



# Capital Health Network

## ACT PHN Baseline Needs Assessment

2016

### Chronic Disease Companion Report



**Capital Health**  
Network

ACT's primary health network

**phn**  
ACT

An Australian Government Initiative

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# 1. Chronic Disease

## Overview

Chronic disease (often referred to as chronic conditions or complex conditions) are long-term diseases that develop slowly, take time to diagnose, are difficult to cure and rarely disappear completely. They last at least six months and often progress in severity causing increasing distress and disability. Many chronic diseases can be prevented through the adoption of healthy lifestyles and behaviours or be self-managed with limited health care support during the early stages (Australian Institute of Health and Welfare, 2016b). As they become more serious and disabling more intensive care may be required and hospital care needed for acute episodes (Kane et al., 2005).

Presently, 35% of all Australians have at least one chronic condition that puts them at risk of serious complications or premature death (Primary Health Care Advisory Group, 2015). That number is expected to increase with an ageing population as age is a significant risk factor for most chronic diseases (Department of Health, 2015b).

However, this number does not fully reflect the burden that chronic diseases place on society, as many people have comorbidities (i.e. multiple chronic conditions). The proportion of people with comorbidities increases over a lifetime such that around 10% of young people have at least two chronic diseases but over 80% of Australians aged 65 years or older report they have three or more chronic diseases (House of Representatives Standing Committee on Health, 2016).

In addition, chronic disease is disproportionately distributed throughout the population. People experiencing disadvantage and those with lower incomes are more likely to experience chronic disease, have worse health outcomes, reduced quality of life and disability. For example, people in the bottom 20% of incomes are about five times more likely to have cardiovascular disease (CVD) or diabetes and twice as likely to have cancer, than those with the highest 20% of incomes.

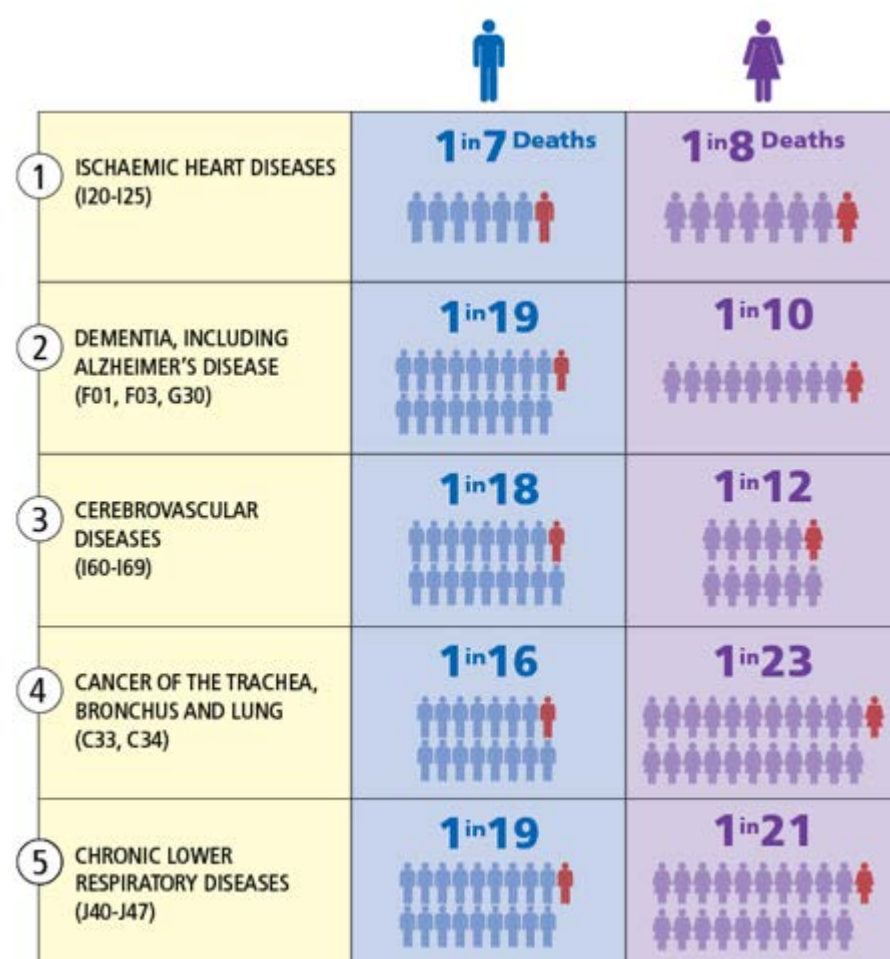
Chronic disease has become the main cause of illness and death and the most significant burden on the Australian Health System (Australian Institute of Health and Welfare, 2014a). While the life expectancy for those aged 65 years and over has increased, expected years of life with a chronic disease or disability have also increased.

The five main causes of death in Australia in 2014 were the same for males and females, namely ischaemic heart disease, dementia (including Alzheimers), cerebrovascular diseases, cancer of the trachea, bronchus and lung, and chronic lower respiratory diseases (Figure 1.1) (Australian Bureau of



Statistics, 2016b). These five diseases accounted for more than one-third of all deaths (Australian Bureau of Statistics, 2016b).

**Figure 1.1: Leading causes as a proportion of all male and female deaths (Australia), 2014**



Source: (Australian Bureau of Statistics, 2016b)

Chronic disease clearly places a huge economic burden on both society and the health system in terms of lost productivity and health care costs. For example, it has been estimated that eliminating chronic disease could increase the workforce by 10% and boost productivity of the Australian economy correspondingly (Australian Institute of Health and Welfare, 2014a, Business Council of Australia, 2011).

While some people may have a genetic predisposition to developing chronic disease, many chronic conditions are considered preventable. Within the ACT 12.4% of the population smoke on a daily basis, 15.7% drank alcohol levels which confer a risk of long-term harm and 63.5% are considered overweight or clinically obese (Australian Bureau of Statistics, 2015). Modifiable behaviours and risk factors (e.g. high lipids, hypertension, being overweight, smoking, and unhealthy diets and excessive alcohol consumption and physically inactivity) account for a high proportion of avoidable

chronic disease (Australian Institute of Health and Welfare, 2014a). Adopting health behaviours has the potential to reduce chronic disease. For example, it is estimate that 58% of people with pre-diabetes can avoid type 2 diabetes through healthy eating, regular exercise and not smoking (Diabetes Australia, 2015). The risk of developing a number of cancers (e.g. bowel, stomach, oesophageal and breast cancer) and cardiovascular disease is also lowered through adopting a healthy lifestyle (Heart Foundation, 2014, Cancer Council Australia, 2016).

Primary health care has a significant role in effective chronic disease prevention and management: identifying those at risk of developing chronic disease and working with individuals and families to both address risk factors and strengthen protective factors, and; working with individuals and the extended chronic care team to provide comprehensive care and achieve better health outcomes.

### A snapshot of the health status of the ACT

ACT residents currently have the longest life expectancy in Australia (i.e. 81.2 years – male, 85.1 years female) (Australian Institute of Health and Welfare, 2014a). According to the 2011 Census, Canberra had over 357,000 residents. Only 1.5% of the population of the ACT (5,185 people) was of Aboriginal or Torres Strait Islander decent, much lower than the national average of 2.5%.

Predictions of the ACT's population as at 2015 estimate a total population of 390,757 people (an increase of 9.5%), with Indigenous Australians now accounting for 2% of the total ACT population.

Future predictions highlight the increasing proportion of older people with the table below providing an overview of the current and estimated population growth of people aged 65+ years (Australian Bureau of Statistics, 2016a, Australian Bureau of Statistics, 2013b).

**Table 1.1: Estimated residential population by sex and age group, persons aged 65 years and over, ACT, 2015**

Age group	Males (no.)	Females (no.)	Persons (no.)	% of ACT pop. 2015	% Projected 2055
65–69	8,138	8,577	16,715	4.3	4.9
70–74	5,345	6,013	11,358	2.9	4.3
75–79	3,744	4,312	8,056	2.1	3.5
80–84	2,420	3,117	5,537	1.4	3.1
85 or more	2,113	3,712	5,825	1.5	4.1
65 & over	21,760	25,731	47,491	12.2	19.8
Total population	193,980	192,446	390,757	100.0	100.0

Source: (Australian Bureau of Statistics, 2016a, Australian Bureau of Statistics, 2013b)

The percentage of those aged over 65 years is currently 11.2% and projected to reach 21.9% by 2059 (ACT Health, 2014): one in five people and a 30% increase in the number of people aged over 65

years, and more significantly nearly a threefold increase in the number of people aged over 85 years over the next 30 years (ACT Chief Minister's Department, 2011).

In the ACT in 2014 the five leading causes of death were ischaemic heart disease, malignant neoplasms of digestive organs, cerebrovascular diseases, other forms of heart disease and organic (including symptomatic) mental disorders (Australian Bureau of Statistics, 2016b). These leading causes however vary by sex and age.

A comparison of deaths and Years of Life Lost (YLL) in the ACT against national comparators (2014) paints a mixed picture with 57% of all deaths attributed to cancers and circulatory diseases (Australian Bureau of Statistics, 2016b) and significant variance in YLL in terms of circulatory conditions and cancers (Table 1.2).

**Table 1.2: Comparison of deaths and Years of Life Lost, 2014**

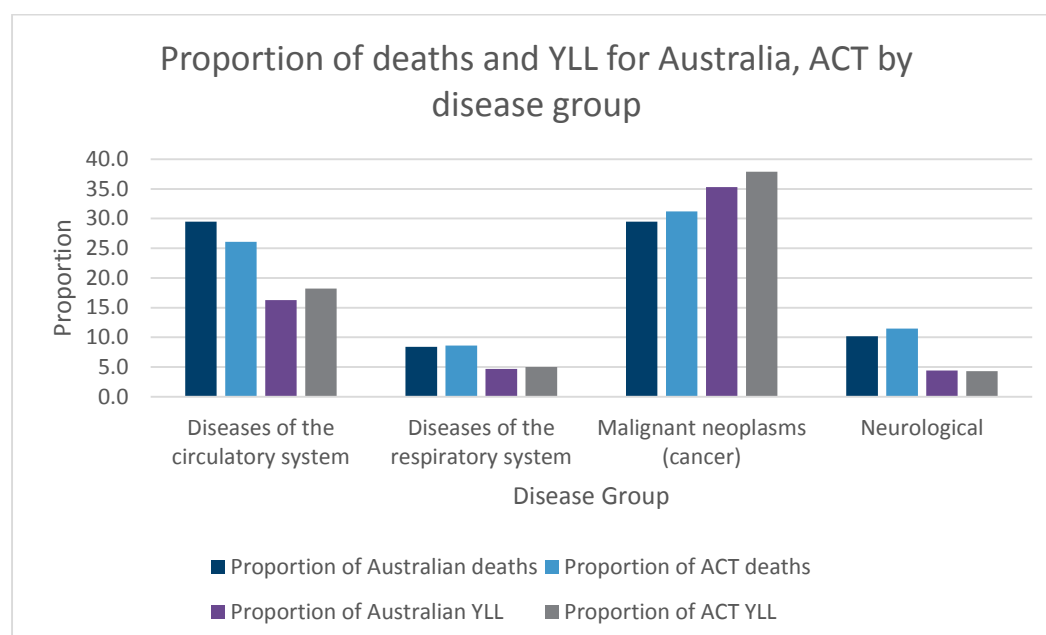
<b>Condition</b>	<b>Proportion of Australian deaths</b>	<b>Proportion of ACT deaths</b>		<b>Proportion of Australian YLL</b>	<b>Proportion of ACT YLL</b>	
<b>Diseases of the circulatory system</b>	<b>29.5</b>	<b>26.1</b>	▼	<b>16.3</b>	<b>18.2</b>	▲
Chronic ischaemic heart disease	7.3	7.1	▽	5.1	5.1	▶◀
Cerebrovascular diseases	7.1	6.4	▼	2.7	3.2	▲
Hypertensive disease	1.5	1.6	▶◀	0.5	0.3	▽
<b>Diseases of the respiratory system</b>	<b>8.4</b>	<b>8.6</b>	△	<b>4.7</b>	<b>5.0</b>	△
Chronic obstructive pulmonary disorder	3.8	3.2	▼	1.9	1.1	▼
Asthma	0.3	0.4	▶◀	0.5	0.2	▼
<b>Malignant neoplasms (Cancer)</b>	<b>29.5</b>	<b>31.2</b>	▲	<b>35.3</b>	<b>37.9</b>	▲
Breast	2.0	3.4	▲	3.5	5.8	▲
Prostate	2.1	1.9	▶◀	0.9	1.0	▶◀
Lung	5.6	4.9	▼	6.4	5.1	▼
Colorectal	1.8	2.8	▲	1.8	2.8	▲
<b>Neurological</b>	<b>10.2</b>	<b>11.5</b>	▲	<b>4.4</b>	<b>4.3</b>	▶◀
Dementia	5.1	6.4	▲	0.5	0.7	▶◀
Alzheimer disease	2.3	1.5	▼	0.2	0.3	▶◀
Parkinson	1	1.4	▲	0.2	0.5	▲

Source: (Australian Bureau of Statistics, 2016b)

YLL and disability adjusted life years (DALYs) are often considered a more appropriate measure of the burden of disease given chronic disease is often not the primary recorded cause of death and people are able to live longer with the disease. In 2014, 59.1% of all YLL were due to four disease groups: cancer, circulatory conditions, neurological conditions and respiratory conditions. Cancer

alone accounted for most years of life lost with 33.8% of the total YLL (Australian Bureau of Statistics, 2016b) (Figure 1.2).

**Figure 1.2: Comparison of Years of Life Lost, 2014**



Source: (Australian Bureau of Statistics, 2016b)

## Prevalence of Chronic Disease

*Cancer (malignant neoplasms)* – Cancer is a category of diseases where the cells grow and divide abnormally resulting in damaging tissues and other parts of the body (Cancer Australia, 2016). In 2014-15, approximately 1.8% of the ACT population reported at least one form of cancer (Australian Bureau of Statistics, 2015).

The most common forms of cancer include breast, prostate, colorectal and lung cancer. Although the mortality rate has been decreasing over time, in 2014 cancer was the most common cause of death in the ACT (28.7% of all deaths). The ACT has a higher proportion of cancer deaths compared to the whole of Australia (31.2% and 29.5% respectively).

Cancer contributes to a greater proportion of the years of life lost than the proportion of deaths. This means that if a person dies of cancer they, on average, have lost more potential life years than someone who died of another cause. Cancer accounted for 4,827 YLL (37.4% of total YLL) in 2014 (Australian Bureau of Statistics, 2016b). For example, the average woman who died of cervical cancer in the ACT in 2014 lost 14 years.



Recent burden of disease estimates have yet to be published, however in 2011 cancer made up 19% of the ACT's burden of disease (Begg et al., 2007).

*Cardiovascular Disease* – Cardiovascular disease (CVD) is a collective term for diseases that affect the heart and blood vessels including stroke, chronic heart disease and high blood pressure (hypertension) (Department of Health, 2015a).

According to the National Health Survey (ACT sample size - 1,708) the ACT has the second lowest proportion of cardiovascular disease and hypertension in Australia (Australian Bureau of Statistics, 2015).

In Australia as a whole, cardiovascular diseases kill more people but accounts for a lower percent of YLL. In 2014-2015, approximately 3.7% of the ACT population self-reported having cardiovascular disease (excluding hypertension), while 12.1% self-reported having hypertension (Australian Bureau of Statistics, 2015). In 2014, CVD was the second leading cause of death in the ACT, being the main contributing factor towards 27.9% of all deaths, and accounting for 2,025 YLL (15.7% of total YLL) (Australian Bureau of Statistics, 2016b). The main risk factor is age however it is more common in men, people of low socio-economic backgrounds, and people of Aboriginal or Torres Strait Islander descent (ACT Health, 2014, Australian Institute of Health and Welfare, 2014d).

*Chronic Kidney Disease* – Chronic Kidney Disease (CKD) is any condition of the kidneys that lasts at least three months and causes kidney damage or reduced kidney function (Department of Health, 2015c). The loss of kidney function is often irreversible (ACT Health, 2010). CKD is believed to be under-diagnosed which may be because 90% of kidney function can be lost before the onset of symptoms. In 2011-12, around 1.7 million people or 10% of the Australian adult population aged 18 years and over had indicators of CKD while only 1% of the population self-reported that they knew they had the condition (Australian Institute of Health and Welfare, 2014b). In 2014-15, 0.9% of the Australian population self-reported CKD, while 3.6% of people aged 75 and over reported CKD (Australian Bureau of Statistics, 2015). In the ACT, 1.3% of the population self-reported CKD in 2014-15, with 5.6% of those 65 years and over reporting this condition (Australian Bureau of Statistics, 2015). Importantly, biomedical information from the Australian Health Survey (2011-12) suggests these figures are likely an underestimate of the true prevalence (Australian Bureau of Statistics, 2013a).

*Chronic Respiratory Disease* – Chronic respiratory conditions affect the respiratory system, examples being chronic obstructive pulmonary disease (COPD), asthma, and allergic rhinitis (Department of Health, 2015d). In 2014-15, 2.6% of Australians reported having COPD, with 7.8% of

Australians over 65 years old reporting the condition (Australian Bureau of Statistics, 2015). In 2014, 4.1% of deaths in Australia were attributed to COPD (Australian Bureau of Statistics, 2016b). In 2014-15, 2.1% of ACT residents self-reported COPD, with this figure increasing to 6.7% in those aged 65 years and over (Australian Bureau of Statistics, 2015).

Australia has the highest prevalence of asthma in the world with approximately 40% living with asthma some point during their life. In 2014-15, 11.5% of the ACT population reported asthma (Australian Bureau of Statistics, 2015). The ACT also has the highest proportion of hay fever and allergic rhinitis in Australia, with over one quarter of the ACT population being affected (Australian Bureau of Statistics, 2015).

Chronic respiratory diseases are the fourth largest cause of death causing 8.6% of ACT deaths in 2014. While causing fewer deaths than neurological diseases, they account for more years of life lost with 5% of the total YLL (Australian Bureau of Statistics, 2015).

*Endocrine, Nutritional and Metabolic Diseases* – The most common diseases in this category are diabetes (characterised by high glucose (sugar) levels in the blood) and high cholesterol (ACT Health, 2014). Diabetes is classified into type 1 and type 2. Type 1 being an autoimmune disease where the immune system destroys cells that produce insulin. Type 1 diabetes cannot be prevented. In contrast, type 2 is highly preventable with a healthy lifestyle encompassing eating well, exercising and weight management (Australian Institute of Health and Welfare, 2016d). In 2014-15, 4.3% of the ACT population reported diabetes (type 1 and type 2) (Australian Bureau of Statistics, 2015) and this figure is expected to keep increasing. People with diabetes often have many comorbidities and it is suspected that the prevalence of type 2 diabetes could be reduced by 40% if obesity was eliminated (ACT Health, 2014).

Cholesterol is a fat-like substance found in the blood stream, organs and nerve fibres. While it is a natural and needed substance, high levels increase the risk of other diseases especially cardiovascular diseases (World Health Organization, 2002). The 2014-15 ABS National Health Survey found the ACT had a higher proportion of people with high cholesterol (8.6%) compared to other states (NSW 7.2%, Victoria 7.3%, QLD 6.4%, WA 6.0%, NT 4.4%). It should be noted however that high cholesterol levels may often be underreported, as individuals may not be aware that they have high cholesterol or see it as a long-term health problem.

*Eye Disease and Adnexa* – Eye diseases often cause blindness or loss of vision and significantly impact on an individual's quality of life. Common diseases in this category are cataracts, glaucoma and macular degeneration (Department of Health, 2016f). These can range from near-sightedness

corrected by glasses or contacts to complete blindness. Over half of the ACT population has one or more eye disease. That increases with age to nearly all (95.8%) of ACT residents 65 years or older having an eye disease (Australian Bureau of Statistics, 2012).

**Mental Illness** – Mental illnesses are diagnosable conditions that significantly interfere with an individual's cognitive, emotional or social abilities (Department of Health, 2009b). Examples include anxiety disorders, affective or mood disorders, and substance abuse disorders. While mental illness is considered a chronic condition it is not covered in this section but discussed in detail in Section 8 – Mental Health.

It should be noted that there is a direct relationship between physical health and people with mental illness often adopting poor lifestyle behaviours and demonstrating high chronic disease risk factors (e.g. prevalence of smoking) and/or conversely people diagnosed with a chronic and life limiting disease often experiencing anxiety and depression.

**Musculoskeletal Diseases (MSK)** – Musculoskeletal Disease is a category of over 150 types of diseases that affect the muscles, bones and joints that cause chronic pain. Common diseases in this category are osteoarthritis, rheumatoid arthritis, some autoimmune diseases and osteoporosis (Department of Health, 2015e). In 2014-15, 29.4% of people in the ACT reported having a musculoskeletal disease. That number doubles for those 65 years and older (Australian Bureau of Statistics, 2015). In Australia, rheumatoid arthritis is twice as likely and osteoporosis four times as likely to affect women (Department of Health, 2015e).

**Chronic pain** – Chronic pain is considered as pain experienced every day for three months or more in the previous six months and defined as '*an unpleasant sensory or emotional experience associated with actual or potential tissue damage*' or described in terms of such damage (Access Economics Pty Limited, 2007). It is often associated with MSK, although it is often a symptom of other diseases such as cancer (and its treatment), degenerative spine disease, fibromyalgia and migraine. Chronic pain is not simply a symptom of a separate pathological process but can be considered a pathological and chronic condition itself.

While difficult to quantify, it is estimated that chronic pain affects approximately 19.2% of Australians, with one in five GP patients suffering from chronic pain (Henderson et al., 2013). Chronic pain is a complex condition that affects mood and behaviour and can lead to isolation, immobility and drug dependence. An Australian study found that chronic pain is associated with increased GP visits (e.g. five-fold increase), and increased possible avoidable ED presentations and

hospitalisations compared to those with no chronic pain (Blyth et al., 2004). Further studies confirm (Blyth et al., 2001, Elliott et al., 1999):

- Women are more likely to experience pain than men.
- Chronic pain is more common with increasing age with prevalence peaking at 65-69 years for males and 80-84 years for females.
- Younger adults are most likely to report interference with daily activities associated with pain.
- Chronic pain is strongly associated with markers of social disadvantage e.g. lower levels of education, being unemployed for health reasons, in receipt of disability or unemployment benefit, and no private health insurance.

*Neurological* – Neurological diseases affect the brain's ability to function. Dementia is a common category of neurological disease that impairs brain function, language, memory, perception, personality and cognitive skills.

Neurological diseases accounted for 11.5% of ACT deaths in 2014 but only 4.3% of the YLL (Blyth et al., 2001). This is very different because many neurological diseases, such as dementia, develop in the later stages of life than many diseases such as certain forms of cancer. Dying from a younger age contributes more potential years of life lost.

In 2015, 10% of Australians 65 years and over had dementia, rising to 31% for those 85 years and over. The prevalence in Australia is expected to increase more than 2.5 times by 2050 (Australian Institute of Health and Welfare, 2012b).

In 2011, 4,400 people were estimated to have dementia in the ACT (approximately 1% of the population) (Alzheimer's Australia ACT, 2016). In 2014, 6.4% of all deaths in the ACT were attributed to dementia compared to 5.1% nationally (Australian Bureau of Statistics, 2016b).

Parkinson disease is another neurological disease that results in loss of body control. While the prevalence is unknown because there is no definitive diagnostic test, some 5% of Australians in residential aged care facilities in June 2011 had a diagnosis of Parkinson disease (Australian Institute of Health and Welfare, 2012a).

*Overweight and Obesity* – Overweight is defined for adults as having a Body Mass Index (BMI) of over 25 (calculated with height and weight), with obesity being over 30 (Department of Health, 2009a). While being overweight or obese is a risk factor for many other chronic diseases, causing comorbidities, it should be considered a chronic disease in its own right. In 2014-15, 63.5% of the ACT adult population was classed as overweight or obese (Australian Bureau of Statistics, 2015).

That includes almost one quarter (23.9%) of the ACT adult population which was classified as clinically obese. Importantly, 57% of those aged 25-34 years old, and 63.5% of those aged 35-44 years old are reported to be overweight or obese in the ACT (Australian Bureau of Statistics, 2015), indicating that the health needs of this group is likely to increase in the future. In 2013-14, 26.3% of ACT children aged 5-17 years old were overweight or obese, highlighting that this is an ongoing issue in today's society (ACT Health, 2016b).

**Comorbidity** – Over 80% of the Australian population over the age of 65 years reported they had three or more chronic conditions, leading to an increase in years of life lost and higher prevalence of disability (Australian Bureau of Statistics, 2015). In 2014-15, 47.5% of the ACT adult population reported three or more chronic conditions, compared to 42.1% of the Australian population.

Based upon a recently published Australia-wide study, the most common combination pattern for three conditions is hypertension plus hyperlipidaemia (e.g. high cholesterol) plus osteoarthritis. While the most common combination of three body systems affected was circulatory plus musculoskeletal plus endocrine/nutritional/metabolic systems (Harrison et al., 2016).

Diabetes is a major underlying cause of death for circulatory and heart disease: people with diabetes are two to four times more likely to develop CVD and about two-thirds die from it (Australian Institute of Health and Welfare, 2014e). Similarly, undiagnosed kidney disease is common amongst people with diabetes: around 40% of people with type 2 diabetes have kidney disease and a 23% higher risk of dying than people without diabetes (Afkarian et al., 2013). The likelihood of developing and dying from CVD and CKD is therefore significantly higher amongst those people with diabetes and many people living with all three diseases.

As a result, comorbidity exacerbates the complexity of management of chronic disease(s). As such, warrant comprehensive chronic disease management strategies. These strategies encompass higher levels of self-care and clinical management, inter-professional collaboration, team-based care and care coordination often resulting in the need for higher health care utilisation.

## **Risk Factors and Protective Measures**

Some risk factors are unable to be changed, such as sex, age, family history and to some extent socioeconomic group, and the ACT population generally demonstrates lower levels of health risk behaviour than national comparators. However, it still has an unacceptably high rate of risk factors for chronic disease that can be addressed through preventative measures, including obesity, low physical activity, alcohol misuse and smoking.

### **Fixed Risk Factors**



1. **Sex:** Sex is an uncontrollable factor in health. Men are more likely to develop cardiovascular disease than are women, however women are up to four times more likely to develop diseases such as osteoporosis and rheumatoid arthritis (Department of Health, 2015e, Australian Institute of Health and Welfare, 2014d).
2. **Age:** Age is also a large risk factor for chronic disease as the chances of developing a chronic disease increase with age as well as symptoms worsening with time. Table 1.3 demonstrates the prevalence of disease for those 65 years and over is much higher than the proportion for the population across all age groups (Australian Bureau of Statistics, 2015).

**Table 1.3: Comparison of prevalence of disease by age**

Condition	Australia total population (%)	ACT total population (%)	Australia 65+ years (%)	ACT 65+ years (%)
<b>Diseases of the eye and adnexa</b>	54.9	57.3	93.4	97.3
Short sightedness/myopia	25.6	31.5	39.2	45.8
Long sighted/hyperopia	28.9	27.1	60	59.1
Cataract	1.8	0.9	9.1	4.3
Glaucoma	0.8	0.3	4.1	1.5
<b>Diseases of the musculoskeletal system and connective tissue</b>	29.9	29.4	66.8	64.1
Arthritis	15.3	13.7	50.5	49.6
Rheumatoid arthritis	1.8	0.4	5.5	1.5
Back problems	16.2	15.9	25.9	23.6
Osteoporosis	3.5	3.9	14.2	15.2
<b>Diseases of the circulatory system</b>	18.3	19.8	58.5	59.5
Angina	1.2	1.4	5.7	8.1
Total heart, stroke, vascular diseases	5.2	3.7	23.1	17.3
Hypertension	11.3	12.1	40.7	46.7
<b>Endocrine, nutritional and metabolic diseases</b>	13.8	14.8	40.1	41.6
Diabetes	5.1	4.3	17.4	13.7
High cholesterol	7.1	8.6	23.9	23.6
<b>Diseases of the respiratory system</b>	30.8	36.3	34.9	34.5
Chronic obstructive pulmonary disorder (COPD)	2.6	2.1	7.8	6.7
Asthma	10.8	11.5	10.4	9.2
Hay fever and allergic rhinitis	19.4	25.9	17	22
<b>Mental and behavioral problems</b>	17.5	18.4	17.7	13.6
Mood affective problems	9.3	10.1	10.5	8.8
<b>Malignant neoplasms (cancer)</b>	1.6	1.8	6.6	7.8

Source: (Australian Bureau of Statistics, 2015)

3. **Family history:** While an association is often found through generations and familial relations, it is not always clear if it is a direct cause between family history and chronic disease. This is because complex diseases involve interactions between several genes, and these interactions can in turn be influenced by multiple exposures across the lifespan. For instance, an individual may have a combination of genes that predisposes them to a particular disease, however their lifestyle factors may mitigate this risk or alternatively related people often have a similar upbringing and exposure to other risk factors. With the human genome mapping, some genetic links have been made. For example, Parkinson disease has been linked with several genes and genetic mutations (Schapira, 2008). Type 1 diabetes is believed to develop from various exposures in people that are predisposed genetically, resulting from a complex interplay of genetics and the environment (Atkinson and Eisenbarth, 2001).
4. **Socio-economic Status (SES):** Low SES individuals and families and those living on the outskirts of mainstream society are often at greater risk of developing a chronic disease for various reasons. For example, alcohol and tobacco use are higher among lower socioeconomic groups when compared to higher groups (Australian Bureau of Statistics, 2010). Public health initiatives and outreach are anecdotally harder with groups such as people with disabilities, people living in rural and remote areas, and people who do not speak English fluently (Government of Western Australia, 2012). These differences can lead to lack of preventative care, engagement, early identification of risk, diagnosis and treatment.
5. **Aboriginal and Torres Strait Islander People:** Aboriginal and Torres Strait Islander people are more likely to develop chronic disease. This can be a result of family history combined with poorer socioeconomic status. Chronic diseases make up approximately two thirds of the gap in life expectancy between the average Australian and those of Aboriginal and Torres Strait Islander decent (Australian Institute of Health and Welfare, 2014a). For more information on the health of Aboriginal and Torres Strait Islander people, refer to Section 4.

### *Protective factors*

While the proceeding factors cannot be changed, there are a number of protective factors that make chronic diseases highly preventable:

1. **Maintaining a healthy weight (Nutrition and physical activity):** In 2014-15, 27.9% of Australians reported being obese, compared to 23.9% of those in the ACT. However, it is more common to be

overweight in the ACT, as 39.1% of individuals reported being overweight in the ACT compared to 35.5% of Australians. A combination of a sedentary lifestyle, overeating, and unhealthy food being easily accessible has led to a big obesity problem. The rates of overweight and obese people have doubled in the past two decades and Australia is now one of the fattest nations. As a result, obesity is now considered both a risk factor and a chronic disease. Health issues arise both from the excess weight and from abnormal metabolic function (Department of Health, 2009a). These result in comorbidities that can, over time, cause a downward spiral in health with each chronic condition exacerbating the other. For example, musculoskeletal diseases could cause pain making it difficult to exercise resulting in weight gain. This then exacerbates pre-existing conditions by placing extra stress on the joints, leading to increased pain, and increase the risk for other chronic diseases such as diabetes.

2. **Smoking:** Smoking takes a toll on many aspects of health and heavily contributes to many chronic diseases, such as lung disease and lung cancer. Second hand smoke (or passive smoke) can also contribute to illness, so reduction and elimination of tobacco smoke is important. The number of Australians smoking has almost halved in the past 20 years with daily smokers making up 14.5% of the Australian population 15 years and older in 2014-15 (Australian Bureau of Statistics, 2015). In the ACT, smoking rates are lower with only 12.4% of people 15 years or over smoking daily in 2014-15 (Australian Bureau of Statistics, 2015). However, it remains a huge problem for Aboriginal and Torres Strait Islander people as the rate of smokers in Australia in 2008 was 47% (Department of Health, 2015f).
3. **Harmful alcohol use:** Alcohol abuse also contributes to many chronic diseases. While the legal drinking age in Australia is 18 years, many children are introduced to alcohol much earlier. In 2010, the average age for the initial use of alcohol was 14.8 years. Drinking is more prevalent in the ACT compared to across Australia with 82.7% of those 15 years and over who reported drinking in the past 12 months, compared to 78.2% nationally (Australian Bureau of Statistics, 2015). However, the prevalence of those 15 years and over who reporting drinking in the past week in the ACT was similar to the Australia wide prevalence (56.0% compared to 55.4% nationally) (Australian Bureau of Statistics, 2015). While the ACT has a similar prevalence for drinking at levels that would produce long-term effects, the ACT does have a slightly lower proportion of “risky drinkers”. In the ACT 15.1% of those aged over 15 years exceeded the 2009 NHMRC lifetime risk guidelines in 2014-15, compared to 16.7% of all Australians (Australian Bureau of Statistics, 2015).

## The Burden of Disease

The most significant burden on the health system today is chronic disease. This burden of disease is placing increasing pressure on health care budgets with associated health care costs rising rapidly:

- Australia spent around \$140.2 billion on health in 20011-12 (Australian Institute of Health and Welfare, 2015).
- each year the Australian Government spends \$1 billion on the planning, coordination and review of chronic disease management and encouraging good practice in primary health care alone (Swerissen et al., 2016).
- \$320 million each year is wasted on avoidable hospital admissions (Swerissen et al., 2016).
- chronic non-communicable diseases account for 70% of the national health care expenditure (Feyer et al., 2014).

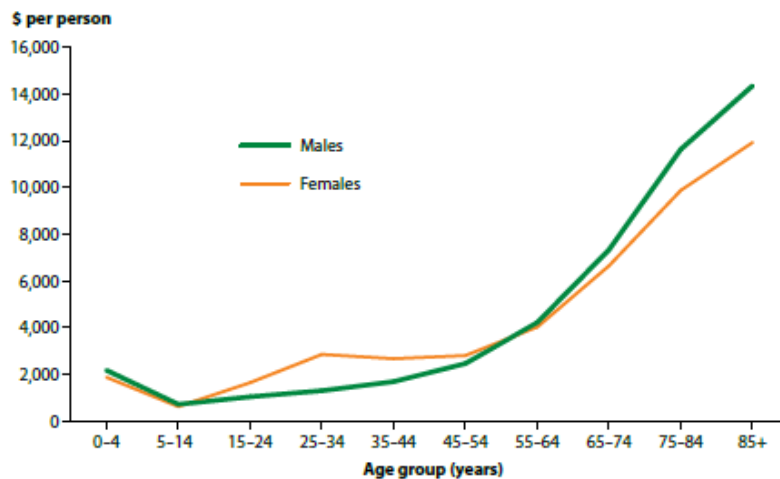
In Australia in 2008-09, over \$4.5 billion were spent on cancer, not including over \$332 million on national screening programs. The highest expense was colorectal cancer and 79% of the cancer expenditure was due to hospital admitted patient services (Australian Institute of Health and Welfare, 2013b).

Cardiovascular disease is the highest expenditure group in Australia. In 2008-09, cardiovascular disease cost 12% of the allocated health care expenditure (Australian Institute of Health and Welfare, 2014d). Musculoskeletal diseases are a further 9% of the total. Osteoarthritis makes up the bulk of musculoskeletal expenditure with 29% (Australian Institute of Health and Welfare, 2014c). Diabetes makes up another 2.3% of allocated health expenditure with 60% of those funds going toward type 2 diabetes (Australian Institute of Health and Welfare, 2013a).

Dementia and other neurological diseases often result in the person needing full time care. 84% of Australians with dementia sometimes or always need assistance and 93% received some sort of assistance due to their dementia. While family and friends may play a role, aged care facilities play a large part. In 2010, over half of residents in Australian residential aged care were diagnosed with dementia (Australian Institute of Health and Welfare, 2012a). As dementia and other neurological diseases have no cure, carers will continue to be needed and raise expenses.

Population ageing is a key driver of growth in health care expenditure due to the fact that health care expenditure is higher in older people who as a result of higher levels of chronic disease consume the bulk of health care services. In 2008-09, health expenditure on adults 85 years and over was almost 20 times as high per person than expenditure on children aged 5-14 years (Figure 1.3) (Australian Institute of Health and Welfare, 2016a).

**Figure 1.3: Allocated health expenditure per person by age group and sex 2008-09**

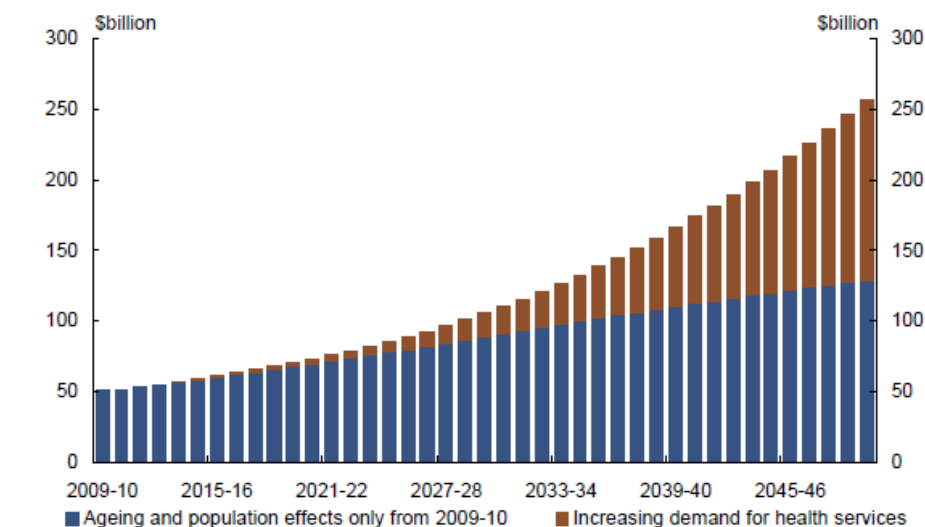


Source: (Australian Institute of Health and Welfare, 2016a)

The cost of health care is expected to increase in the future regardless of change in demographics. However, with the increase in ageing and associated policy responses to increases in prevalence of chronic disease health care expenditure is expected to increase significantly.

Figure 1.4 represents the anticipated growth in Australian Government health expenditure driven by the effects of an ageing population and increase in chronic conditions, the changing nature of health services, the baby boomer generation expecting higher standards of aged care and health care services and emerging technological advances in health care delivery (Commonwealth of Australia, 2010). This accounting for roughly 10% of the difference between current spending and projected spending (Commonwealth of Australia, 2015).

**Figure 1.4: Australian Government health care expenditure projections**



Source: Treasury projections.



Figure 1.5 represents the projected spend per person relative to projected growth in expenditure, illustrating increased spend associated with an ageing population (Commonwealth of Australia, 2015).

**Figure 1.5: Australian Government Health spending per person with and without ageing (real 2014-15 dollars)**

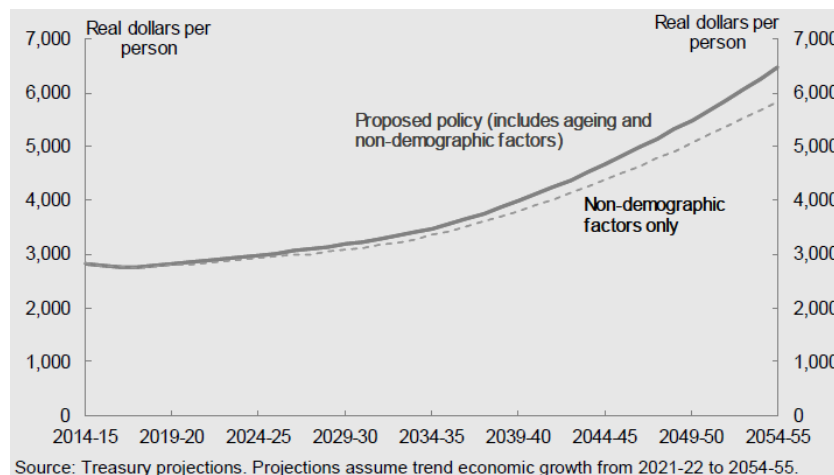
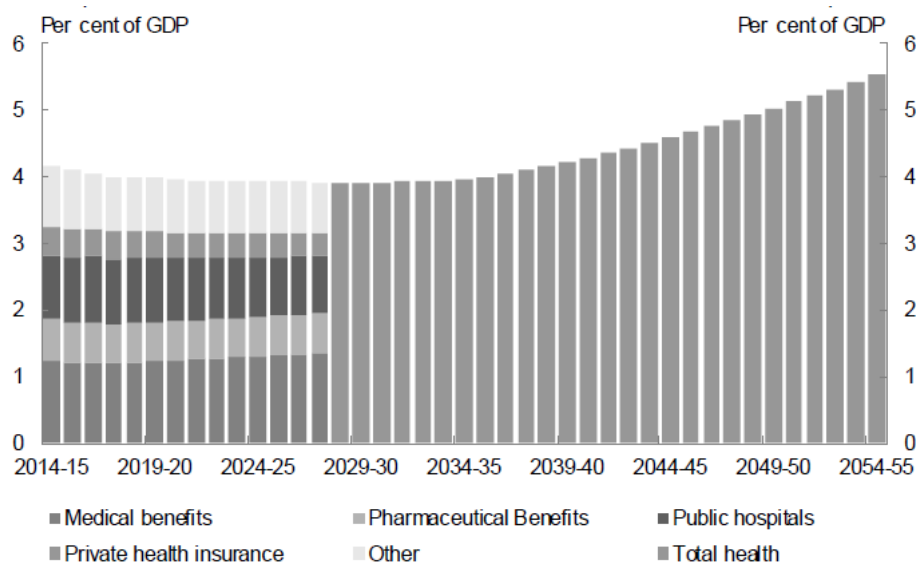


Figure 1.6 outlines projected health spending by component (Commonwealth of Australia, 2015).

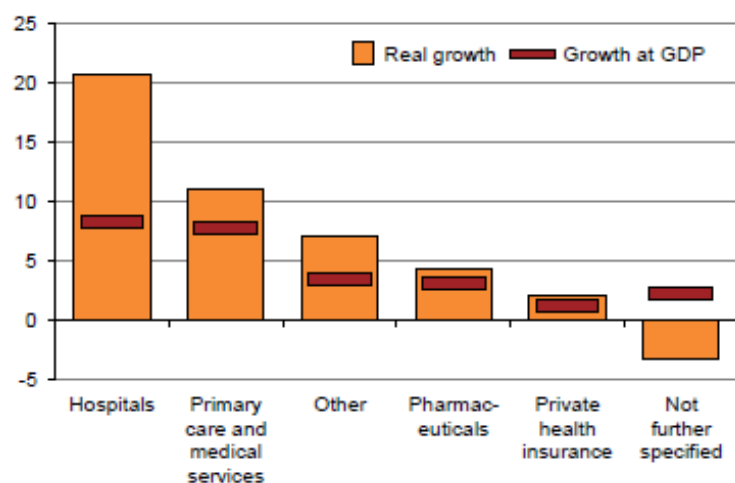
**Figure 1.6: Australian Government health spending by component**



(Note: excludes contributions to the Medical Research Future Fund)

Hospital expenditure is the biggest part of health spending and at the national level has been the biggest source of growth in all government spending (Figure 1.7) (Duckett et al., 2014).

**Figure 1.7: Change in Australian governments' health expenditure by sub category 2002-03 to 2012-13**



Source: (Duckett et al., 2014)

Health is the biggest sector in the ACT economy. ACT Government expenditure on health care is estimated to be 31% of the total budget and growing. ACT's own source expenditure on health has risen 78% over five years to 2012-13 and is expected to continue to accelerate in line with national trends and reduction in Commonwealth allocations at a rate significantly higher than GDP and the ACT's revenue base (ACT Government, 2013, Council of Australian Governments, 2016b).

In addition, the ACT has twice the relative level of unexplained hospital costs than the next highest State (after wage differentials are considered) (Figure 1.8) (Duckett et al., 2014).

**Figure 1.8: Average state unexplained costs (relative to Australia) with and without adjustments to average wages, 2010-11 e.g. Cost per admission relative to national average (\$)**



Source: (Duckett et al., 2014)

Given this outlier position and that hospital activity is a dominant budget item, there is clearly a need to focus on whole system effectiveness and service efficiencies for the benefit of consumers and the health system alike.

The cost burden is, however, not just a hospital-based issue. The National Health Performance Authority confirms that general practice and MBS face increasing challenges in managing demand and the rising cost of primary health care with (National Health Performance Authority, 2015):

- 12.5% of GP-attenders (e.g. 'very high' (more than 20 visits per year) and 'frequent fliers' (12-19 visits per year)) responsible for 41% of Medicare out-of-hospital expenditure, and
- very high GP-attenders seeing on average 4.8 GPs across 2012-13 – this demonstrating little continuity of care which potentially leads to duplicated tests and treatments.

The report confirms that people who see the doctor most often tend to have more health problems and chronic conditions and a greater level of disadvantage than low-attenders. It concludes that high GP-attenders need team based and better co-ordinated care to address health needs, enhance the consumer experience, and make appropriate, efficient and effective use of health care.

### *Strategies*

Given the predicted population growth and increase in the proportion and the associated health status of older people, including the higher prevalence of chronic disease, cost pressures will continue to be placed on the ACT's health system. There will be increasing demand for health care services unless we start to consider how we do things differently, shifting emphasis upstream to both prevent the onset of chronic disease and placing emphasis on comprehensive management of chronic disease within the primary health care setting in partnership with active health care consumers.

The above provides an overview of the current state of health of the ACT population, the prevalence of chronic conditions and the increasing impact on the health system.

Given the increasing burden of disease and complexity of the challenge at hand, a strategic and joined up approach to the development of comprehensive chronic disease prevention and management is required.

It is imperative that all strategic partners come together to co-design and develop a whole of system approach to chronic disease management spanning the spectrum of care which maximises the benefit of the whole health system and drives system effectiveness and efficiencies.

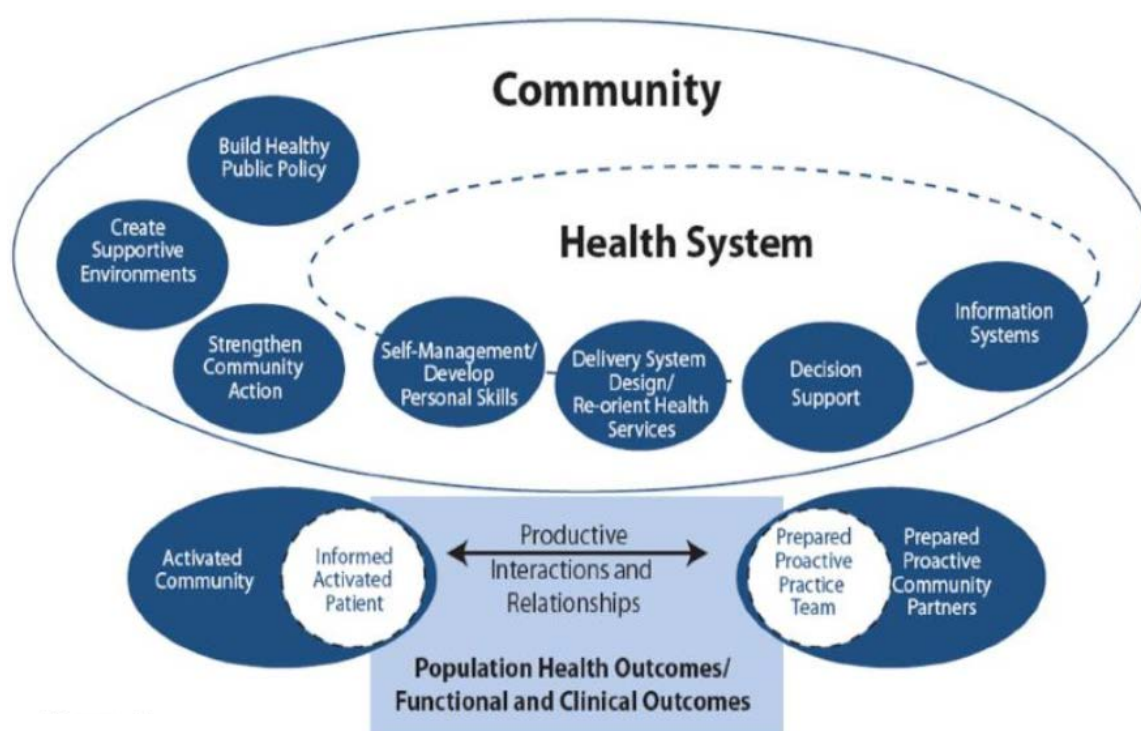
The ACT health system has a significant benefit in terms of shared population base and jurisdictional boundaries, and local decision authority vested in ACT Health and CHN. The development of a joint collaborative working agreement on primary care and chronic conditions (including the establishment of a joint Coordinating Committee) with ACT Health, Calvary Health Care and Health Care Consumers' Association of the ACT provides a platform from which to drive cross sector activities. Joint initiatives need to be based on the Expanded Chronic Care Model.

## What does effective chronic disease prevention and management look like?

The *Expanded Chronic Care Model (ECCM)* (Barr et al., 2003) is widely accepted as the universal best practice model for integrated chronic disease prevention and management (Figure 1.9). This model focuses on delivering better health outcomes and reducing the burden of disease for the benefit of people at risk of or living with chronic and complex conditions. The model adopts both:

- a population approach encompassing effective public health measures and the identification and stratification of cohorts of consumers at risk of developing chronic conditions who may benefit from health promotion and disease prevention measures (e.g. lifestyle modification), and;
- an individual approach - an appreciation of the holistic health care needs of the individual consumer, often spanning multiple chronic conditions, and the tailoring of individualised clinical regimens, packages and coordination of team-based care and supports that address personal health and social care needs. Ensuring people understand their health conditions, how best to self-manage chronic disease and make appropriate use of health services and supports, e.g. an emphasis on quality of life and keeping people well and out of hospital.

**Figure 1.9: Expanded Chronic Care Model**



Source: (Barr et al., 2003)

Evidence of best practice models of care, including the patient-centred health care home (patient-centred HCH) model, build on the ECCM above and consistently confirm that core components of a comprehensive and integrated chronic disease prevention and management model of care, regardless of condition, encompass (NSW Agency for Clinical Innovation, 2013b, Department of Health and Human Services, 2009, Barr et al., 2003, Page et al., 2014, Katterl et al., 2012, Alderwick et al., 2015, Feyer et al., 2014, Dorling et al., 2015, The Health Foundation, 2014):

- **Activated consumers:**
  - **Prevention and health promotion** – Reducing the risk and rates of ill health in a given population and/or when established, reducing the severity of chronic disease and preventing complications.
  - **Health and health system literacy** – Increasing knowledge of health risk factors and enhancing people’s ability to find and understand basic information about their health and how to make appropriate use of local health services.
  - **Lifestyle modification and supported self management** – Supporting individuals in positive behaviour change and enabling them to better understand and self-manage their chronic condition.



- **Supported decision-making** – Ensuring people with impaired decision making capability (due to age, disability, acquired brain injury or mental illness) have access to support to make personal and informed decisions e.g. advanced care planning (ACT Disability Aged and Carers Advocacy Service, 2016).
- **Comprehensive and integrated care:**
  - **Targeted enrolment of patients at general practice** – Patients identified at risk of, or living with, complex and chronic conditions establish a therapeutic relationship through voluntary enrolment with a named GP or practice for comprehensive chronic disease management services (Scott et al., 2008).
  - **Screening, risk stratification and early identification of at risk individuals** – population wide screening activity (e.g. cancer screening services), effective lifestyle (and risk factor) reporting and recording, standard application of risk assessment protocols/tools, application of risk stratification methods utilising practice and hospital data, and predictive modelling techniques to identify potential hospital 'frequent fliers' (Capital Health Network, 2016b, Haas et al., 2013, Department of Health, 2016c).
  - **Comprehensive assessment** – appropriate and timely access to diagnostics (including diagnostic imaging and pathology) and specialist outpatient services.
  - **Timely access to care and supports** – including appropriate and timely access to team based care encompassing both health and social care components e.g. GPs and primary health care practitioners, clinical specialists, reablement or end of life services (e.g. outpatient referrals, specialist clinics, acute services and reablement), welfare and social care supports focused on individualised needs and comprehensive care plans.
  - **Evidence-based clinical management and clinical pathways** – Adherence to evidence-based clinical guidelines and localised clinical pathways that address individual needs and comorbidities (including access to self management and rehabilitation/reablement services and encompassing transitions of care and effective medicines management) and the psychosocial impact of chronic disease (Starfield, 2010, NSW Agency for Clinical Innovation, 2013a).
  - **Primary health care led shared care, care coordination and continuity of care** – The development of holistic individualised care plans and team-based packages of care, the provision of care coordination encompassing both health and social care services and supports (often general practice based), step-up/step-down capability (to respond

to changing needs), effective discharge planning and transitional supports across the health and social care system, including hours and out of hours services and supports (Watson and Meyers, 2010).

- ***Effective monitoring and review*** – The proactive monitoring and management of symptoms, post transition/discharge follow-up and supports, management of complications, secondary and crisis prevention e.g. medicines review/management and encompassing the use of telehealth communication and monitoring systems (Commonwealth of Australia, 2016).

This evidence base also affirms that singular approaches are not effective. Successful chronic disease prevention and management programs utilise multi-facted evidence-based approaches, often recognising the relationships between such components (e.g. effective discharge planning, community service supports, immediate post-acute transition services and monitoring (e.g. Home from Hospital) and ongoing self-management capability) and the critical role of the GP and general practice in providing clinical leadership, team-based care and care coordination (Dorling et al., 2015).

While the above articulates the components of an optimal generic chronic disease prevention and management model of care (an approach adopted by Commonwealth in the draft Strategic Framework for Chronic Disease) (Department of Health, 2016h), research affirms the benefit of applying this model at a disease specific level across the continuum of care spanning primary, acute and community based health and care services and sectors (Katterl et al., 2012, NSW Agency for Clinical Innovation, 2013b, Barr et al., 2003, Alderwick et al., 2015). For example, the ECCM above could provide the framework for the design and development of a cardiovascular disease prevention model for primary health care in the ACT (Volker et al., 2014). Similarly the Chronic Heart Failure Consensus Statement which confirms multi-stakeholder agreement on and commitment to a standardised model of care (Page et al., 2014). Work undertaken by the NSW Agency for Clinical Innovation (ACI) is currently focusing on tailoring and operationalising the NSW Model for Integrated Care across numerous chronic conditions e.g. Diabetes Mellitus and Congestive Heart Failure (CHF), and Better Cardiac Care and Respiratory Disease Management for Aboriginal and Torres Strait Islander People (NSW Agency for Clinical Innovation, 2015a).

While best practice chronic disease prevention and management models of care encompass all of the above components, the operating environment must be supported by key system enablers including (Primary Health Care Advisory Group, 2015, Feyer et al., 2014, Barr et al., 2003, NSW Agency for Clinical Innovation, 2013b, Alderwick et al., 2015, Dorling et al., 2015):

- ***Data collection and information sharing*** – By patients and health care teams to measure and monitor individual health outcomes and improve clinical and team-based performance. The electronic patient health record offers the ideal tool to document and supply patients, carers and health care providers with the appropriate health care information to optimise care. The development of whole of system chronic disease registers (e.g. CHF register) to both indentify patients and facilitate effective patient monitoring. Data system compatability within and across health services is required to ensure efficient transfer of data and reduce system duplication and waste. Adequate patient information is a prerequisite for reducing avoidable ED presentations and hospital admissions and medical errors.
- ***Access to meaningful data for management and benchmarking*** – The application of standardised chronic disease specific outcome measures and National Minimum Data Sets, including:
  - the collection of outcome data at an individual, practice and population level to determine the effectiveness and cost of care; inform practice standards, performance and development based upon up-to-date comparative effectiveness research, and; inform system performance and cost effectiveness.
  - the measurement and evaluation of care effectiveness and enable regional, national and international benchmarking of performance and outcomes (e.g. CHF).
- ***The use of assisitive technologies*** – encompassing the remote monitoring and observations of patients with chronic disease e.g. telehealth monitoring and supports.
- ***The use of funding models that support the delivery of comprehensive consumer focused packages of care across the whole life course that promote team-based, coordinated and continuous care*** – e.g. the application of bundled payments to optimise care and augment fee for service payments.
- ***Workforce planning and development*** – An appropriately resourced, skilled and equipped muti-disciplinary and flexible primary health care workforce with access to specialists which work together to deliver evidence-based care. Policies that strengthen both specialisation (by condition or client type) and multi-skilling in the health workforce are important in this respect.
- ***Research and emphasis on quality improvement*** – Ethical and evidence-based research and quality improvement policies together with the promotion, monitoring and implementation of high quality evidence is essential to ensuring evidence informed practice and

encompasses processes to ensure the dissemination and translation of evidence into practice.

## Policy and System Reform

In recognising the burden of disease, the Australian Government has undertaken a number of reviews to inform future policy and health system reform agendas.

The report to Government on the findings of the Primary Health Care Advisory Group (PHCAG) places increasing emphasis on the fundamental role of primary health care in the prevention, management and co-ordination of consumer centred care and accomplishment of better outcomes for people with chronic and complex conditions (Primary Health Care Advisory Group, 2015). This is consistent with the Royal Australian College of General Practitioners (RACGP) vision for general practice and a sustainable health care system (The Royal Australian College of General Practitioners, 2015).

The *Healthier Medicare* package, to be rolled out from July 2017 proposes the introduction of a new model of care for people with chronic and complex conditions and up to 200 patient-centred Health Care Home (HCH) pilot sites. The pilot sites will be trialling new models of GP-led and team-based chronic disease management encompassing specialist and allied health interventions, the provision of health care packages tailored to the individual needs of enrolled patients with multiple chronic conditions, funded by a 'bundled' primary health care payment system (e.g. re-directing MBS Chronic Disease Management funds to support this new approach). Pilot sites will be responsible for co-ordinating care for chronically-ill patients, and facilitating timely access to state run out-of-hospital and community nursing services (Australian Government, 2016a, Australian Government, 2016c, Australian Government, 2016b).

The review of the Medicare and Pharmaceutical Benefits Schemes (MBS and PBS) provides another key component of policy reform with an emphasis on efficiency and effectiveness. Reductions in rebates to be introduced from 1 July 2016 may, however, present a barrier to access to primary health care services as service providers increase patient charges to compensate for loss of income. Given the low utilisation of MBS items within the ACT (see below), concerns from the consumer organisations, service providers and professional bodies point out the likelihood of the disproportionate impact of this policy on low income families and those at risk of poor health outcomes. It is also indicative of a misalignment with strategies for effective chronic disease prevention and management and the development of a high performing health care system founded on accessible, responsive and comprehensive primary health care services.

Recent reports on the results of the MBS review confirm that clinical practice is more likely to be improved by more appropriate GP decision-making with an emphasis on application of evidence-based clinical protocols. This will ensure that tests and treatments are targeted at people with appropriate clinical indications, rather than a radical shift in MBS and PBS themselves (Parnell, 2016).

Similarly, the introduction of the Pharmacists within General Practice pilots reinforces the concept of the Health Care Home with a focus on ensuring appropriate pharmaceutical regimens (e.g. review of medications for those with multi-morbidity), pharmaceutical advice and support to GPs, consumer literacy and medicines management (a causal factor of many avoidable hospitalisations) and the reduction of crisis situations (Pharmaceutical Society of Australia, 2014a).

The recent COAG Agreement on public hospital funding confirms the responsibilities of Commonwealth and State/Territory Governments and the role of Local Hospital Networks (LHN), Primary Health Networks (PHN) and Private Health Insurers (PHI) in developing and delivering integrated health care given the interoperability of the health system. The Agreement affirms a commitment to develop and implement reforms to improve local health outcomes and decrease avoidable demand on public health services (e.g. not just hospitals). There will be better co-ordinated care, best use of public funds and paying for quality (e.g. not unnecessary or unsafe care), reducing avoidable readmissions to hospital (e.g. slowing the trajectory of chronic disease or staving off inevitable deterioration), with an emphasis on high performing primary health care (Council of Australian Governments, 2016a, Feyer, 2016, Council of Australian Government, 2016).

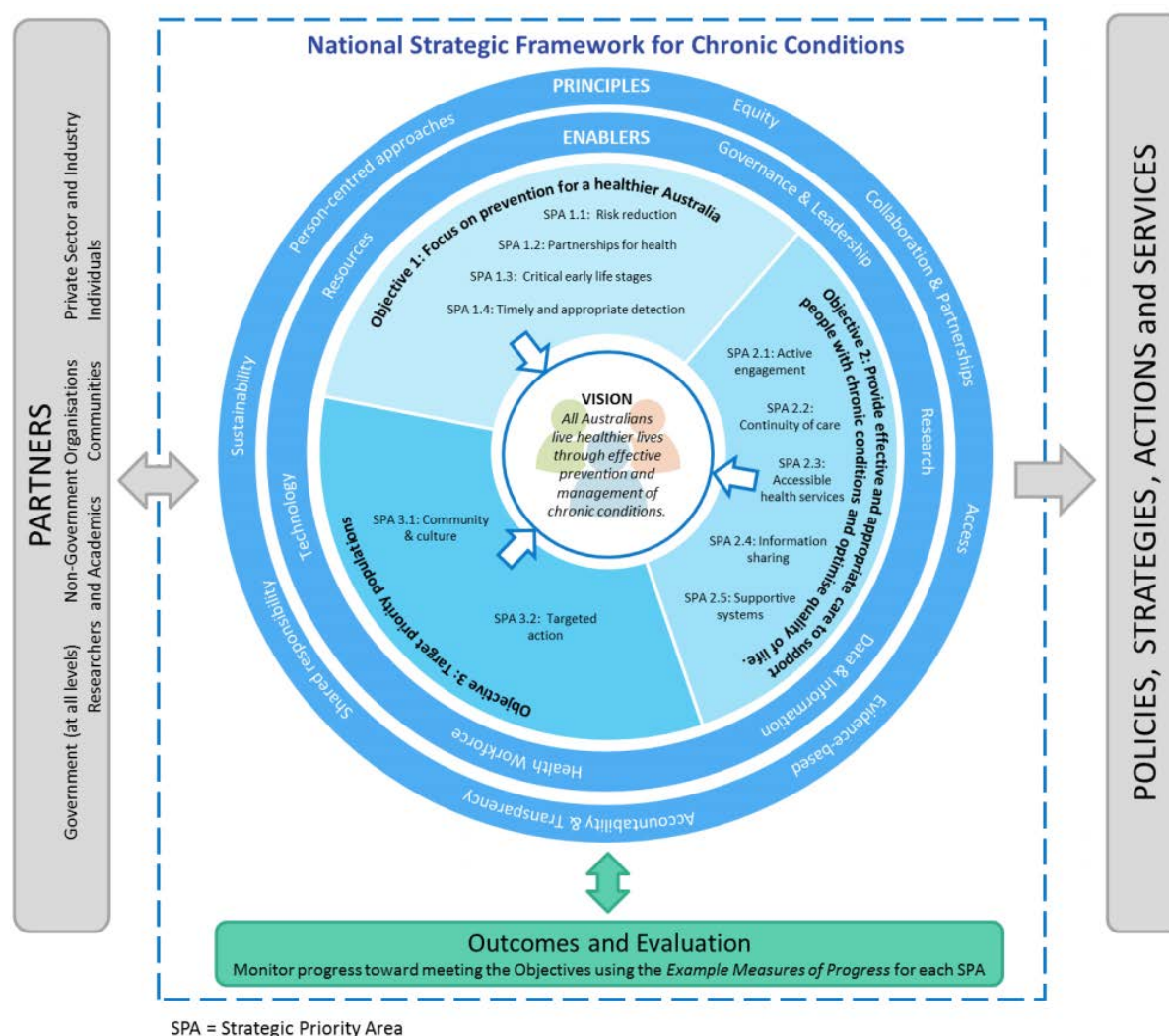
Most recently, the Inquiry into Chronic Disease Prevention and Management in Primary Health Care (House of Representatives Standing Committee on Health, 2016) considered the current state and best practice chronic disease prevention and management in the primary health care setting. The report puts forward 14 recommendations for reform, spanning the provision of primary health care for chronic disease, best practice, multidisciplinary teams and education, and funding models. It notes that the package of reforms announced under the *Healthier Medicare* package align with identified models of best practice and the two year trial of patient-centred *Health Care Homes* (HCH) encompass many of the suggested reforms.

Consultation on the draft National Strategic Framework for Chronic Conditions 2017-2025 (Department of Health, 2016h) provides a comprehensive overview of impending national policy, establishing a vision, setting direction and providing guidance for the development and implementation of policies, strategies, actions and services to address chronic conditions and



improve health outcomes. Strategic objectives and priority areas (SPAs) of focus are detailed in Figure 1.10.

**Figure 1.10: Concept Map of the National Strategic Framework for Chronic Disease**



Source: (Department of Health, 2016h)

In the ACT, the *ACT Health Chronic Conditions Strategy* (2013-18) affirms goals for better chronic disease management while the now expired *ACT Health Population Health Division Strategic Framework* (2013-2015) and *Primary Health Care Strategy* (2011-2014) affirmed goals for both chronic disease prevention and management (ACT Health, 2013a, ACT Health, 2013b, ACT Health, 2011).

Lapses in the latter two strategies, clarity of national policy and an increasing appreciation of the need for enhanced efficiency and effectiveness of the local health system to better address the increasing burden of disease, together with clarity of the roles and responsibilities of 'system stewards' (e.g. ACT Health and CHN – ACT's Primary Health Network) now provides an opportunity

to bring together key stakeholders to develop a jurisdictional, whole of system model of integrated chronic disease prevention and management supported by associated strategic investment, incentives and performance frameworks. If we share the same population and know what ‘good’ looks like, why can’t we work together to achieve it?

Acknowledgement of the interoperability of the health care system, underpinned by a collaborative agreement for joint working established between ACT Health, CHN (ACT’s PHN), Calvary Hospital and Health Care Consumers’ Association of the ACT, and the success of joint funded initiatives such as the introduction of HealthPathways, now provides the opportunity to build on evidence of best practice consumer focused chronic disease prevention and management and work together with consumers and other key stakeholders to determine what comprehensive and connected care should look like in the ACT (ACT Health and Capital Health Network, 2016, Oldham, 2014). An agreed localised evidence-based and best practice model with an understanding of current strengths and weaknesses within health sectors and across the system could provide a framework for action and clarification of each party’s contribution to a shared reform agenda.

Effective joint working relationships established through HealthPathways activities provide the opportunity to accelerate the application of a comprehensive and integrated model of care for a number of highly prevalent conditions including for example asthma, COPD, CHF (in line with the Heart Foundations national CHF Consensus Statement) (Page et al., 2014), CVD, diabetes, obesity and pain management.

### *Strategies*

Building on evidence of best practice, national and local policy and reform agendas, system stewards encompassing CHN and ACT Health, together with Health Care Consumers’ Association of the ACT (HCCA) and other key stakeholders (including Calvary Hospital and interested PHIs) should work together to co-design and develop a shared model of comprehensive and integrated care for the prevention and management of chronic disease in the ACT, confirming areas for improvement and strategic investment.

This jointly agreed model of care should be underpinned by refreshed strategies and investment plans for improvement and integration of connected and sustainable health prevention/ promotion, primary health care, community and hospital based services, and associated system enablers.

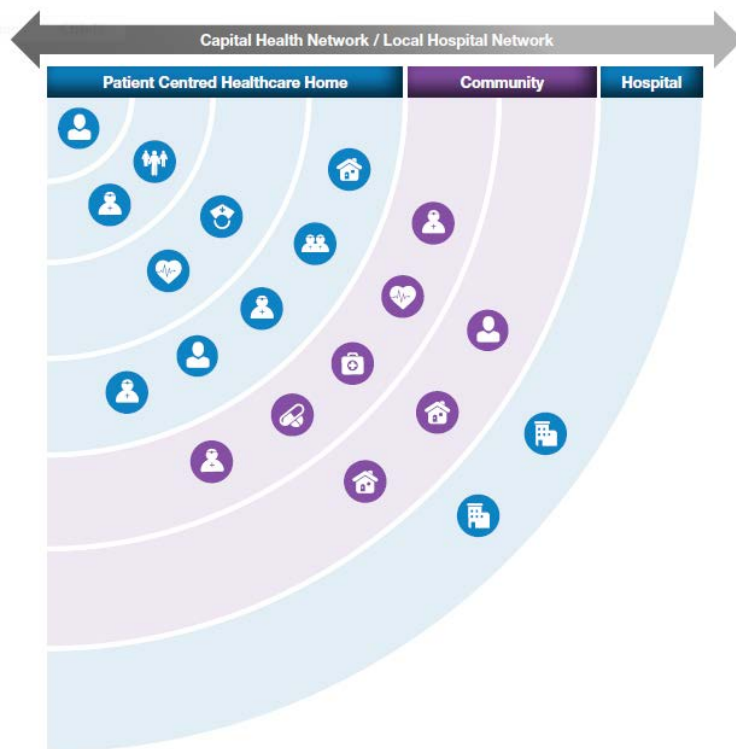
Application of the model should be accelerated through the development of tailored models of care encompassing for example Asthma, COPD, CHF (in line with the CHF Consensus Statement), CVD, Diabetes, Obesity and Pain Management.

## High Performing Primary Health Care

Advanced or high performing primary health care is a prerequisite for best practice chronic disease prevention and management and also the foundation of an efficient and effective health care system (Australian Centre for the Medical Home, 2016, Van Weels, 2014).

*Patient-Centred Health Care Home (HCH)* - The Primary Health Care Advisory Group (PHCAG) report to Government on *'Better Outcomes for People with Chronic and Complex Health Conditions'* (2016) reinforces the value of advanced primary health care and the significance of the relationship between consumers with chronic and complex conditions (Doyle et al., 2013, Primary Health Care Advisory Group, 2015). Recommendations to Government from both the PHCAG and most recently the Standing Committee on Health (2016) focus on modernising primary health care and maximising the role of consumers as partners in their own chronic disease management through the adoption of the patient-centred HCH model: *"a setting where patients and their carers can receive enhanced access to holistic coordinated care and wrap around support for multiple health needs"* (House of Representatives Standing Committee on Health, 2016). The patient-centred HCH model encompasses care for all stages of a disease across the life course (prevention, primary health care, specialist/acute and chronic care, and palliative care) and the provision of comprehensive consumer focused care, including care transition support, step-up/step-down capability and coordinated care (encompassing both health and social care) (Figure 1.11).

**Figure 1.11: Patient-Centred Health Care Home**



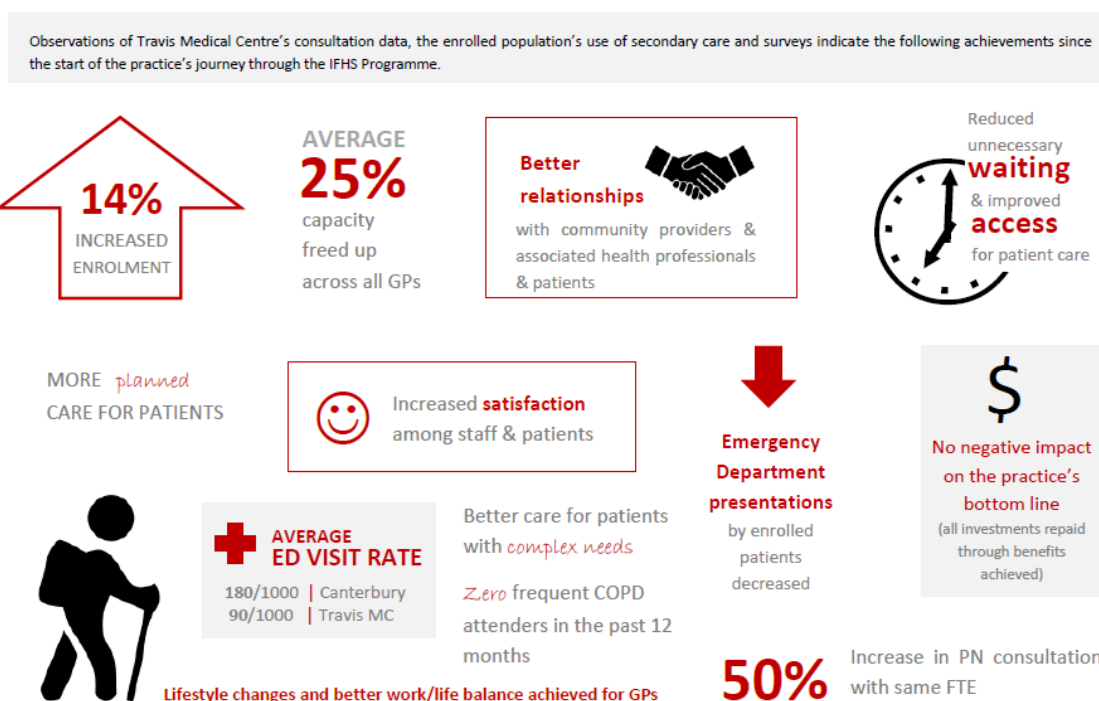
The patient-centred HCH provides the means to deliver a whole person, community and population approach to the ECCM model as outlined above, placing value on both generalist and specialist care and emphasis on interprofessional collaboration and care coordination.

Evidence confirms that patient-centred HCH initiatives increase consumer satisfaction and self-management capability, improve care processes (e.g. care planning, clinical leadership, multi-disciplinary working, care coordination and transitions of care) and have the potential to improve health outcomes, reduce health care activity and overall health costs (including GP and specialist attendance, avoidable ED presentations and preventable hospital admissions) (Jackson et al., 2013, Alexander and Bae, 2012).

In recognising the benefit of this approach, Scott and Jackson (2013) call for a shift in emphasis from low-volume high-cost hospital-centric to high-volume low-cost general practice-centred models of care (Scott and Jackson, 2013). Similarly, Starfield (2010) advocates that *'any proposals to revamp primary health care must consider the role specialists play in ongoing (as well as consultative) care of patients'* in the primary health care setting (Starfield, 2010). The introduction of the patient-centred HCH provides the opportunity to re-consider team-based care at a community level with the emphasis centred on a place based approach to keeping people well and out of hospital, improving health outcomes and the consumer experience of care.

A case study on the Integrated Family Health Services (IFHS) program, Canterbury, New Zealand clarifies results achieved by the Travis Medical Centre when changing the consumer experience and moving to a patient-centred HCH model (Figure 1.12) (Canterbury District Health Board, 2015).

**Figure 1.12: Results of the IFHS program, Travis Medical Centre, Canterbury, NZ**



Source: (Canterbury District Health Board, 2015)

Changes adopted in this improvement process focused on a different approach to acute presentations, focused on assessing need and conducting triage in advance of clinics; a planned approach to consultations; changes to the roles of team members; widening the team; more proactive management of complex patients, and; improved access to care for patients.

Similarly the Inala beacon practice scheme (Queensland, Australia) has adopted an integrated care model for type 2 diabetes encompassing a 'one stop' approach to diabetes management, with GPs with advanced skills in diabetes management working alongside Endocrinologists, Diabetes Educators and related allied health workers in the general practice setting. Evaluation of this approach confirms the practice sees three times as many patients as local outpatients clinics at half the costs, patients demonstrating major improvements in the control of glucose, blood pressure and lipid levels, improved levels of consumer satisfaction and a 50% reduction in avoidable hospitalisations. This model of comprehensive integrated chronic disease management is the Queensland Government's preferred model for outpatient substitution and is supported by a \$35 million Integrated Care Innovation Fund (Queensland Government, 2016).

The Queensland model also has scope to encompass other chronic conditions (e.g. renal disease, CHF, COPD etc) and palliative care supported by bundled funding arrangements to cover staff and infrastructure costs (Australian Doctor, 2016). Scott et al (2013) report that general practice based multi-disciplinary care led by GPs with a special interest in Chronic Heart Failure supported by a Cardiologist enables higher quality care and improved survival rates, is more effective than hospital clinics in applying evidence-based guidelines and managing comorbidities, and reduces days of hospitalisation and health care costs (Scott and Jackson, 2013). As mentioned above, the Heart Foundation's Chronic Heart Failure Consensus Statement (2014) provides multi-stakeholder agreement on and commitment to multi-disciplinary care (Page et al., 2014).

The beacon practice model above is now being developed in other areas of Queensland, has been adopted by Western Australia and a similar model piloted in NSW as part of the Integrated Care Pilots (NSW Government Ministry of Health, 2015). In addition, the NSW Agency for Clinical Innovation (ACI) is currently focusing on tailoring and operationalising the NSW Model for Integrated Care across numerous chronic conditions, including Diabetes Mellitus and Congestive Heart Failure, Better Cardiac Care and Respiratory Disease Management for Aboriginal and Torres Strait Islander People (NSW Agency for Clinical Innovation, 2015a).

As part of the *Healthier Medicare* package, the Australian Government recently announced the piloting of the Australian patient-centred HCH model in some 200 general practices commencing 2017-18. Prerequisites for participation are likely to encompass: participants must provide primary or principal care, have a practice structure or local service network to provide care consistent with the patient-centred HCH model and willingness to provide comprehensive and connected care consistent with the principles of the patient-centred HCH model (Starfield, 2010).

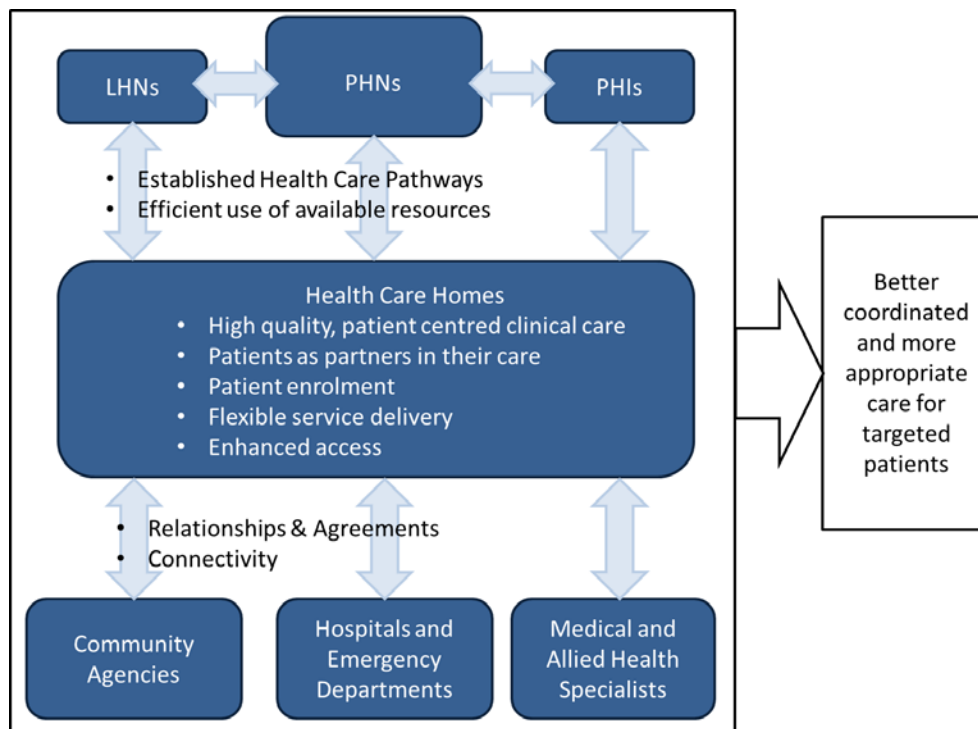
This trial aims to reduce the barriers faced by patients across a fragmented health system by keeping people well and out of hospital. Opportunity exists for innovative practices to test the '*Healthier Medicare* for chronically-ill patients' package in the ACT encompassing (Australian Government, 2016a):

- *Enrolment* - Voluntary patient enrolment and nomination of a preferred clinician
- *Activated consumers* - Patients, families and carers as active partners in care
- *Integrated care* - High quality flexible service delivery and team-based care through shared information, care planning, evidence-based and localised health pathways , in-hours and out-of-hours provision, care coordination and continuity of care
- *Outcomes focused* - Data collection and sharing by consumers and their health care teams to measure health outcomes and improve performance.

- *Funding mechanisms* – Application of ‘bundled payments’ to be used alongside MBS items to support whole person team-based service delivery.

Several of these components are evident in individual general practices in the ACTs (e.g. models of patient enrolment and extended team-based care exists) yet not consistently nor comprehensively across the ACTs primary health care sector, primarily due to the constraints of the current health care system and misalignment of system enablers (e.g. funding mechanisms) (Primary Health Care Advisory Group, 2015).

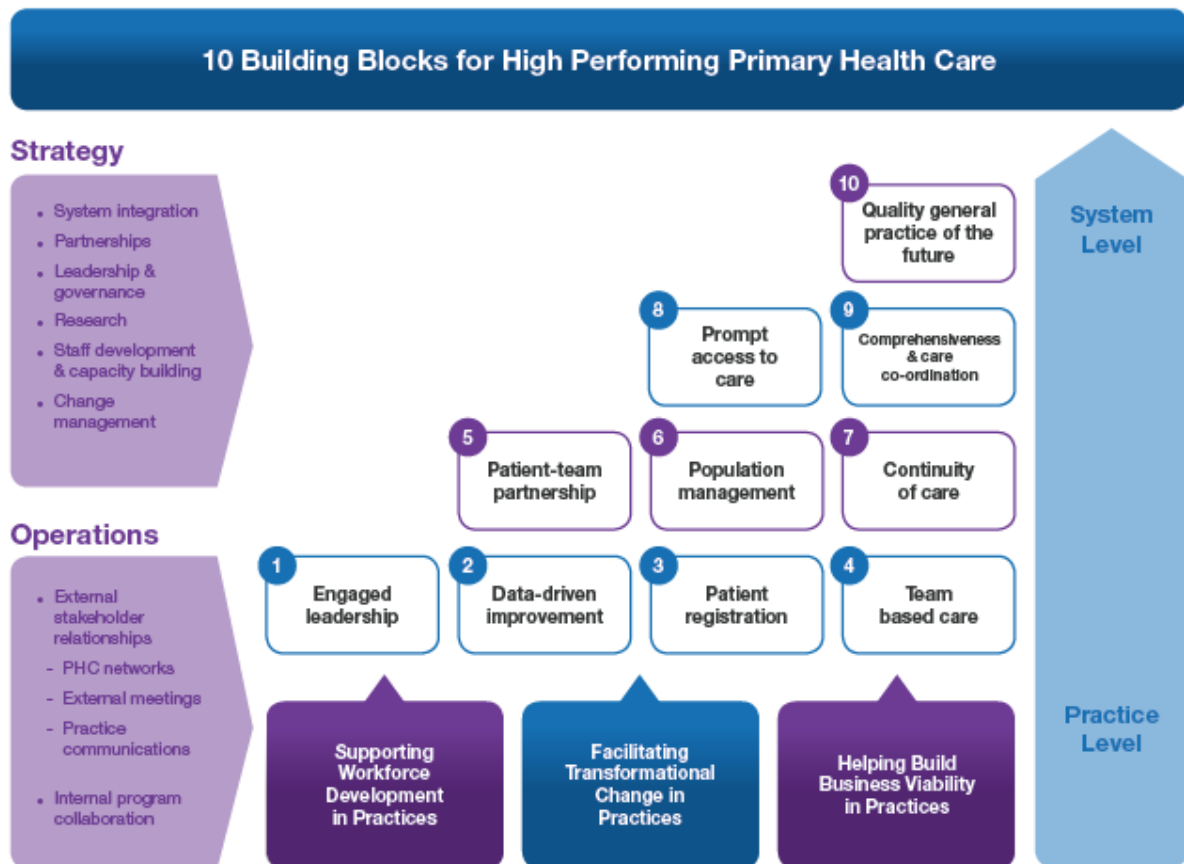
**Figure 1.13: The Health Care Home Model**



*10 Building Blocks of High Performing Primary Health Care* - Work undertaken by the Centre for Excellence in Primary Care in California, USA when both studying and describing the attributes of exemplary primary health care practices and supporting others to become more consumer focused, led to the formulation of the 10 building blocks of high-performing primary health care model (Bodenheimer et al., 2014) (Figure 1.14).



Figure 1.14: 10 Building Blocks of High Performing Primary Health Care



Source: (Bodenheimer et al., 2014)

The 10 building blocks depict the capabilities required to deliver both the patient-centred HCH model of care as well as ECCM. The four foundational blocks are considered critical as they underpin all other elements with high performing practices focusing on the accomplishment of comprehensive and coordinated care for the benefit of consumers and striving towards continuous improvement in all areas.

Not only is this improvement model transforming primary health care in the USA but is also transforming the development and delivery of primary health care in Australia. For example, WentWest (Western Sydney PHN) has established an innovative practice development and support program modelled on the 10 building blocks and directly informed by the Centre for Excellence in Primary Care, California, USA (WentWest, 2016). This program is considered a key enabler of WentWest's Integrated Care Pilot, funded by NSW Health and a core component of practice development support services offered by the PHN (Ernst & Young WentWest Limited & Menzies Centre for Health Policy, 2015).

The 10 building blocks support the principles of effective general practice (The Royal Australian College of General Practitioners, 2014), traditional models of the four pillars of primary care practice (e.g. first contact care, continuity of care, comprehensive care and coordination of care) (Starfield, 1992), the RACGP standards for general practice and vision of quality general practice of the future (The Royal Australian College of General Practitioners, 2013, The Royal Australian College of General Practitioners, 2012).

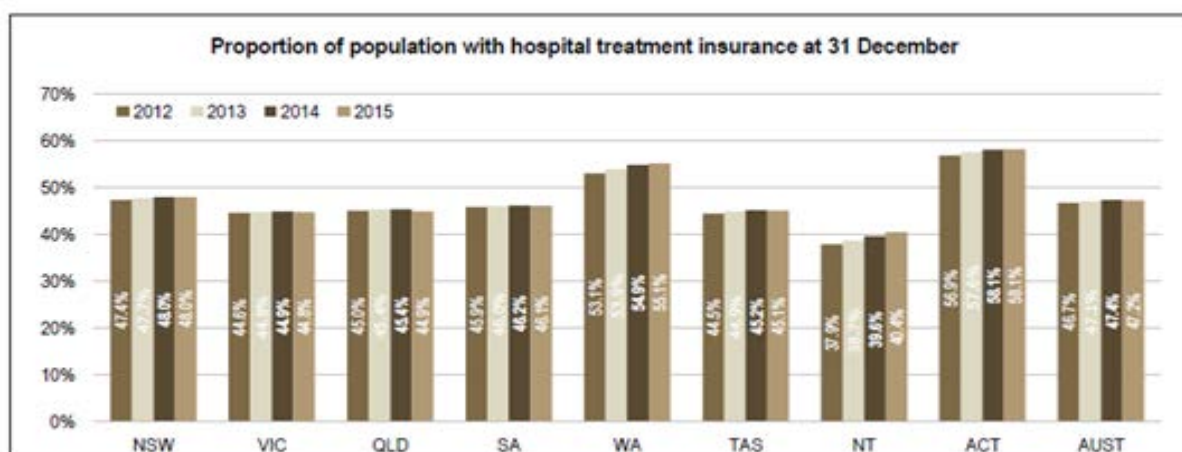
As lead primary health care organisation in the ACT, CHN plays a key role in working with general practice to build and sustain high performing practice. CHN has a longstanding joint working relationship with WentWest and looks to tailor the WentWest development program to ACT's primary health care needs to support quality improvement in general practice and establish the 10 building blocks that underpin the patient-centred HCH.

## **The Role of Private Health Insurers (PHIs) in Better Chronic Disease Prevention and Management**

Private Health Insurers (PHI) recognise that as both health care funders and service providers they play a significant role in the prevention and management of chronic disease for members. In the interest of service effectiveness and efficiency, they recognise that a more coordinated and integrated approach to prevention and management is needed to minimise the impact of chronic conditions.

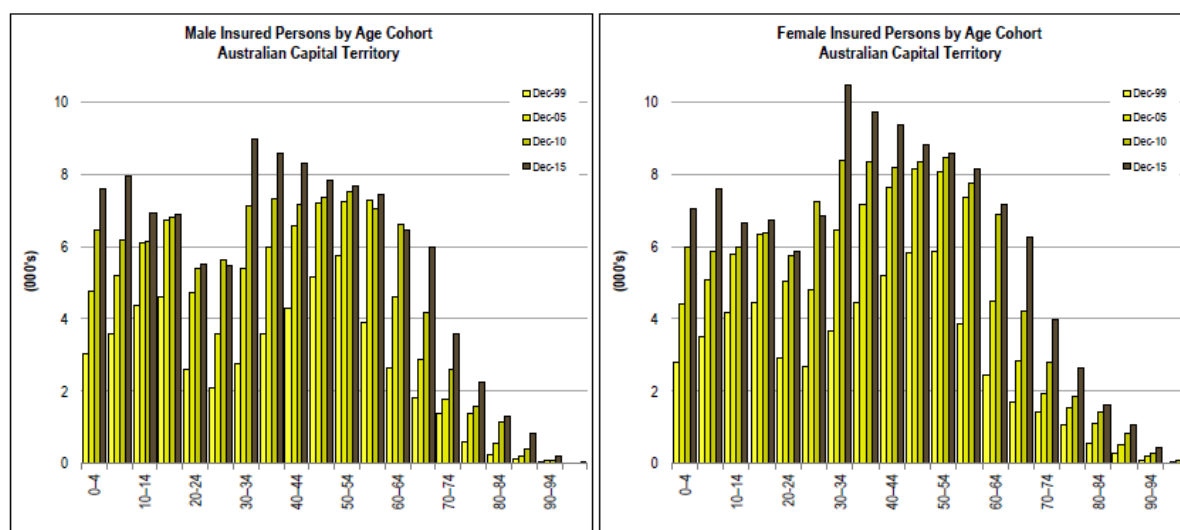
As a key component of a mixed health economy, in 2014 there was a 1.2% increase the number of people with private health insurance in all states and territories. The ACT continues to have the highest proportion of total population covered by hospital insurance than other jurisdictions (e.g. 58.1% coverage in the ACT as opposed to 47.2% coverage across all States and Territories) and followed the national trend experiencing 1.2% growth in 2014 (Figure 1.15) (Australian Prudential Regulation Authority, 2016b). Within the ACT more women than men, across most age groups, have private health insurance (Figure 1.16).

**Figure 1.15: Proportion of population with hospital treatment insurance at 31 December 2014**



Source: (Australian Prudential Regulation Authority, 2016b)

**Figure 1.16: Insured Persons by Age Categories – All PHIs – 31 Dec 2014**



Source: (Australian Prudential Regulation Authority, 2016b)

However, the ACT continues to demonstrate low levels of PHI utilisation (Australian Prudential Regulation Authority, 2016a).

Medibank and BUPA hold the largest proportion of the ACT market share (31.3% and 22.2% respectively) followed by NIB and HCF (15.6% and 14.1% respectively). The ACT membership base is of limited significance to the Australian PHI industry, at best accounting for 4% of Fund Membership (e.g. NIB, with Fund Membership for Medibank and BUPA being 2.2% and 1.7% respectively) (Commonwealth Ombudsman, 2016).

In recognising the increasing burden of disease and rising demand for high cost services, PHIs like other health funding agencies are keen to reduce pressures on high cost services by keeping people

well, reducing avoidable hospitalisations and readmissions, and providing comprehensive and co-ordinated care for people with chronic and complex conditions. Services provided by PHIs to achieve this include for example:

- HCF – the My Health Guardian service provides a health and wellbeing program for Members including online tools that promote goals setting, behaviour change and coaching for people with chronic health conditions (HCF, 2016).
- BUPA – Similarly BUPA provides on line health assessments and health checks delivered through a range of health tools and calculators. BUPA Telehealth and coaching programs for CHF, heart disease, diabetes, back pain and lung conditions encompass decision support programs, telephone health coaching and population health analytics results demonstrate a 10% reduction in annual hospital (re)admissions with average monthly medical and pharmacy costs lower for those people who received coaching (BUPA, 2015). BUPA which have been utilised by ACT Health.
- Medibank – Built on the stratification of need and evidence from similar international programs, Medibank Private has developed a suite of extended support services for people with chronic disease (Medibank Private, 2015). These programs are open to people with chronic conditions who once referred by their GP, meet specific eligibility criteria based upon the condition type, severity and complexity of a patient's condition where an appropriate funder has been secured. While the programs are being rolled out for the benefit of Medibank health fund members in the first instance, other PHIs may be interested in extending this service offer to members to reduce pressures on health fund costs. Similarly, given the benefit to hospital systems (e.g. reduced avoidable hospitalisation and associated costs) Victoria and Queensland governments have looked to fund this service offer for public hospital patients.

Health reform agendas recognise the contribution of PHIs and the potential to maximise the benefit of the whole health system to achieve better health outcomes for people with chronic and complex conditions. The draft National Strategic Framework for Chronic Conditions affirms PHIs are considered partners in the prevention and management of chronic conditions and advocates they have a shared responsibility for health and system related outcomes. This includes enhancing efforts to establish and maintain evidence-based and multi-pronged prevention approaches (Department of Health, 2016h).

## Strategies

Increasing interest in the patient-centred HCH operating model amongst ACT's general practices, together with the Commonwealths *Healthier Medicare* reform agenda and increasing acknowledge on PHI's roles on keeping members well and out of hospital, provides an opportunity for GP leaders and business owners to be at the vangard of health system reform.

The Commonwealth's patient-centred HCH pilot program provides the opportunity to strengthen consumer focused care, team care arrangements, care coordination and the interrelationship with specialist and acute services, and leverage relationships with partner funding agencies including MBS/PBS, ACT Health and PHIs.

CHN has a critical role in supporting continuous quality improvement and the enhancement of HCH capability founded on the fundamentals of the 10 building blocks of high performing primary health care services.

Key strategies include:

- Identifying and supporting innovative practices in the ACT to proactively participate in the piloting of the *Healthier Medicare* patient-centred HCH initiative.
- Extending the capacity of the CHN Practice Development Team to support quality improvement in the general practice setting – building the systems and expertise to be high performing practices founded on the 10 building blocks of high performing primary health care.
- Exploring opportunities to work in partnership with PHIs for the benefit of ACT residents and better integrate/leverage services offered by PHIs where appropriate.

## Activated consumers

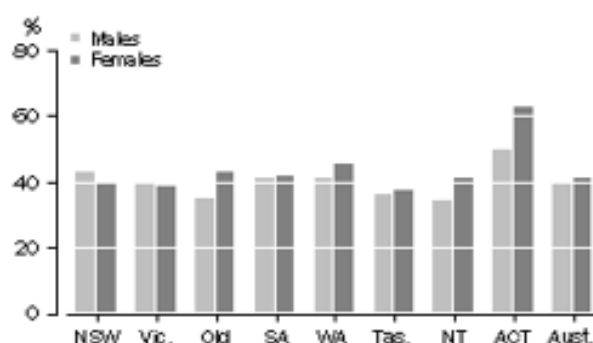
*Health literacy* - Patients' understanding of chronic disease and self-management, and how to make best use of an often complex and fragmented health care system, is a core challenge for people with low health literacy. Such people are typically of low SES status, often from marginalised and disadvantaged communities, e.g. those at risk of developing a chronic condition and poor health outcomes including potential ED/hospital 'frequent flyers'.

The Australian Bureau of Statistics (ABS) estimates that approximately 60% of Australians aged 15–74 years do not have adequate health literacy to enable optimal health outcomes (Australian Bureau of Statistics, 2008). While there were no outstanding differences in health literacy between states

and territories, the exception to this was the ACT, with the proportion of skills level 3 or above (the minimum required for individuals to meet the complex demands of everyday life and work in the emerging knowledge-based economy) being 56% (65% for women) (Figure 1.17).

Health literacy is generally lower amongst people with low educational attainment, who are unemployed and/or experience lower levels of income and SES status, are aged 15-19 years old, older Australians, people who speak a language other than English and those who have poorer health status.

**Figure 1.17: Health literacy skill level 3 or above**



Source: (Australian Bureau of Statistics, 2008)

Low health literacy perpetuates health inequality. Evidence (primarily from the USA and Canada) shows that low individual health literacy is independently associated with poor health status and higher utilisation of services. Low health literacy has been associated with significant health care costs in the USA and has also been found to (Keleher and Hagger, 2007):

- predict less healthy behaviours
- generate higher rates of hospitalisation
- reduce capacity for self-management of chronic conditions
- create poorer health status generally.

The Australian Commission on Quality and Safety in Health Care's (ACQSHC) statement on health literacy (September 2014) highlights the importance of health literacy in ensuring safe and high-quality care and separates health literacy into two components (Australian Commission on Safety and Quality in Health Care, 2014b):

- **Individual health literacy** - the skills, knowledge motivation and capacity of a person to access, understand, appraise and apply information to make effective decisions about health and health care.
- **Health Literacy Environment** - the infrastructure, policies, processes, materials, people and relationships that make up the health system and have an impact on the way that people access, understand, appraise and apply health-related information and services.

Actions are required to improve health literacy at multiple levels across the whole health system spanning the consumer, health care professionals, organisations that provide health care services at

a local level, organisations that support health care providers, and government organisations, regulators and bodies that advise on health policy.

This also reinforces the ECCM where consumers are considered equal partners in the co-creation of health supported by a sustained therapeutic relationship with a family GP (as the lead health care professional), the multi-disciplinary care team, care coordinators, specialist services and supports.

At a population health level, health literacy is considered a primary preventative measure equipping individuals with the knowledge and skills to make informed decisions about health risk factors, choice and control, and appropriate use of health and care services and supports.

At an individual level, health literacy strengthens the effectiveness of health interventions, contributing to better health outcomes through the development of therapeutic relationships between individuals and health professionals that facilitate better clinical care, quality and safety, better medicines and self-management, and an enhanced consumer experience.

Similarly, it is a health system measure, equipping health professionals and service providers to establish meaningful communication and productive relationships with consumers in the co-creation of health, driving service effectiveness, consumer satisfaction and service efficiencies (Doyle et al., 2013).

While nationally health literacy is considered a foundational component of the health equity and safety and quality agendas, limited priority appears to be attached to this in the primary health care setting. The ACQSHC are committed to embedding health literacy into health care systems, ensuring effectiveness of communications and integrating health literacy into education. ACQSHC calls on health care providers, managers, policy makers and consumers to take action to address health literacy (Australian Commission on Safety and Quality in Health Care, 2014a). For example, ACT Health has developed a range of resources and supports for clinicians and hospital services to ensure that services and staff are equipped to communicate and engage effectively with consumers (ACT Health, 2016c).

Similarly there is a need to equip consumers and carers to better engage with their own health, health professionals and the health system alike. While consumer and carer organisations play a significant role in the education, advocacy and support of consumer focused health literacy initiatives, health literacy supports targeting those with low health literacy and vulnerable populations is lacking. Funding for initiatives such as the 'Health Literacy for All' (an ACT Government grant funded program) and 'READ for Refugees' (a Department of Health grant funded program)



have subsequently expired and such services, while targeted at 'at risk' communities, no longer exist.

*HealthPathways* – Developed in New Zealand, HealthPathways is an online information portal used at the point of care by GPs, specialists, nurses and allied health practitioners, providing information tools and resources to assess, manage and refer patients to local health and care services (HealthPathways Community, 2016). Clinical guidelines and referral pathways are established on evidence-based practice tailored specifically to the local health system. HealthPathways is being implemented locally as a joint initiative between CHN, ACT Health and neighbouring Southern New South Wales PHN and Health District (Capital Health Network, 2016a).

While aimed at clinicians, the HealthPathways system also has a companion consumer focused portal HealthInfo, that provides complementary consumer focused information on local health services, health conditions and medications, referral pathways and clinical best practice, what to expect at each stage of the consumer journey, options and supports, tailored specifically to the local population (HealthInfo Canterbury, 2016). HealthInfo is considered a key component of the New Zealand health literacy campaign, providing locally tailored quality information to inform consumer choice and control, enhance health literacy and self-management capability.

The two information platforms support the co-creation of health, work hand-in-hand ensuring both clinicians and consumers have access to consistent and quality health and health system information to aid chronic disease management and establish common understanding – the foundation of an ongoing therapeutic relationship between consumer and clinician.

The bulk of the ACT's information resources have already been developed in the clinical HealthPathways portal (including educational resources for consumers) and the platform is available through the HealthInfo portal. Investment required in a localised consumer portal is considered minimal with the potential to add benefit at an individual, community and health system level (HealthInfo adopts a place based approach) and reinforces the concept of consumers as equal and partners in care.

*Self-management and health coaching* – Enhancing self-management capability through, for example, the Stanford Chronic Disease Self-Management Program (small group focused) (Stanford Medicine, 2016) and the 'Flinders Model' of chronic disease self-management (individual focused) (Flinders Human Behaviour and Health Research Unit, 2016), ongoing behavioural change support and health coaching (e.g. HealthChange encompassing lifestyle modification founded on motivational interviewing, goal setting and cognitive behavioural approaches (HealthChange

Australia, 2016) utilised by Medibank's Care Connect suite of programs) empowers people to better understand and manage their conditions, thereby improving health outcomes and the patient experience of care, and promoting more efficient use of health care resources through greater self-awareness of when and how to make best use of health services.

While the ACT has a range of self-management and health coaching programs spanning public health and community based services, and the local peak body SHOUT proactively promotes such programs and supports (Self Help Organisations United Together, 2016), there is limited awareness of these amongst consumers and clinicians alike, their eligibility criteria and access routes, and limited follow up to reinforce adult learning, sustain participant interaction and enhance peer support (ACT Medicare Local, 2014). While a key component of best practice chronic disease prevention and management, such services and supports are not well integrated into localised health pathways and not often considered a core component of individualised care planning.

Opportunity exists to mainstream self-management programs and supports into care planning and chronic disease management and care coordination, integrate into clinical protocols established in HealthPathways (and potentially HealthInfo), strengthen referral routes and access to local services and supports to enhance self-management capabilities amongst people with chronic and complex conditions.

*Supported decision-making* – The United Nations Convention on the Rights of Person's with Disability calls for the adoption of supported decision making to ensure individuals are able to access their right to decide, enjoy autonomy and inclusion and live equal and active lives (United Nations, 2006). The principles of supported decision making apply to the ACSQHC National Standard on Partnering with Consumers (Australian Commission on Safety and Quality in Health Care, 2016). Effective chronic disease prevention and management requires a beneficial relationship between consumers and their personal support networks and clinicians alike.

Supported decision making is aimed at people with impaired decision-making capacity due to age, disability, acquired brain injury or mental illness e.g. those people typically at risk of chronic, comorbid and complex conditions.

ACT Disability, Aged and Carer Advocacy Service (ADACAS) has undertaken a number of projects to raise awareness of supported decision making and provides training and support to guide decision supporters (potentially including clinicians) in their role (ACT Disability Aged and Carers Advocacy Service, 2016).

Decision supporters should be considered key members of the extended health care team as set out in the patient-centred HCH. Knowledge of such supports is currently limited and such support not universally accessible nor mainstreamed within and across health care services. Opportunity exists to inform the ACT's health workforce on individual's rights and the principles of supported decision-making, mainstream this important initiative and integrate it into clinical protocols established in HealthPathways, strengthen referral routes and enhance access to decision support for people with chronic and complex conditions.

### *Strategy*

Strategies to promote health, increase health literacy, self-management and determination include:

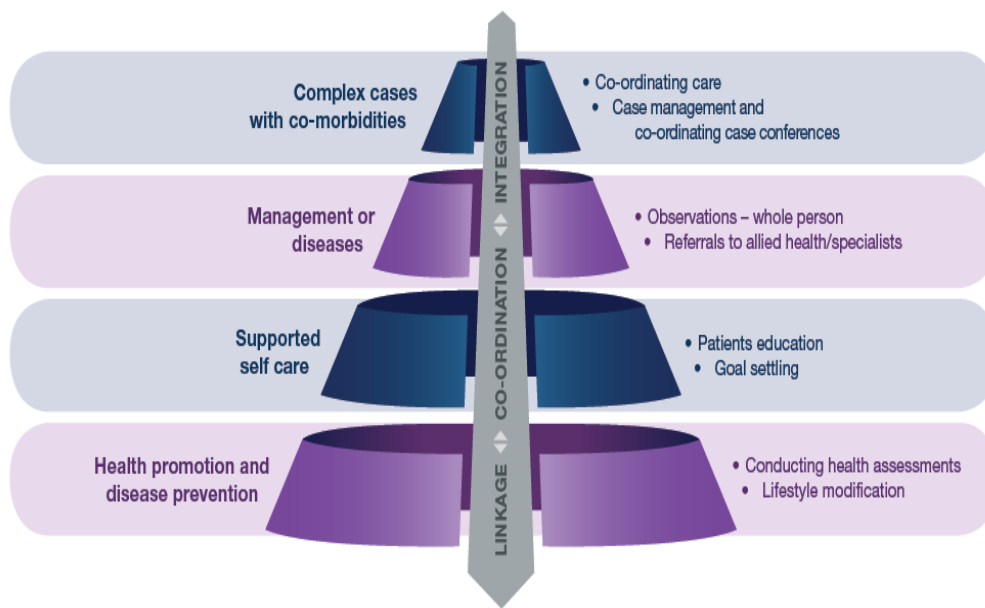
- working with ACT Health to implement a HealthPathways linked consumer portal HealthInfo that provides an accessible repository of validated local health information on service and access options, locally endorsed condition treatment fact sheets and other local resources.
- providing patient education and self-management support as an integral part of the cross-sector chronic disease management programs, care planning processes and care coordination services, and integrate into local HealthPathways.
- integrating supported decision making (for people whose decision making capacity is impaired) information, tools and resources into HealthPathways clinical and consumer portals.

## **Early identification, assessment and intervention for patients at risk of poor health outcomes**

### *Risk Stratification and Patient Segmentation*

The risk stratification of population cohorts (or consumer segmentation) is a core element of comprehensive chronic disease prevention and management programs and a prerequisite to the identification of patients likely to benefit from tailored care programs including, for example, care coordination.

**Figure 1.18: Adapted from Kaiser Permanente - Risk Stratification Pyramid**



Source: Adapted by CHN from Taylor (2007)

The Kaiser Permanente model of risk stratification provides a model to segment whole populations into different groups contingent on needs, determine the appropriate level of intervention proportionate to that need, and tailor services and health care resources accordingly (Taylor, 2007).

Tier 1 includes people with highly complex needs and frequent users of unplanned hospital services (5% of the population), Tier 2 encompasses people with chronic conditions who are considered at risk of deterioration (15-30% of population) which would benefit from structured support and Tier 3 (65-80% of the population) who have relatively manageable chronic conditions who on the whole are capable of self-management (Figure 1.18).

While traditionally health and care resources have been focused on those with the highest levels of need (e.g. Tier 1 - those patients who require the highest intensity hospital services, as represented in both the CDMU CCP and Medibank's Care Point program), increasingly research affirms the benefit of supporting people at an earlier stage (e.g. Tier 2/3 – typically those people with chronic disease whose health condition is considered unstable or are at risk of deterioration) who could benefit from planned, structured and coordinated support and who currently consume the majority of total health care costs, to better manage chronic disease and prevent deterioration, crisis and peak hospital utilisation, and reduce overall costs (McKinsey & Company, 2016, Feyer et al., 2014, Haas et al., 2013).

Identification of such patients can't be achieved by the acute sector alone but requires a realignment of the current health care system with an emphasis on high performing primary health

care e.g. “enrolling patients at early stages of disease and identifying people who can benefit from hospital avoidance strategies” and the adoption of a jurisdictional and whole of system approach to integrated care (Feyer, 2016). McKinsey’s report that an unpublished report by the NHS (UK) found that the identification of at risk patients and a focus on integrating services, the utilisation of intensive primary health care to reduce hospital admissions, and the active management of patients by GPs, reduced the number of bed days required for asthma, bronchitis, COPD and stroke by 75% among people over the age of 65 years (Dorling et al., 2015).

Risk stratification which utilises patient and administrative data across both PHC and hospital settings can be utilised to identify ‘high-risk’ patients. A recent review conducted in USA of six risk-adjustment methods used to predict hospitalisations, ED visits, 30 day readmissions and high expenditures, concluded that while the results of the Adjusted Clinical Groups risk stratification model outperformed others in predicting hospitalisations and ED visits, any of the other five models would help general practice target and implement care coordination more efficiently (e.g. Hierarchical Condition Categories, Elder Risk Assessment, Chronic Comorbidity Index and Minnesota Health Care Home Tiering) (Haas et al., 2013). This review also noted that other factors could be considered when identifying patients in need of care coordination in order to reduce the need for hospitalisation and high cost health care, including consideration of living situations, medication regimen, lifestyle and patient choices.

To date risk stratification and consumer segmentation has been minimal, largely limited to research and service pilots. Presently the Australian Health System does not systematically group health care consumers into different segments based on assessment of future health care needs. The ability to do so is compounded by the omission of patient ‘enrolment’ at general practice level, limitations of fragmented data sets, health data collection and analysis, and limited interoperability of information systems.

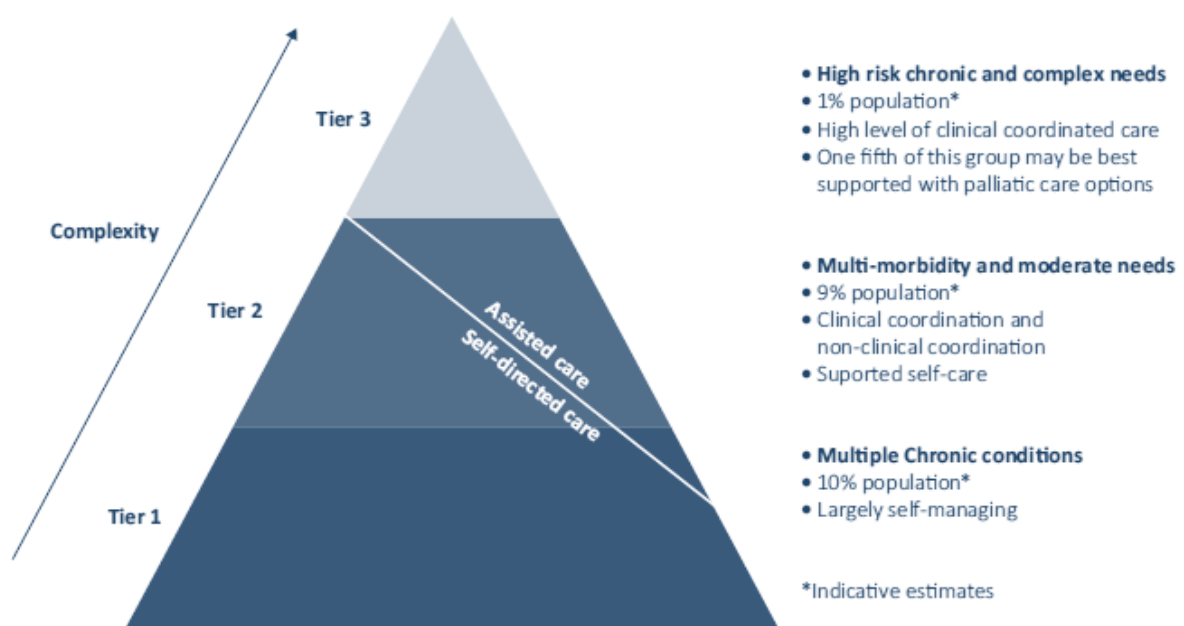
While most hospital avoidance, care coordination and chronic care programs identify patients through physician referrals, this approach doesn’t necessarily focus on patients who could benefit most from comprehensive chronic disease prevention and management programs. For example,

- a recent study of the use of MBS items amongst people with diabetes suggests that they are not targeted to those people who are likely to benefit the most (Department of Health, 2011). However, this evaluation of the Diabetes Care Project concluded that the combination of an improved IT platform and data collection and analysis, and alternative funding models based on risk stratification had a positive impact on clinical outcomes.

- results of the NSW Chronic Disease Management Program (an initiative aimed at reducing potentially preventable hospitalisations) suggest people with chronic disease need to be recruited to community based programs before their conditions deteriorate to the point that they need hospitalisation and that patients (e.g. Tier 2 patients) were being enrolled onto the program too late (e.g. Tier 1 patients). The program has now been adjusted to identify people with chronic diseases earlier and services and supports put in place to help them better manage their conditions in the community setting.

The recent Primary Health Care Advisory Group (PHCAG) recommendations to Commonwealth on Better Outcomes for People with Chronic and Complex Health Conditions (2015) acknowledges that “linking the patient with the right intensity of treatment is important” (Primary Health Care Advisory Group, 2015).

**Figure 1.19: Chronic Disease by complexity in Australia**



Note: \* estimates based in analysis of available population, hospitalisation and Medicare data. Accurate estimates of population sub groups are limited due to limited national data to support such analysis.

Source: (Primary Health Care Advisory Group, 2015)

For illustrative purposes, the PHCAG draws from existing utilisation data to segment populations and identify the intensity of care that should be offered in the proposed ‘*Healthier Medicare*’ patient-centred Health Care Home trials (Department of Health, 2016g) and calls on the Department of Health to “identify suitable case finding processes, drawing on existing validated Australian and

international risk stratification tools to identify patients requiring high levels of coordination and team (based) care” (Primary Health Care Advisory Group, 2015).

Evidence of the increasing interest at both state and national levels in the application of risk stratification in the Australia health care system includes:

- Based on the Kaiser Permanente and Wagner ECCM, risk stratification has been used successfully in:
  - Victoria for the Hospital Readmissions Risk Program (HARP) where clinical information, service use history, psycho-social and other factors are utilised to determine the probability of readmission within the next 12 months and patients stratified and service offers tailored accordingly to the level of risk (St Vincent's Hospital Melbourne, 2015).
  - The identification of fund members eligible to participate in Medibank’s Care First suite of services with the screening and eligibility protocols encompassing a two stage identification and segmentation process utilising both member based data and where accessible general practice related data (Medibank, 2016).
- Development and application of the NSW Agency for Clinical Innovation ‘*Patient identification and selection handbook: NSW guide to risk stratification*’ (NSW Agency for Clinical Innovation, 2015b).

### Strategies

The Commonwealth Government has recently announced the development of a risk stratification framework as part of the Healthier Medicare initiative to be rolled out from July 2017. It is anticipated that this tool will draw on current data sets (Including MBS chronic disease item utilisation), will be trialled in the patient-centred Health Care Home pilots and will inform the classification of individual need, eligibility and access to packages of care and ‘bundled payments’, and the development of practice based ‘at risk’ and chronic disease registers.

Risk stratification is clearly contingent on access to timely and relevant data. CHN has a key role in informing the development of a stratification tool, supporting general practice in the application of the tool and integrating the tool into the local QiData quality improvement program.

CHN should therefore look to:

- extend the QiData initiative to support practices to stratify patient cohorts/identify people at risk of chronic disease and/or poor health outcomes

- work with ACT Health to apply a consistent approach to the stratification of patients and identification of those people who would benefit from care coordination and tailored chronic disease management programs.

## Identification of those at risk of chronic disease

General practice and allied health practitioners play a fundamental role in the identification of those at risk of chronic disease. Basic recording and reporting of health data (e.g. height and weight, BMI, waist to hip ratios, blood measures etc.) and lifestyle factors (e.g. smoking, nutrition, physical activity, alcohol and drug use, and gambling) is important in the assessment, screening and identification of patients at risk of developing chronic disease. However, there appears to be a lack of consistency in the collection, recording and reporting of such data as routine within and across general practice and a lack of understanding of barriers to such data collection (Capital Health Network, 2016b).

Ochre Health has recently implemented a consumer-led pilot initiative (endorsed by consumer health organisations) which aims to capture self-measurement and lifestyle factor reporting in real time. The results of the evaluation of this pilot will provide useful insight and learnings (Ochre Health, 2016).

CHNs QiData initiative encourages participating general practices to capture such information and supports them to utilise information to:

- Identify those people who could benefit from health assessment, screening and/or immunisation, to determine those at risk of developing chronic disease and consider preventative measures.
- Undertake quality improvement initiatives aimed at enhancing individual health outcomes and the consumer experience with a focus on better use of MBS chronic disease management items (e.g. call and recall) to provide comprehensive and continuous cycles of care.

A similar initiative is available to general practice through the Improvement Foundation (AU) (Improvement Foundation, 2016). An example of a GP-led improvement initiative founded on the use of data to identify those at risk and prevalence of disease includes:

- Respiratory Disease (Improvement Foundation, 2010)
  - the use of data to identify COPD patients, people with asthma, smokers and ex-smokers
  - the development of practice registers and establishment of call and recall systems for all COPD, emphysema and people with asthma



- the establishment of a lung function clinic encompassing a GP with specialist skills, practice nurse and respiratory technician
- the performance of health assessments including spirometry tests and development of GP management plans to support comprehensive and continuous care and consumer engagement
- the establishment of strong partnerships with specialists and other health care providers.

### *Strategies*

As a foundational element of high performing primary health care the collection of basic health data to inform the identification of those at risk of chronic disease and clinical decision making is crucial.

CHN will continue to support practices strengthen the collection, recording and utilisation of data and make best use of MBS chronic disease management items to achieve better health outcomes through expanding QiData initiative to engage with a broader range of practices.

## **Health Assessment, Screening and Immunisation rates**

Screening for chronic disease or the identification of those at risk of chronic disease is undertaken through chronic disease related Medicare activities specified under the Medicare Benefits Scheme (MBS) and a number of national cancer screening programs:

*MBS Health Assessment Activity* (Department of Human Services, 2016) – Health assessments are generally made up of information taking, examination and/or investigations; making an overall patient assessment; recommending appropriate interventions (including e.g. referrals) and providing advice/information to patients as well as keeping a record of the assessment and offering both the patient and/or carer a written report with recommendations about matters covered by the assessment. There are four time-based MBS health assessment items ranging from brief to prolonged assessments (Items 701, 703, 705 and 707) which can be undertaken for the following target groups:

- people aged 45-49 who are at risk of developing chronic disease
- a type 2 diabetes evaluation for people aged 40-49 years considered to be at high risk of developing diabetes
- people aged 75 years and older (see Table 1.5)

- a comprehensive medical assessment for permanent residents of residential aged care facilities (RACFs)
- a health assessment for people with intellectual disability
- a health assessment for refugees and other humanitarian entrants
- an Aboriginal and Torres Strait Islander people's health assessment for children, adults and older people (Item 715).

Note: Further analysis of item 715 is provided in section 4. Consideration of Mental Health assessments (not detailed above) is included in section 8.

Commonwealth advises that a health assessment should not take the form of a health screening service but may well confirm the need for health screening (see below). Health assessment is a prerequisite to risk stratification, early identification of people at risk and those with chronic disease and comorbidity and therefore access to timely and appropriate care.

MBS data demonstrates that general practice in the ACT underperforms in the utilisation of MBS health assessment related activity (Table 1.4 and Table 1.5) (Department of Human Services, 2016).

**Table 1.4: MBS Health Assessment Rates – All Target Groups – 2014-15**

MBS Item		ACT*	Aus*	% of Aus	Rank
<b>701</b>	Brief Health Assessment	87	287	30%	LAST
<b>703</b>	Standard Health Assessment	627	1,002	63%	7
<b>705</b>	Long Health Assessment	377	903	42%	7
<b>707</b>	Prolonged Health Assessment	866	1,221	71%	7
<b>715</b>	Aboriginal and Torres Strait Islander Health Assessment	356	715	50%	7

Source: (Department of Human Services, 2016)

With similar results demonstrated for health assessment activity for those over the age of 75 years:

**Table 1.5: MBS Health Assessment Rates – Over 75 years – 2014-15**

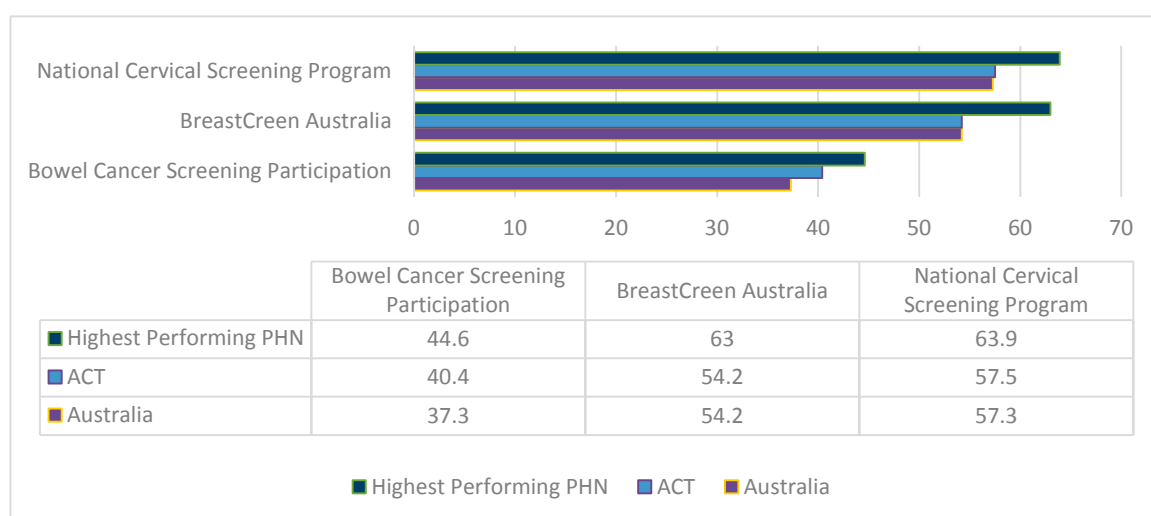
MBS Item		ACT*	Aus*	% of Aus	Rank
<b>701</b>	Brief Health Assessment	172	749	23%	LAST
<b>703</b>	Standard Health Assessment	5,250	6,285	84%	4
<b>705</b>	Long Health Assessment	4,196	8,474	50%	LAST
<b>707</b>	Prolonged Health Assessment	11,966	15,978	75%	7

Source: (Department of Human Services, 2016)

These results demonstrate the continuing and historic low utilisation of such MBS item numbers within the ACT.

*Cancer Screening Rates* – While cancer screening rates within the ACT are in line with national averages, they are significantly lower than the highest performing PHNs in breast and cervical screening (8.8% and 6.6% variation) and also lower in terms of bowel cancer screening (4.2% variation) with rural and remote areas outperforming the ACT across the period 1 January 2013 and 31 December 2014 (Figure 1.20) (Australian Institute of Health and Welfare, 2016c). Given the concentration of the ACT population within the jurisdiction and relative ease of access to screening services, these results are somewhat concerning.

**Figure 1.20: Cancer Screening Rates Jan 2013 – Dec 2014 – ACT and Comparators**



Source: (Australian Institute of Health and Welfare, 2016)

Complacency is not appropriate when evidence confirms that early identification of cancers and timely access to specialist care leads to better survival rates and health outcomes, and a reduced burden of disease (Australian Health Ministers' Advisory Council, 2008). Screening plays a significant role in detecting many cancers.

### *Immunisation and Vaccination Rates*

The National Immunisation Program can be considered both a primary and secondary chronic disease prevention measure providing both direct benefit to individuals who are vaccinated and where there is high vaccine coverage a secondary benefit to unvaccinated people who receive indirect protection due to less disease circulating amongst the community:

- primary prevention measures encompassing Hepatitis B (HepB) vaccination and the Human Papillomavirus (HPV)
- secondary prevention measures (safeguarding the health of older people, pregnant women, Aboriginal and Torres Strait Islander people, very young children and people with underlying

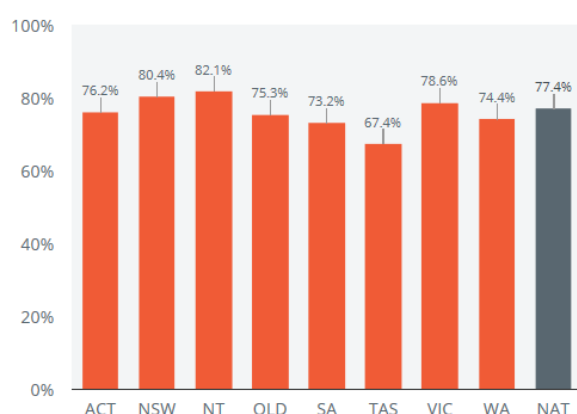
chronic disease) encompassing Pneumonia (Pneumococcal Conjugal) , Influenza and Whooping Cough (Acellular Pertussis).

As at March 2016, ACT demonstrated higher than average performance in childhood immunisation with some 93.4% of all children 12-15 months (Australia 92.7%), 91.7% of all children aged 24-27 months (Australia 90.1%) and 93.7% of all children aged 60-63 months (Australia 92.7%) fully immunised in line with requirements of the National Immunisation Program (Department of Health, 2016a). These results are consistent with the immunisation rates of Aboriginal and Torres Strait Islander children in the ACT. Although ACT performance in this respect is somewhat lower than in the highest performing PHN regions (92% ACT- range 76.7%-100% at 12-15 months, 88.1% ACT – range 77.1%-100% at 24-27 months, 88.5% ACT – range 80%-100% 60-63 months) (Department of Health, 2016d, Department of Health, 2016b).

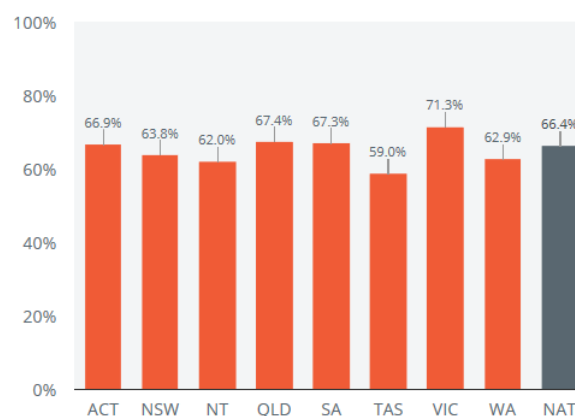
This is not the case with regard to HPV vaccination coverage, where the ACT is below the national average for female coverage at 76.2% coverage (Australia 77.4%; range: 67.4% - 82.1%) while male coverage is slightly above the national average at 66.9% coverage (Australia 66.4%; range 59% - 71.3%) (Figure 1.21).

**Figure 1.21: HPV 3 dose vaccination coverage, females and males turning 15 years in 2015**

**Coverage - Females**



**Coverage - Males**



Source: (National HPV Vaccination Program Register, 2016)

The most recent adult vaccination survey published in 2009 focused on adult experience of influenza and pneumococcal vaccination and included questions on pertussis (whooping cough) vaccination for adults (Australian Institute of Health and Welfare, 2011a). These conditions can lead to serious complications and death in very young children, older people and those people with chronic disease and comorbidities. For example, people suffering with various circulatory, respiratory and immuno-suppressant conditions are at high risk of influenza and its complications.

As at 2009 an estimated:

- 74.6% of Australians and 78% of ACT residents aged over 65 years were vaccinated against seasonal flu (range 69.3% - 81.3%)\*
- ACT had the highest number of women aged over 65 years (80.7%, Australia 76.5%) vaccinated against seasonal flu and 60.1% (Australia 69%) vaccinated against pneumococcal disease
- 74.8% (Australia 72.2%) and 45.2% (Australia 48.8%) of men aged over 65 years vaccinated against seasonal flu and pneumococcal disease respectively.
- 54.5% of Australians aged over 65 years were vaccinated against pneumococcal disease\*
- Nationally 51.5% of the target population aged over 65 years were vaccinated against influenza and pneumococcal disease and 22.1% of the target population aged over 65 years were not vaccinated for either disease
- 18.9% of Australians over the age of 18 years and 42.6% of those aged over 65 years had received pandemic (H1N1 – swine flu) vaccination, or 43.3% vaccinated in the ACT
- 11.3% of Australians and 12.6% of ACT residents aged over 18 years had received a pertussis vaccination as an adult or adolescent with uptake substantially higher among parents of infants aged less than 12 months at 51.5% nationally.

\*Note: 96% of these vaccinations were provided free of charge, either under the government-funded immunisation program (including people with chronic disease) or by employers. Put another way, 96% of the vaccinated target population were vaccinated with program-provided vaccine.

Reasons for not getting vaccinated including for example:

- |  |  |
|--|--|
| • I don't get sick/I'm healthy           | • I'm not at risk/don't get it                   |
| • I don't get the flu/rarely get the flu | • Not a priority for me/don't have time/too busy |

### Strategies

Increased immunisation/vaccination, health assessment and screening activity will inevitably have a positive impact on the health and wellbeing of the ACT population, ensuring people are protected and/or identified early and subsequently receive the right care at the right time.

Best practice comprehensive chronic disease prevention and management places an emphasis on the early identification of those people considered at risk or who demonstrate early signs of disease. The accomplishment of higher levels of participation in health assessment, screening and

immunisation activities should be encouraged particularly within and across ACT's vulnerable and at risk populations, including those people with poor health literacy.

Strategies to support protection and early identification through effective screening include:

- Continuing to promote national immunisation/vaccination and screening programs.
- Supporting primary health care providers to record as routine basic health and lifestyle factors.
- Conducting research to determine why ACT's general practices underperform in MBS related health assessment activities and ascertain what could be done to overcome this and ensure equitable access to such health assessment measures. (Note: Health assessment informs risk stratification and eligibility to packages of care).
- Supporting general practice in the quality use of data and improvement initiatives aimed at improving practice effectiveness and the use of MBS related health assessment and screening measures, call and recall capabilities.

## Comprehensive shared and coordinated care to patients with complex and chronic conditions

Ineffective management of chronic conditions leads to worse health outcomes and higher health care costs (Swerissen et al., 2016).

A proactive approach to chronic disease management encompassing preparing, coordinating, reviewing or contributing to health planning and consumer focused team-based care is a core component of all best practice chronic disease management initiatives.

Chronic disease related Medicare items specified under the MBS assist GPs to manage the health care of people with chronic or terminal medical conditions, including those requiring multidisciplinary, team-based care from a GP and at least two other health or care providers. These items are designed for patients who require a structured approach to chronic disease management and enable GPs to plan and coordinate the care of patients with complex needs requiring ongoing and multidisciplinary care.

MBS data demonstrates the level of associated MBS utilisation and patient coverage within the ACT (Table 1.6) (Department of Human Services, 2016).

**Table 1.6: MBS Chronic Disease Management – Provider Information 2014-15 and Practice Nurse Item (PNIP) Numbers as of November 2015**

MBS Item		ACT*	Aus*	% of Aus	Rank
721	GP Management Plan (GPMP)	4053	8565	47%	LAST
723	Team Care Arrangement (TCA)	3292	7952	47%	LAST
732	Review of GP Management Plan and/or Team Care Arrangement	4675	10698	44%	LAST
729	GP Contribution to, or Review of, Multidisciplinary Care Plan	5	12	42%	6
731	GP Contribution to, or Review of, Multidisciplinary Care Plan prepared by RACF	171	415	41%	7
10978	Follow Up Health Services for Indigenous people	32	515	6%	LAST
10997	Practice Nurse Monitoring and Support	1520	5137	30%	LAST

\*Services per 100,000 population. Source: (Department of Human Services, 2016)

These results demonstrate the low utilisation of chronic disease MBS item numbers within the ACT.

Given the prevalence of chronic disease is on the whole comparable with the rest of Australia and the benefit of adopting a structured approach to chronic disease management and team-based care, it remains unclear why this is the case in the ACT.

Further analysis of such data demonstrates the low number of patients who complete a cycle of care, represented by those who receive a GPMP/TCA review (item 732; n: 8602, actual activity) compared with the number of patients who receive a GPMP (item 721; n: 16051, actual activity) and TCA (item 723; n: 13026, actual activity) e.g. at best only 30% of the eligible population. (The recommended frequency of item 732 is every 6 months - actual GPMP/TCA review activity (item 732) could therefore be considered to be 15% of the eligible population). At face value this demonstrates a lack of monitoring/review of health outcomes achieved and continuity of care for people living with complex and chronic conditions. Reasons for the low utilisation of GPMP/TCA reviews are also unclear.

### *Shared Care and Allied Health*

Shared care related MBS items can be utilised by GPs and allied health practitioners when addressing comprehensive needs of individuals with chronic or terminal conditions or complex care needs requiring services from the usual GP and at least two other health or care providers. There is no list of eligible conditions, although these items are designed for patients who require a structured approach.

MBS data on GP multi disciplinary case conferencing which allow GPs to plan and coordinate the multidisciplinary team-based care of patients in the community, those discharged from hospital or people living in RACFs, and allied health professionals, home and community service providers and care organisations to participate in case conferences, again demonstrates low levels of utilisation of MBS item numbers (Table 1.7). The use of item 750 (e.g. Participation in a case conference of at least 15 and less than 20 minutes) is an unexplained anomaly with ACT activity demonstrating exponential growth across the last four years with utilisation recorded as 5, 54 and 88 claimers per 100,000 population across the period 2011-12, 2012-13 and 2013-14 respectively, with the range of other states and territories ranging from 5 to 27 per 100,000 population in the last reporting period 2014-15 (Department of Human Services, 2016).

**Table 1.7: GP Multidisciplinary Case Conferences 2014-15**

MBS Item		ACT*	Aus*	% of Aus	Rank
735	Organise and coordinate a case conference – at least 15 and less than 20 minutes	26	91	29%	6
739	Organise and coordinate a case conference – at least 20 and less than 40 minutes	15	55	27%	7
743	Organise and coordinate a case conference – at least 40 minutes	17	30	57%	LAST
747	Participate in a case conference - at least 15 and less than 20 minutes	34	51	67%	7
750	Participate in a case conference - at least 20 and less than 40 minutes	112	17	659%	1
758	Participate in a case conference - at least 40 minutes	11	12	92%	3

\*Services per 100,000 population. Source: (Department of Human Services, 2016)

Analysis of MBS data on chronic disease management related allied health activity for people with chronic or terminal conditions and complex care needs, demonstrates low levels of access and utilisation (Table 1.8). Such activity again correlates with the low level of GPMPs and TCAs (Table 1.6) e.g. prerequisites to MBS allied health chronic disease services. While in the case of dietetics the availability of services in ACT Health may explain this low level, this is not the case for podiatry and physiotherapy.

**Table 1.8: Annual Number of Allied Health CDM Services (per capita) – ACT and Australia 2014-15**

MBS Item		ACT*	Aus*	% of Aus	Rank
10951	Diabetes Educator	83	357	23%	LAST
10952	Audiology	3	6	50%	LAST
10953	Exercise Physiology	727	871	83%	5



10954	Dietetics	940	1504	83%	7
10956	Mental Health Worker	5	26	19%	LAST
10958	Occupational Therapy	55	222	25%	7
10960	Physiotherapy	1614	6961	23%	LAST
10962	Podiatry	1883	10456	18%	LAST
10964	Chiropractic	242	1188	20%	7
10966	Osteopathy	108	562	19%	5
10968	Psychology	30	84	36%	LAST
10970	Speech Pathology	127	591	21%	LAST

\*Services per 100,000 population. Source: (Department of Human Services, 2016)

By way of illustration, MBS utilisation of MBS Allied Health group services for patients with type 2 diabetes demonstrates negligible utilisation of services (Table 1.9).

**Table 1.9: Allied Health - Assessment and Provision of Group Services for Patients with Type 2 Diabetes**

MBS Item		ACT*	Aus*	% of Aus	Rank
81100	Assessment for Group Services by Diabetes Educator	0	6	0%	LAST
81110	Assessment for Group Services by Exercise Physiologist	1	36	3%	LAST
81120	Assessment for Group Services by Dietician	0	6	0%	LAST
81105	Diabetes Education Group Services	0	8	0%	LAST

\*Services per 100,000 population. Source: (Department of Human Services, 2016)

### Strategies

The PHCAG report on Better Outcomes for People with Complex and Chronic Conditions (2015) places increasing emphasis on the role and contribution of effective general practice in best practice chronic disease prevention and management, while the draft National Strategic Framework advocates the provision of effective and appropriate care. Yet given the level of chronic disease within the ACT and low levels of PHI utilisation it is unclear why ACT's primary health care services continue to underutilise the MBS scheme for the benefit of patients.

The introduction of the *Healthier Medicare* patient-centred Health Care Home pilots will likely place increasing emphasis on the recording and reporting of patient data and the use of MBS data to inform the development of risk stratification methodology and the allocation of MBS resources to fund the piloting of 'bundled payments'. The utilisation of MBS related chronic disease items therefore becomes critical in determining baseline activity and as a result funds available to

support the development of advanced primary health care and comprehensive chronic disease management capability.

Further analysis of levels of activity and reasons for such underperformance is required to gain a broader insight into the impact on patients' health and wellbeing of local people, the impact on the health system (e.g. preventable ED presentations and avoidable hospitalisations) and supports required to improve performance.

It is clear that individualised chronic disease management plans and shared care arrangements are critical to best practice comprehensive chronic disease prevention and management. These are also a key component of high performing primary health care and will continue to be a key element of the Australian health care system. In order to provide more effective support to primary care practices, CHN will consider undertaking research into the local factors that have resulted in such low levels of chronic disease management MBS Item uptake.

## Medication Management

Medication management is a critical component of chronic disease management, ensuring individuals benefit from their medication regimen and medication-related risks and identified problems are addressed. This is increasingly important when considering the level of comorbidity amongst the ACT population, the need to optimise patient safety and the medication regimen to address multiple chronic conditions, and the likelihood of patients being discharged with alternate medication following hospitalisation.

The role of the Pharmacist is integral to comprehensive chronic disease prevention and management and the extended health care team, serving to enhance safety and quality (and reduce risk) and patient health outcomes. However, MBS data again demonstrates low levels of utilisation of MBS items to optimise medication management (Table 1.10).

**Table 1.10: Medication Management 2014-15**

MBS Item		ACT*	Aus*	% of Aus	Rank
900	Home Medicines Review (HMR)	158	266	59%	LAST
903	Residential Medication Management Review (RMMR)	113	228	50%	LAST

\*Services per 100,000 population. Source: (Department of Human Services, 2016)

The Pharmaceutical Society of Australia (PSA) recognises the Sixth Community Pharmacy Agreement which provides opportunity to optimise the Pharmacists contribution for improved primary health

care, particularly for those with chronic conditions requiring multiple medications (Pharmaceutical Society of Australia, 2014b). Both the Australian Medical Association (AMA) and the PSA recognise the need for a more collaborative primary health care system and advocate a willingness to develop a more integrated role for Pharmacists in the general practice setting (Pharmaceutical Society of Australia, 2014a).

It is anticipated that Pharmacists will play a critical role in the Commonwealth's person-centred Health Care Home trials and team-based care:

- With the incidence of chronic disease and comorbidity resulting in increasingly complex medication regimens, the risk of medication related issues in primary care is also likely to increase.
- Currently, adverse drug events are responsible for an estimated 190,000 hospital admissions each year, costing the health care system \$660 million. Medicine-related hospital admissions have increased sharply in recent decades, with the largest increases seen for those aged 80 years and older (Burgess et al., 2005).
- Nearly half of those aged 65–74 years have five or more long-term health conditions, increasing to 70% of those aged 85 and over (Australian Bureau of Statistics, 2006).
- By 2050, the proportion of people aged over 65 in Australia is projected to reach one in four (Australian Institute of Health and Welfare, 2012a).
- Older Australians in particular are at a higher risk with approximately one in three unplanned hospital admissions in this group related to medicines. Two thirds of Australians over 75 years are on five or more medications (NPS MedicineWise, 2013).

Various models of Pharmacists within general practice exist, with benefits including improved clinical regimens and health outcomes of selected patients with chronic conditions, such as diabetes and osteoporosis (Tan et al., 2014b, Tan et al., 2014a), the ability to review and maximise drug therapies accordingly to best practice clinical guidelines and facilitate the safe and sustained transition of patients from hospital to community settings e.g. post discharge medication reviews.

### Strategies

CHN recognises the opportunity to optimise both clinical and medication regimens for people with chronic conditions and comorbidities through the development of advanced primary health care encompassing team-based care, and the integral contribution of Pharmacists within general practice and Aged Care services.

CHN has invested in a pilot study to determine the effectiveness of the role and contribution of Pharmacists operating within general practice and the targeted role of the Pharmacists in the effective medication management of older people with chronic and complex conditions. An evaluation of the three pilot sites will be completed in December 2016 and will inform the development of future models of person-centred and general practice led advanced primary health care.

An evaluation of the CHN sponsored Pharmacists within General Practice and Aged Care pilot to be reported in December 2016 to inform future strategies for quality and safety in high performing primary health care.

## Care Coordination

All best practice chronic disease prevention and management models, regardless of setting, include care coordination as a critical component of comprehensive and consumer focused care. Care coordination is typically defined as “the deliberate organization of patient care activities between two or more participants (including the patient) involved in a patient’s care to facilitate the appropriate delivery of health care services. Organizing care involves the marshalling of personnel and other resources needed to carry out all required patient care activities, and is often managed by the exchange of information among participants responsible for different aspects of care” (McDonald et al., 2007).

Hass et al (2013) note that *“Patients with multiple chronic conditions may see many providers, often in an uncoordinated manner, adding to their increasing risk of high healthcare utilization through test duplication, medication management conflicts, and medical errors. These patients are also at increased risk for hospital admissions and emergency department (ED) visits. Primary care doctors may not routinely have the time or the resources to properly manage these complex patients who have multiple chronic health problems. Thus, care coordination for the right patients could decrease unnecessary care and prevent perverse outcomes”* (Haas et al., 2013).

National examples of care coordination in the primary health care setting include:

- **Department of Veteran Affairs (DVA), Coordinated Veterans’ Care (CVC) program (Department of Veterans’ Affairs, 2014)** – The CVC is a longstanding team-based care program aimed at improving the management of chronic conditions for DVA Gold Card members with one or more targeted chronic conditions or complex care needs (e.g.

congestive heart failure, coronary artery disease, pneumonia, COPD and/or diabetes), and those at risk of an unplanned hospitalisation.

- **Victoria Health Department, Hospital Admissions Risk Program (HARP) (Department of Health & Human Services, 2011)** – The HARP program aim is to decrease hospital demand through the use of comprehensive assessment, care coordination and a timely response to specialist care in the community setting for people with complex needs or chronic conditions who frequently present to hospital or are at risk of doing so. Eligibility is founded on patient segmentation based on the Kaiser Permanente triangle of risk stratification.
- **Adelaide PHN – Health Care Hubs (Adelaide PHN, 2016)** – In line with PHN objectives and introduced in 2016, the Health Care Hubs program offers a place-based approach to expanded care coordination and integration in the top ten areas of highest rates of multi-morbidity in the PHN region. Care coordination services and supports are provided to eligible patients in participating practices, strengthens general practice capability (care planning and coordination) and underpins the concept of the patient-centred HCH.
- **Medibank Private – Care Connect (Medibank Private, 2015)** – Medibank Private has developed a suite of three integrated chronic disease management programs targeting fund members, identified through analysis of patient data, who have chronic and complex conditions (e.g. Diabetes, COPD, oesteo arthritis, CVD and asthma). CareFirst is a behaviour change service supported by telephonic and online education and navigation. Care Transition is integrated into the hospital discharge process and aims to address the care needs of individuals as they transition from hospital to the ‘home’ aimed at people most at risk of unplanned readmissions. CarePoint provides care coordination to people with multi-morbidity and complex needs. This service offer has recently been introduced to the ACT and is currently being rolled out via direct marketing to eligible fund members.
- **Tasmania PHN – Care Coordination Services (Primary Health Tasmania, 2016)** - Primary Health Tasmania delivers and commissions some 31 organisations to provide care coordination services to help ensure elderly people, people with chronic health conditions (e.g. neurodegenerative disorders, COPD, heart disease, diabetes and musculoskeletal disorders and kidney disease) and Aboriginal and Torres Strait Islander people receive connected care across a range of services. Care coordinators work with individuals, their carers, GPs, hospitals and other service providers to assess care needs, develop tailored care plans, help people understand their condition and better self-manage, arrange and access the services people need to stay healthy and independent. In addition, the service aims to assist health care providers adopt a person-centred and holistic approach.

While care coordination can take place in a number of settings, it is considered a core component of the patient-centred HCH chronic disease prevention and management model of care and one of the 10 building blocks of advanced primary health care. Evidence on effective care coordination affirms the criticality of both the identification of eligible patients through risk stratification, the enrolment of patients with an emphasis on Tier 2 patients, the provision of care coordination in the primary health care setting and the ability to broker/coordinate both health and social care services aimed at keeping people well and out of hospital, including managing the successful and sustained transition of patients from hospital to their home setting (Timmins and Ham, 2013, Russell et al., 2013, Oliver-Baxter and Bywood, 2013).

Care coordination is therefore considered a quality and safety initiative (comprehensive care – right chronic disease management plan, right service/supports, right time, right duration, right risk tolerances, right cost) and a secondary prevention measure (promoting self-management, reducing crisis situations and as such avoidable ED presentations and hospital admissions) e.g. maximising the benefit of the whole health care system and reducing the cost burden of disease.

Despite the current and projected burden of disease, the Integrated Team Care (building on Closing the Gap and Care Coordination and Supplementary Services) and CVC programs are the only integrated care coordination models operating within the primary health care setting in the ACT providing support to targeted and eligible ‘at risk’ patients.

The ***Chronic Disease Management Unit (CDMU, Canberra Hospital)*** delivers an alternative approach providing specialist nurse support and care coordination services from an acute hospital setting to people with CHF, COPD, obesity, Parkinson’s disease and other movement disorders. This is typically provided for complex Tier 1 level patients who frequently present to ED, use specialist and hospital services often on an unplanned basis. The service offers self-management education and strategies, facilitation and coordination of community and other support services, communication and advocacy and assistance with completing Enduring Power of Attorney and Advanced Care Plan documentation (ACT Health, 2016a).

A joint review of the Canberra Hospital and Health Services Chronic Disease Management Unit and Chronic Care Coordination program conducted in 2014-15, encompassing feedback from key stakeholders, identified limitations of the current model (ACT Medicare Local, 2015):

- A focus on hospital ‘frequent flyers’ (e.g. predominantly the acutely ill and/or complex Tier 1 patients) including identified patients who have repeatedly been admitted to hospital across the previous two years and those nearing end of life stage

- A limited cohort of eligible clients e.g. covering only four defined chronic conditions and not encompassing Aboriginal and Torres Strait Islander communities
- Lack of clarity of primary focus e.g. whether this was an acute hospital support service, a transitional support service (hospital to home) or a community and/or primary health care support service housed in an acute setting.
- Limited relationships and system integration across acute specialists and hospital services, community services and general practice e.g. limited engagement in discharge planning or the development of GPMPs and continuity of care in the primary health care setting through coordination of TCAs.
- Limited ability to step down or discharge patients from the program.

As a result of this initiative, key design features were agreed in principle, providing the foundation for next steps and development of a whole of system model of care coordination.

The new Commonwealth primary health care and chronic disease reform agendas clearly focuses on best practice chronic disease management: the development of a consistent risk stratification method providing a tool to identify 'at risk' patients and patient-centred HCH pilots to commence in 2017 providing the opportunity to trial alternative patient focused, GP-led, comprehensive and co-ordinated models of care. Care coordination again will be critical component of the patient-centred HCH model.

### Strategies

Building on the groundwork already done, opportunity now exists for CHN, ACT Health and other key stakeholders to consider new ways of working and developing a best practice approach to care coordination in the ACT. Through the co-design, develop and implement a proof of concept service model for transitional care coordination for targeted (risk stratified) chronic and complex hospital inpatients (e.g. those at risk of readmission) to successfully transition to a supported patient-centred HCH setting: integrating multi-faceted evidence-base approaches such as effective discharge and care planning, immediate post-acute transition support and monitoring, strengthened self-management capability and health coaching, access to and coordination of health care and community services supports.

Strategies to promote targeted planning and coordination of care to patients with complex chronic conditions what would most benefit include:

- Providing more targeted education and support to general practice on the appropriate use of GPMPs and Team Care Arrangements (TCAs) (as above)
- Researching the cause of the under-utilisation of chronic disease related MBS item numbers and multi-disciplinary team care arrangements in the ACT and develop a strategy to address any identified barriers (as above)
- Co-design, develop and implement a proof of concept service model for transition of care coordination for targeted (e.g. Tier 2) chronic and complex hospital inpatients to successfully transition to a supported primary care setting, integrating multi-faceted evidence-based approaches such as effective discharge planning, immediate post-acute transition support and monitoring (e.g. GRACE – see Older People), self-management and community services supports.

## System Enablers

### *E-Health and Digital Strategies*

The improved use of data to both monitor patients and inform system improvement, together with the use of new technologies to support the delivery of health care within the community setting, are key enablers of better chronic disease prevention and management.

Current challenges within the health system continue to be the interoperability of information management system across the health system, although there is recognition of the increasing need for collaboration across governments, the private and non-government sectors and software vendors to deliver integrated health systems that better support health care delivery as evidenced in the draft National Digital Health Strategy for Australia (2016) (Department of Health, 2016e). The draft strategy focuses on person-centred care and the use of digital technologies to empower consumers to be more involved in and take control of the management of their health and wellbeing; the collection, analysis and use of health care data in population health planning and quality improvement; the coordination of care across multiple health care providers – essential to the effective chronic disease management and continuity of care; improved access to care through a national approach to the creation and transfer of electronic referrals and the use of telehealth and on line health platforms, improving the quality and safety of health care (e.g. the sharing of electronic medications information and contraindications), and encouraging innovation to transform health service delivery.

***MyHealth Record (Australian Digital Health Agency, 2016)*** – MyHealth record (formerly the Personally Controlled Electronic Health record – PCEHR) has an important role to play in the sharing



of health information about an individual (encompassing for example shared care plans, health summaries record, track and monitoring of health outcomes) thereby facilitating comprehensive and coordinated team-based care.

While increasing the volume of health information uploaded and accessed through the MyHealth Record is considered a national priority, feedback from the sector and key stakeholders confirms that key challenges remain at an operation level including:

- interoperability between health service provider organisations across the system of care, including limited application of secure messaging and shared care
- lack of integration in discharge planning protocols and limited uploading of hospital discharge summaries
- limited utilisation of shared care planning capabilities
- limited uptake of digital technologies and IT based patient record systems in areas of allied health, community pharmacy and specialist medical practices
- lack of clarity of community, sector specific and system wide change and adoption strategies
- changes to eligibility criteria for the eHealth Practice Incentive Payment (PIP) while well intended present barriers to some practices and perpetuates disengagement.

Learnings from the Commonwealth 'opt out' pilot of MyHealthRecord will inform future strategies (Australian Digital Health Agency, 2016).

**General Practice QiData** – CHN's QiData initiative commenced in November 2014 and CHN currently provides support to some 24 general practices (covering 34,354 patients in March 2016 alone and some 274,080 patients since commencement) to strengthen their ability to enhance data recording and management and provide quality information to improve the identification, assessment and management of patients at risk of developing or who live with chronic disease(s). This quality data and information management initiative allows practices to interrogate practice data to improve the health of their practice populations through the development of practice-based chronic disease registers and enhance call and recall capability to support full cycles of care.

Outcomes measures for QiData initiative include:

- Increase in the number of general practices motivated and confident in the use of clinical audit tools
- Improved number of practices sharing de-identified data with CHN
- Improved numbers of participating practices (e.g. 80%) engaged in meaningful quality improvement initiatives informed by the data and adopting a PDSA cycle of improvement

- The use of PDSA outcome measures as indicators to measure the desired change in general practice and the ability to relate this to CHNs performance indicators including e.g. cancer screening rates, mental health treatment rates, hospital avoidance.

Quality data, data management and business application (e.g. patient stratification and predictive modelling) is a core component of effective chronic disease management programs. This is acknowledged in the PHCAG report on *Better Outcomes for Complex and Chronic Conditions* which advocates data collection and sharing of information by patients and the health care teams to measure and monitor patient outcomes and improve performance. The Advisory Group recommends that a nationally consistent, de-identified National Minimum Data Set should be established with a view to improving population health outcomes and informing ongoing health systems improvements. It acknowledges that data collection and analysis is key to the establishment of the patient-centred HCH model of care and comprehensive chronic disease prevention and management programs focused on better health outcomes.

**Chronic Disease Register** – There is no national chronic disease register encompassing all chronic conditions.

ACT Health currently operates a Chronic Disease Management Register (CDMR) across Canberra Hospital and Health Services (Dugdale and Hopkins, 2015). This includes case management information for a range of clinical services that participate in the Chronic Disease Management Clinical Network (CDMU). Patients are identified for inclusion on the register if they have an acute episode of care and are discharged from Canberra Hospital with diabetes, COPD or CHF. Utilisation of the register appears to be limited to the CDMU network application and associated research and does not extend to all Diabetes, COPD or CHF patients in the region.

The National (insulin-treated) Diabetes Register (Australian Institute of Health and Welfare, 2011b) is a data base administered by AIHW. It collects information about people who use insulin as part of their treatment for diabetes.

Data are provided by the National Diabetes Services Scheme, administered by Diabetes Australia, and the Australasian Paediatric Endocrine Group who collect information about children with diabetes. Information is utilised to provide a sampling frame for research, evaluation and clinical studies of insulin-treated diabetes; monitor and report on the incidence of insulin-treated diabetes; provide information to health service providers and planners and assist in national diabetes monitoring.

The Australian Cardiac Outcomes Registry administers the Cardiac Procedures Register and the Cardiac Devices Register. Data from consenting cardiac patients is entered into the national databases through participating hospitals and clinics, and analysis of data is conducted by the South Australian Health and Medical Research Unit which produces reports to inform continuous improvement. Additionally, hospitals and clinics can use the national results to benchmark performance and for local research.

The Heart Foundation Consensus Statement for Chronic Heart Failure (2013) calls for the expansion of the current cardiac registers to include patients with CHF, the development of national local data definitions for CHF and promotes the need to link data across settings and care transitions. In addition it proposes an alternative approach to segmenting patients on the basis of the phase of condition and as such an alternative approach to stratification, identification of prevalence and level of need and the tailoring of individual packages of care. In considering the development of a comprehensive approach to CHF, consideration should also be given to the development of a local CHF register to inform the development of a national register.

There is no nationally consistent approach to the recording and reporting of chronic conditions, the utilisation of Medicare chronic disease items, specialist referrals and hospital utilisation provides information on activity not necessarily prevalence of disease or population health needs. The National Health Survey provides a snapshot of self reported chronic disease.

In developing a community focused and primary health care led approach to chronic disease management, consideration may need to be given to the development of a systematic approach to the recording and reporting of chronic disease across the region and spanning the spectrum of care.

### *Strategies*

Strategies to promote the quality recording, reporting and utilisation of de-identified patient information to inform better chronic disease management, service and system improvement include:

- Informing the development of the Commonwealth's National Digital Health Strategy
- Supporting the roll out of My Health Record
- Extending the current QiData initiative to encompass more local general practices
- Consider the development of a localised register for chronic conditions in the ACT e.g. extending the Cardiac register locally to encompass CHF.

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