

CHAPTER 5: EQUITY

5.1 OVERVIEW

This chapter considers ***Evaluation Question 3: To what extent has the Better Access initiative provided equitable access to populations in need? (in particular people living in rural and remote areas, children and young people, older persons, people from culturally and linguistically diverse backgrounds)?*** Specifically, the chapter brings together data on *Better Access* service utilisation with information about the prevalence of mental health problems (from the 2007 NSMHWB) and other Division-based characteristics. Together, these data inform a modeling exercise that describes levels of mental health treatment need in areas defined by the boundaries of Divisions of General Practice and investigates whether *Better Access* services are being distributed according to need.

The analyses presented in Chapters 3 and 4 examined whether particular groups (e.g., children and young people, older persons, people living in rural and remote areas, people of low socio-economic status) are proportionally represented in the *Better Access* uptake data, compared to their overall representation in the population. However, these analyses rely on the assumption that mental health problems are evenly distributed across population groups, which is known not to be the case. The analyses presented in this chapter attempt to overcome this problem by adjusting the population comparators to take into account the prevalence of mental health problems among certain groups, using data from the 2007 NSMHWB. The methodology is informed previous analyses.^{34, 35, 37}

The analyses presented in this chapter address Evaluation Question 3 via the following series of research questions:

1. What is the distribution of mental health need at the individual level?
2. What is the relative distribution of mental health need across Divisions of General Practice?
3. What is the relative distribution of *Better Access* and allied health *Better Access* services used across Divisions of General Practice?
4. What are the rates of *Better Access* and allied health *Better Access* services according to key Division characteristics?
5. What is the relationship between mental health needs and *Better Access* services used at the Division level?

5.2 WHAT IS THE DISTRIBUTION OF MENTAL HEALTH NEED AT THE INDIVIDUAL LEVEL?

A first step in the analysis was to derive a measure of mental health need. Mental health need can be defined in many ways.^{43, 44} For the current study, an inclusive measure of need was developed that takes into consideration the groups to whom *Better Access* services are principally targeted (namely the common mental disorders including affective, anxiety and

substance use disorders), as well as other factors that may prompt individuals to seek treatment but that fall outside the criteria for determining disorder or that fall under the threshold for meeting criteria for disorder. Further information about the rationale and methodology underpinning the approach to defining and measuring mental health need is provided in section 2.3.4 of this report.

Mental health need was defined as:

- Individuals with any of the following indicators of need: a 12-month affective, anxiety or substance use disorder and/or; 12-month symptoms (but no lifetime disorder); and/or any psychiatric hospitalisation in the past 12 months and/or; high or very high level of psychological distress on the K10 measure and/or; 7 or more days out of role and/or; any suicidality in the past 12 months.

The distribution of mental health need among Australian adults at an individual level was then examined. Data from the 2007 NSMHWB were used to estimate the proportion of the adult population aged 16 to 84 years experiencing mental health need according to definition above. Table 5.1 shows that 31.9% (95% CI 30.0%-33.9%) of the adult population aged 16 to 84 years were classified as having mental health need, comprising 20.0% (95% CI 18.9%-21.1%) with any 12-month affective, anxiety or substance use disorder plus an additional 12.1% (95% CI 11.1%-13.1%) with at least one other indicator of need.

Table 5.1 Number and percentage of Australian adults aged 16 to 84 years meeting criteria for mental health need, and for the individual components of mental health need, as estimated by the 2007 National Survey of Mental Health and Wellbeing (*N*=8,841)

	N	%	95% CI
Mental health need	2,913	32.1	30.8-33.4
Any 12-month affective, anxiety or substance use disorder	1,768	20.0	18.9-21.1
12-month symptoms of affective, anxiety or substance use disorder (but no lifetime disorder)	416	4.3	3.8-4.8
Hospitalisation for a mental health condition in past 12 months	294	2.8	2.4-3.3
7 or more days out of role	786	8.3	7.6-9.0
High or very high psychological distress	849	9.4	8.6-10.3
Suicidality in past 12 months	248	2.4	2.0-2.8

Ns are unweighted; % (95% CI) are weighted. The total number of persons meeting criteria for mental health need will be less than the sum of the persons meeting individual criteria for its components because a person may meet criteria for more than one component.

5.3 WHAT IS THE RELATIVE DISTRIBUTION OF MENTAL HEALTH NEED ACROSS DIVISIONS OF GENERAL PRACTICE?

The distribution of mental health need across the 113 Divisions of General Practice was then estimated. Using age, gender and section of state information collected by the 2007 NSMHWB, it was possible to calculate rates of mental health need for each of the 84 strata defined by gender (male and female), age group (16-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, 60-64, 65-69, 70-74, 75-79, 80-84 years) and section of state (capital cities, other metropolitan regions, remainder). By taking this population category data from the 2007 NSMHWB, and weighting each Division according to its population structure (as defined by the

same 84 strata), it was then possible to model the proportion of residents in each Division who would be expected to be meet the criteria for mental health need.

Table 5.2 summarises the distribution characteristics of the measure of mental health need across the 113 Divisions of General Practice in Australia. Between 29.5% and 34.5% of the adult population in each Division were categorised as meeting criteria for the definition of mental health need. The mean was 31.8%, and the coefficient of variation was 0.03, indicating relatively little variability between Divisions on this measure. The distribution is also shown in Figure 5.1.

Table 5.2 Summary statistics for mental health need among adults aged 16 to 84 years in 113 Divisions of General Practice in Australia

	Summary statistics				Percentile				
	Range	Mean	SD	CoV	10th	25th	50th	75th	90th
Mental health need	29.5-34.5%	31.8%	1.1%	0.03	30.4	31.0	31.9	32.8	33.3

SD, standard deviation; CoV, coefficient of variation. Data are weighted to offset the effects of population size.

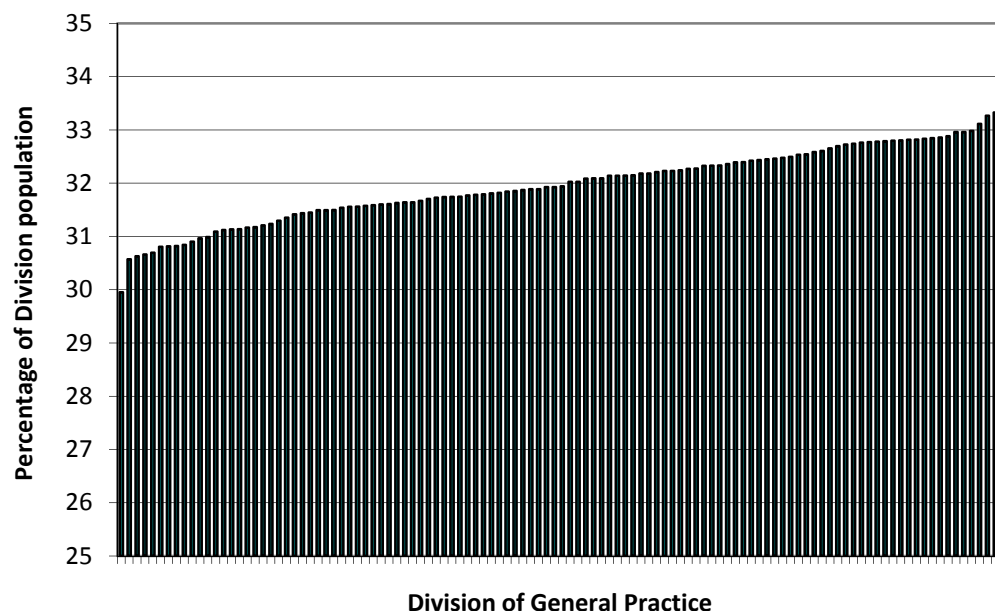


Fig 5.1 Estimated proportion of adult population aged 16 to 84 years with any potential need for mental health care in 113 Divisions of General Practice

5.4 WHAT IS THE RELATIVE DISTRIBUTION OF *BETTER ACCESS* AND ALLIED HEALTH *BETTER ACCESS* SERVICES USED ACROSS DIVISIONS OF GENERAL PRACTICE?

The purpose of the current set of analyses was to examine the extent to which mental health need predicts two outcome variables: (1) total MBS-subsidised *Better Access* services received in 2009 (crude rate per 1,000 population); and (2) total MBS-subsidised allied health *Better Access* services received in 2009 (crude rate per 1,000 population). The following figures 5.2 and 5.3 show the frequency distributions of the rates of *Better Access* and allied health *Better Access* services used across the 113 Divisions.

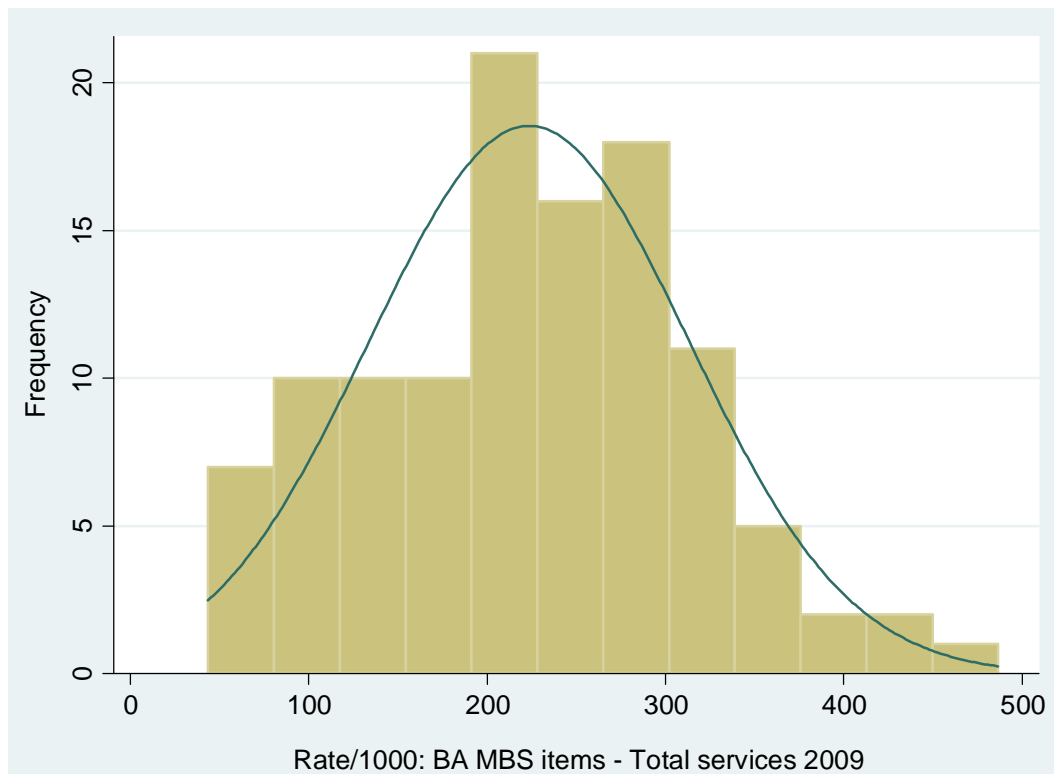


Fig 5.2 Total MBS-subsidised *Better Access* services used in 2009 (rate per 1,000 population) by adults aged 16 to 84 years across 113 Divisions of General Practice

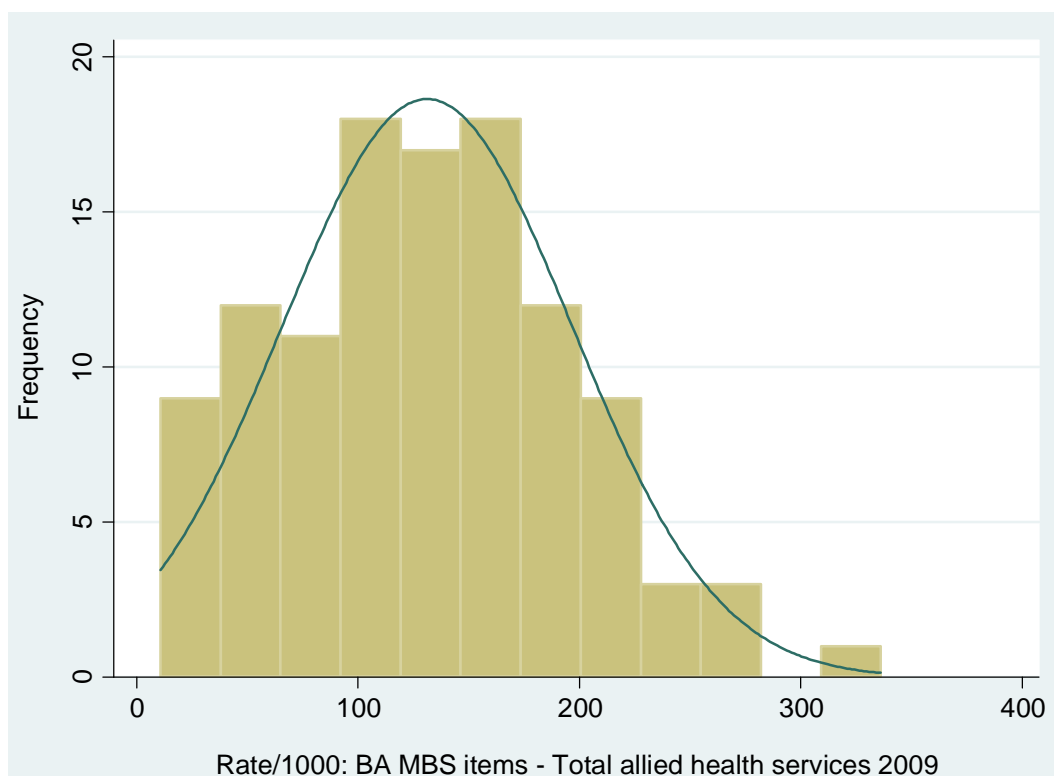


Fig 5.3 Total MBS-subsidised allied health *Better Access* services used in 2009 (rate per 1,000 population) by adults aged 16 to 84 years across 113 Divisions of General Practice

Table 5.3 provides descriptive statistics for the 113 Divisions on each of the outcome measures. The distributions of the outcome measures demonstrated normality.

Table 5.3 Summary statistics for the 2 outcome measures relating to *Better Access* services used in 2009 for adults aged 16 to 84 years in 113 Divisions of General Practice

	Range	Mean	SD	CoV	Percentile				
					10th	25th	50th	75th	90th
<i>Better Access</i> services used (per 1,000)	43.6-486.6	223.6	89.7	0.40	98.3	164.4	221.2	282.6	330.8
Allied health <i>Better Access</i> services used (per 1,000)	10.8-336.3	131.3	65.6	0.50	41.8	85.1	133.7	172.6	211.8

2009 figures have regard to all MBS claims processed up to and including 30 April 2010.

SD, standard deviation; CoV, coefficient of variation. Crude rates. Data are weighted to offset the effects of population size.

Total *Better Access* services used per Division were estimated to be between 43.6 and 486.6 services per 1,000 population. The mean was 223.6 services, and the coefficient of variation was 0.40. Total allied health *Better Access* services used per Division were estimated to be between 10.8 and 336.3 services per 1,000 population. The mean was 131.3 services, and the coefficient of variation was 0.50.

The following figures 5.4 and 5.5 show the overall distribution of the two outcome measures for each of the 113 GP Divisions, in ascending order. These charts illustrate the following:

- The rate of *Better Access* services received rates varies between Divisions of General Practice by a factor of 3.4 between the bottom 10% and the top 10%; and
- The rate of allied health *Better Access* services received rates vary by a factor of 5.1 between the bottom 10% and the top 10%.

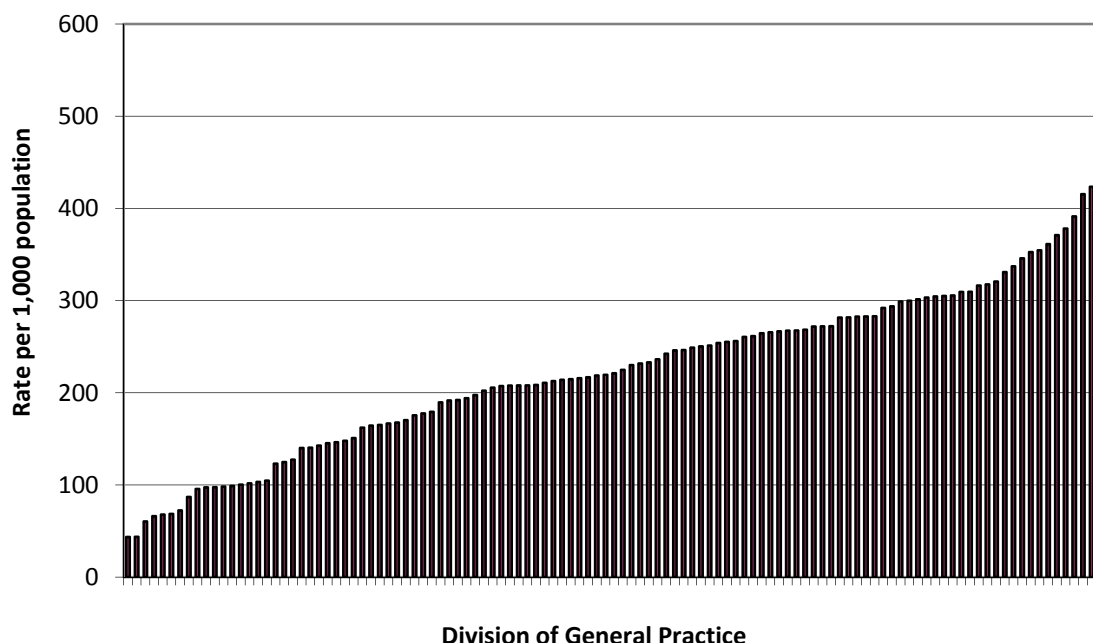


Fig 5.4 Total MBS-subsidised *Better Access* services used in 2009 (rate per 1,000 population) by adults aged 16 to 84 years within each 113 Divisions of General Practice

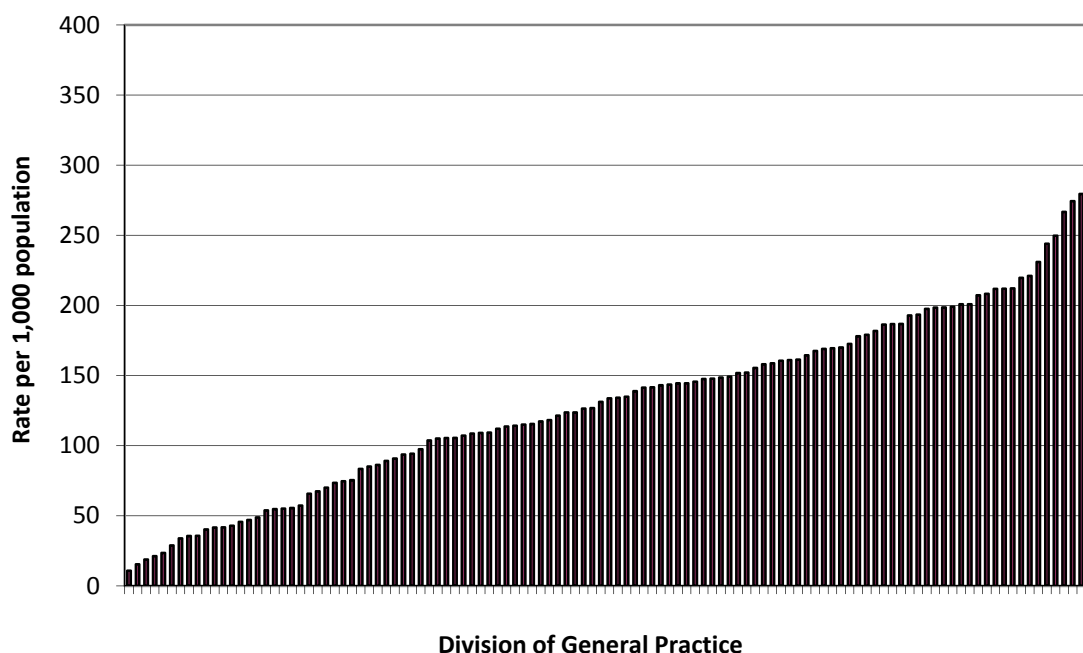


Fig 5.5 Total MBS-subsidised allied health *Better Access* services used in 2009 (rate per 1,000 population) by adults aged 16 to 84 years within each 113 Divisions of General Practice

5.5 WHAT ARE THE RATES OF *BETTER ACCESS* AND ALLIED HEALTH *BETTER ACCESS* SERVICES ACCORDING TO KEY DIVISION-LEVEL FACTORS?

It is also useful to inspect the profile of *Better Access* and allied health *Better Access* services used for the various Division-level factors used in the analyses. There are state/territory-based variations in *Better Access* and allied health *Better Access* services used for persons aged 16 to 84 years. These are summarized in Table 5.4 and the following Figures 5.6 and 5.7.

Table 5.4 Summary statistics for the *Better Access* and allied health *Better Access* services used in 2009 for adults aged 16 to 84 years, by state/territory and nationally

	Total <i>Better Access</i> services used in 2009 (per 1,000)	Total allied health <i>Better Access</i> services used in 2009 (per 1,000)
	Mean (95% CI)	Mean (95% CI)
New South Wales	257.3 (238.4-276.2)	155.6 (140.5-170.8)
Victoria	303.2 (274.4-331.9)	192.2 (169.8-214.7)
South Australia	209.3 (180.9-237.7)	113.9 (93.5-134.3)
Queensland	229.8 (198.2-261.4)	134.4 (112.8-156.0)
Western Australia	214.7 (180.6-248.7)	130.8 (105.6-156.0)
Tasmania	217.1 (141.2-293.0)	138.6 (83.4-193.8)
Australian Capital Territory	216.9 (.)	143.1 (.)
Northern Territory	60.4 (.)	28.9 (.)
National	252.0 (238.3-265.8)	153.2 (142.9-163.6)

CI, confidence interval. Crude rates. Data are weighted by population size of Division of General Practice.

'.' – Value cannot be estimated because NT and ACT include only one Division of General Practice.

The table and figures show that:

- Nationally, the mean number of *Better Access* services received is 252.0 (95% CI 238.3-265.8) per 1,000 population rates. Rates varied by a factor of 5.0 between the jurisdictions with the lowest (Northern Territory) and highest (Victoria) rates (Figure 5.6); and
- Nationally, the mean number of allied health *Better Access* services used in 2009 was 153.2 (95% CI 142.9-163.6) per 1,000 population rates. Rates varied by a factor of 6.7 between the jurisdictions with the lowest (Northern Territory) and highest (Victoria) rates (Figure 5.7).

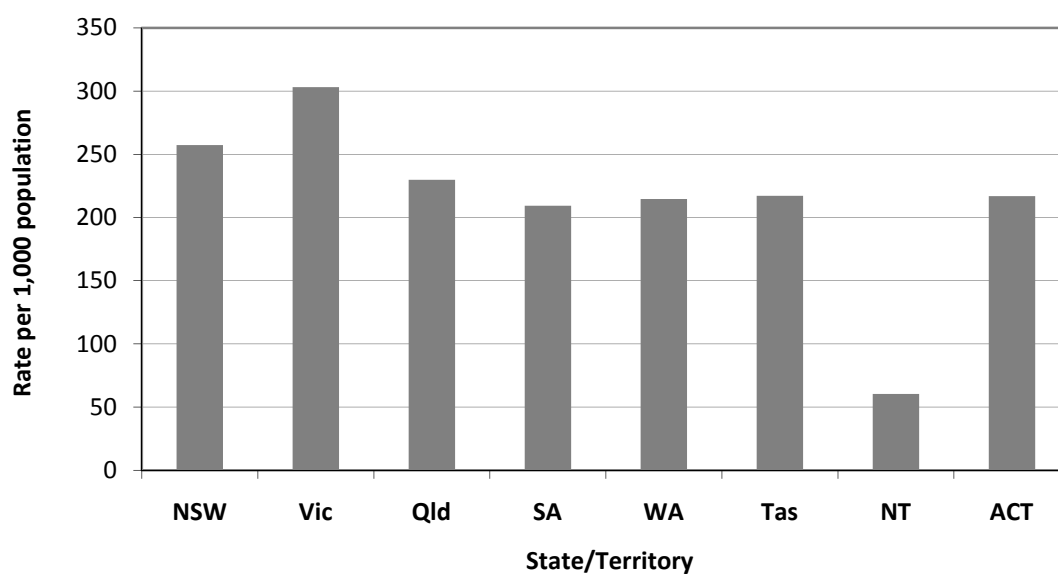


Fig 5.6 Total MBS-subsidised *Better Access* services used in 2009 by adults aged 16 to 84 years, by state/territory (rate per 1,000 population)

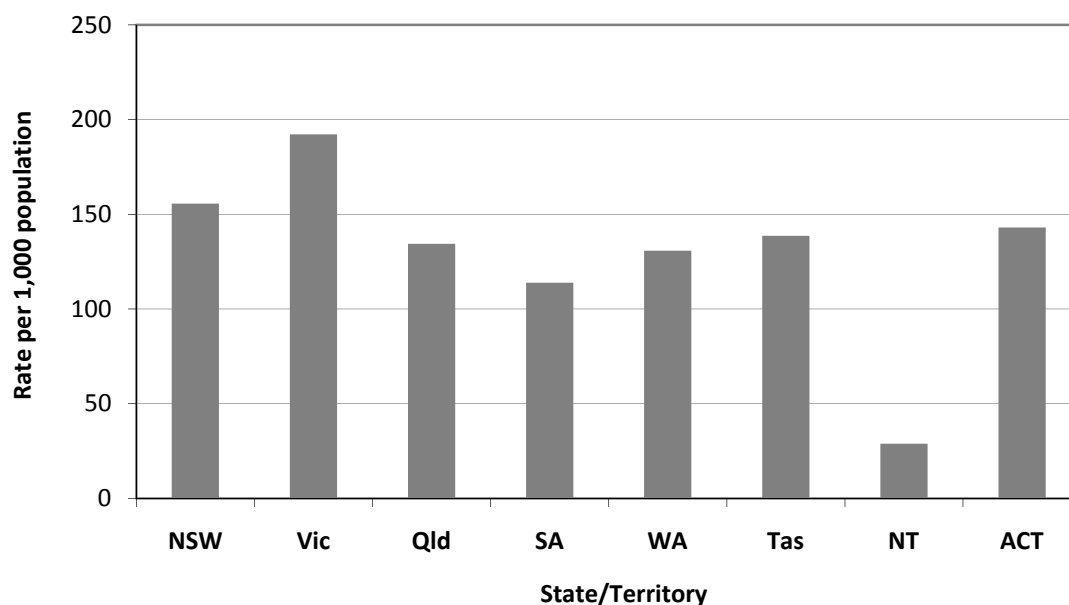


Fig 5.7 Total MBS-subsidised allied health *Better Access* services used in 2009 by adults aged 16 to 84 years, by state/territory (rate per 1,000 population)

Table 5.5 shows the weighted correlations between the measures of services used, mental health need and the Division-level characteristics. This shows the direction and magnitude of the relationships between measures.

Table 5.5 Weighted correlations among the measures

	Total <i>Better Access</i> services used (per 1,000)	Allied health <i>Better Access</i> services used (per 1,000)	GP supply rate (per 1,000)	Remoteness (%)	Mental health need (%)	Labour force participation (%)	Unemployment (%)	IRSED deciles 1 to 3 (%)
Total <i>Better Access</i> services used (per 1,000)	1.00							
Allied health <i>Better Access</i> services used (per 1,000)	0.97	1.00						
GP supply rate (per 1,000)	0.33	0.27	1.00					
Remoteness (%)	-0.48	-0.44	-0.30	1.00				
Mental health need (%)	0.26	0.33	0.18	-0.06	1.00			
Labour force participation (%)	-0.12	-0.05	-0.32	0.30	0.33	1.00		
Unemployment (%)	-0.03	-0.13	0.36	-0.10	-0.21	-0.62	1.00	
IRSED deciles 1 to 3 (%)	-0.37	-0.43	0.21	0.18	-0.29	-0.44	0.65	1.00

5.6 WHAT IS THE RELATIONSHIP BETWEEN MENTAL HEALTH NEED AND *BETTER ACCESS* UPTAKE, SERVICE USE AND BENEFITS PAID AT THE DIVISION LEVEL?

Having determined the ‘performance’ of each Division on the measure of mental health need and the two *Better Access* indicators (total *Better Access* and allied health *Better Access* services used), it was possible to develop regression models in which *Better Access* services used were predicted by various Division level factors (GP workforce supply, potential to access services, and other Division characteristics). The two sets of models are considered below.

The best fitting models for the data were obtained using a hierarchical model-building process comprising 4 steps. Each step comprised one or more candidate variables. Step 1 included the GP workforce supply factor variable: the rate of full-time weighted equivalent GPs in the Division (GP FWE) per 1,000 population. Step 2 included factors relating to potential to access services: state or territory; and remoteness (% of the Division population residing in remote localities, as defined by RRMA categories 6 and 7). Step 3 included the measure of mental health need: percentage of population meeting criteria for need. Step 4 included other Division characteristics: the percentage of Division population (aged 15 years and over) participating in the labour force; the percentage of Division population unemployed; the percentage of Division population living in localities of greatest relative socioeconomic disadvantage, as defined by IRSED deciles 1 to 2.

The successive contribution of the variables in each step to the explanatory power of the model was examined using the R^2 statistic. Importantly, this analysis strategy enabled estimation of the independent contribution of each predictor once other factors had been accounted for. Variables that were associated with the outcome variables in univariate analyses at or below the 0.15 probability level were considered for inclusion in the models. In addition, each predictor was retained only if it contributed at least an additional 1% to the variance explained by the model. Variables were excluded if there was evidence of multicollinearity.

5.6.1 TOTAL *BETTER ACCESS* SERVICES USED

The final model predicting total *Better Access* services used is shown in Table 5.6. The final model explained 54.70% of the variation in *Better Access* services used.

Table 5.6 Final model showing adjusted associations between predictors and total *Better Access* services used in 111 Divisions of General Practice^a in 2009

	Coefficient	SE	t	P	95% CI
Step 1: GP workforce supply	12.10	2.66	4.55	<0.001	6.83 to 17.38
Step 2: Division in Victoria	64.25	11.03	5.82	<0.001	42.37 to 86.14
Division in SA or NT	-20.80	17.30	-1.20	0.232	-55.10 to 13.51
Remoteness	-1.72	0.46	-3.77	<0.001	-2.63 to -0.82
Step 3: Mental health need	10.11	4.88	2.07	0.041	0.43 to 19.78
Step 4: Relative socioeconomic disadvantage	-1.39	0.32	-4.46	<0.001	-2.01 to -0.77

^a Two influential outliers removed

Each successive step contributed at least 1% additional variation explained in total persons using *Better Access* services in 2009. In step 1, the rate of full-time workload equivalence (FWE) of GPs per 1,000 population in each Division was found to be positively associated with *Better Access* services used, explaining 11.07% of the variation (adjusted R^2 0.1107). Of the step 2 candidate variables, being a Division in Victoria was positively associated with services used. Being a Division with relatively high percentage of the population residing in remote locations was negatively associated with services used. Being a Division in South Australia or the Northern Territoryⁱ was not significantly associated with *Better Access* services used after the subsequent addition of other variables in the model. The step 2 variables together contributed an additional 32.19% to the variation explained (giving an adjusted R^2 of 0.4326). The step 3 measure of mental health need was positively associated with services used, adding an additional 3.27% to the variation explained (giving an adjusted R^2 of 0.4653). Of the step 4 variables, having a relatively higher percentage of the population living in areas of greater relative socioeconomic disadvantage was negatively associated with services used, adding an additional 8.17% to the variation explained (giving an adjusted R^2 of 0.5470).

In summary, higher rates of *Better Access* services used were found in Divisions that had relatively higher levels of mental health need, after adjusting for all other variables in the model. However there were other factors that play a part in explaining rates of *Better Access* services used at a Divisional level. Higher rates of *Better Access* services used were also found in Divisions that had higher rates of GP supply, and Divisions located in Victoria. Lower rates of *Better Access* services used were found in Divisions with relatively more people living in socioeconomically disadvantaged areas and Divisions with relatively more people living in remote locations.

5.6.2 TOTAL ALLIED HEALTH *BETTER ACCESS* SERVICES USED

The final model predicting total allied health *Better Access* services used is shown in Table 5.7. The final model explained 50.99% of the variance in allied health *Better Access* services used.

Table 5.7 Final model showing adjusted associations between predictors and total allied health *Better Access* services used in 113 Divisions of General Practice in 2009

	Coefficient	SE	t	P	95% CI
Step 1: GP workforce supply	7.09	2.08	3.40	0.001	2.95 to 11.22
Step 2: Division in Victoria	45.86	8.64	5.30	<0.001	28.71 to 63.01
Division in SA or NT	-22.51	13.57	-1.66	0.100	-49.41 to 4.38
Remoteness	-1.19	0.36	-3.31	0.001	-1.90 to -0.48
Step 3: Mental health need	10.69	3.81	2.81	0.006	3.14 to 18.2
Step 4: Relative socioeconomic disadvantage	-1.05	0.24	-4.35	<0.001	-1.53 to -0.57

In step 1, the rate per 1,000 population of full-time workload equivalence (FWE) of GPs in each Division was found to be positively associated with allied health *Better Access* services used, explaining 6.68% of the variation (adjusted R^2 0.0668). Of the step 2 variables, being a Division in Victoria was positively associated with allied health services used, whereas being a Division with a relatively high proportion of the population living in remote locations was negatively associated with allied health services used. Being a Division in South Australia or the Northern Territory was

ⁱ The Northern Territory and South Australia were combined for analysis based on results of univariate analyses and the fact that the Northern territory comprises only one Division of General Practice.

not significantly associated with allied health *Better Access* services used after the addition of subsequent variables into the model. The step 2 variables together contributed an additional 30.12% to the variation explained (adjusted R^2 0.3670). The step 3 measure of mental health need was positively associated with services used, adding an additional 6.10% to the variation explained (adjusted R^2 0.4280). Of the step 4 variables, percentage of population percentage of the population living in areas of greater relative socioeconomic disadvantage was negatively associated with service use, adding an additional 8.19% to the variation explained (adjusted R^2 0.5099).

In summary, higher rates of allied health *Better Access* services used were found in Divisions that have relatively higher levels of mental health need, after adjusting for all other variables in the model. However there were other factors that played a part in explaining rates of allied health *Better Access* services used at a Divisional level. Higher rates of allied health *Better Access* services used were also found in Divisions that have higher rates of GP supply, and Divisions located in Victoria. Lower rates of *Better Access* services used were found in Divisions with relatively more people living in socioeconomically disadvantaged areas and Divisions with relatively more people living in remote locations.

5.7 KEY FINDINGS

The key findings from this chapter were:

- At a Division level, rates of total *Better Access* services used and allied health *Better Access* services used are positively associated with levels of mental health need.
- The simplest and most parsimonious models for explaining variation in total *Better Access* services used and allied health *Better Access* services used were based on five Division level factors: greater supply of GPs; being a Division in Victoria; lower percentage of the Division population living in remote locations; and lower percentage of the Division population living in socioeconomically disadvantaged areas.
- The percentage of variance explained was similar between the two models – 54.70% and 50.99% respectively. Variables relating to potential to access services (GP supply, remoteness, state/territory) collectively contributed a larger proportion of the variance in total *Better Access* services used (43.26%) than allied health (36.70%) *Better Access* services used. The mental health need variable contributed a larger proportion of additional variance explained in allied health (6.10%) than total (3.27%) *Better Access* services used, after variables relating to potential to access services were taken into account. Socioeconomic disadvantage contributed a similar proportion of additional variance in total (8.19%) and allied health (8.17%) *Better Access* services used, after all other variables were taken into account.