperglycaemia can cause serious damage, especially to blood vessels and nerves.¹ Compared to those without diabetes, people with diabetes are **two to four times more likely to develop CVD**. Coronary artery disease, heart failure, and stroke are major causes of death and disability in people with diabetes.² The CVD risk associated with prolonged hyperglycaemia is due to various mechanisms that are linked to **atherosclerosis**^{1,2}:

- insulin resistance
- hyperlipidaemia
- endothelial dysfunction
- abnormal platelet function
- hypertension
- systemic inflammation
- oxidative stress

These mechanisms contribute to diabetes being a major cause of **blindness, chronic kidney disease, peripheral arterial disease (PAD), and lower limb amputation**.^{1,5}

Did you know?

Between 2000 and 2019, the rate of diabetes-related deaths by age increased by 3%. In lower- and middle-income countries, the diabetes mortality rate increased 13%. In 2019, 1.5 million deaths were directly attributable to diabetes, and another 460,000 kidney disease deaths were related to diabetes.¹

CVD, cardiovascular disease

1. World Health Organization (WHO). Diabetes – Fact sheet. Available at: <https://www.who.int/news-room/fact-sheets/detail/diabetes>. Accessed August 2024.

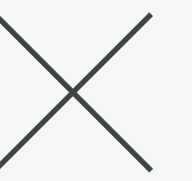
2. Jyotsna FNU et al. *Cureus*. 2023;15:e43882.

3. Diabetes UK. Diagnostic criteria for diabetes. Available at: https://www.diabetes.org.uk/for-professionals/improving-care/clinical-recommendations-for-professionals/diagnosis-ongoing-management-monitoring/new_diagnostic_criteria_for_diabetes. Accessed August 2024.

4. International Diabetes Federation (IDF). IDF diabetes atlas: Diabetes around the world in 2021. Available at: <https://diabetesatlas.org/>. Accessed August 2024.

5. Centers for Disease Control and Prevention (CDC). Diabetes and your heart. Available at: https://www.cdc.gov/diabetes/diabetes-complications/diabetes-and-your-heart.html?CDC_AAref_Val=https://www.cdc.gov/diabetes/library/features/diabetes-and-heart.html. Accessed August 2024.





Hyperlipidaemia | Metabolic risks

Hyperlipidaemia (high levels of fat in the blood) may include one or more of the following^{1,2}:

- increased total cholesterol
- increased low-density lipoprotein cholesterol (LDL-C) (“bad” cholesterol)
- increased non-high-density lipoprotein cholesterol* (non-HDL-C) (“bad” cholesterol)
- increased triglycerides
- decreased high-density lipoprotein cholesterol (HDL-C) (“good” cholesterol)

Globally, about 39% of adults (37% for men and 40% for women) has raised total cholesterol (≥ 5.0 mmol/L or ≥ 90 mg/dL).³

Like other metabolic risk factors, hyperlipidaemia is a **chronic disease** and a **risk factor for other chronic diseases**. If left untreated, elevated blood lipids can lead to **atherosclerosis**. This, in turn, may lead to CVDs (eg, heart disease, stroke, and other vascular diseases).³

In particular, elevated LDL-C is a key contributor to ischaemic stroke and ischaemic heart disease, which are major causes of mortality.²

Did you know?

Deaths attributable to high LDL-C increased from 3.0 million in 1990 to 4.4 million in 2019.²

*Non-HDL-C comprises all parts of “bad” cholesterol, including LDL-C, very-low-density lipoprotein cholesterol (VLDL-C), intermediate-density lipoprotein cholesterol (IDL-C) and lipoprotein (a).⁴

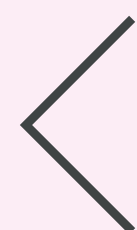
1. World Health Organization (WHO). Noncommunicable diseases – Fact sheet. Available at: <https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases>. Accessed August 2024.

2. Du H et al. *Front Cardiovasc Med.* 2022;9:903126.

3. World Heart Foundation. Improving prevention and control of raised cholesterol: A call to action. Available at: <https://world-heart-federation.org/wp-content/uploads/2021/05/World-Heart-Federation-Cholesterol-White-paper.pdf>. Accessed August 2024.

4. British Heart Foundation. New cholesterol guidelines. Available at: <https://www.bhf.org.uk/informationsupport/heart-matters-magazine/medical/ask-the-experts/new-cholesterol-guidelines>. Accessed August 2024.

Your Role in Chronic Disease Care



Value and impact of pharmacy

Pharmacy is a natural ally in the global fight against chronic diseases, such as chronic kidney disease (CKD), hypertension, heart failure, and COPD.¹

There are multiple touch points within the pharmacy that provide the opportunity for pharmacy team members to impact patient care:



Routine pharmacy services may reveal patient risk factors for chronic disease or existing chronic disease symptoms, making them ideal touchpoints for further patient counselling and referral



Pharmacists can provide initial counselling on what a specific chronic disease is, the risks a patient may have of developing a disease, why it is important to get tested, how they can get screened, and what symptoms to monitor for



COPD, chronic obstructive pulmonary disease

1. International Pharmaceutical Federation (FIP). Cardiovascular diseases: A handbook for pharmacists. Available at: <https://www.fip.org/file/5251>. Accessed August 2024.

Early identification, timely intervention, and primary care referral

According to WHO, detection, screening and treatment are key components of chronic disease management.¹

Although the extent of the involvement of pharmacists in chronic disease care may vary depending on the country in which they practice, community pharmacists are well positioned to deliver many early identification and timely intervention measures and refer to primary care when appropriate.²

Medication management

- Prescription dispensing
- Supporting patients and caregivers to understand how to manage their medication
- Fostering medication adherence in all phases (initiation, implementation, and persistence)
- Instruction on how to properly use medical devices, health related applications, and monitoring systems

Screening

- Point-of-care disease screening
- Advice on frequency of screening
- Referral to primary care for diagnosis and intervention

Monitoring

- Risk factor identification and monitoring
- Symptom identification and monitoring
- Blood pressure monitoring
- Blood glucose monitoring

Counselling

- Over-the-counter (OTC) and non-prescription recommendations
- Advice on healthy lifestyle behaviour and risk factor modification
- Guidance on prevention, early detection, and medication adherence for patients with obesity, blood pressure, or blood glucose values out of the recommended targets
- Disease state education and self-management guidance
- Counselling on when to seek urgent or primary care

1. World Health Organization (WHO). Noncommunicable diseases – Fact sheet. Available at: <https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases>. Accessed August 2024.

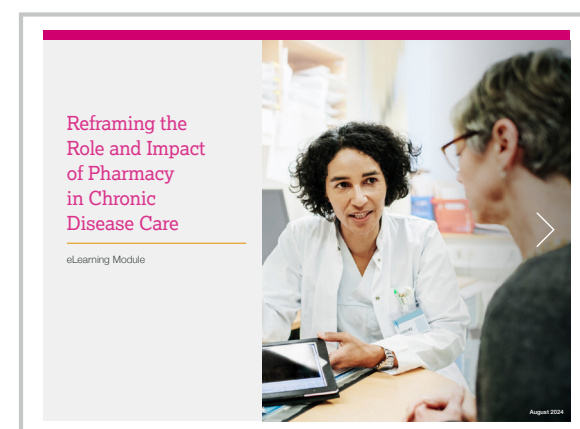
2. International Pharmaceutical Federation (FIP). Beating non-communicable diseases in the community: The contribution of pharmacists. Available at: <https://www.fip.org/files/content/publications/2019/beating-ncds-in-the-community-the-contribution-of-pharmacists.pdf>. Accessed August 2024.

Chronic Disease Service Framework

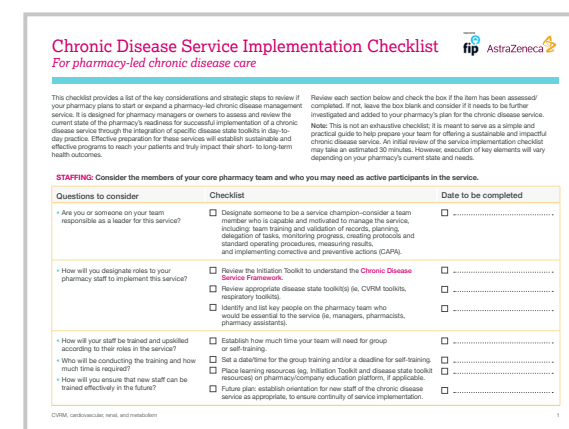


Components of the Chronic Disease Service Framework

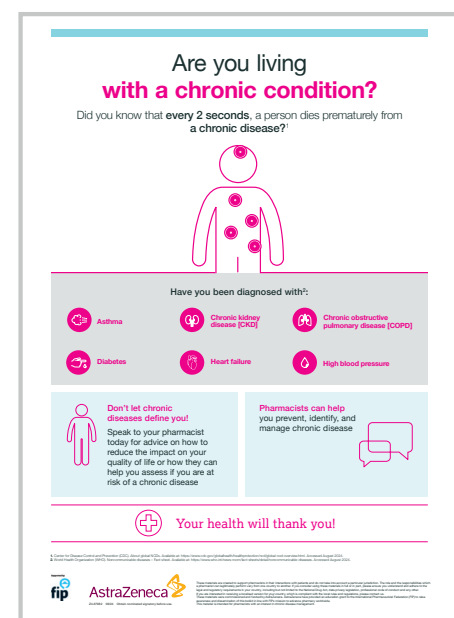
Chronic Disease Service Initiation Toolkit



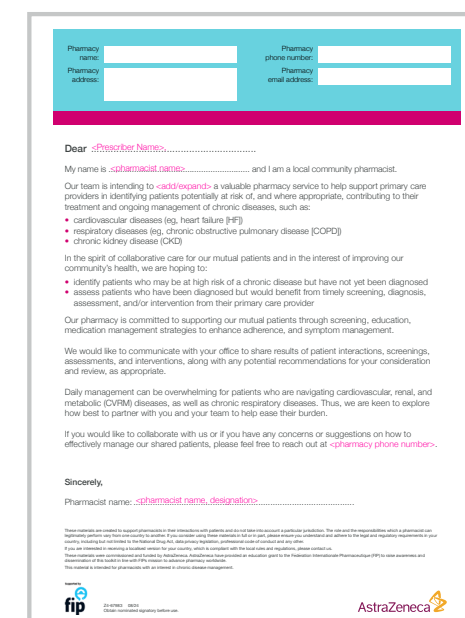
Service Framework eLearning Module



Service Implementation Checklist



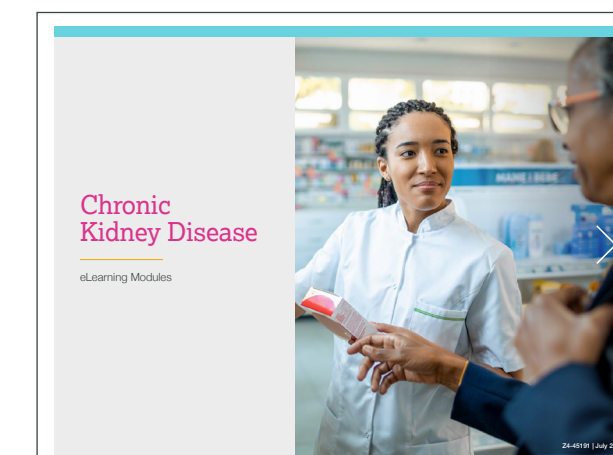
Service Promotion Poster



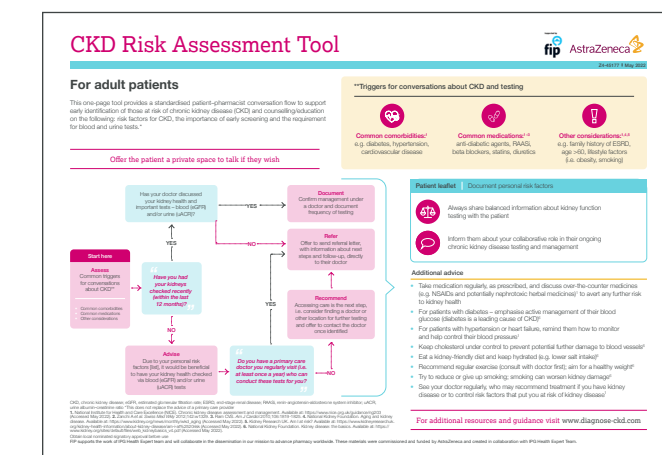
Prescriber Service Promotion Letter

Designed to facilitate starting, expanding, promoting, and/or integrating a chronic disease pharmacy-based service

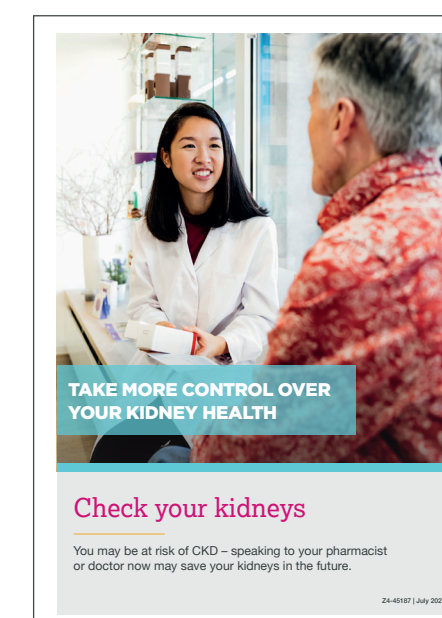
Chronic Disease State Pharmacy Toolkits



Disease State eLearning Module



Disease State Assessment Tool



Patient Information Leaflet



Primary Care Referral Letter

Designed to support, streamline, and enhance pharmacy-led early identification of chronic disease and timely intervention and management

The CKD Pharmacy Toolkit will be used as an example of a Chronic Disease State Pharmacy Toolkit throughout the remainder of this eLearning Module.

Service framework objectives

Objectives of the Chronic Disease Service Framework for pharmacists and team members are to:



Provide a foundational education to pharmacists and pharmacy team members in chronic disease and specific chronic disease states



Equip and upskill the team to employ the practice-based resources at point-of-care and to deliver effective counselling to patients about chronic disease, their risks, how to get screened, and how to effectively manage their disease



Identify patients that would benefit from pharmacist-led interventions focused on one or more of the following: earlier identification of at-risk patients, medication management, patient adherence, patient counselling and education, and symptom monitoring



Communicate and collaborate with primary care providers to facilitate and/or support chronic disease management

All resources are **developed by pharmacists for pharmacists** to support chronic disease screening, monitoring, and management and to deliver motivational counselling to empower those who would benefit from pharmacist-led interventions. Resources are designed for **ease of use and seamless integration** into existing pharmacy services, aiming to minimise the burden on workload and workflow.



Benefits and outcomes

It is important to establish a structured, streamlined pathway for patients with chronic disease to be identified, referred for additional screening, diagnosed, treated, and managed throughout the disease journey. This will have numerous beneficial effects to both your pharmacy and the wider community.

As the role of the pharmacist continues to evolve from the supply of pharmaceutical products to the provision of services and information, the need for practice-based tools will increase.¹

Benefits and outcomes of effective integration of the Chronic Disease Service Framework:



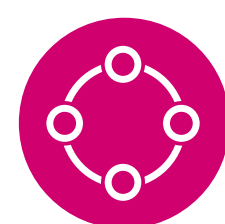
Improving outcomes for your patients

Effective screening, identification, and intervention of patients with chronic disease can result in more patients being diagnosed and treated. Early identification and timely intervention can slow the progression of a disease and reduce the risk of complications. The role you will play in the management of chronic diseases could have a significant impact on patients' future health outcomes and quality of life.



Supporting the growth of your pharmacy

Chronic disease services can be a valuable addition to your current offerings and can encourage utilisation of other services, such as blood glucose or blood pressure monitoring. By expanding your service offerings and building strong community relationships, you can gain competitive differentiation and grow your business to better serve your patients, which may be reflected in patient loyalty. Integration of sustainable services into workflow can support your clinical and revenue goals.



Strengthening connections within your local community

Building trusting and long-lasting relationships in your community is key. Ongoing patient support for those at risk of or diagnosed with a chronic disease is best provided in a familiar and local setting. In addition, you can strengthen your relationship with local primary care services through collaboration and patient referrals, creating more opportunities to work together to achieve shared goals of patient care.

1. International Pharmaceutical Federation (FIP). Beating non-communicable diseases in the community: The contribution of pharmacists. Available at: <https://www.fip.org/files/content/publications/2019/beating-ncds-in-the-community-the-contribution-of-pharmacists.pdf>. Accessed August 2024.

Enhancing pharmacy-based services

The service framework, including the launch pad and the disease-specific toolkits, is designed for ease of use and seamless integration into your existing pharmacy services, without any additional burden on workload and workflow.

All materials have been developed for use by members of the pharmacy team, including qualified pharmacists and pharmacy assistants as appropriate.

Full implementation of the service framework will create counselling opportunities at key points of contact with patients and enhance existing services.

The Chronic Disease Service Framework is designed to enhance existing pharmacy-based services.

The Chronic Disease Service Framework can be integrated into, including but not limited to, the following:



Dispensing and counselling



Chronic disease diagnostic testing (eg, blood pressure and blood glucose monitoring)



Medication reviews



Well-being and lifestyle services



Medication management and adherence



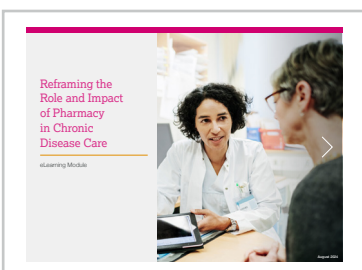
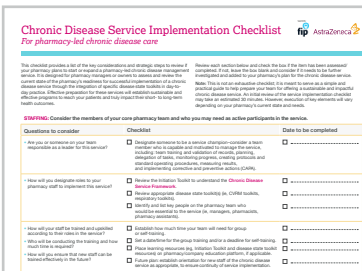
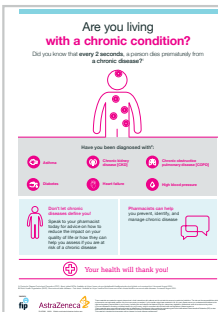
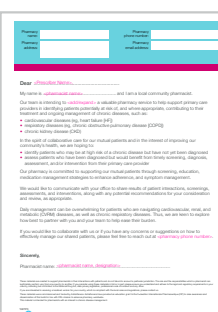
Vaccinations



Service Initiation Toolkit resources

The Service Initiation Toolkit consists of four elements that facilitate the establishment or expansion of a pharmacy-based chronic disease service.

Table 1 | Chronic Disease Service Initiation Toolkit resources

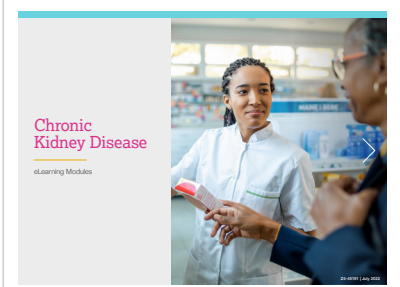
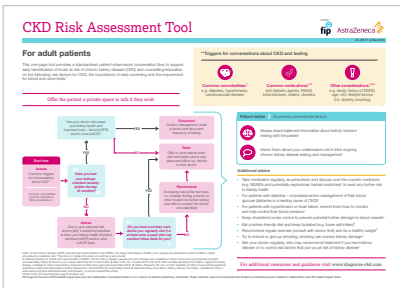
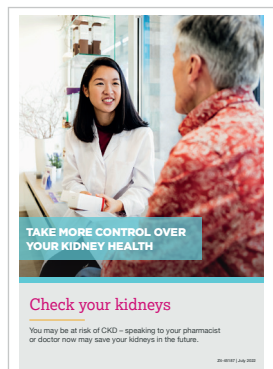
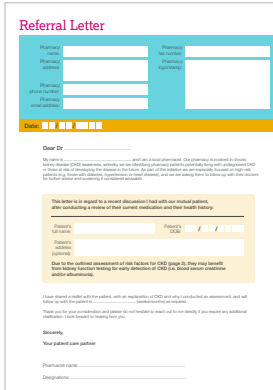
Resource	Description	Purpose
 eLearning Module	PowerPoint presentation that introduces the Initiation Toolkit and Disease-Specific Pharmacy Toolkit elements and describes how to integrate those elements into everyday pharmacy practice	Designed to highlight the accessibility and value of pharmacists in chronic disease management; Establishes why a standardised, streamlined approach to chronic disease can maximise patient interactions
 Service Implementation Checklist	Print-on-demand and easy-to-use checklist for a pharmacy decision maker that provides a summary of components to consider when deciding to start or expand a chronic disease service and/or explains how to effectively integrate the service into day-to-day workflow	Designed to provide pharmacy managers and owners with a self-evaluation tool in preparation for starting or expanding a chronic disease service effectively; Provides an easy-to-use guide that helps set the team up for success
 Service Promotion Poster	Print-on-demand poster that informs patients to initiate a conversation with the pharmacist or pharmacy team member about their chronic disease risk and/or current chronic disease	Designed to enable the pharmacy to take advantage of in-store marketing by informing all customers and patients who visit the pharmacy about the value of chronic disease services delivered by their trusted pharmacist
 Prescriber Service Promotion Letter	Print-on-demand letter personally addressed and sent to a local prescriber(s) from the pharmacy team outlining pharmacy-based chronic disease services and how partnership can enhance community health	Designed to foster collaboration with prescribers in the local market and to set expectations with respect to pharmacy-based chronic disease services



Disease State Pharmacy Toolkit resources

Each of the four Disease State Pharmacy Toolkit resources are developed to facilitate pharmacist-led chronic disease care and to assist pharmacists to deliver motivational counselling to empower those who would benefit from such care.

Table 2 | Chronic Disease State Pharmacy Toolkit resources

Resource	Description	Purpose
 <p>Disease State eLearning Module</p>	PowerPoint presentation for pharmacists and pharmacy team members that provides foundational knowledge about a specific chronic disease using a case-based approach	Designed to enhance the pharmacist's knowledge on a specific chronic disease state (guidelines, screening, treatment, etc) and the pharmacist's role in helping patients achieve better health outcomes
 <p>Disease State Assessment Tool</p>	Conversation-based tool to be used by pharmacists and pharmacy team members (where appropriate) to support counselling patients on the risk of the chronic disease being discussed, how to be screened, and/or how to manage the disease	Designed to streamline the patient engagement experience so the chronic disease service/interaction can be easily integrated into everyday pharmacy practice; it also reinforces pharmacist behaviour and habituates their role as interventionists in chronic disease management
 <p>Patient Information Leaflet</p>	Handout to be shared by a pharmacist or pharmacy team member with the patient that can be used to summarise the pharmacist-patient interaction and provide supplemental information	Designed to allow the pharmacist to confidently counsel the patient whilst trusting that pertinent disease state and/or management information will not be lost and to allow the patient to review information as needed at their convenience
 <p>Primary Care Referral Letter</p>	Personalised letter to be sent by pharmacists or pharmacy team members (where appropriate) to the patient's primary care physician that explains why the pharmacy is reaching out and how to partner to support the patient	Designed to simplify the documentation and referral process so the pharmacist can quickly capture relevant information and recommendation(s) to support further assessment of the patient and to help build a collaborative relationship



Service framework implementation tips

Implementation tips for effective integration of the Chronic Disease Service Framework include:

- 1 Don't be overwhelmed.** You can use a team-based, stepwise approach to integrating the service framework into your pharmacy practice.
- 2 Do use the service framework to enhance effectiveness and efficiency.** You can use the service framework to streamline, structure, and enhance the quality of the moments spent with patients. You can aim to add these resources into your practice with minimal impact on workload and workflow (not on top of your practice) to make those moments matter.
- 3 Don't feel obligated to use all of the resources.** You can use the resources provided in the service framework alone or in combination in a manner that best suits your pharmacy practice.
- 4 Don't stress about the administrative burden.** The service framework is designed to minimise administrative tasks and simplify the launch of a new chronic disease service or expansion of an existing chronic disease service.
- 5 Do use other resources to aid implementation.** The International Pharmaceutical Federation (FIP) has many valuable practice-specific and disease-specific resources (<https://ncd.fip.org/>) that can support the initiation and/or expansion of a chronic disease service.



FIP + Chronic Disease Service Framework support across the service delivery journey

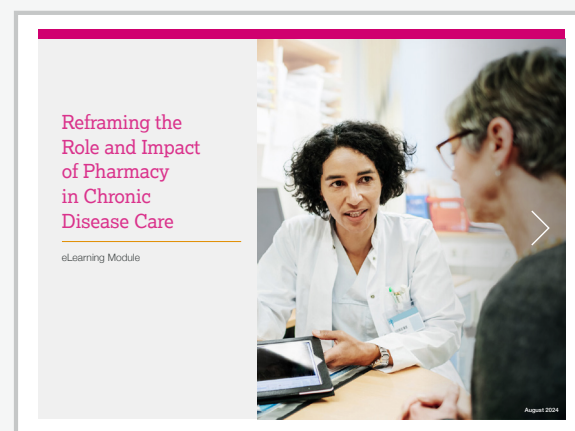


Chronic Disease Service Initiation Toolkit

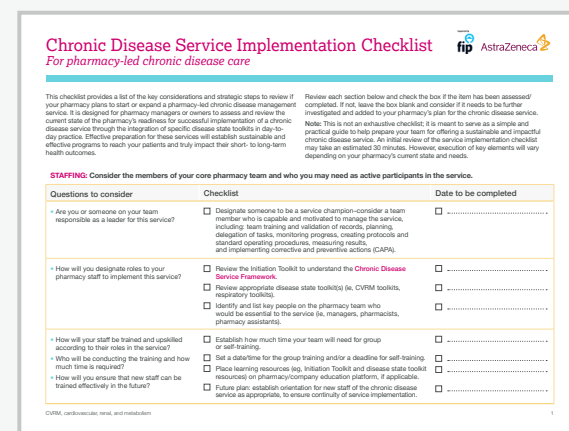


Chronic Disease Service Framework

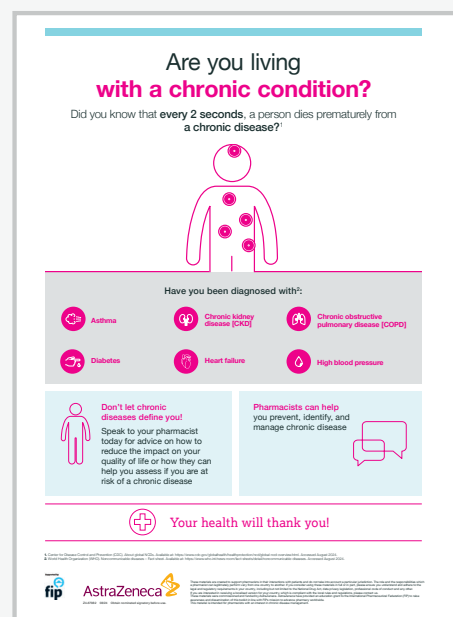
Chronic Disease Service Initiation Toolkit



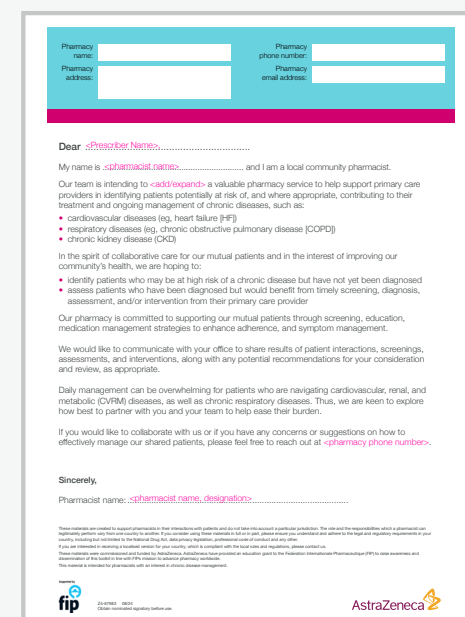
Service Framework eLearning Module



Service Implementation Checklist

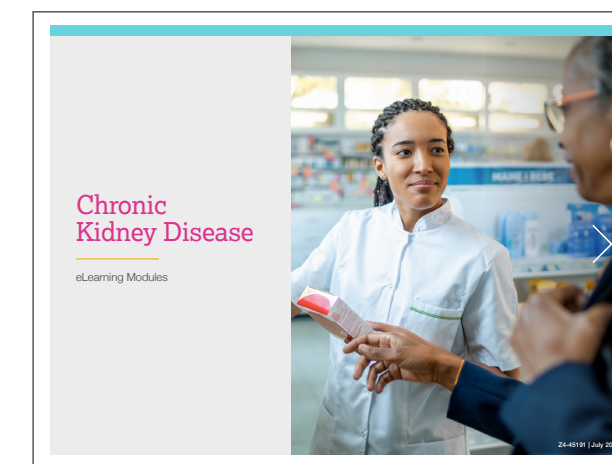


Service Promotion Poster

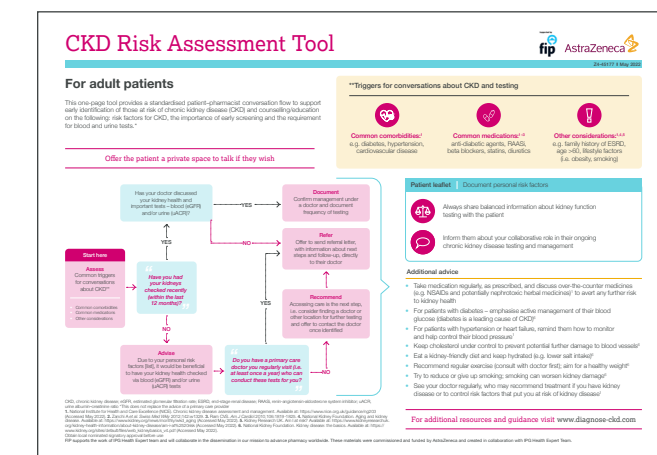


Prescriber Service Promotion Letter

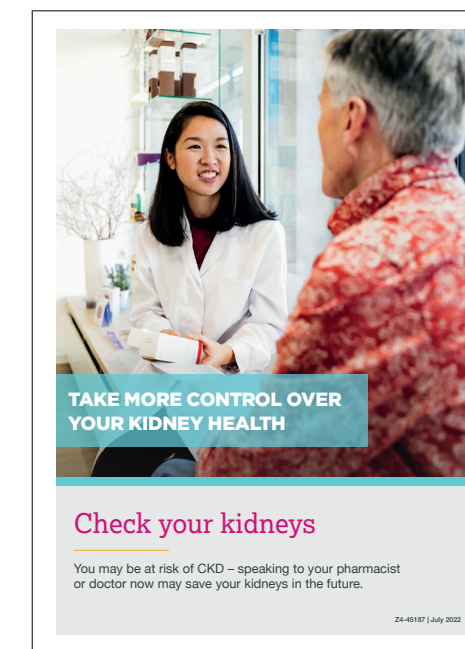
Chronic Disease State Pharmacy Toolkits



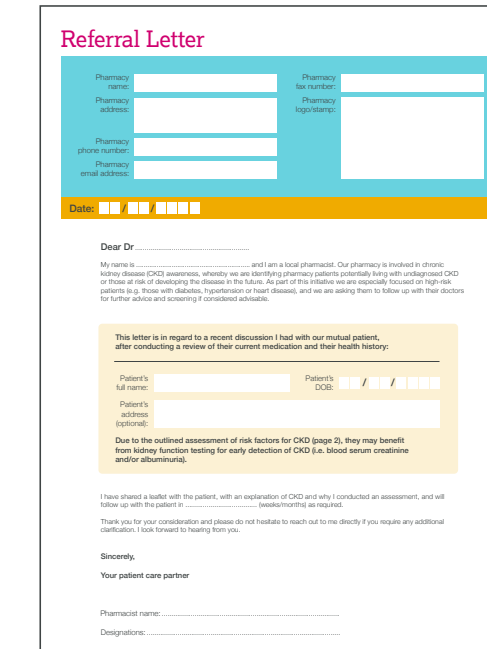
Disease State eLearning Module



Disease State Assessment Tool



Patient Information Leaflet

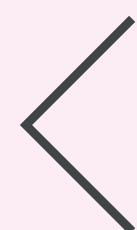


Primary Care Referral Letter

The resources in the Chronic Disease Service Framework can be **used alone** or **in combination** to support the initiation, expansion and/or delivery of pharmacy-based chronic disease services.



Case Study 1



01 Meet World Health Pharmacy

World Health Pharmacy would like to implement a structured chronic disease service.

- World Health Pharmacy is an established community pharmacy focused on delivering patient-centred care
- The pharmacy currently offers vaccine services in addition to its routine dispensing and patient counselling services
- The pharmacy team recognises a need for a chronic disease service based on their current patient demographics and the number of disease-related questions they receive
- However, the team are worried that they do not have the time or resources to implement a new service

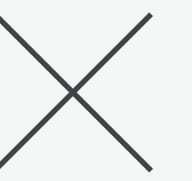
Where should the World Health Pharmacy team start?

ACT NOW



01

ACT NOW



Does this situation sound familiar? Do you work in a pharmacy where your patients could benefit from a chronic disease service, but you are already feeling time poor and do not wish to add to your team's workload?

Like World Health Pharmacy, many pharmacies are already engaging in chronic disease management services, such as promotion of healthier lifestyles, support of patient medication adherence and safety, and patient and caregiver engagement and empowerment through education.¹ However, these services may not be consistently delivered due to time constraints and lack of structured delivery.

This is your opportunity to offer structured, streamlined and integrated chronic disease services that enhance the pharmacist-chronic disease patient interaction. The **Chronic Disease Service Initiation Toolkit** is a great place to start!



How to Use the Service Initiation Toolkit



Using the Service Implementation Checklist

The **Service Implementation Checklist** can be utilised when deciding whether to start or expand a pharmacy-based chronic disease service.

The checklist provides pharmacists and pharmacy teams with a list of the key considerations and strategic steps to review if they wish to implement and operationalise a new service. While it is not an exhaustive list, the checklist can serve as a starting point for you and your team to adequately prepare for a chronic disease service.


The checklist empowers pharmacy teams to evaluate the current state of various areas within the pharmacy, including:

- Staff
- Physical space
- Technology / tools
- Operations / workflow
- Sustainability
- Demand / promotion
- Collaboration / referral

Complete the checklist. Carefully review each section and check off the box if it is an item that already exists.

If not, leave the box blank and consider how it can be acquired or developed and incorporated into the pharmacy's plan for the service.

ACT NOW +

Chronic Disease Service Implementation Checklist 
For pharmacy-led chronic disease care

This checklist provides a list of the key considerations and strategic steps to review if your pharmacy plans to start or expand a pharmacy-led chronic disease management service. It is designed for pharmacy managers or owners to assess and review the current state of the pharmacy's readiness for successful implementation of a chronic disease service through the integration of specific disease state toolkits in day-to-day practice. Effective preparation for these services will establish sustainable and effective programs to reach your patients and truly impact their short- to long-term health outcomes.

Review each section below and check the box if the item has been assessed/ completed. If not, leave the box blank and consider if it needs to be further investigated and added to your pharmacy's plan for the chronic disease service.

Note: This is not an exhaustive checklist; it is meant to serve as a simple and practical guide to help prepare your team for offering a sustainable and impactful chronic disease service. An initial review of the service implementation checklist may take an estimated 30 minutes. However, execution of key elements will vary depending on your pharmacy's current state and needs.

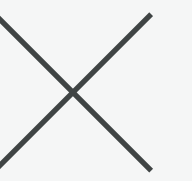
STAFFING: Consider the members of your core pharmacy team and who you may need as active participants in the service.

Questions to consider	Checklist	Date to be completed
• Are you or someone on your team responsible as a leader for this service?	<input type="checkbox"/> Designate someone to be a service champion—consider a team member who is capable and motivated to manage the service, including: team training and validation of records, planning, delegation of tasks, monitoring progress, creating protocols and standard operating procedures, measuring results, and implementing corrective and preventive actions (CAPA).	<input type="checkbox"/>
• How will you designate roles to your pharmacy staff to implement this service?	<input type="checkbox"/> Review the Initiation Toolkit to understand the Chronic Disease Service Framework . <input type="checkbox"/> Review appropriate disease state toolkit(s) (ie, CVRM toolkits, respiratory toolkits). <input type="checkbox"/> Identify and list key people on the pharmacy team who would be essential to the service (ie, managers, pharmacists, pharmacy assistants).	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
• How will your staff be trained and upskilled according to their roles in the service?	<input type="checkbox"/> Establish how much time your team will need for group or self-training.	<input type="checkbox"/>
• Who will be conducting the training and how much time is required?	<input type="checkbox"/> Set a date/time for the group training and/or a deadline for self-training.	<input type="checkbox"/>
• How will you ensure that new staff can be trained effectively in the future?	<input type="checkbox"/> Place learning resources (eg, Initiation Toolkit and disease state toolkit resources) on pharmacy/company education platform, if applicable. <input type="checkbox"/> Future plan: establish orientation for new staff of the chronic disease service as appropriate, to ensure continuity of service implementation.	<input type="checkbox"/> <input type="checkbox"/>

CVRM, cardiovascular, renal, and metabolism

1





ACT NOW

Complete the **Service Implementation Checklist** in consultation with your pharmacy team. It may need to be reviewed several times if some items originally do not exist.

Ask team members for possible solutions for procurement or development if a checklist item is not yet in place at your pharmacy.



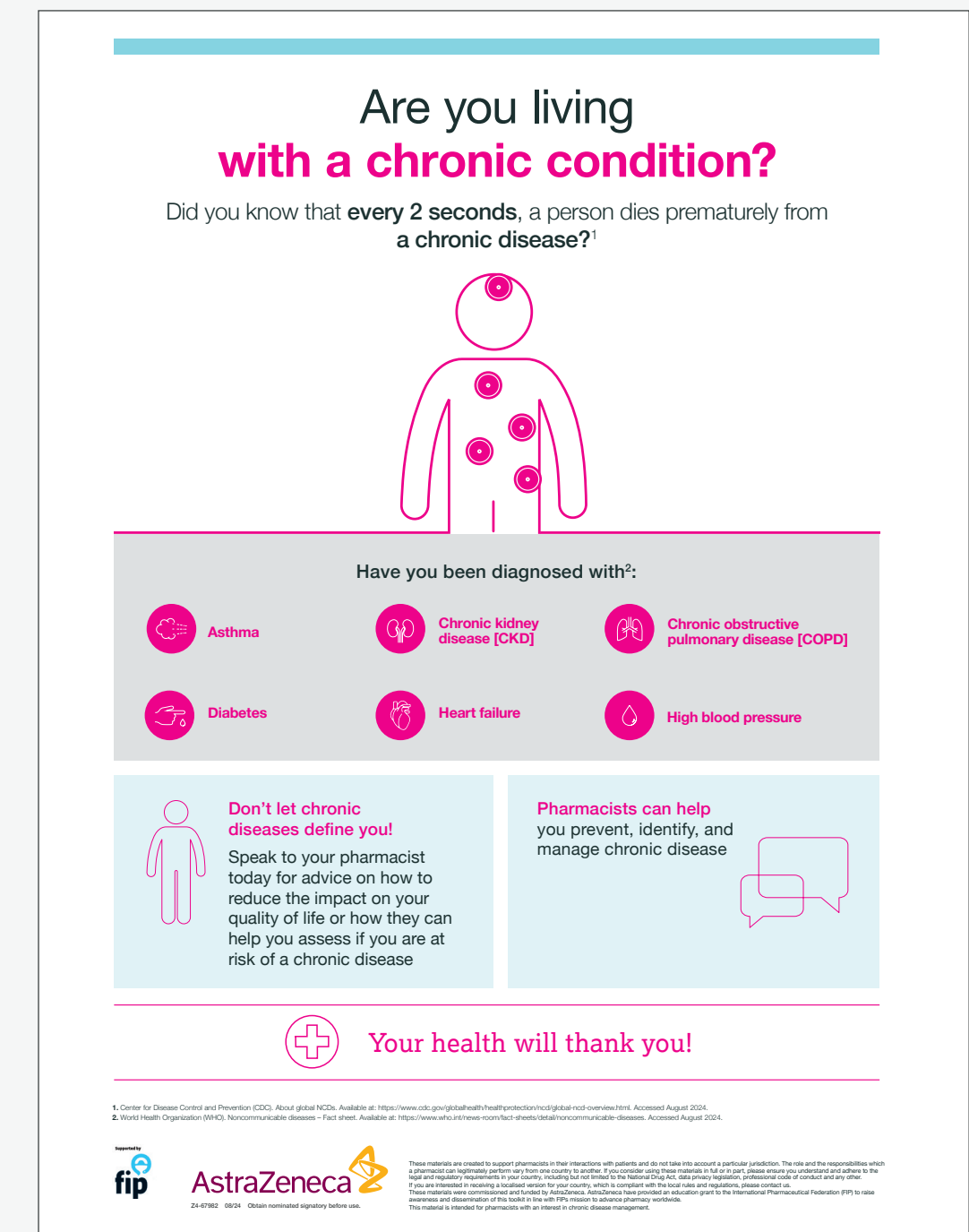
Using the Service Promotion Poster

The **Service Promotion Poster** can be used by pharmacies (like World Health Pharmacy) to prompt patients to initiate a conversation with the pharmacist or pharmacy team member about their chronic disease risk and/or current chronic disease.

The poster is aimed at anyone who visits the pharmacy.

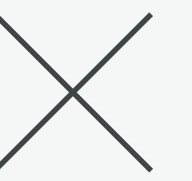
The poster's call to action encourages those who feel they may be at risk, who would just like to know more, or who have a chronic disease to speak to their pharmacist or a member of the pharmacy team without delay.

Place the poster at eye level around the pharmacy where the public can see it.



ACT NOW +





ACT NOW

Place the **Service Promotion Poster** near or in the areas of the pharmacy where patients will already be interacting with counter pharmacy staff to provide greater impact, including:

- above where medicines are dispensed
- in waiting areas
- in consultation / counselling rooms



Using the Prescriber Service Promotion Letter

The **Prescriber Service Promotion Letter** can be used by pharmacies (like World Health Pharmacy) to:

- inform local prescribers (physicians, nurse practitioners, physician assistants, etc) about the value of pharmacy-based chronic disease services that can support and augment current prescriber-directed interventions
- promote collaboration and partnership between the pharmacist, patient, and prescriber(s)

Setting expectations with prescribers in the local market is an essential step in fostering collaboration in the chronic disease pharmacy service. It is important that local prescribers understand that pharmacy chronic disease services are intended to enhance chronic disease management of mutual patients and not meant to replace essential services provided by primary care.

The print-on-demand promotion letter can help set expectations. It can also help prompt a conversation on how to establish an alliance between the pharmacy and prescriber teams to care for their mutual patients.

The promotion letter can be personalised with the pharmacy's contact information and can be sent to prescribers via email, post, or fax.

ACT NOW +

Pharmacy name:	<input type="text"/>	Pharmacy phone number:	<input type="text"/>
Pharmacy address:	<input type="text"/>	Pharmacy email address:	<input type="text"/>

Dear <prescriber name>.....

My name is <pharmacist name>..... and I am a local community pharmacist.

Our team is intending to <add/expand> a valuable pharmacy service to help support primary care providers in identifying patients potentially at risk of, and where appropriate, contributing to their treatment and ongoing management of chronic diseases, such as:

- cardiovascular diseases (eg, heart failure [HF])
- respiratory diseases (eg, chronic obstructive pulmonary disease [COPD])
- chronic kidney disease (CKD)

In the spirit of collaborative care for our mutual patients and in the interest of improving our community's health, we are hoping to:

- identify patients who may be at high risk of a chronic disease but have not yet been diagnosed
- assess patients who have been diagnosed but would benefit from timely screening, diagnosis, assessment, and/or intervention from their primary care provider

Our pharmacy is committed to supporting our mutual patients through screening, education, medication management strategies to enhance adherence, and symptom management.

We would like to communicate with your office to share results of patient interactions, screenings, assessments, and interventions, along with any potential recommendations for your consideration and review, as appropriate.

Daily management can be overwhelming for patients who are navigating cardiovascular, renal, and metabolic (OVRM) diseases, as well as chronic respiratory diseases. Thus, we are keen to explore how best to partner with you and your team to help ease their burden.

If you would like to collaborate with us or if you have any concerns or suggestions on how to effectively manage our shared patients, please feel free to reach out at <pharmacy phone number>.

Sincerely,

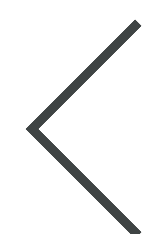
Pharmacist name: <pharmacist name, designation>.....

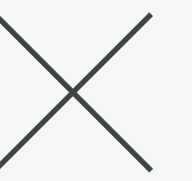
These materials are created to support pharmacists in their interactions with patients and do not take into account a particular jurisdiction. The role and the responsibilities which a pharmacist can legally perform vary from one country to another. If you consider using these materials in your country, please ensure you understand and adhere to the legal and regulatory requirements in your country, including but not limited to the national drug law, state pharmacy regulation, professional code of conduct and any other.

These materials were commissioned and funded by AstraZeneca. AstraZeneca has provided an education grant to the Fédération Internationale Pharmaciens (FIP) to raise awareness and dissemination of this booklet in the with FIP's response to chronic disease management.

Member of
fip 24-67585 - 08/24
Obtenir votre matériel réglementaire avant utilisation.

AstraZeneca





ACT NOW

Providing local prescribers with the **Prescriber Service Promotion Letter** detailing the pharmacy's chronic disease service can help to clearly define the objective of the service and the role of the pharmacy team, which, in turn, can minimise misconceptions and misperceptions.

It is hoped that local prescribers who are aware of the chronic disease service and its potential positive impact on health outcomes may begin to refer their chronic disease patients to the pharmacy.



Revisit Case Study 1



01 Revisiting World Health Pharmacy

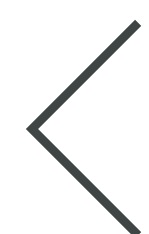
After completing the **Service Implementation Checklist** together, the pharmacy team determined that they actually did have the time and resources to offer a sustainable and impactful chronic disease service.

With help from the **Chronic Disease Service Framework**, the team would focus on maximising their time spent with patients, rather than adding time to patient interactions.

The team decided to establish a structured CKD service first, given the number of diabetes and hypertensive patients the pharmacy served. They would focus on early identification of those at risk of CKD and those who may be unaware they have the disease.

The **Service Initiation Toolkit** provided resources they could use to promote the new service to their patients and prescribers.

The **CKD Pharmacy Toolkit** provided resources to aid patient assessment and counselling once the service began. The **CKD eLearning Module**, which was part of the pharmacy toolkit, helped the team to be ready and up-to-date with the current disease landscape.



01 Revisiting World Health Pharmacy (cont'd)

The pharmacists and other team members did not anticipate issues with respect to staffing or the physical space to run the CKD service:

- The staff pharmacist was excited to be the service champion and manage the service
- The pharmacy had a small room that could be used when private patient consultations were needed

During subsequent meetings, the team explored ways the chronic disease service could be self-sustaining or even generate revenue, given there would be no direct government or third-party insurance reimbursement for the service:

- ✓ Potential increased revenue if patients were more adherent to their medications and there was less waste
- ✓ Reimbursement of services that could be combined with the chronic disease service (eg, vaccinations, medication therapy management, patient out-of-pocket service fees)
- ✓ Enhanced customer loyalty leading to repeat visits
- ✓ Improved utilisation of existing services, such as vaccinations



Chronic Disease State Pharmacy Toolkits

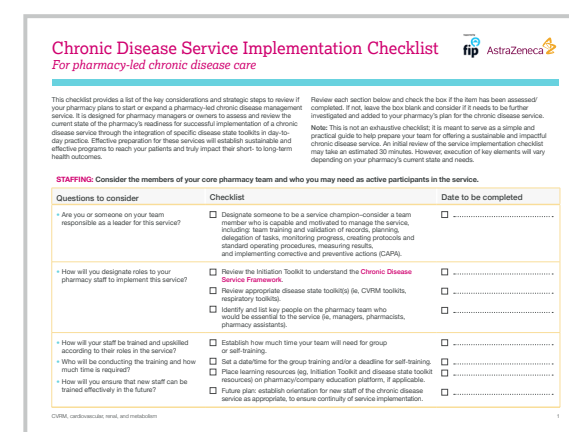


Chronic Disease Service Framework

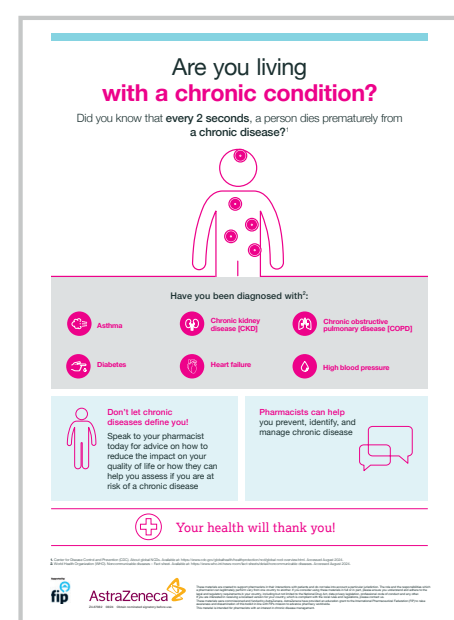
Chronic Disease Service Initiation Toolkit



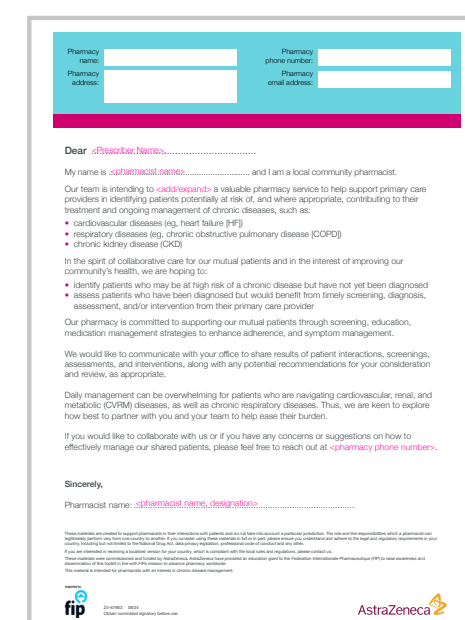
Service Framework eLearning Module



Service Implementation Checklist

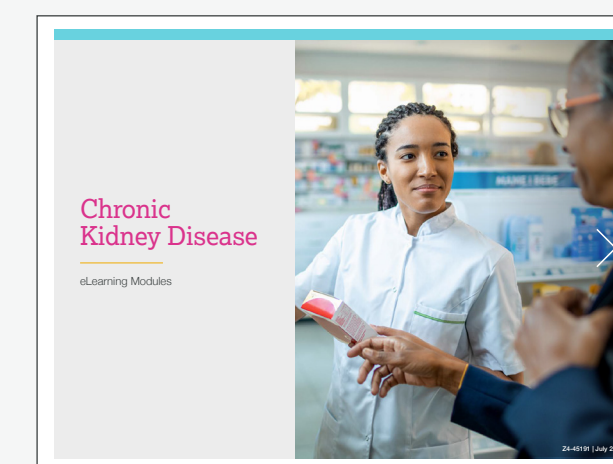


Service Promotion Poster

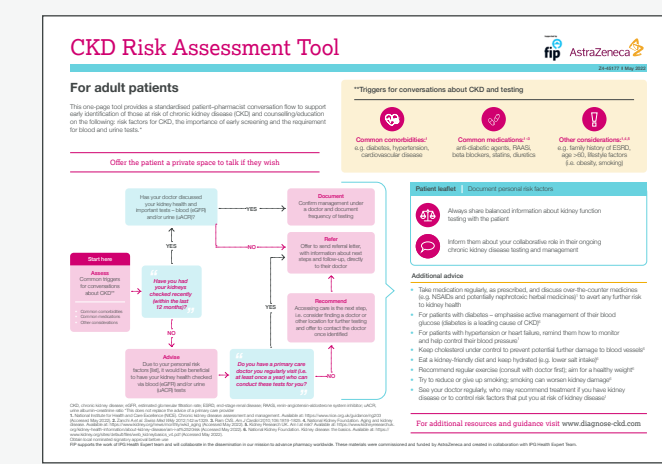


Prescriber Service Promotion Letter

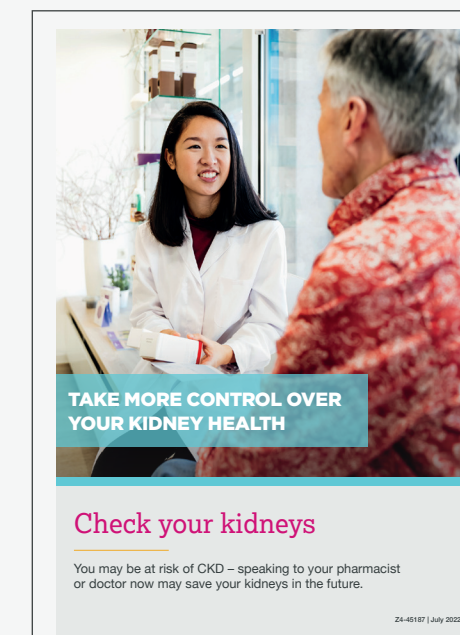
Chronic Disease State Pharmacy Toolkits



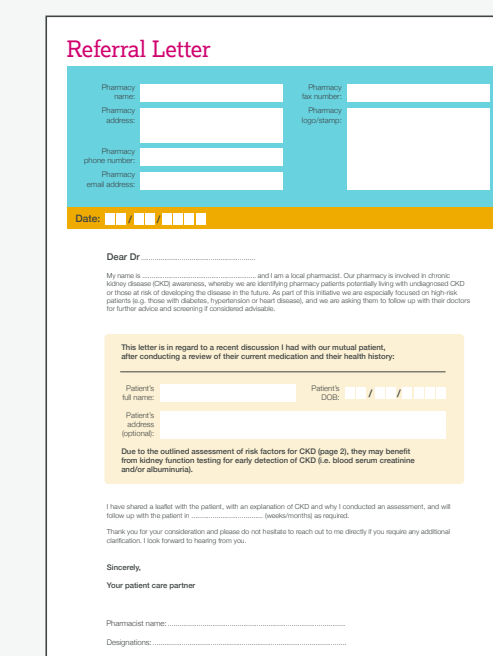
Disease State eLearning Module



Disease State Assessment Tool



Patient Information Leaflet



Primary Care Referral Letter

The resources in the Chronic Disease Service Framework can be **used alone** or **in combination** to support the initiation, expansion and/or delivery of pharmacy-based chronic disease services.



Caring for chronic disease patients in the pharmacy

What steps can pharmacists and their teams take every day to identify and care for chronic patients? They can recognise and identify patients, start a conversation and motivate patients to take action, and collaborate with primary care.

STEP 1

Recognise and Identify

Positively impacting a specific chronic disease patient starts with accurate identification and driving earlier diagnosis and timely treatment.

Detection requires a good understanding of the specific disease, its risk factors, and the current international and/or local guidelines.

Increasing public awareness at point of care can help trigger conversations with the pharmacy team.

STEP 2

Start a Conversation and Take Action

Motivating patients to take action involves a continuous and conscious effort by the entire pharmacy team.

Using effective counselling techniques and an integrated plan can help streamline engagement with patients, from initiation through to the monitoring phase of the journey.

STEP 3

Collaborate with Primary Care

Communicating and collaborating with primary care can optimise care for patients at risk of chronic disease.

Effectively and efficiently documenting an assessment and key recommendations can help build a strong collaborative care partnership and promote a seamless experience for at-risk patients.

Chronic Disease-Specific Pharmacy Toolkits can help structure and formalise this process!

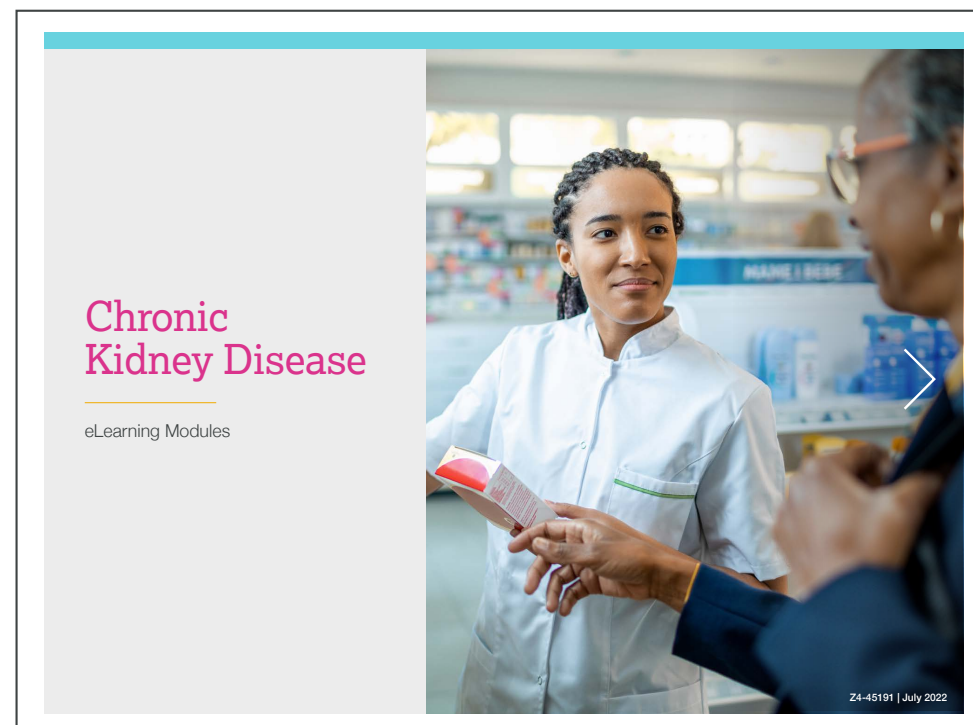


Use of the Disease State Pharmacy Toolkit resources in the care journey

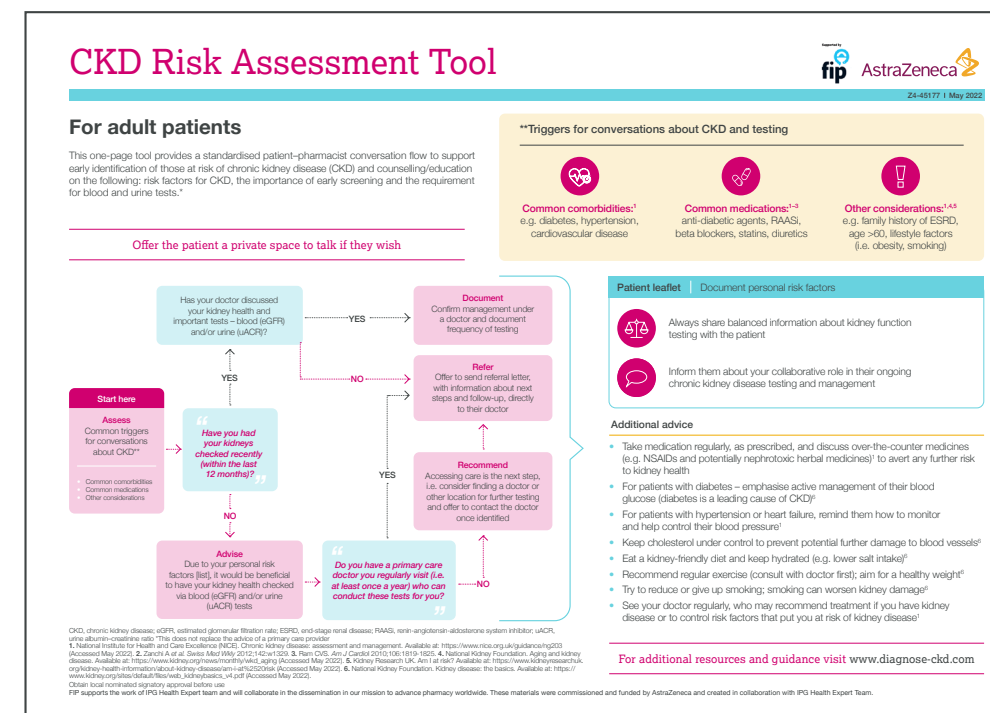
STEP 1
Recognise and Identify

STEP 2
Start a Conversation and Take Action

STEP 3
Collaborate with Primary Care



Disease State eLearning Module



Disease State Assessment Tool



Patient Information Leaflet

Referral Letter

Pharmacy name: _____ Pharmacy tax number: _____
 Pharmacy address: _____ Pharmacy telephone: _____
 Pharmacy phone number: _____ Pharmacy postcode: _____
 Pharmacy email address: _____

Date: [] / [] / []

Dear Dr _____

My name is _____ and I am a local pharmacist. Our pharmacy is involved in chronic kidney disease (CKD) awareness, whereby we are identifying pharmacy patients potentially living with undiagnosed CKD or those at risk of developing the disease in the future. The aim of this letter is to help you to identify patients at risk of CKD, with a view to identifying them early and offering them support and advice to help them to manage their condition.

This letter is in regard to a recent discussion I had with your mutual patient, after conducting a review of their current medication and their health history:

Patient's full name: _____ Patient's DOB: [] / [] / []
 Patient's address (postcode): _____

Due to the outlined assessment of risk factors for CKD (page 2), they may benefit from kidney function testing for early detection of CKD (i.e. blood serum creatinine and/or albumin).

I have shared a leaflet with the patient, with an explanation of CKD and why I conducted an assessment, and will follow up with the patient in _____ (weeks/months) as required.

Thank you for your consideration and please do not hesitate to reach out to me directly if you require any additional clarification. I look forward to hearing from you.

Sincerely,
 Your patient care partner

Pharmacist name: _____
 Designation: _____

Primary Care Referral Letter

Case Study 2



02 Meet Anushka

Let's review how to integrate a disease-specific pharmacy tool into pharmacy practice using chronic kidney disease (CKD) as an example

Anushka is 61 years old

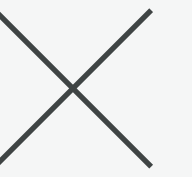
- Anushka has been living with hypertension for the past 15 years, and her hypertension has only been under control for the past few years
- Anushka was diagnosed with type 2 diabetes nearly 6 years ago
- She occasionally uses over-the-counter (OTC) medication to manage her headaches
- She is overweight but does not smoke
- She recently started to mention that her feet are often swollen, making her shoes too tight

ACT NOW



02

ACT NOW



Are you comfortable identifying patients at risk of CKD and referring them for screening, diagnosis, and early intervention? What about other chronic diseases? Are you comfortable taking an active role in chronic disease care?

Utilising the chronic disease-specific pharmacy toolkit can help you recognise moments where you can engage with patients; assess their current understanding of comorbidities that can negatively impact their health; provide them with valuable information on risk factors, symptoms, screening, and treatment; and support them in their care journey.



How to Use the Disease State Pharmacy Toolkits



STEP 1

Recognise and Identify

Complete the module to support risk identification

The **eLearning Module** is an interactive programme designed for self-study to help pharmacists and pharmacy team members better recognise and identify patients who may possess risk factors for a specific chronic disease or progression of that disease (eg, CKD, heart failure, COPD, hypertension).

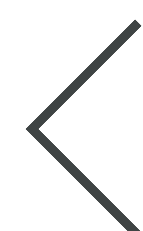
The module is designed to provide foundational knowledge about the disease to support pharmacy intervention, including patient education, screening, symptom monitoring, and medication optimisation.

The eLearning Module has been created with a focus on community pharmacy practice. Case studies have been included to help with the understanding and relevance to daily practice, as well as tables and figures for quick access and easy reference. There are also learning quizzes at the end of each module to test understanding and application of knowledge.

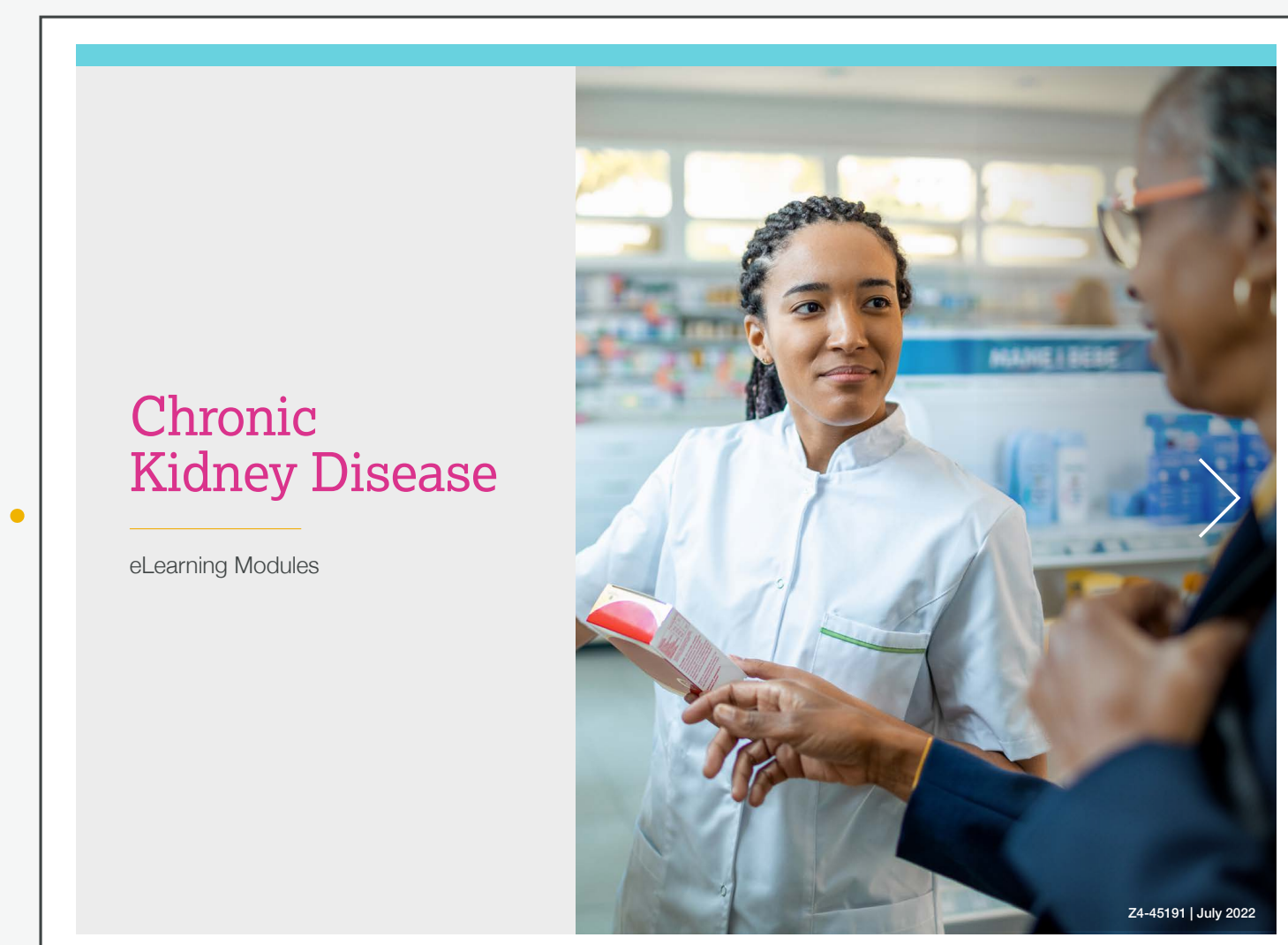
Consider completing the module before implementing the pharmacy toolkit. The module will take around 60 minutes to complete. It is divided into various subsections. You can progress through the content at your own pace.

Each **eLearning Module** is customised to a specific disease state.

ACT NOW +

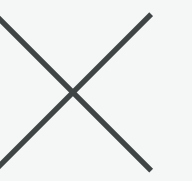


CKD, chronic kidney disease
COPD, chronic obstructive pulmonary disease



STEP 1

Recognise and Identify



ACT NOW

The module has been developed to support continuing professional education.

When appropriate, use the module as evidence of professional development.



STEP 2

Start a Conversation and Take Action

Use the tool to start a conversation and motivate patients to take action

Identifying those who may be at risk of or have a chronic disease, such as CKD, involves assessing risk factors, identifying disease symptoms, or identifying conditions that may develop as a result of the disease. Using a guided assessment tool designed to be integrated within a typical pharmacy workflow can help streamline the process.

CKD Risk Assessment Tool

For adult patients

This one-page tool provides a standardised patient-pharmacist conversation flow to support early identification of those at risk of chronic kidney disease (CKD) and counselling/education on the following: risk factors for CKD, the importance of early screening and the requirement for blood and urine tests.*

****Triggers for conversations about CKD and testing**

- Common comorbidities:**¹ e.g. diabetes, hypertension, cardiovascular disease
- Common medications:**¹⁻³ anti-diabetic agents, RAASi, beta blockers, statins, diuretics
- Other considerations:**^{1,4,5} e.g. family history of ESRD, age >60, lifestyle factors (i.e. obesity, smoking)

Offer the patient a private space to talk if they wish

Start here

Assess Common triggers for conversations about CKD**

- Common comorbidities
- Common medications
- Other considerations

Has your doctor discussed your kidney health and important tests – blood (eGFR) and/or urine (uACR)?

YES → **Document** Confirm management under a doctor and document frequency of testing

NO → **Refer** Offer to send referral letter, with information about next steps and follow-up, directly to their doctor

“Have you had your kidneys checked recently (within the last 12 months)?”

NO → **Advise** Due to your personal risk factors (list), it would be beneficial to have your kidney health checked via blood (eGFR) and/or urine (uACR) tests

YES → **Recommend** Accessing care is the next step, i.e. consider finding a doctor or other location for further testing and offer to contact the doctor once identified

“Do you have a primary care doctor you regularly visit (i.e. at least once a year) who can conduct these tests for you?”

NO → **Refer**

Patient leaflet | Document personal risk factors

- Always share balanced information about kidney function testing with the patient
- Inform them about your collaborative role in their ongoing chronic kidney disease testing and management

Additional advice

- Take medication regularly, as prescribed, and discuss over-the-counter medicines (e.g. NSAIDs and potentially nephrotoxic herbal medicines)¹ to avert any further risk to kidney health
- For patients with diabetes – emphasise active management of their blood glucose (diabetes is a leading cause of CKD)⁶
- For patients with hypertension or heart failure, remind them how to monitor and help control their blood pressure¹
- Keep cholesterol under control to prevent potential further damage to blood vessels⁶
- Eat a kidney-friendly diet and keep hydrated (e.g. lower salt intake)⁶
- Recommend regular exercise (consult with doctor first); aim for a healthy weight⁶
- Try to reduce or give up smoking; smoking can worsen kidney damage⁶
- See your doctor regularly, who may recommend treatment if you have kidney disease or to control risk factors that put you at risk of kidney disease⁶

For additional resources and guidance visit www.diagnose-ckd.com

CKD, chronic kidney disease; eGFR, estimated glomerular filtration rate; ESRD, end-stage renal disease; RAASi, renin-angiotensin-aldosterone system inhibitor; uACR, urine albumin-creatinine ratio. *This does not replace the advice of a primary care provider.
1. National Institute for Health and Care Excellence (NICE). Chronic kidney disease: assessment and management. Available at: <https://www.nice.org.uk/guidance/ng203> (Accessed May 2022). 2. Zandri A et al. *Swiss Med Wkly* 2012;142:w1529. 3. Ram CVS. *Am J Cardiol* 2010;105:1819-1825. 4. National Kidney Foundation. Aging and kidney disease. Available at: https://www.kidney.org/news/monthly/wkd_aging (Accessed May 2022). 5. Kidney Research UK. Am I at risk? Available at: <https://www.kidneyresearchuk.org/kidney-health-information/about-kidney-disease/am-i-at-risk?2520risk> (Accessed May 2022). 6. National Kidney Foundation. Kidney disease: the basics. Available at: https://www.kidney.org/sites/default/files/web_kidneybasics_v4.pdf (Accessed May 2022).
Obtain local nominated signatory approval before use.
FIP supports the work of IPG Health Expert team and will collaborate in the dissemination in our mission to advance pharmacy worldwide. These materials were commissioned and funded by AstraZeneca and created in collaboration with IPG Health Expert Team.

The **Assessment Tool** has been developed to be used by pharmacists and pharmacy team members to support patient counselling about the risk of a disease, the condition itself, how patients can be screened, and/or how the disease can be managed.

The assessment tool is set out as a flow diagram of a standardised conversation with a patient, including question prompts and education reminders.

The assessment tool is designed as a conversation and counselling guide. It is not meant to replace individualised patient care and appropriate recommendations from a healthcare professional.

Each **Assessment Tool** is customised to a specific disease state.

Look for conversation triggers

The assessment tool starts with looking for common triggers to initiate a patient conversation.

What risk factors, disease symptoms, or conditions related to a particular chronic disease have you identified that suggest a discussion is needed? Are there comorbidities, medications, symptoms, or other considerations that may place your patient at risk of the disease, suggest the patient should be screened for the disease, or indicate treatment may need modification?

Risk factors, symptoms, and disease-related conditions can often be identified through routine pharmacy services.

Routine pharmacy services that may highlight risk factors, symptoms, or disease-related conditions include:

- Medicine dispensing
- Medication reviews
- Patient counselling
- Blood pressure checks

Start here

Assess
Common triggers for conversations about CKD**

- Common comorbidities
- Common medications
- Other considerations

CKD Risk Assessment Tool

For adult patients

This one-page tool provides a standardised patient-pharmacist conversation flow to support early identification of those at risk of chronic kidney disease (CKD) and counselling/education on the following: risk factors for CKD, the importance of early screening and the requirement for blood and urine tests.¹

****Triggers for conversations about CKD and testing**

- Common comorbidities:^{1,2}** e.g. diabetes, hypertension, cardiovascular disease
- Common medications:^{1,3}** anti-diabetic agents, RAASi, beta blockers, statins, diuretics
- Other considerations:^{1,4,5}** e.g. family history of ESRD, age >60, lifestyle factors (i.e. obesity, smoking)

Offer the patient a private space to talk if they wish

Start here
Assess Common triggers for conversations about CKD**

1. Have you had your kidneys checked recently (within the last 12 months)?^{1,2}

2. Do you have a primary care doctor you regularly visit (i.e. at least once a year) who can conduct these tests for you?^{1,2}

Document
Confirm management under a doctor and document frequency of testing

Refer
Offer to send referral letter, with information about next steps and follow-up, directly to their doctor

Recommend
Accessing care is the next step, i.e. consider finding a doctor or other location for further testing and offer to contact the doctor once identified

Advise
Due to your personal risk factors (B), it would be beneficial to have your kidney health checked via blood (eGFR) and/or urine (uACR) tests

Additional advice

- Take medication regularly, as prescribed, and discuss over-the-counter medicines (e.g. NSAIDs and potentially nephrotoxic herbal medicines)¹ to avert any further risk to kidney health
- For patients with diabetes – emphasise active management of their blood glucose (diabetes is a leading cause of CKD)¹
- For patients with hypertension or heart failure, remind them how to monitor and help control their blood pressure¹
- Keep cholesterol under control to prevent potential further damage to blood vessels¹
- Eat a kidney-friendly diet and keep hydrated (e.g. lower salt intake)¹
- Recommend regular exercise (consult with doctor first); aim for a healthy weight¹
- Try to reduce or give up smoking; smoking can worsen kidney damage¹
- See your doctor regularly, who may recommend treatment if you have kidney disease or to control risk factors that put you at risk of kidney disease¹

For additional resources and guidance visit www.diagnose-ckd.com

STEP 2b

Start a Conversation and Take Action

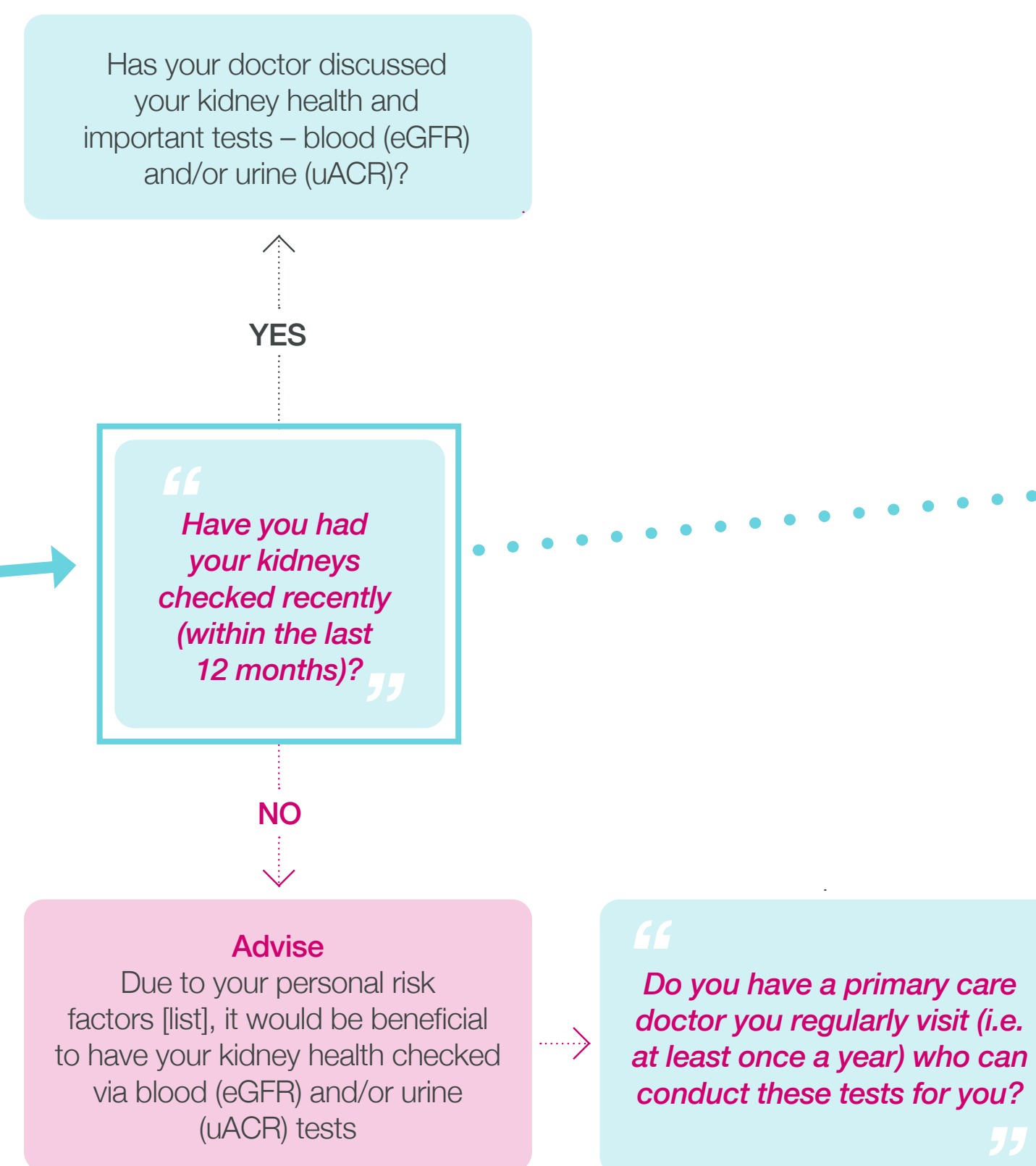
Start a conversation

After confirming if risk factors, symptoms, or conditions that may develop as a result of the disease are present, it's important that you initiate a conversation.

A simple question can be used to help determine whether your patient has recently been tested, understands their risk of developing the disease, or has already been diagnosed. A simple question could also confirm if their symptoms have changed.

In the case of CKD, you can ask this simple question to open a discussion on the patient's risks and, ultimately, the importance of early screening and early intervention.

The opening question will vary depending on the disease.



ACT NOW +

CKD Risk Assessment Tool

For adult patients

This one-page tool provides a standardized patient-pharmacist conversation flow to support early identification of those at risk of chronic kidney disease (CKD) and counseling/education on the following: risk factors for CKD, the importance of early screening and the requirement for blood and urine tests.

****Triggers for conversations about CKD and testing**

- Common comorbidities:**¹ e.g. diabetes, hypertension, cardiovascular disease
- Common medications:**²⁻³ anti-diabetic agents, RAAS, beta blockers, statins, diuretics
- Other considerations:**^{1,4,5} e.g. family history of ESRD, age >60, lifestyle factors (i.e. obesity, smoking)

Offer the patient a private space to talk if they wish

Start here

Assess Common triggers for conversations about CKD:¹
Common comorbidities
Common medications
Other considerations

Have you had your kidneys checked recently (within the last 12 months)?

YES

Document
Confirm management under a doctor and document frequency of testing

NO

Refer
Offer to send referral letter, with information about next steps and follow-up, directly to their doctor

Advise
Due to your personal risk factors [list], it would be beneficial to have your kidney health checked via blood (eGFR) and/or urine (uACR) tests

Do you have a primary care doctor you regularly visit (i.e. at least once a year) who can conduct these tests for you?

YES

Recommend
Accessing care is the next step, i.e. consider finding a doctor or other location for further testing and offer to contact the doctor once identified

NO

Patient leaflet | Document personal risk factors

- Always share balanced information about kidney function testing with the patient
- Inform them about your collaborative role in their ongoing chronic kidney disease testing and management

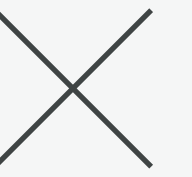
Additional advice

- Take medication regularly, as prescribed, and discuss over-the-counter medicines (e.g. NSAIDs and potentially nephrotoxic herbal medicines) to avert any further risk to kidney health
- For patients with diabetes – emphasis on active management of their blood glucose (diabetes is a leading cause of CKD)
- For patients with hypertension or heart failure, remind them how to monitor and help control their blood pressure!
- Keep cholesterol under control to prevent potential further damage to blood vessels!
- Eat a kidney-friendly diet and keep hydrated (e.g. lower salt intake)
- Recommend regular exercise (consult with doctor first); aim for a healthy weight!
- Try to reduce or give up smoking; smoking can worsen kidney damage!
- See your doctor regularly, who may recommend treatment if you have kidney disease or to control risk factors that put you at risk of kidney disease!

For additional resources and guidance visit www.diagnose-ckd.com

CKD: chronic kidney disease; eGFR: estimated glomerular filtration rate; ESRD: end-stage renal disease; RAAS: renin-angiotensin-aldosterone system inhibitor; uACR: urine albumin-creatinine ratio. This does not replace the advice of a primary care provider.
1. National Institute for Health and Care Excellence (NICE). Chronic kidney disease: assessment and management. Available at: <https://www.nice.org.uk/guidance/ng208> (Accessed May 2022). 2. Zaveri AT, et al. Blood Mod May 2012; 12(5): 202-210. 3. Berra CB, et al. Clin Kidney J 2015; 8(1): 10-18. 4. National Kidney Foundation. Signs and symptoms of kidney disease. Available at: <https://www.kidney.org/newsroom/signs-and-symptoms-of-kidney-disease> (Accessed May 2022). 5. Kidney Research UK. All in All. Available at: <https://www.kidneyresearchuk.org/all-in-all> (Accessed May 2022). 6. National Kidney Foundation. Kidney disease: the basics. Available at: <https://www.kidney.org/newsroom/kidney-disease-the-basics> (Accessed May 2022).
Diagnose tool not intended for patient approval before use.
FIP supports the work of IPG Health Expert team and collaborates in the dissemination in our mission to advance pharmacy worldwide. These materials were commissioned and funded by AstraZeneca and created in collaboration with IPG Health Expert Team.

CKD, chronic kidney disease
eGFR, estimated glomerular filtration rate
uACR, urine albumin-creatinine ratio

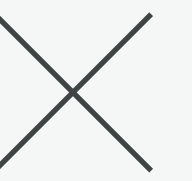


ACT NOW

Opportunities for the pharmacist to initiate a chronic disease conversation may include:

- Patient visits the pharmacy to pick up a prescription or a refill for a chronic disease (eg, diabetes, hypertension) **[medication management]**
- Patient requests a glucose measurement or a review of their at-home results **[chronic disease screening or monitoring]**
- Patient requests a blood pressure measurement **[chronic disease screening or monitoring]**
- Patient visits for a medication review **[counselling / pharmacy service]**





ACT NOW

Providing an information leaflet can help to reinforce the valuable information you shared about the chronic disease. The leaflet can also help summarise the risk assessment that you conducted.

(More information is to come on best practices to personalise the patient information leaflet.)



STEP 2d

Start a Conversation and Take Action

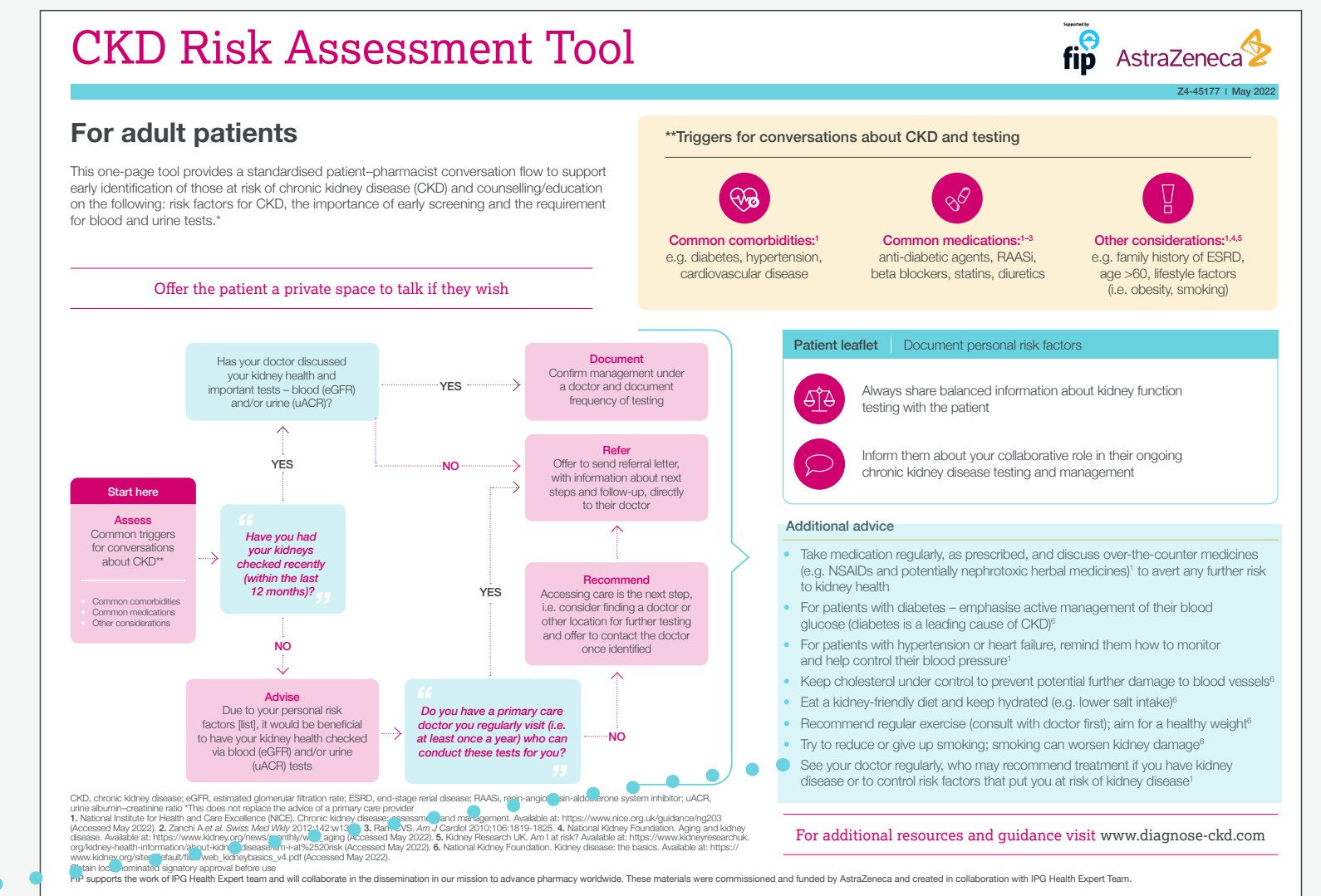
Provide holistic advice over multiple visits

Provide the personalised educational leaflet along with holistic advice to the patient while they are waiting for their next steps.

Your assessment and conversation will likely involve a significant amount of education and require communicating many key recommendations. It may be best to provide advice to the patient over multiple visits or schedule an appointment if possible.

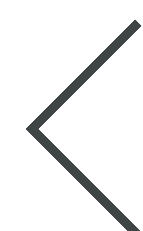
Additional advice

- Take medication regularly, as prescribed, and discuss over-the-counter medicines (e.g. NSAIDs and potentially nephrotoxic herbal medicines)¹ to avert any further risk to kidney health
- For patients with diabetes – emphasise active management of their blood glucose (diabetes is a leading cause of CKD)⁶
- For patients with hypertension or heart failure, remind them how to monitor and help control their blood pressure¹
- Keep cholesterol under control to prevent potential further damage to blood vessels⁶
- Eat a kidney-friendly diet and keep hydrated (e.g. lower salt intake)⁶
- Recommend regular exercise (consult with doctor first); aim for a healthy weight⁶
- Try to reduce or give up smoking; smoking can worsen kidney damage⁶
- See your doctor regularly, who may recommend treatment if you have kidney disease or to control risk factors that put you at risk of kidney disease¹



Familiarise yourself with the tool's conversation flow. It does not need to be used during counselling but can be referred to as required.

ACT NOW +





ACT NOW

Keep any additional advice simple and actionable.

Consider spreading out your recommendations over several visits or upon each refill if necessary.

Document the conversation.

Note: It is advisable to consider your local data protection laws and confidentiality regulations before you share and/or document personal information.

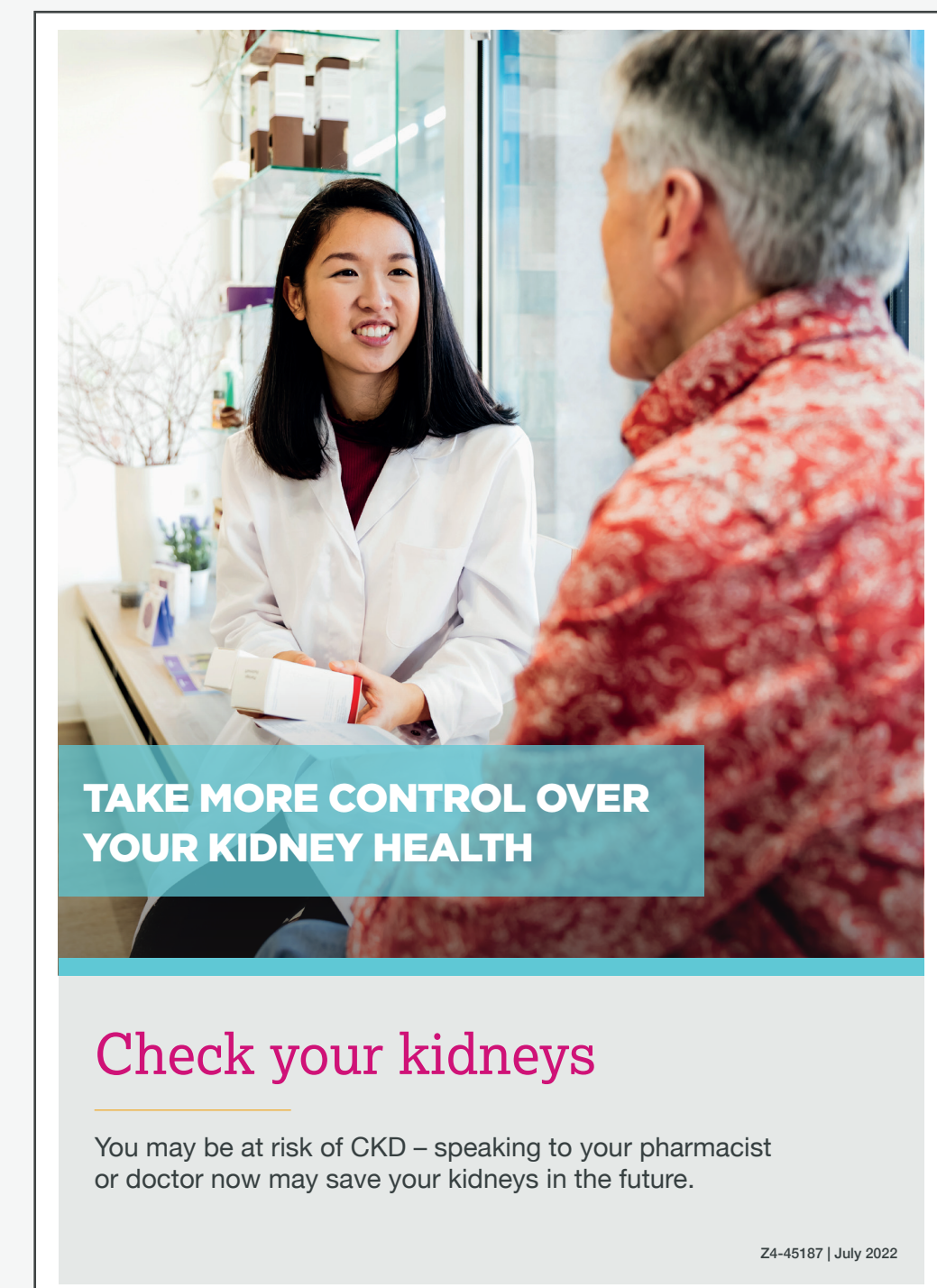


Summarise the visit using the Patient Information Leaflet

To ensure your patient receives the most benefit from the chronic disease risk assessment and counselling, provide the patient with the completed **Patient Information Leaflet**.

- Briefly explain what the chronic disease is and how, if left untreated, there can be serious complications in the future
- Why they are at risk and to what degree
- Why it's important to be tested if they are at risk, and what is involved in testing
- The next steps to keeping healthy (in the case of CKD, keeping their kidneys healthy)

Each **Patient Information Leaflet** is customised to a specific disease state.



Share the Patient Information Leaflet with the patient

Depending on the disease, summarise why the patient has been provided with the leaflet:

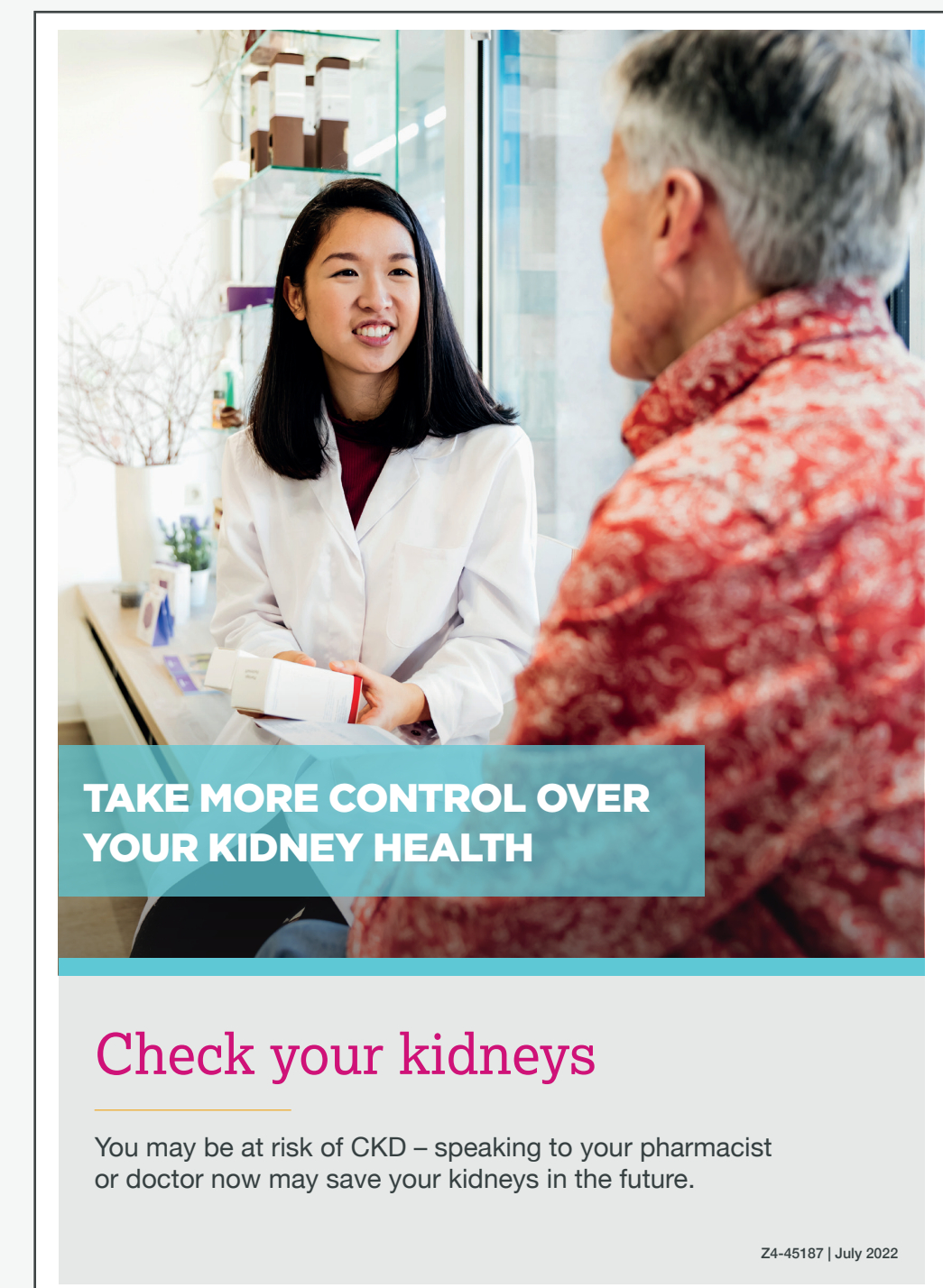
- They have been identified as being at risk and would benefit from screening (eg, CKD Patient Information Leaflet)
- They have been identified as potentially benefiting from pharmacist-led interventions focused on medication management, adherence, counselling, and symptom monitoring (eg, Heart Failure Patient Information Leaflet)

The Patient Information Leaflet should be filled out by the pharmacist or pharmacy team member who interacted with the patient.

Check off applicable boxes and add any additional details (eg, a blood pressure reading) in the notes section. Then sign and date the document.

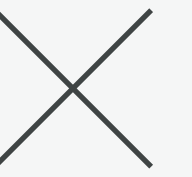
Share the leaflet with your patient during counselling as a visual aid to the conversation or provide following the counselling, as either a summary of the interaction or to provide additional information.

ACT NOW +



STEP 2f

Start a Conversation and Take Action



ACT NOW

Encourage the patient to share the leaflet with their primary care provider.

Suggest a timeframe in which you will follow up with them.



Document your assessment and key recommendations

As a pharmacist, communicating and collaborating with other primary care providers can be one of the most important steps in optimising chronic disease care.

Effectively and efficiently documenting your assessment and key recommendations can help build a strong collaborative care partnership and promote a seamless experience for your patients.

The **Primary Care Referral Letter** is a customisable PDF document that simplifies documentation and the referral process.

It provides a brief outline of the assessment and a summary of the patient's medications in relation to the chronic disease in question.

The referral letter explains why your pharmacy is reaching out and possible ways to partner to support the patient.

Note: It is advisable to consider your local data protection laws and confidentiality regulations before you share and/or document personal information.



Referral Letter

Pharmacy name:	Pharmacy fax number:
Pharmacy address:	Pharmacy logo/stamp:
Pharmacy phone number:	
Pharmacy email address:	

Date: / /

Dear Dr.

My name is and I am a local pharmacist. Our pharmacy is involved in chronic kidney disease (CKD) awareness, whereby we are identifying pharmacy patients potentially living with undiagnosed CKD or those at risk of developing the disease in the future. As part of this initiative we are especially focused on high-risk patients (e.g. those with diabetes, hypertension or heart disease), and we are asking them to follow up with their doctors for further advice and screening if considered advisable.

This letter is in regard to a recent discussion I had with our mutual patient, after conducting a review of their current medication and their health history:

Patient's full name:	Patient's DOB: <input type="text"/> / <input type="text"/> / <input type="text"/>
Patient's address (optional):	

Due to the outlined assessment of risk factors for CKD (page 2), they may benefit from kidney function testing for early detection of CKD (i.e. blood serum creatinine and/or albuminuria).

I have shared a leaflet with the patient, with an explanation of CKD and why I conducted an assessment, and will follow up with the patient in (weeks/months) as required.

Thank you for your consideration and please do not hesitate to reach out to me directly if you require any additional clarification. I look forward to hearing from you.

Sincerely,
Your patient care partner

Pharmacist name:
Designators:

Each **Primary Care Referral Letter** is customised to a specific disease state.



STEP 3b

Collaborate with Primary Care

Share the Referral Letter with the primary care professional

Complete page 1 of the referral letter to provide a summary of important points for the primary care professional.

Complete the remaining pages to summarise the results of your standardised patient assessment that was conducted, including risk factors, available testing results, and medications. (Sections included in the referral letter are dependent on the chronic disease). Fill in the tables accordingly. There is also space available on the final page for your comments.

Personalise the referral letter for your patient. Send the letter to the primary care professional via email or print, sign, and send (eg, by post or via fax).

Did you know?

Studies have shown that adherence to medication regimens after hospital discharge is a major concern, but the establishment of collaborative care with primary care providers increases patients' adherence after discharge.¹

ACT NOW +

Referral Letter

Pharmacy name:	Pharmacy fax number:
Pharmacy address:	Pharmacy logo/stamp:
Pharmacy phone number:	
Pharmacy email address:	

Date: / /

Dear Dr.....

My name is and I am a local pharmacist. Our pharmacy is involved in chronic kidney disease (CKD) awareness, whereby we are identifying pharmacy patients potentially living with undiagnosed CKD or those at risk of developing the disease in the future. As part of this initiative we are especially focused on high-risk patients (e.g. those with diabetes, hypertension or heart disease), and we are asking them to follow up with their doctors for further advice and screening if considered advisable.

This letter is in regard to a recent discussion I had with our mutual patient, after conducting a review of their current medication and their health history:

Patient's full name: Patient's DOB: / /
Patient's address (optional):

Due to the outlined assessment of risk factors for CKD (page 2), they may benefit from kidney function testing for early detection of CKD (i.e. blood serum creatinine and/or albuminuria).

I have shared a leaflet with the patient, with an explanation of CKD and why I conducted an assessment, and will follow up with the patient in (weeks/months) as required.

Thank you for your consideration and please do not hesitate to reach out to me directly if you require any additional clarification. I look forward to hearing from you.

Sincerely,

Your patient care partner

Pharmacist name:

Designations:

1. International Pharmaceutical Federation (FIP). Beating non-communicable diseases in the community: The contribution of pharmacists. Available at: <https://www.fip.org/files/content/publications/2019/beating-ncds-in-the-community-the-contribution-of-pharmacists.pdf>. Accessed August 2024.

STEP 3b

Collaborate with Primary Care



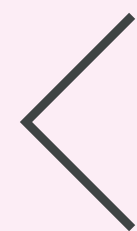
ACT NOW

Following referral to primary care, it is essential to follow up with the patient and monitor as required.

It is also important to follow up with the primary care prescriber to answer questions and provide clarification if required and discuss how you may be able to support.



Revisit Case Study 2



Revisiting Anushka

Assessment Tool



Are you aware that high blood pressure, diabetes, and your regular ibuprofen use may put you at risk of developing CKD?

In addition, your recent symptoms of fatigue should be investigated, as it may be related to your kidney health.



Have you had your kidneys checked in the last 12 months?



Anushka's responses

Anushka communicates that she was unaware of her CKD risk and that her previous pharmacist and current doctor haven't spoken to her about it.

Anushka is not aware of any blood or urine kidney tests in the last year.



Revisiting Anushka

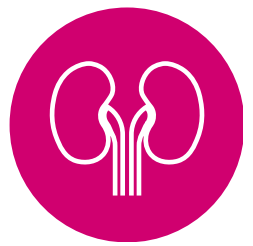
Consider Anushka's risks

What we know



Hypertension

CVD diagnosis; Blood pressure was 158/92 at the pharmacy today and has been higher than normal during the past few visits to the pharmacy



Type 2 diabetes

Blood glucose has not been well controlled for the past 2 years with metformin and glipizide



OTC pain medication use

Regularly uses paracetamol and ibuprofen 3-4 times a week to relieve her headaches

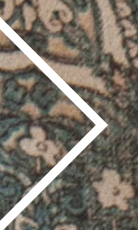


New symptoms of swelling

Feet are often swollen, causing shoes to be tight



CVD, cardiovascular disease
OTC, over-the-counter



Revisiting Anushka (cont'd)

Following use of the assessment tool, the pharmacist identified that Anushka has multiple risk factors that required addressing. Anushka was not aware of any kidney function decline.

The pharmacist recognised her need for further education on the topic of CKD to prepare her for a conversation with primary care. Anushka was provided with the Patient Information Leaflet to summarise their interaction.

The pharmacist decided she would have several conversations with Anushka over multiple visits to ensure she would not be overwhelmed.

The pharmacist informed Anushka that a referral letter would be sent to her primary care physician, and Anushka agreed. She committed to a follow-up with the pharmacist in 1 month.



02 Goals of therapy

Ultimately, the pharmacist can collaborate with Anushka's healthcare team to reduce the risk and/or severity of disease by attempting to slow progression via the measures below:

- 1 Lifestyle modifications
- 2 Renal and CV risk assessments
- 3 Review of glycaemic and blood pressure control
- 4 Review of glycaemic and hypertension medications and importance of adherence
- 5 Treatments to reduce CV risk or slow its progression (eg, RAAS inhibition, SGLT2 inhibitors)
- 6 Treatment and monitoring schedule

CV, cardiovascular
RAAS, renin-angiotensin-aldosterone system
SGLT2, sodium-glucose cotransporter-2



Module Key Learnings

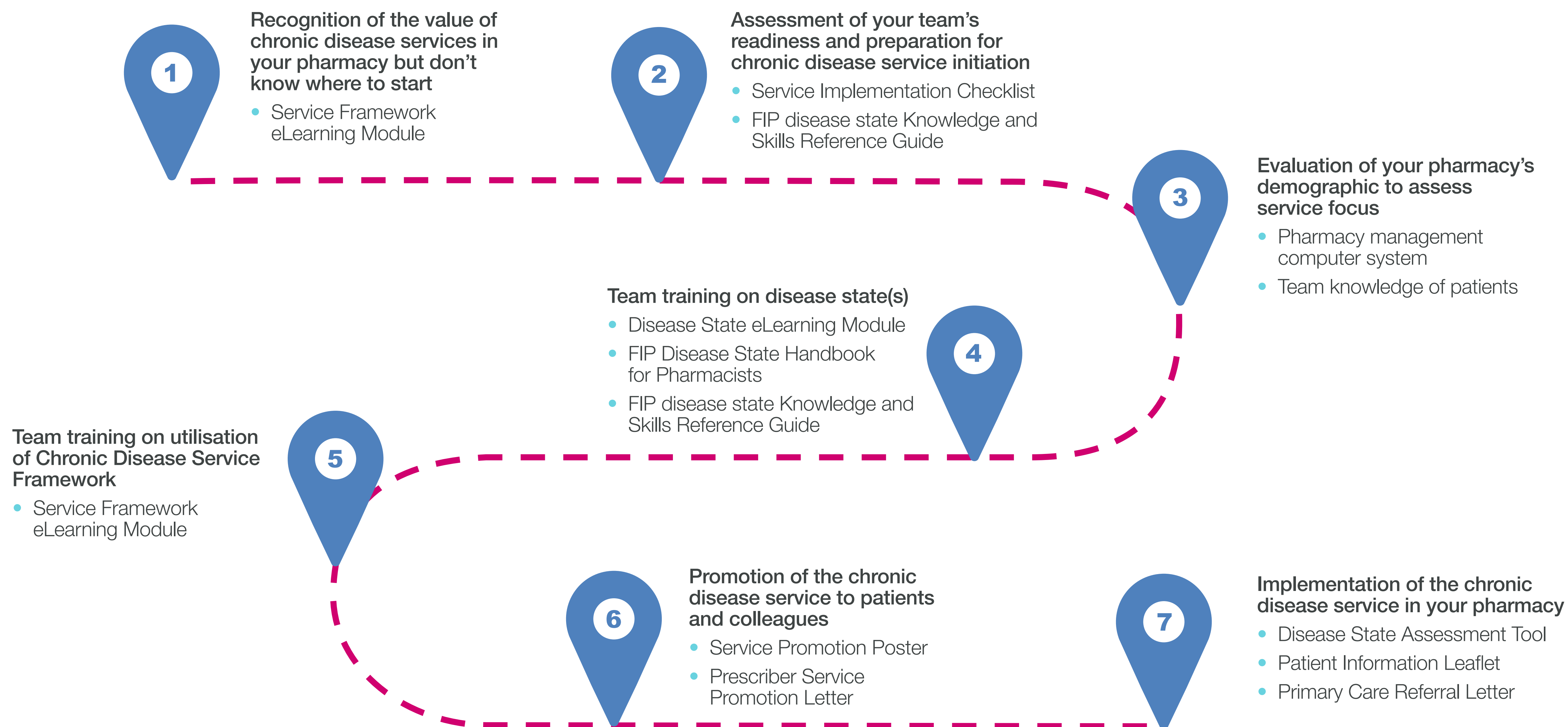


Key learnings

- As the most accessible healthcare provider, pharmacists and pharmacy teams are well placed to identify patients who may benefit from early identification of chronic disease and/or timely intervention and management.
- Routine pharmacy services may reveal patients at risk of a chronic disease, who have disease symptoms, or have conditions that may have developed as a result of the disease, making them ideal touchpoints for further patient counselling and referral.
- The Chronic Disease Service Framework can be used to structure and streamline the pathway for chronic disease patients in the pharmacy to be identified, referred, and cared for throughout their disease journeys.
- The Chronic Disease Service Framework resources are developed by pharmacists for pharmacists and are designed for ease of use and seamless integration into existing pharmacy services, aiming to minimise the burden on workload and workflow.
- You and your pharmacy team members have a vital role in helping patients access appropriate chronic disease care.



FIP + Chronic Disease Service Framework support across the service delivery journey



Module Learning Checkpoints



Learning checkpoint

Q1 There are daily opportunities in the pharmacy for early identification of chronic disease and timely intervention. Select all daily opportunities that apply.

- A. While dispensing prescriptions and OTC medications
- B. While performing blood pressure and blood glucose measurements
- C. During pharmacy screening days where you identify existing lifestyle and clinical risk factors
- D. When discussing strategies to improve medication adherence



Answer

Q1 There are daily opportunities in the pharmacy for early identification of chronic disease and timely intervention. Select all daily opportunities that apply.

- ✓ While dispensing prescriptions and OTC medications
- ✓ While performing blood pressure and blood glucose measurements
- ✓ During pharmacy screening days where you identify existing lifestyle and clinical risk factors
- ✓ When discussing strategies to improve medication adherence

All of these apply.

As one of the most accessible healthcare providers, pharmacists and pharmacy teams are well placed to identify patients who may benefit from early identification of chronic disease and timely intervention, including risk factor assessment, screening, monitoring, and education.

Routine pharmacy services may reveal patients at risk, those who have symptoms, or those who have disease-related conditions, making them ideal touchpoints for further patient counselling and referral.



Learning checkpoint

Q2 After identifying a patient with disease risk factors, disease symptoms, or conditions that are a result of the disease, a simple question such as “Have you had your (insert heart, kidney, lungs, etc) checked within the last 12 months?” can initiate a conversation and provide tremendous insight into the patient’s current knowledge and health.

True

False



Answer

Q2 After identifying a patient with disease risk factors, disease symptoms, or conditions that are a result of the disease, a simple question such as “Have you had your (insert heart, kidney, lungs, etc) checked within the last 12 months?” can initiate a conversation and provide tremendous insight into the patient’s current knowledge and health.

True

False

Asking the patient a simple question about their health (eg, if they had their kidneys, heart, or lungs checked) will allow you to understand their awareness of the chronic disease and their risk of the disease. It provides a starting point for providing relevant advice and education.



Learning checkpoint

Q3 Which of the following are potential benefits and outcomes of integration of the **Chronic Disease Service Framework** into pharmacy practice?

- A. Improved health outcomes for your patients
- B. Establishment of a structured, streamlined pathway for chronic disease patients to be identified, referred, and cared for throughout their journeys
- C. Stronger connections within your local community
- D. Support for the growth of your pharmacy by creating differentiated services



Answer

Q3 Which of the following are potential benefits and outcomes of integration of the **Chronic Disease Service Framework** into pharmacy practice?

- ✓ Improved health outcomes for your patients
- ✓ Establishment of a structured, streamlined pathway for chronic disease patients to be identified, referred, and cared for throughout their journeys
- ✓ Stronger connections within your local community
- ✓ Support for the growth of your pharmacy by creating differentiated services

All of these are **potential benefits and outcomes** of effective integration of the Chronic Disease Service Framework into pharmacy practice.



Learning checkpoint

Q4 Which of the following statements regarding the **Assessment Tool** is true?

- A. It is a conversation-based tool to be used by pharmacists and pharmacy team members (where appropriate) to support counselling patients on the risk of the chronic disease being discussed, how to be screened, and/or how to manage the disease.
- B. It should only be used by pharmacists to support patient counselling.
- C. It should be used during all chronic disease conversations and patient counselling.
- D. It can replace individualised patient care and appropriate recommendations given its detailed content.



Answer

Q4 Which of the following statements regarding the **Assessment Tool** is true?

- ✓ It is a conversation-based tool to be used by pharmacists and pharmacy team members (where appropriate) to support counselling patients on the risk of the chronic disease being discussed, how to be screened, and/or how to manage the disease.
- ✗ It should only be used by pharmacists to support patient counselling.
- ✗ It should be used during all chronic disease conversations and patient counselling.
- ✗ It can replace individualised patient care and appropriate recommendations given its detailed content.

The **Disease-Specific Assessment Tool** is a conversation-based tool to be used by pharmacists and pharmacy team members (where appropriate) to support counselling patients on the risk of the chronic disease being discussed, how to be screened, and/or how to manage the disease.

Pharmacists and pharmacy team members should familiarise themselves with the conversation flow suggested by the tool. However, it does not need to be used during counselling with a patient but can be referred to as required.

The assessment tool is designed as a conversation and counselling guide. It is not meant to replace individualised patient care and appropriate recommendations from a healthcare professional.



Learning checkpoint

Q5 Which of the following statements regarding the Primary Care Referral Letter are **true**?

- A. It is a customisable PDF document that simplifies documentation and the referral process.
- B. It helps to build a strong collaborative care partnership with other primary care professionals and promote a seamless experience for patients.
- C. It provides a brief outline of the assessment and a summary of the patient's medications in relation to the chronic disease in question.
- D. The referral letter explains why the pharmacy is reaching out and possible ways to partner to support the patient.



Answer

Q5 Which of the following statements regarding the Primary Care Referral Letter are **true**?

- ✓ It is a customisable PDF document that simplifies documentation and the referral process.
- ✓ It helps to build a strong collaborative care partnership with other primary care professionals and promote a seamless experience for patients.
- ✓ It provides a brief outline of the assessment and a summary of the patient's medications in relation to the chronic disease in question.
- ✓ The referral letter explains why the pharmacy is reaching out and possible ways to partner to support the patient.

All of these statements are true regarding the Primary Care Referral Letter.



Glossary of Common Terms



Glossary

Angina: chest pain or discomfort that occurs when the heart muscle does not receive as much blood as it needs.¹

Asthma: chronic lung disease caused by inflammation and narrowing of the small airways of the lungs, making it more difficult to breathe and causing symptoms such as cough, wheezing, shortness of breath, and chest tightness.²

Atherosclerosis: a multifaceted, persistent, inflammatory condition characterised by the buildup of lipids (fat and cholesterol), immune cells, and extracellular matrix within the walls of the arteries, resulting in the formation of atherosclerotic plaques. The inner layers of the artery walls become thick and irregular due to the plaque buildup. Plaque can cause arteries to narrow, reducing blood flow through them.^{1,3}

Atrial fibrillation: irregular heartbeat that occurs when beating in the atria (upper chambers of the heart) is abnormal and blood cannot flow properly from the two atria to the two ventricles (lower chambers of the heart).⁴

Cardiovascular diseases (CVDs): group of disorders of the heart and blood vessels, including coronary heart disease, heart failure, cerebrovascular disease (disease of the blood vessels supplying the brain; eg, stroke), and peripheral arterial disease (disease of blood vessels supplying the arms and legs).⁵

Chronic diseases: broadly defined as conditions that last one year or more and require ongoing medical attention or limit activities of daily living or both. Chronic diseases are caused by a combination of genetic, physiological, environmental, and behavioural factors. They are also known as non-communicable disease (NCDs).^{6,7}

1. U.S. Department of Health and Human Services. The health consequences of smoking—50 years of progress: A report of the Surgeon General. Available at: https://www.ncbi.nlm.nih.gov/books/NBK179276/pdf/Bookshelf_NBK179276.pdf. Accessed August 2024.

2. World Health Organization (WHO). Asthma – Fact sheet. Available at: <https://www.who.int/news-room/fact-sheets/detail/asthma>. Accessed August 2024.

3. Jyotsna FNU et al. *Cureus*. 2023;15:e43882.

4. Centers for Disease Control and Prevention (CDC). Atrial Fibrillation. Available at: <https://www.cdc.gov/heart-disease/about/atrial-fibrillation.html>. Accessed August 2024.

5. World Health Organization (WHO). Cardiovascular disease (CVDs) – Fact sheet. Available at: [https://www.who.int/news-room/fact-sheets/detail/cardiovascular-diseases-\(cvds\)](https://www.who.int/news-room/fact-sheets/detail/cardiovascular-diseases-(cvds)). Accessed August 2024.

6. Centers for Disease Control and Prevention (CDC). About Chronic Diseases. Available at: https://www.cdc.gov/chronic-disease/about/?CDC_AAref_Val=https://www.cdc.gov/chronicdisease/about/index.htm. Accessed August 2024.

7. World Health Organization (WHO). Noncommunicable diseases – Fact sheet. Available at: <https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases>. Accessed August 2024.

Glossary

Chronic kidney disease: abnormalities of kidney structure or function, including markers of kidney damage and a reduced glomerular filtration rate (GFR) that have been present for 3 months, which have implications for health.¹

Chronic obstructive pulmonary disease: lung disease that causes the airways to narrow and become obstructed, which in turn makes breathing difficult. It has been described as a disease of the airways (chronic bronchitis) and/or a disease of the air sacs (emphysema).²

Coronary artery disease (CAD): most common type of CVD that occurs when atherosclerosis affects the arteries of the heart. As plaque builds up, the coronary arteries narrow, making it more difficult for blood to flow. Angina or a myocardial infarction may occur if the blood flow to the heart becomes reduced or blocked. Over time, CAD may also lead to heart failure and arrhythmias.³

Diabetes: hyperglycaemia (also known as high blood glucose or high blood sugar) that occurs when the pancreas does not produce enough of the hormone insulin or when the body cannot effectively use the insulin it produces.⁴

Endothelium dysfunction: type of coronary artery disease where imbalance in the vascular endothelium (thin layer of cells that line the blood vessels) between vasoconstricting substances (eg, reactive oxygen species [ROS]) and vasodilation substances (eg, nitric oxide) leads to impairment of vasodilation. Coronary arteries begin to lack the ability to dilate properly and become constricted and narrow even though there is not an actual blockage in the artery.^{3,5}

Haemorrhagic stroke: type of stroke that occurs when a blood vessel supplying the brain bursts.³

Heart failure: a type of CVD that occurs when the heart cannot pump enough blood to the body's vital organs. Although the heart works, it does not work as well as it should. This can cause fluid to pool in the body, which manifests as swelling (oedema) in the lower legs and ankles and shortness of breath as fluid collects in the lungs.³

CVD, cardiovascular disease

1. National Institute for Health and Care Excellence (NICE). Chronic kidney disease in adults. Available at: <https://www.nice.org.uk/guidance/qs5/resources/chronic-kidney-disease-in-adults-pdf-58297746373>. Accessed August 2024.
2. Global Allergy and Airways Patient Platform (GAAPP). What is COPD? Available at: <https://gaapp.org/diseases/copd/>. Accessed August 2024.
3. U.S. Department of Health and Human Services. The health consequences of smoking—50 years of progress: A report of the Surgeon General. Available at: https://www.ncbi.nlm.nih.gov/books/NBK179276/pdf/Bookshelf_NBK179276.pdf. Accessed August 2024.
4. World Health Organization (WHO). Diabetes – Fact sheet. Available at: <https://www.who.int/news-room/fact-sheets/detail/diabetes>. Accessed August 2024.
5. Diabetes.co.uk. Endothelial dysfunction. Available at: <https://www.diabetes.co.uk/diabetes-complications/endothelial-dysfunction.html#:~:text=In%20endothelial%20dysfunction%2C%20vasodilation%20is,a%20stroke%20or%20heart%20attack>. Accessed August 2024.

Glossary

Hyperlipidaemia: abnormal levels of different types of fats in the blood, including increased total cholesterol, low-density lipoprotein cholesterol (LDL-C), non-high-density lipoprotein cholesterol (non-HDL-C), triglycerides, and decreased high-density lipoprotein cholesterol (HDL-C).^{1,2}

Hypertension: elevated blood pressure that occurs when the pressure in the blood vessels is typically 140/90 mmHg or higher. It is also known as high blood pressure.³

Insulin resistance: inability of insulin-dependent glucose to leave the bloodstream and enter fat and muscle cells due to impaired sensitivity to insulin.⁴

Ischaemic heart disease (IHD): type of CVD that occurs when heart arteries become narrowed due to the build up of plaque, which results in less blood and oxygen reaching the heart muscle. It is sometimes also referred to as coronary artery disease.⁵

Ischaemic stroke: type of stroke that occurs when a blood clot or other particle blocks an artery in the brain or an artery leading to the brain.⁵

Left ventricular hypertrophy: thickening of the wall of the left ventricle (the heart's main pumping chamber). The thickened heart wall can become stiff, making it harder for the heart to effectively pump blood. Uncontrolled hypertension is the most common cause, and complications may include arrhythmias and heart failure.⁶

Myocardial infraction: acute event that occurs when blood flow to the heart is severely reduced or blocked and heart muscle cells die from lack of oxygen; also known as a heart attack.⁵

CVD, cardiovascular disease

1. World Health Organization (WHO). Noncommunicable diseases – Fact sheet. Available at: <https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases>. Accessed August 2024.

2. Du H et al. *Front Cardiovasc Med*. 2022;9:903126.

3. World Health Organization (WHO). Hypertension – Fact sheet. Available at: <https://www.who.int/news-room/fact-sheets/detail/hypertension>. Accessed August 2024.

4. Yaribeygi H et al. *J. Diabetes Res*. 2021;7:7796727.

5. U.S. Department of Health and Human Services. The health consequences of smoking—50 years of progress: A report of the Surgeon General. Available at: https://www.ncbi.nlm.nih.gov/books/NBK179276/pdf/Bookshelf_NBK179276.pdf. Accessed August 2024.

6. Mayo Clinic. Left ventricular hypertrophy. Available at: <https://www.mayoclinic.org/diseases-conditions/left-ventricular-hypertrophy/symptoms-causes/syc-20374314>. Accessed August 2024.

Glossary

Osteoarthritis: degenerative joint disease where the protective cartilage on the ends of bones breaks down, causing pain, swelling, and problems moving the joint. It is the most common type of arthritis worldwide.¹

Osteoporosis: bone disease characterised by low bone mass, deterioration of bone tissue, and disruption of bone microarchitecture.²

Oxidative stress: a disruption in the balance between the production of reactive oxygen species (ROS) and the body's capacity to counteract it with antioxidant defence mechanisms, leading to a detrimental impact on cells and tissues.³

Sleep apnoea: sleep condition that occurs when breathing repeatedly stops and starts during sleep.⁴

Stroke: acute event that occurs when there is an interruption of blood flow to the brain. There are two types of stroke – haemorrhagic and ischaemic.⁵

Thrombosis: formation or presence of a blood clot (thrombus) inside a blood vessel or heart chamber.⁵

Type 1 diabetes: high level of blood glucose (sugar) that occurs when the body does not produce enough of the hormone insulin. This type of diabetes requires daily administration of insulin.⁶

Type 2 diabetes: high level of blood glucose (sugar) that occurs when the body cannot effectively use the hormone insulin it produces (insulin resistance). Approximately 95% of people with diabetes globally have type 2 diabetes.⁶

1. National Health Service (NHS). Osteoarthritis. Available at: <https://www.nhs.uk/conditions/osteoarthritis/>. Accessed August 2024.

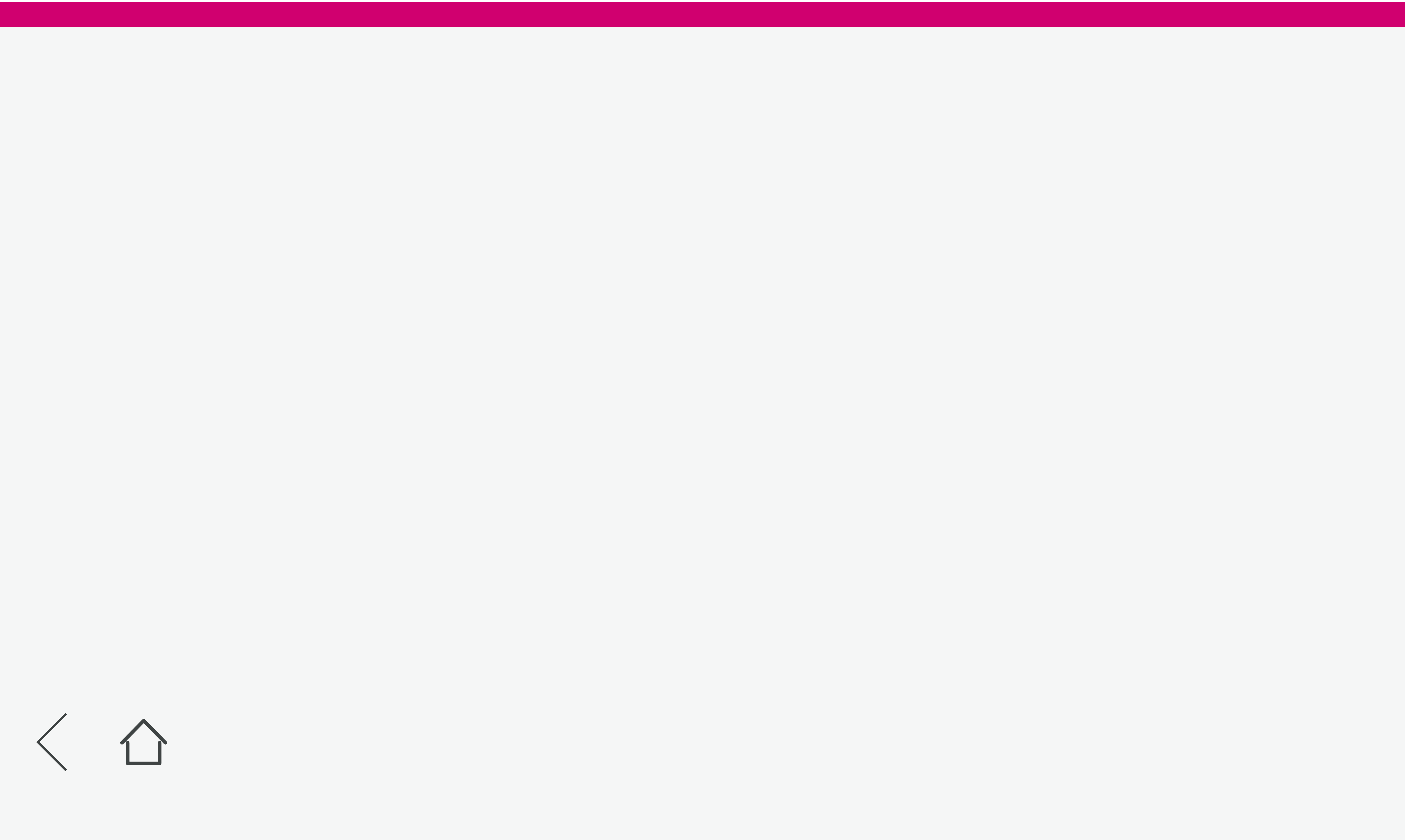
2. Sözen et al. *Eur J Rheumatol*. (2017) 4(1): 46–56.

3. Jyotsna FNU et al. *Cureus*. 2023;15:e43882.

4. National Health Service (NHS). Sleep apnoea. Available at: <https://www.nhs.uk/conditions/sleep-apnoea/>. Accessed August 2024.

5. U.S. Department of Health and Human Services. The health consequences of smoking—50 years of progress: A report of the Surgeon General. Available at: https://www.ncbi.nlm.nih.gov/books/NBK179276/pdf/Bookshelf_NBK179276.pdf. Accessed August 2024.

6. World Health Organization (WHO). Diabetes – Fact sheet. Available at: <https://www.who.int/news-room/fact-sheets/detail/diabetes>. Accessed August 2024.



Supported by



Z4-67980

09/24

Obtain local nominated signatory approval before use.

