

# *Chronic Disease Area Profile*

Data as at November 2017

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# 1 CHRONIC DISEASE AREA PROFILE

## SUMMARY

- Chronic conditions have complex and multiple causes; are generally long-term and persistent, and often lead to a gradual deterioration of health and loss of independence.
- Many chronic conditions occur across the life cycle, although they become more prevalent with older age. More than 70 per cent of people aged over 60 have two or more chronic conditions. Higher prevalence is experienced by people in the lowest socioeconomic areas.
- There is forecast to be more than a 95% increase in the number of people aged over 70 in the 15 years to 2031.
- These broad patterns of chronic disease are represented in the NWMPHN by:
  - Higher prevalence of key precursors of chronic disease in some of the growth and peri-urban locations (overweight and obesity, tobacco consumption, low dietary fruit and exercise)
  - Higher rates of chronic health conditions, preventable hospitalisation and avoidable deaths have a similar correlation to the socioeconomic determinants.
- General practice is offered incentives for improvements in chronic disease management, through MBS items for case conferencing and health care assessments. The uptake of these items across the region has been variable with low rates in many of the high chronic disease areas.

### 1.1 Analysis notes

Throughout this profile, colour schemes have been added to tables to provide a ranking within a comparison population. In most analyses where Local Government Area (LGA) values or rates are displayed, the colours correspond to the decile of the value within the distribution comprised of Greater Melbourne LGAs.

In other words, the 31 Greater Melbourne LGA's are ranked in order and arranged into approximately 10 groups (~3 in each). For purposes of consistency, if an LGA within the NWMPHN catchment is performing worse than the median Greater Melbourne LGA it is red, the deeper the red the worse it is. The better performing LGAs are coloured varying shades of green.

### 1.2 About chronic disease

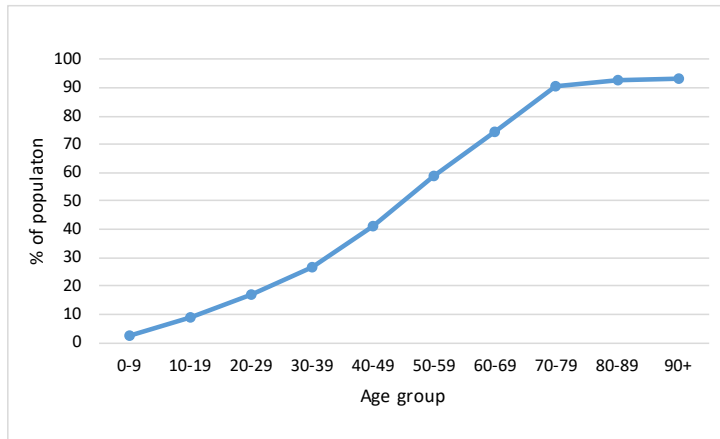
The term 'chronic disease' covers a wide group of conditions, illnesses and diseases.

Chronic conditions have complex and multiple causes; are generally long-term and persistent, and often lead to a gradual deterioration of health and loss of independence. While not usually immediately life threatening, chronic conditions are the most common and leading cause of premature mortality.

Many chronic conditions occur across the life cycle, although they become more prevalent with older age. More than 70 per cent of people aged over 60 have two or more chronic conditions (Figure 1). Higher prevalence of chronic conditions is experienced by people in the lowest socioeconomic areas and those in rural and remote communities.

They can result from the complex interaction of external factors and biological causes, usually over a long period, and can lead to functional limitations and disability. If the biological and metabolic changes that occur during these long latency periods were identified, early intervention strategies, including prevention, treatment and management plans, may be implemented. Once present, chronic diseases often persist throughout a person's life, so there is generally a need for long-term management by individuals and health professionals.<sup>1</sup>

Figure 1: Patient age-specific prevalence of 2 or more chronic conditions<sup>2</sup>



Although chronic diseases cover a diverse group of conditions the following chronic diseases are typically used as markers of prevalence, as they pose significant health problems, have been the focus of ongoing national surveillance efforts, and actions can be taken to prevent them:

- Arthritis
- Asthma
- Back pain and problems
- Cancer (such as lung and colorectal cancer)
- Cardiovascular disease (such as coronary heart disease and stroke)
- Chronic obstructive pulmonary disease (COPD)
- Diabetes

### 1.3 Target populations

As the prevalence of chronic disease is related to age of the population, an understanding of the age distribution of the current and projected population is important. The current Victorian government population projections estimate that there will be more than a 95% increase in the number of people aged over 70 in the 15 years to 2031 (Figure 2, p 5). This growth is forecast to be concentrated in the Local Government Areas (LGAs) of Melbourne, Brimbank, Hume, Melton and Wyndham (Figure 3, p.5).

<sup>1</sup> AIHW 2016. Australia's health 2016. Australia's health no. 15. Cat. no. AUS 199. Canberra: AIHW.

<sup>2</sup> Harrison C, Britt H, Miller G, et al Examining different measures of multimorbidity, using a large prospective cross-sectional study in Australian general practice BMJ Open 2014;4:e004694. doi: 10.1136/bmjopen-2013-004694

Figure 2: Historical and forecast population of people aged 70 or older and 85 and older in NWMPHN catchment (ABS ERP, ABS Census 2016, VIF2016)

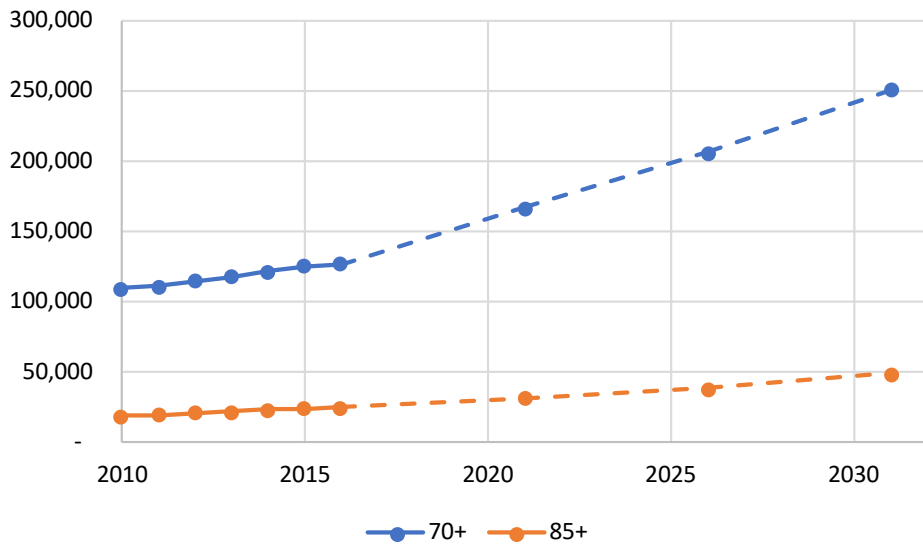
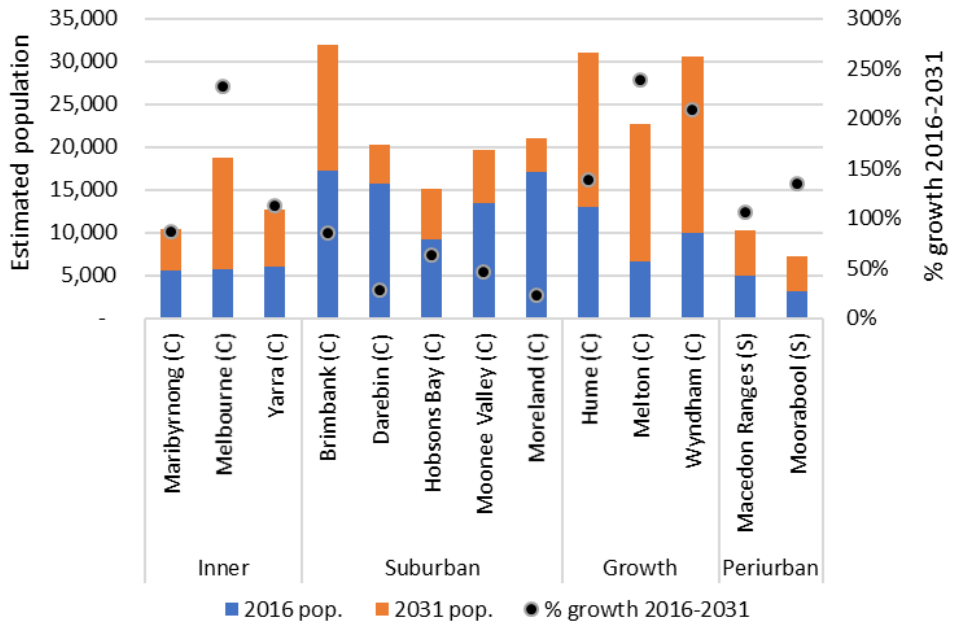


Figure 3: 2016 and forecast 2031 population of people aged 70 or older by LGA NWMPHN catchment (ABS Census and VIF2016)



## 1.4 Chronic disease in north western melbourne phn

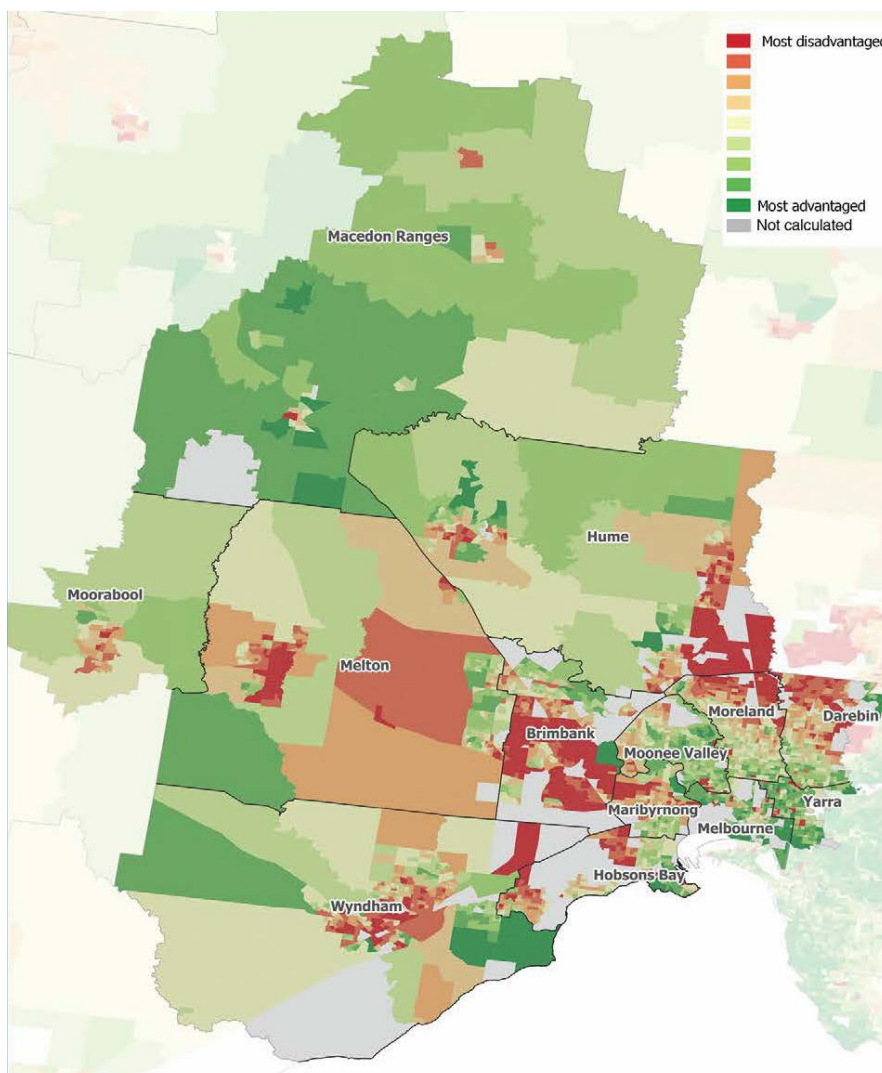
### 1.4.1 Determinants of chronic disease

In addition to the age profile of the community, there are a number of other key determinants related to chronic disease prevalence. These include lifestyle related health behaviours and biomedical factors such as: tobacco use; physical activity and exercise; and body weight.

Additionally, the broad features of society and socioeconomic characteristics (ie. affluence, employment, education) contribute to the achievement of positive lifestyle related health behaviours and the establishment of chronic disease.

The Index of Relative Socioeconomic Disadvantage is a standardized approach developed by the ABS for the measurement of socioeconomic disadvantage. Figure 4 illustrates the variation across the area with some highly-advantaged areas and some very disadvantaged areas.

Figure 4: Deciles of Index of Relative Socioeconomic Disadvantage (IRSD) 2011



Source: ABS Census 2011

Data on the prevalence of protective health behaviours indicates a generally higher overall level of achievement in Victoria when compared to the Australian average, but with significant variation across LGAs in the NWMPHN region (Table 1, p.7). The general impression of the trend in the data is that the populations of the inner city have generally lower rates of the indicator, with higher rates in the growth and peri-urban areas.

Table 1: Standardised ratio of estimated number of people aged 18 years with specified health determinant (2014-15)

Region	LGA Name	Overweight (but not obese)	Obese	High waist measurement	Current smokers	≥2 alcoholic drinks per day <sup>3</sup>	Adequate fruit intake	No or low exercise in previous week
Inner city	Maribyrnong (C)	106.7	78.4	94.8	97.7	72.5	95.5	98.1
	Melbourne (C)	92.8	54.7	76.5	62.8	95.5	96.2	87.8
	Yarra (C)	104.0	58.2	84.5	85.3	127.3	96.8	85.7
Suburban	Brimbank (C)	105.5	98.0	96.5	108.0	51.5	93.7	109.9
	Darebin (C)	106.4	85.7	97.0	95.9	77.4	97.9	99.1
	Hobsons Bay (C)	108.6	89.2	97.9	103.0	87.2	96.9	99.0
	Moonee Valley (C)	108.7	87.3	95.2	86.0	89.0	98.7	93.8
	Moreland (C)	106.8	86.8	99.5	88.8	79.2	97.6	97.1
Growth area	Hume (C)	106.4	119.1	104.0	117.4	58.4	94.2	108.4
	Melton (C)	109.0	127.6	107.5	110.6	66.4	95.8	103.3
	Wyndham (C)	109.3	112.6	106.9	97.8	65.8	98.7	102.7
Peri-urban	Macedon Ranges (S)	107.7	106.0	102.5	89.2	108.9	96.6	94.8
	Moorabool (S)	106.3	125.7	104.8	115.0	103.2	94.6	102.0
<b>Victoria</b>		<b>105.2</b>	<b>95.6</b>	<b>98.4</b>	<b>97.0</b>	<b>89.9</b>	<b>96.7</b>	<b>98.5</b>
<b>Australia</b>		<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Source: PHIDU 2017. Highlights on a red (poorer performance) to green (better performance) scale

Note: The standardised ratio is a measure of the overall experience of a comparison population (LGA) in terms of the standard population (Australia) by calculating the ratio of observed prevalence to expected prevalence in the comparison population.

<sup>3</sup> Estimated number of people aged 15 years and over

## 1.4.2 Prevalence of chronic disease

The data below illustrates the variation in prevalence and avoidable deaths from selected chronic health conditions. Apart from diabetes and circulatory disease, there are generally lower rates of prevalent illness in the inner locations and higher in growth and peri-urban LGAs (Table 2, below).

Table 2: Standardised ratio of estimated number of people with chronic health condition 2011–12

Region	LGA Name	Diabetes mellitus	High blood cholesterol	Circulatory system	Asthma	COPD	Musculo skeletal	Arthritis
Inner city	Maribyrnong (C)	127.3	98.0	105.2	87.1	75.2	90.8	84.5
	Melbourne (C)	86.3	107.6	94.9	76.3	71.2	86.6	82.4
	Yarra (C)	104.2	98.1	98.6	93.4	79.7	93.9	83.9
Suburban	Brimbank (C)	163.4	96.7	96.1	82.3	69.4	91.7	92.4
	Darebin (C)	123.9	98.5	100.5	95.3	77.8	96.1	101.4
	Hobsons Bay (C)	104.9	99.1	99.5	100.3	77.7	94.1	95.7
	Moonee Valley (C)	103.8	100.2	94.6	94.0	76.0	95.4	91.0
	Moreland (C)	124.0	98.8	99.6	92.5	77.4	95.4	101.6
Growth area	Hume (C)	134.7	97.8	96.0	98.9	79.0	100.6	102.5
	Melton (C)	111.1	98.1	101.4	105.8	77.5	98.6	95.8
	Wyndham (C)	101.5	99.3	95.4	92.7	74.1	91.6	86.9
Peri-urban	Macedon Ranges (S)	61.6	104.9	90.2	128.3	78.6	96.8	91.4
	Moorabool (S)	69.0	100.4	97.0	128.2	85.0	101.3	96.8
<b>Victoria</b>		<b>87.7</b>	<b>101.7</b>	<b>96.1</b>	<b>106.7</b>	<b>78.0</b>	<b>96.1</b>	<b>94.9</b>
<b>Australia</b>		<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Source: PHIDU 2017. Highlights on a red (poorer performance) to green (better performance) scale

A different pattern is illustrated in examining avoidable deaths (Table 3), in that Maribyrnong has high rates across most conditions, unlike the other inner city LGAs, and Macedon Ranges has low rates unlike the other growth and peri-urban locations.

Table 3: Standardised ratio of avoidable deaths, persons aged 0 to 74 years (2010 to 2014)

Region	LGA Name	Cancer	Diabetes	Circulatory	IHD	Cerebrovasc	Respiratory	COPD
Inner city	Maribyrnong (C)	92.6	151.1*	120.9**	127.2*	105.7	123.6	123.2
	Melbourne (C)	65.5**	40.6*	76.6*	77.8	70.6	70.2*	79.6
	Yarra (C)	90.8	120.0	83.6	79.6	105.0	86.8	79.4
Suburban	Brimbank (C)	82.7*	154.8**	99.9	89.6	122.6	67.6**	65.5**
	Darebin (C)	94.0	73.9	107.8	117.0*	93.4	82.3	84.1
	Hobsons Bay (C)	112.9**	77.4	103.4	104.3	115.6	118.8	114.6
	Moonee Valley (C)	76.6**	108.7	82.6*	88.9	78.8	73.5	75.6
	Moreland (C)	106.7	131.2	100.7	105.5	97.7	68.9*	69.7*
Growth area	Hume (C)	96.0	110.0	109.4	114.0	88.6	113.5*	112.8
	Melton (C)	93.2	133.7	104.7	102.6	112.0	111.7	107.9
	Wyndham (C)	86.7	83.7	86.0	81.8*	99.6	98.2	96.2
Peri-urban	Macedon Ranges (S)	80.2**	58.8	74.2**	69.5*	78.4	61.2*	66.4
	Moorabool (S)	97.2	69.9	97.2	95.9	107.4	114.1	107.7
<b>Victoria</b>		<b>97.1**</b>	<b>86.8**</b>	<b>90.4**</b>	<b>89.2**</b>	<b>96.6</b>	<b>87.4**</b>	<b>86.3**</b>
<b>Australia</b>		<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Source: PHIDU 2017. Highlights on a red (poorer performance) to green (better performance) scale

\*statistically significant, at the 95% confidence level, \*\*statistically significant, at the 99% confidence level



### 1.4.3 Potentially Preventable Hospitalisations

Analysis of Potentially Preventable Hospitalisations (PPH) provides another lens to examine the impact of chronic disease on the community. It is used as a health system performance indicator of accessibility and effectiveness in the Australian National Healthcare Agreement.

This indicator has been developed to provide an estimation on the level of admissions to hospital for a condition where the hospitalisation could potentially have been prevented through the provision of appropriate individualised preventative health interventions and early disease management. These interventions would usually be delivered in primary care and community-based care settings (including by general practitioners, medical specialists, dentists, nurses and allied health professionals).

A key limitation is that not all the hospitalisations captured by the indicator could have been prevented, at least in the short term. While some of these admissions could have been prevented by more effective management in the period leading up to hospitalisation, other admissions may reflect chronically ill or elderly patients who have received optimum management in primary care. While the chronic conditions leading to hospitalisation may have been prevented through primary prevention initiatives (such as quit smoking interventions or physical activity programs), the long time lag between disease onset and complications leading to hospital admission means that such initiatives may take many years to impact on admission rates.

Despite these limitations, it does provide a geographic analysis of the different levels of burden across the community with higher PPH levels in the outer metropolitan areas of Melton-Bacchus Marsh, Wyndham and Tullamarine-Broadmeadows. The inner areas of Melbourne, Yarra, Essendon and Darebin-South have lower reported PPH levels.

Table 4: Potentially preventable hospitalisations per 100,000 people (age-standardised) in 2015–16 by NWMPHN SA3 area

SA4	SA3 name	Total PPH rate	Headline conditions				
			Cellulitis	Kidney and urinary tract infections	Chronic obstructive pulmonary disease (COPD)	Congestive heart failure	Diabetes complications
Melbourne - Inner	Brunswick - Coburg	2,295	240	215	190	273	155
	Darebin - South	2,043	132	233	157	232	146
	Essendon	2,199	133	154	163	188	155
	Melbourne City	2,479	174	203	190	207	263
	Yarra	2,166	139	212	158	198	111
Melbourne - N East	Darebin - North	2,857	170	249	260	336	272
Melbourne - N West	Keilor	2,170	202	199	161	207	142
	Macedon Ranges	1,992	97	174	204	122	144
	Moreland - North	2,785	201	244	230	313	244
	Sunbury	2,727	208	178	295	202	281
	Tulla – Bmeadows	3,077	204	247	294	339	249
Melbourne - West	Brimbank	2,573	158	200	202	304	276
	Hobsons Bay	2,301	161	200	156	192	212
	Maribyrnong	2,437	152	189	234	284	237
	Melton - B Marsh	2,599	194	207	258	237	256
	Wyndham	2,747	210	276	311	242	265

SA4	SA3 name	Total PPH rate	Headline conditions				
			Cellulitis	Kidney and urinary tract infections	Chronic obstructive pulmonary disease (COPD)	Congestive heart failure	Diabetes complications
<b>NWMPHN</b>		<b>2,515</b>	<b>178</b>	<b>219</b>	<b>221</b>	<b>260</b>	<b>225</b>
<b>Other Victorian PHNs</b>							
Eastern Melbourne		2,304	186	220	157	201	164
South Eastern Melb		2,665	224	295	241	213	183
Gippsland		2,913	287	260	285	206	241
Murray		2,826	262	266	321	214	210
Western Victoria		2,491	191	223	251	175	181
<b>Australia</b>		<b>2,643</b>	<b>253</b>	<b>288</b>	<b>260</b>	<b>211</b>	<b>183</b>

Sources: AIHW analysis of the National Hospital Morbidity Database and Australian Bureau of Statistics, Estimated Resident Population. <http://www.myhealthycommunities.gov.au/our-reports/potentially-preventable-hospitalisations-update/july-2017/web-update>

Highlights on a red (poorer performance) to green (better performance) scale

## 1.5 Service response

### 1.5.1 Use of services

The assessment of the level of service use can be used as a measure of both the adequacy of the availability of services and the impact of the condition on a population. The data below provides initial analysis on the level of chronic disease management in hospitals and general practice.

#### Hospitalisation

The data in Table 5 (below) illustrates the variation in the hospital admission rates across the NWMPHN area for selected chronic diseases, illustrating generally lower admission rates in the inner locations and higher rates in the growth areas and peri-urban locations. This trend appears to be in line with the data presented earlier.

Table 5: Standardised ratio of hospital admission rates for selected conditions, public and private hospitals (2012-13)

Region	LGA Name	Circulatory	Respiratory	Cancer	Dialysis
Inner city	Maribyrnong (C)	91.6**	73.5**	78.2**	144.2**
	Melbourne (C)	75.8**	69.9**	93.2**	81.6**
	Yarra (C)	77.7**	72.4**	97.6**	108.8**
Suburban	Brimbank (C)	97.6	75.8**	79.9**	155.8**
	Darebin (C)	96.5*	80.4**	105.7**	185.9**
	Hobsons Bay (C)	98.8	73.6**	96.9**	94.0**
	Moonee Valley (C)	93.8**	77.8**	103.2	106.3**
	Moreland (C)	97.4	91.2**	97.9**	107.8**
Growth area	Hume (C)	107.7**	103.3	102.6**	161.2**
	Melton (C)	115.1**	92.7**	95.0**	167.2**
	Wyndham (C)	112.5**	78.9**	90.6**	96.0**
Peri-urban	Macedon Ranges (S)	87.2**	83.7**	99.2**	41.4**
	Moorabool (S)	109.0*	119.9**	103.2**	..
<b>Victoria</b>		<b>99.0**</b>	<b>90.5**</b>	<b>104.7**</b>	<b>101.8**</b>
<b>Australia</b>		<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Source: PHIDU 2017. Highlights on a red (poorer performance) to green (better performance) scale

\*statistically significant, at the 95% confidence level, \*\*statistically significant, at the 99% confidence level

#### General practice chronic disease management plan

There are a range of MBS items to assist general practice and allied health to in the management of patients with chronic disease through specific items for health assessments and undertaking multidisciplinary case conferencing. The release of MBS data by small area provides some insight into the uptake of these items across the NWMPHN area.

Table 6 and 7 (below) provides data on the variation in take-up of GP multidisciplinary case conferencing and GP Health Assessments by SA3 area. These data illustrate a wide variation in utilisation across the catchment. Overall there has been an increase in the per capita uptake in the case conferencing, and a static rate in Health Assessments. Low rates of Health Assessments in Melbourne City and Yarra would be partially explained by the younger age profile in those areas. Data for additional chronic disease items is provided in Table 10 to Table 14.

Table 6: Patients and services per 100,000 people for GP multidisciplinary case conferencing items by provider location (SA3 areas)

SA4	SA3	Patients per 100k people				Services per 100k people			
		2013	2014	2015	2016	2013	2014	2015	2016
Melbourne - Inner	Brunswick - Coburg	32.6	35.3	40.7	43.5	53.0	57.7	65.4	79.3
	Darebin - South	9.3	8.3	6.6	8.4	13.7	12.6	9.1	12.5
	Essendon	28.5	34.1	33.8	33.0	38.2	51.8	46.3	41.2
	Melbourne City	5.9	8.3	15.9	17.4	8.9	11.3	26.4	26.8
	Yarra	10.6	12.7	18.6	17.3	13.5	17.5	25.1	23.5
Melbourne - N East	Darebin - North	5.4	9.6	19.3	22.8	8.3	15.3	29.6	34.9
Melbourne - N West	Keilor	2.2	6.1	5.2	5.5	2.5	8.2	7.3	6.5
	Macedon Ranges	55.5	62.7	68.1	74.9	86.7	98.9	102.5	111.4
	Moreland - North	17.7	14.7	14.2	13.7	27.0	26.1	24.3	22.5
	Sunbury	19.6	35.5	48.7	50.3	24.5	44.1	58.1	67.5
	Tulla - Bmeadow	25.4	34.2	50.2	57.4	33.0	51.2	83.6	96.8
Melbourne - West	Brimbank	10.1	13.4	19.7	24.3	13.7	20.6	29.5	33.6
	Hobsons Bay	7.9	15.5	19.3	28.7	11.1	20.8	30.6	49.6
	Maribyrnong	0.8	1.7	4.4	9.0	1.0	1.9	4.6	10.8
	Melton - B Marsh	27.5	41.6	47.8	56.7	37.8	60.6	68.8	83.8
	Wyndham	17.9	22.4	25.9	29.5	27.5	34.2	42.3	45.1
<b>Victoria</b>	<b>Victoria</b>	16.3	21.8	27.3	32.4	25.6	34.5	43.0	50.7
<b>Australia</b>	<b>Australia</b>	18.1	24.0	30.8	37.3	31.3	41.2	53.4	65.3

Source: MBS Statistics [http://www.health.gov.au/internet/main/publishing.nsf/Content/PHN-MBS\\_Data](http://www.health.gov.au/internet/main/publishing.nsf/Content/PHN-MBS_Data), ABS ERP. Item numbers: 735, 739, 743, 747, 750, 758, 10997. Highlights on a red (lower) to green (higher) scale

Table 7: Patients and services per 1000 people for GP Health Assessment items by provider location (SA3 areas)

SA4	SA3	Patients per 1000 people				Services per 1000 people			
		2013	2014	2015	2016	2013	2014	2015	2016
Melbourne - Inner	Brunswick - Coburg	30.1	31.8	36.5	30.3	30.5	32.3	36.7	30.4
	Darebin - South	38.2	29.1	27.9	29.0	38.6	29.3	28.0	29.2
	Essendon	41.2	40.3	44.7	46.5	41.9	41.1	45.1	46.8
	Melbourne City	8.1	11.4	11.2	12.3	8.2	11.6	11.2	12.4
	Yarra	16.5	15.5	19.4	18.8	16.6	15.7	19.4	18.8
Melbourne - N East	Darebin - North	29.0	29.4	32.8	30.6	29.3	29.9	32.9	30.6
Melbourne - N West	Keilor	21.4	25.3	27.4	32.5	21.5	25.6	27.4	32.7
	Macedon Ranges	29.2	27.2	26.0	25.1	29.5	27.4	26.2	25.3
	Moreland - North	44.9	50.7	45.4	43.7	45.9	51.6	45.6	43.8
	Sunbury	39.0	30.5	26.7	24.9	39.4	30.9	26.8	25.0
	Tulla - Bmeadow	25.5	32.6	36.0	30.7	25.9	33.4	36.4	31.0
Melbourne - West	Brimbank	27.8	30.2	28.6	27.4	28.2	30.6	28.8	27.7
	Hobsons Bay	20.2	27.7	23.4	25.6	20.4	28.4	23.5	25.6
	Maribyrnong	32.5	33.3	35.7	31.7	33.2	33.9	36.0	31.8
	Melton - B Marsh	22.1	30.2	33.0	30.3	22.5	30.7	33.1	30.4
	Wyndham	25.0	29.8	27.7	19.9	26.1	30.7	27.9	20.0
<b>Victoria</b>	<b>Victoria</b>	29.0	31.5	32.1	30.6	29.6	32.1	32.4	31.1
<b>Australia</b>	<b>Australia</b>	36.7	41.2	43.6	42.9	38.3	43.3	46.4	47.0

Source: MBS Statistics [http://www.health.gov.au/internet/main/publishing.nsf/Content/PHN-MBS\\_Data](http://www.health.gov.au/internet/main/publishing.nsf/Content/PHN-MBS_Data), ABS ERP. Item numbers: 701, 703, 705, 707, 715, 10987. Highlights on a red (lower) to green (higher) scale



## 1.6 Future opportunities

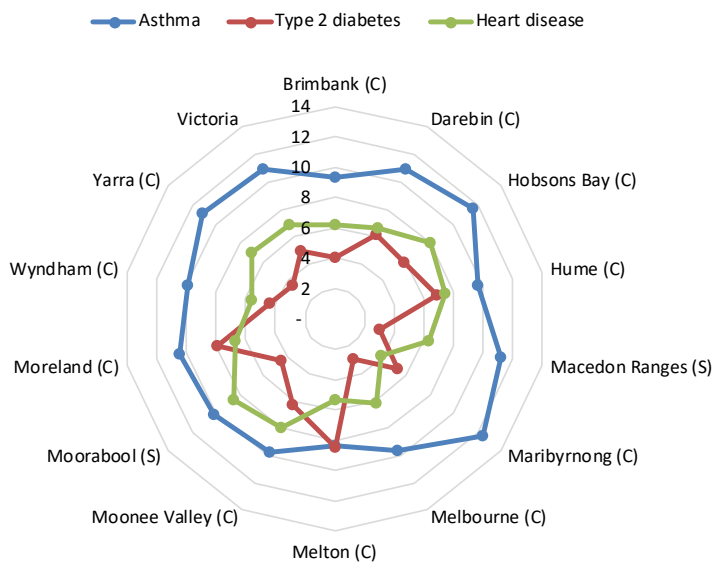
The data presented above illustrates the existing challenges for the NWMPHN and allows the identification of a number of opportunities to improve the level of chronic disease management. These include:

- Increasing work with primary care agencies and local government to increase the impact of primary prevention programs.
- Improve the reach of chronic disease management programs in the high population growth areas and those with high prevalence of disease and risk factors.

## 2 OTHER DATA

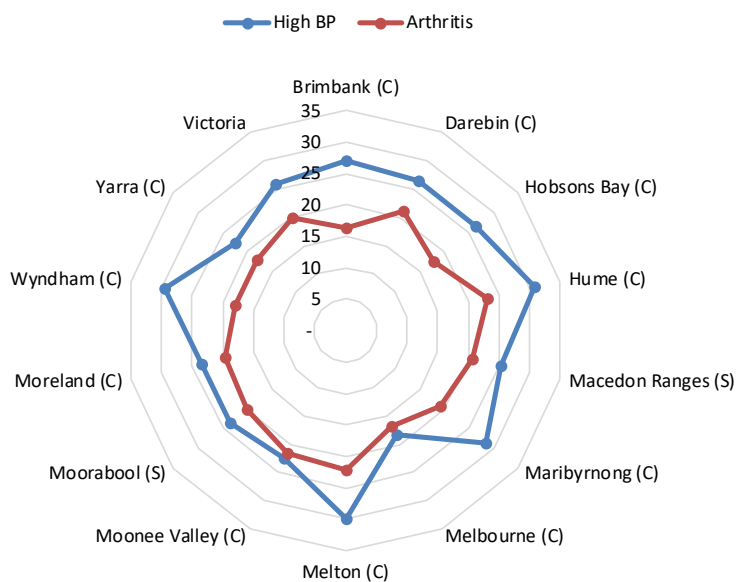
### 2.1 Self reported prevalence of chronic disease

Figure 5: Self reported prevalence of asthma, type 2 diabetes, and heart disease



Source: DHHS Victorian Population Health Survey 2011

Figure 6: Self reported prevalence of high blood pressure and arthritis



Source: DHHS Victorian Population Health Survey 2011

Table 8: Population aged 70+ in the NWMPHN municipalities 2016 and projected to 2031

Region	LGA	2016 ABS Census	2031 projection VIF2016	% growth 2016-2031	Pop growth 2016-31
<b>Inner</b>	Maribyrnong (C)	5,570	10,357	86%	4,787
	Melbourne (C)	5,643	18,693	231%	13,050
	Yarra (C)	5,977	12,709	113%	6,732
<b>Suburban</b>	Brimbank (C)	17,191	31,925	86%	14,734
	Darebin (C)	15,701	20,190	29%	4,489
	Hobsons Bay (C)	9,207	15,067	64%	5,860
	Moonee Valley (C)	13,465	19,650	46%	6,185
	Moreland (C)	17,044	21,027	23%	3,983
<b>Growth</b>	Hume (C)	12,976	31,023	139%	18,047
	Melton (C)	6,666	22,593	239%	15,927
	Wyndham (C)	9,912	30,600	209%	20,688
<b>Periurban</b>	Macedon Ranges (S)	4,930	10,179	106%	5,249
	Moorabool (S)	3,080	7,228	135%	4,148
<b>Grand Total</b>		<b>127,362</b>	<b>251,240</b>	<b>97%</b>	<b>123,878</b>

Source: ABS Census and VIF2016

Table 9: Population aged 85+ in the NWMPHN municipalities 2016 and projected to 2031

Region	LGA	2016 ABS Census	2031 projection VIF2016	% growth 2016-2031	Pop growth 2016-31
<b>Inner</b>	Maribyrnong (C)	1,371	1,907	39%	536
	Melbourne (C)	1,252	3,918	213%	2,666
	Yarra (C)	1,075	2,352	119%	1,277
<b>Suburban</b>	Brimbank (C)	2,927	5,855	100%	2,928
	Darebin (C)	3,730	4,307	15%	577
	Hobsons Bay (C)	1,966	3,055	55%	1,089
	Moonee Valley (C)	2,963	4,370	47%	1,407
	Moreland (C)	4,321	4,693	9%	372
<b>Growth</b>	Hume (C)	1,883	5,125	172%	3,242
	Melton (C)	897	4,605	413%	3,708
	Wyndham (C)	1,453	5,508	279%	4,055
<b>Periurban</b>	Macedon Ranges (S)	810	1,855	129%	1,045
	Moorabool (S)	483	1,359	181%	876
<b>Grand Total</b>		<b>25,131</b>	<b>48,909</b>	<b>95%</b>	<b>23,778</b>

Source: ABS Census and VIF2016

Table 10: Patients and services per 100,000 people for asthma care planning items by provider location (SA3 areas)

SA4	SA3	Patients per 1000 people				Services per 1000 people			
		2013	2014	2015	2016	2013	2014	2015	2016
Melbourne - Inner	Brunswick - Coburg	1.5	1.6	1.6	1.9	1.5	1.6	1.6	1.9
	Darebin - South	6.8	8.3	7.1	6.8	6.8	8.3	7.1	6.8
	Essendon	4.9	4.8	5.5	4.7	4.9	4.9	5.5	4.7
	Melbourne City	0.2	0.5	0.4	0.5	0.2	0.5	0.4	0.5
	Yarra	0.8	0.5	0.8	0.9	0.8	0.5	0.8	0.9
Melbourne - N East	Darebin - North	0.7	0.5	0.9	0.5	0.7	0.5	0.9	0.5
Melbourne - N West	Keilor	0.1	-	-	0.5	0.1	-	-	0.5
	Macedon Ranges	9.3	3.4	8.8	9.3	9.3	3.4	8.8	9.3
	Moreland - North	0.2	0.2	0.4	1.6	0.2	0.2	0.4	1.6
	Sunbury	0.3	0.9	0.8	1.1	0.3	0.9	0.8	1.1
	Tulla - Bmeadow	2.0	2.3	2.0	2.0	2.0	2.3	2.0	2.0
Melbourne - West	Brimbank	1.8	1.9	1.5	1.4	1.8	1.9	1.5	1.4
	Hobsons Bay	0.5	0.6	0.9	0.5	0.5	0.6	0.9	0.5
	Maribyrnong	0.3	0.5	0.9	1.2	0.3	0.5	0.9	1.2
	Melton - B Marsh	1.7	1.3	1.5	1.5	1.7	1.3	1.5	1.5
	Wyndham	0.8	1.2	1.9	2.1	0.8	1.2	1.9	2.1
<b>Victoria</b>	<b>Victoria</b>	1.6	1.9	2.1	2.2	1.6	1.9	2.1	2.2
<b>Australia</b>	<b>Australia</b>	1.5	1.8	2.2	2.3	1.5	1.8	2.2	2.3

Source: MBS Statistics [http://www.health.gov.au/internet/main/publishing.nsf/Content/PHN-MBS\\_Data](http://www.health.gov.au/internet/main/publishing.nsf/Content/PHN-MBS_Data), ABS ERP. Item numbers: 2546, 2547, 2552, 2553, 2558, 2559. Highlights on a red (lower) to green (higher) scale

Table 11: Patients and services per 100,000 people for cervical screening items by provider location (SA3 areas)

SA4	SA3	Patients per 1000 people				Services per 1000 people			
		2013	2014	2015	2016	2013	2014	2015	2016
Melbourne - Inner	Brunswick - Coburg	4.9	5.6	4.5	5.0	4.9	5.6	4.5	5.0
	Darebin - South	3.8	3.7	4.3	3.1	3.8	3.7	4.3	3.1
	Essendon	5.5	4.5	4.0	3.0	5.5	4.4	4.0	2.9
	Melbourne City	4.1	4.1	4.8	4.3	4.0	4.1	4.7	4.2
	Yarra	5.1	4.6	3.9	4.1	5.1	4.6	3.8	4.1
Melbourne - N East	Darebin - North	2.0	1.1	2.3	2.2	2.0	1.1	2.3	2.2
Melbourne - N West	Keilor	1.2	1.7	1.8	2.0	1.2	1.7	1.8	2.0
	Macedon Ranges	4.1	2.6	2.9	3.5	4.1	2.5	2.9	3.5
	Moreland - North	1.8	1.8	2.5	1.7	1.8	1.8	2.5	1.7
	Sunbury	3.9	3.5	3.4	3.3	3.9	3.5	3.4	3.3
	Tulla - Bmeadow	6.3	5.4	4.0	3.9	6.3	5.4	4.0	3.9
Melbourne - West	Brimbank	3.7	3.8	3.8	3.9	3.7	3.8	3.8	3.9
	Hobsons Bay	1.5	1.8	2.0	1.9	1.5	1.8	2.0	1.9
	Maribyrnong	2.4	2.6	3.1	2.9	2.4	2.6	3.1	2.9
	Melton - B Marsh	8.3	6.9	4.5	3.5	8.3	6.9	4.5	3.5
	Wyndham	4.7	6.0	5.8	6.4	4.7	6.0	5.8	6.3
<b>Victoria</b>	<b>Victoria</b>	3.5	3.5	3.2	3.2	3.5	3.4	3.2	3.2
<b>Australia</b>	<b>Australia</b>	4.9	5.6	4.5	5.0	4.9	5.6	4.5	5.0

Source: MBS Statistics [http://www.health.gov.au/internet/main/publishing.nsf/Content/PHN-MBS\\_Data](http://www.health.gov.au/internet/main/publishing.nsf/Content/PHN-MBS_Data), ABS ERP. Item numbers: 2501, 2503, 2504, 2506, 2507, 2509. Highlights on a red (lower) to green (higher) scale



Table 12: Patients and services per 100,000 people for diabetes care planning items by provider location (SA3 areas)

SA4	SA3	Patients per 1000 people				Services per 1000 people			
		2013	2014	2015	2016	2013	2014	2015	2016
Melbourne - Inner	Brunswick - Coburg	12.2	11.7	13.9	12.5	12.2	11.7	13.9	12.5
	Darebin - South	17.9	20.4	18.8	19.6	17.9	20.5	18.8	19.6
	Essendon	16.7	14.7	13.6	10.9	16.7	14.7	13.6	10.9
	Melbourne City	1.7	2.3	2.2	2.0	1.7	2.3	2.2	2.0
	Yarra	5.6	6.0	6.8	6.2	5.6	6.0	6.8	6.2
Melbourne - N East	Darebin - North	10.5	11.0	11.7	9.5	10.5	11.0	11.7	9.5
Melbourne - N West	Keilor	11.0	13.5	12.4	13.4	11.0	13.5	12.4	13.0
	Macedon Ranges	15.5	17.4	16.6	16.1	15.6	17.4	16.7	16.1
	Moreland - North	11.6	15.6	15.0	13.9	11.7	15.7	15.0	13.9
	Sunbury	12.9	11.9	10.4	10.0	12.8	11.9	10.4	10.0
	Tulla - Bmeadow	9.8	12.1	11.9	12.9	9.9	12.1	11.9	12.9
Melbourne - West	Brimbank	10.6	11.3	10.3	9.6	10.6	11.3	10.3	9.6
	Hobsons Bay	12.0	13.5	13.6	14.6	12.0	13.5	13.6	14.6
	Maribyrnong	12.0	12.0	12.1	10.5	12.0	12.0	12.1	10.5
	Melton - B Marsh	8.9	10.8	12.2	12.1	8.9	10.8	12.2	12.1
	Wyndham	6.7	7.9	7.5	6.5	6.7	7.8	7.5	6.5
<b>Victoria</b>	<b>Victoria</b>	9.6	10.7	10.8	10.7	9.6	10.7	10.8	10.7
<b>Australia</b>	<b>Australia</b>	9.5	10.6	10.9	11.1	9.5	10.6	10.9	11.1

Source: MBS Statistics [http://www.health.gov.au/internet/main/publishing.nsf/Content/PHN-MBS\\_Data](http://www.health.gov.au/internet/main/publishing.nsf/Content/PHN-MBS_Data), ABS ERP. Item numbers: 2517, 2518, 2521, 2522, 2525, 2526. Highlights on a red (lower) to green (higher) scale

Table 13: Patients and services per 100,000 people for medication review items by provider location (SA3 areas)

SA4	SA3	Patients per 1000 people				Services per 1000 people			
		2013	2014	2015	2016	2013	2014	2015	2016
Melbourne - Inner	Brunswick - Coburg	13.8	13.2	7.8	8.3	13.8	13.5	7.9	8.3
	Darebin - South	12.4	12.6	9.9	7.5	12.4	12.6	10.3	7.6
	Essendon	9.5	9.1	7.3	8.5	9.5	9.2	7.3	8.5
	Melbourne City	2.2	1.9	2.7	2.5	2.2	1.9	2.7	2.5
	Yarra	2.6	3.0	2.4	3.4	2.7	3.0	2.4	3.4
Melbourne - N East	Darebin - North	7.0	7.3	5.5	4.3	7.0	7.3	5.6	4.4
Melbourne - N West	Keilor	8.4	6.8	5.5	7.3	8.4	6.9	5.7	7.6
	Macedon Ranges	10.3	8.1	3.4	7.6	10.4	8.1	3.4	7.7
	Moreland - North	12.1	9.3	7.0	6.5	12.2	9.3	7.1	6.6
	Sunbury	7.5	9.8	2.9	4.0	7.5	9.8	2.9	4.1
	Tulla - Bmeadow	6.8	6.2	6.6	5.2	6.9	6.2	6.7	5.3
Melbourne - West	Brimbank	5.5	5.6	3.7	6.3	5.5	5.6	3.8	6.4
	Hobsons Bay	5.2	5.9	3.0	3.7	5.3	6.0	3.0	3.7
	Maribyrnong	7.4	7.1	5.1	5.9	7.4	7.1	5.1	5.9
	Melton - B Marsh	5.7	5.7	3.6	4.4	5.7	5.7	3.6	4.4
	Wyndham	3.1	4.4	3.7	3.1	3.1	4.4	3.7	3.1
<b>Victoria</b>	<b>Victoria</b>	8.5	7.8	5.5	6.1	8.5	7.8	5.5	6.1
<b>Australia</b>	<b>Australia</b>	7.3	6.9	4.9	5.5	7.3	6.9	4.9	5.5

Source: MBS Statistics [http://www.health.gov.au/internet/main/publishing.nsf/Content/PHN-MBS\\_Data](http://www.health.gov.au/internet/main/publishing.nsf/Content/PHN-MBS_Data), ABS ERP. Item numbers: 900, 903. Highlights on a red (lower) to green (higher) scale

Table 14: Patients and services per 100,000 people for mental health care planning items by provider location (SA3 areas)

SA4	SA3	Patients per 1000 people				Services per 1000 people			
		2013	2014	2015	2016	2013	2014	2015	2016
Melbourne - Inner	Brunswick - Coburg	137.7	151.5	160.2	171.9	175.2	197.2	204.4	223.0
	Darebin - South	108.2	109.2	120.8	136.0	140.2	145.4	160.4	185.0
	Essendon	118.3	123.6	132.8	141.3	146.0	148.2	163.7	172.2
	Melbourne City	108.5	125.6	135.2	138.8	152.5	187.5	205.2	204.4
	Yarra	147.5	152.2	160.7	167.3	190.5	191.6	202.2	206.2
Melbourne - N East	Darebin - North	59.8	61.5	66.9	72.5	87.6	89.5	92.1	102.8
Melbourne - N West	Keilor	54.7	60.1	64.7	73.0	71.9	76.4	79.5	88.6
	Macedon Ranges	82.8	89.7	99.5	126.2	108.0	121.0	137.3	171.7
	Moreland - North	53.1	56.4	62.2	65.4	65.2	68.6	72.8	77.0
	Sunbury	117.2	126.3	142.3	149.4	157.6	179.2	210.9	214.9
	Tulla - Bmeadow	91.5	101.6	108.3	118.6	119.4	136.1	140.1	155.8
Melbourne - West	Brimbank	69.9	77.3	83.1	86.4	95.5	104.8	116.2	119.6
	Hobsons Bay	60.2	74.3	81.3	91.7	72.0	90.2	98.2	116.5
	Maribyrnong	79.8	80.7	94.9	108.8	99.5	99.1	119.1	135.5
	Melton - B Marsh	99.3	107.3	112.5	127.1	179.9	187.0	195.9	216.5
	Wyndham	74.7	88.0	91.1	104.6	100.0	123.3	120.3	143.3
<b>Victoria</b>	<b>Victoria</b>	87.6	95.3	102.6	111.8	117.5	127.9	139.0	151.6
<b>Australia</b>	<b>Australia</b>	75.9	83.3	90.5	99.1	100.0	109.7	119.2	131.0

Source: MBS Statistics [http://www.health.gov.au/internet/main/publishing.nsf/Content/PHN-MBS\\_Data](http://www.health.gov.au/internet/main/publishing.nsf/Content/PHN-MBS_Data), ABS ERP. Item numbers: 2700, 2701, 2712, 2713, 2715, 2717. Highlights on a red (lower) to green (higher) scale

Table 15: PBS prescriptions dispensed, decile of age and sex standardised rate, by SA3, 2013–14

SA4	SA3	Asthma medicines people aged 3 to 19 years	Asthma medicines people aged 20 to 44 years	Asthma and COPD medicines people aged 45 years and over.	Asthma and related respiratory admissions to hospital people aged 3 to 19 years#	Asthma admissions to hospital people aged 20 to 44 years, 2010–11 to 2012–13 ##	Asthma and COPD admissions to hospital people aged 45 years and over. ##	Heart failure admissions to hospital people aged 40 years and over. #	PBS prescriptions dispensed for anticholinesterase medicines people aged 65 years and over, 2013–14 *
Melbourne - Inner	Bwick - Coburg	9	9	6	1	8	7	1	6
	Darebin - South	8	9	8	6	7	9	3	3
	Essendon	9	9	8	5	8	9	6	5
	Melbourne City	8	10	9	1	8	9	7	2
	Yarra	5	9	7	5	6	8	9	2
Melbourne - NE	Darebin - North	7	8	4	7	8	6	2	2
Melbourne - NW	Keilor	7	7	9	1	5	9	4	6
	Macedon Ranges	5	5	7	7	6	10	6	4
	Moreland - North	6	8	5	1	6	7	2	6
	Sunbury	2	3	3	7	1	6	7	4
	Tulla - Bmeadows	6	6	2	3	4	2	1	4
Melbourne - West	Brimbank	4	7	5	1	2	8	2	8
	Hobsons Bay	8	7	6	5	7	9	5	5
	Maribyrnong	6	9	2	1	6	7	3	8
	Melton - B Marsh	5	6	2	4	3	5	3	6
	Wyndham	7	7	4	6	5	5	4	8

Deciles of rates: 1 = lowest 10% of rates; 10 = highest 10% of rates. Highlights on a red (lower) to green (higher) scale

Sources: National Health Performance Authority analysis of Pharmaceutical Benefits Scheme (PBS) statistics 2013–14 (data supplied 10/04/2015) and Australian Bureau of Statistics Estimated Resident Population 30 June 2013. Full data specifications at <http://meteor.aihw.gov.au/content/index.phtml/itemId/623427>

# Sources: National Health Performance Authority analysis of Admitted Patient Care National Minimum Data Sets from 2010–11 to 2012–13 (data supplied 09/04/2014) and Australian Bureau of Statistics Estimated Resident Population 30 June 2013. Full data specifications at <http://meteor.aihw.gov.au/content/index.phtml/itemId/623427>

## Sources: National Health Performance Authority analysis of Admitted Patient Care National Minimum Data Set 2012–13 (data supplied 09/04/2014) and Australian Bureau of Statistics Estimated Resident Population 30 June 2013. Full data specifications at <http://meteor.aihw.gov.au/content/index.phtml/itemId/623427>

\* Sources: National Health Performance Authority analysis of Pharmaceutical Benefits Scheme (PBS) statistics 2013–14 (data supplied 19/03/2015) and Australian Bureau of Statistics Estimated Resident Population 30 June 2013. Full data specifications at <http://meteor.aihw.gov.au/content/index.phtml/itemId/623427>