Atlas of Healthcare Variation: Methodology | Mental health

April 2020

General points

- Data is not presented where the number of people was less than 10. This approach is to preserve confidentiality.
- People were assigned to their district health board (DHB) of domicile; where more than one domicile was recorded, the most recent value was selected. The same rule was applied to primary health organisation (PHO) enrolment, where people were assigned to the PHO in which they were most recently enrolled.
- Ethnicity data presented is prioritised ethnic group (Māori, Pacific peoples, Asian, European/other).

Standard deviation

Data is presented as standard deviation from the mean.

Standard deviation is a statistical measure of variation from the mean. Assuming that recorded instances are normally distributed (ie, they are in the usual 'bell-shaped curve'), 68 percent of all recorded instances would be expected to be within one standard deviation either side of the mean and 95 percent within two standard deviations. The two 'middle' shades would be within one standard deviation of the mean.

Confidence intervals

Data for each DHB is presented as the rate per 100 population. Upper and lower confidence intervals were calculated to 95 percent level of confidence.

Note this work from the Royal New Zealand College of General Practitioners: https://www.nzdoctor.co.nz/article/news/mental-health-and-addiction-consults-make-nearly-third-gps-work

Definition of an antidepressant

The expert advisory group (EAG) discussed the best way to classify medicines that are used to treat depression and/or anxiety. A number of antidepressant medications are also used in low doses for indications such as pain. To address this, the EAG decided to present data for medicines that are primarily used to treat depression separately from data for medicines that are also used for depression and neuropathic pain.

For this reason, selective serotonin reuptake inhibitors (SSRIs), the serotonin and noradrenaline reuptake inhibitor (SNRI) venlafaxine and mirtazapine (mixed noradrenaline/serotonin effects) are presented together as 'SSRIs and other reuptake inhibitors'. This reflects that these medicines are used exclusively to treat depression and anxiety. Guidelines recommend that SSRIs are to be used as first-line treatment for moderate to severe depression, with venlafaxine and mirtazapine as second-line treatment.

Tricyclic and related antidepressants (TCAs) are presented separately because amitriptyline and nortriptyline are also used to treat neuropathic pain (an unapproved use). For this reason, TCA dispensing rates represent treatment for a mix of depression, anxiety and neuropathic pain.

Monoamine-oxidase inhibitors were excluded from this analysis because they are used rarely and typically not in primary care.

Table 1 presents the count of people and relative percentage of all 'antidepressant' dispensing by class. Note the relative dispensing varies by age, with more SSRI used in younger people.

Table 1: People dispensed antidepressants (2018)	Count	Percentage
Total selective serotonin reuptake inhibitor	344,395	56.1
Total tricyclic and related antidepressant *Amitriptyline* *Nortriptyline*	193,776 *108,842* *72,511*	31.5
Other (venlafaxine and mirtazapine)	73,962	12.0
Monoamine-oxidase inhibitors	2,251	0.4
Total antidepressants	614,384	

It was agreed that both any use and regular use should be reported as there are gaps. For instance, Māori are less likely to regularly receive antidepressant medication compared with European/other (note the importance of using age groups to highlight these differences).

Definition of regular dispensing

For some of the medicines, both any dispensing and 'regular' dispensing are reported.

Regular dispensing is defined as when people are dispensed the medicine or medicine class in three or four quarters in a year. This is a measure of 'persistence' and is considered to reflect people who are regularly taking the medicine.

One-off or less than regular dispensing includes people who have had a trial of treatment and those who are recommended to have regular treatment but are not having that treatment. For this reason, the gap between any use and regular use may highlight treatment gaps. For example, indicator 1 shows that Māori are less likely to regularly receive SSRI or other uptake inhibitor medication compared with European/other (note the importance of using age groups to highlight these differences). This suggests that while Māori have initial access to treatment, there are barriers to regular treatment.

Indicators from patient experience. For more details on the national primary care patient experience survey data collection, see Appendix 1.

Definition of long-term mental health condition

Respondents were asked to select which conditions expected to last six months or more they have been diagnosed with.

Respondents who selected anxiety, depression or other mental health condition were grouped as having a long-term mental health condition.

Indicator 1	**In the last 12 months was there a time when you did not visit a GP or nurse because of cost? Respondents with a self-reported long-term mental health condition**
Response options	Yes, no
Denominator	Those who selected anxiety, depression or other mental health condition as a long-term condition (expected to last six months or more)
Analysis	By year: 2018 Ethnicity: Māori, Pacific peoples, Asian, European/other Age: 15–24, 25–44, 45–64, 65–74, 75 and over Gender: F, M
Scoring	Yes = 0; no = 10
Rationale	New Zealand Health Survey: In the past 12 months, was there a time when you *had a medical problem but* did not visit a general practitioner (GP) because of cost? 14.9 percent
Commentary	**1. People who at some time in the last 12 months did not visit a GP or nurse because of cost** **Description**: The question seeks to quantify unmet need for primary care due to cost in a cohort of patients who are able to access primary care to some extent. Responses are only shown for those who self-reported a mental health condition. For a comparison with other populations, visit: www.hqsc.govt.nz/atlas/health-service-access Affordability is a combination of service cost and related expenses such as cost to get there, childcare and opportunity cost, such as time off work. Poor access to primary care is associated with inadequate prevention and management of chronic diseases, delayed diagnoses, incomplete adherence to treatments, overuse of drugs and technologies, and coordination and safety problems.[1] Delaying primary care can lead to more serious illnesses and hospital admissions.[2] The results from this survey align with other reports. For example, the New Zealand Health Survey reports 15 percent of people do not access their GP due to cost in the year. In addition, in the Commonwealth Fund survey (2017), New Zealand ranks third-worst of the 11 countries surveyed, with 18 percent of New Zealanders reporting a cost barrier to care. **Why this is important** In the context of managing people with a long-term mental health condition in primary care, these results highlight an important issue with access. **Questions that the data prompts** • Which population groups in your area are delaying important care?

	• Does your population know how to access relevant subsidies and low-cost access practices? Is community services card information visible to patients at practices? • What impact does this indicator have on regular treatment? • How many people also find prescription cost is a barrier? • What is the impact of rurality? • What impact does this indicator have on emergency department presentations and acute demand? 1. Schneider EC, Sarnak DO, Squires D, et al. 2017. Mirror, mirror: international comparison reflects flaws and opportunities for better US health care. Commonwealth Fund. URL: www.commonwealthfund.org/ (accessed 28 March 2020). 2. Milne BJ, Parker K, McLay J, et al. 2015. Primary health care access and ambulatory sensitive hospitalizations in New Zealand. *Journal of Ambulatory Care Management* 38(2): 178–87. DOI: 10.1097/JAC.0000000000000057 (accessed 28 March 2020).

Indicators of medicine dispensing

Indicator 2	**People dispensed an SSRI or other reuptake inhibitor**
Numerator	• Count of distinct master National Health Index (NHI) numbers • A dispensing of SSRI or mirtazapine or venlafaxine
Denominator	New Zealand population, using Stats NZ population projections for the relevant years
Analysis	By year (2016–18), by age (0–14, 15–24, 25–44, 45–64, 65–74 and 75 and over), gender and ethnicity (Māori, Pacific peoples, Asian and European/other) Region: DHB of domicile and PHO most recently enrolled with
Chemicals	• Selective serotonin reuptake inhibitors: citalopram hydrobromide; escitalopram; fluoxetine hydrochloride; paroxetine; sertraline • Other antidepressants: mirtazapine; venlafaxine
Source	Pharmaceutical Collection, Stats NZ population projections
Rationale	This indicator presents people dispensed SSRI or other reuptake inhibitors one or more times in a year. Mirtazapine and venlafaxine were included with SSRI as they are used exclusively to treat anxiety or depression and are not used low-dose for other indications such as chronic pain. Selective serotonin reuptake inhibitors are first-line treatment when antidepressant therapy is planned, with few exceptions. Our analysis shows an age gradient. Of all antidepressants, SSRIs are most commonly used in younger people – approximately 80 percent of younger people (0 – 24 years) on antidepressants use SSRIs, compared with approximately 50 percent of those aged 65 and over.

Commentary	**2. People dispensed an SSRI or other reuptake inhibitor** **Description**: Data for 2016–2018 is presented by year, ethnicity, age and sex. **Why this is important** SSRI and other reuptake inhibitors are recommended as first-line treatment where anxiety and/or depression therapy is planned and they are the most commonly dispensed class of antidepressant. **Questions that the data prompts** • Where rates are high, does this reflect good access to primary care or poor access to non-pharmacological treatments? • Are there differences by ethnicity within age groups? Are there known differences in prevalence or does this reflect something else? • Are too many SSRIs given to older people at high risk of falls?

Indicator 3	**People regularly dispensed an SSRI or other reuptake inhibitor**
Numerator	• Count of distinct master NHI numbers • A dispensing of SSRI or mirtazapine or venlafaxine in three or four quarters in the year
Denominator	New Zealand population, using Statistics New Zealand population projections for the relevant years
Analysis	By year (2016–18), by age (0–14, 15–24, 25–44, 45–64, 65–74 and 75 and over), gender and ethnicity (Māori, Pacific peoples, Asian and European/other) Region: DHB of domicile and PHO most recently enrolled with
Chemicals	• Selective serotonin reuptake inhibitors: citalopram hydrobromide; escitalopram; fluoxetine hydrochloride; paroxetine; sertraline • Other antidepressants: mirtazapine; venlafaxine
Source	Pharmaceutical Collection, Stats NZ population projections
Rationale	Note: The definition of ‘regular’ allows people to change SSRI or another uptake inhibitor throughout the year and still be counted as having regular medication. Guidelines recommend that people receive treatment for at least six months after remission. For this reason, the difference between indicator 1 and those dispensed regularly may represent a treatment gap.
Commentary	**3. People regularly dispensed an SSRI or other reuptake inhibitor** **Description**: Data for 2016–18 is presented by year, ethnicity, age and sex. ‘Regular’ was defined as people dispensed any SSRI or reuptake inhibitor in three or four quarters over the year. **Why this is important** Guidelines recommend that people receive treatment for at least six months after remission(1). The difference between indicator 1 and those dispensed regularly may represent people coming to the end of their

	treatment period, people undergoing a treatment trial or a treatment gap. **Questions that the data prompts** • Why are Māori less likely to receive regular treatment? Does this reflect a treatment gap? • Why do rates vary widely by DHB? For example, they vary 2.8-fold among those aged 25–44 years. • Do you know what contributes to the observed differences in your region (eg, follow-up rates, prescription rates and health literacy)? • Have you considered co-design around information needs and delivery of information for groups where variation is noted? • Are too many SSRIs given to older people at high risk of falls? 1. https://pathways.nice.org.uk/pathways/depression#path=view%3A/pathways/depression/continuation-and-relapse-prevention-for-adults-with-depression.xml&content=view-node%3Anodes-at-remission **Further reading** Auckland UniServices. *Variation in Medicines Use by Ethnicity: A comparison between 2006/7 and 2012/13*. Final report prepared for PHARMAC. Auckland: University of Auckland. URL: www.pharmac.govt.nz/assets/2018-01-19-Variation-in-medicines-use-by-ethnicity-Final-Report.pdf (accessed 28 March 2020).

Indicator 4	**People dispensed a tricyclic or related antidepressant**
Numerator	• Count of distinct master NHI numbers • A dispensing of a tricyclic or related antidepressant
Denominator	New Zealand population, using Stats NZ population projections for the relevant years
Analysis	By year (2016–18), by age (0–14, 15–24, 25–44, 45–64, 65–74 and 75 and over), gender and ethnicity (Māori, Pacific peoples, Asian and European/other) Region: DHB of domicile and PHO most recently enrolled with
Chemicals	Cyclic and related agents: amitriptyline; clomipramine hydrochloride; dosulepin [dothiepin] hydrochloride; doxepin hydrochloride; imipramine hydrochloride; maprotiline hydrochloride; nortriptyline hydrochloride
Source	Pharmaceutical Collection, Stats NZ population projections
Rationale	TCAs are presented separately because amitriptyline and nortriptyline are also used to treat neuropathic pain (an unapproved use). For this reason, TCA dispensing rates represent treatment for a mix of depression, anxiety and neuropathic pain.
Commentary	**4. People dispensed a tricyclic or related antidepressant** **Description**: Data for 2016–18 is presented by year, ethnicity, age and sex. **Why this is important**

	Some TCAs are indicated for panic and other anxiety disorders while others such as amitriptyline and nortriptyline are also used 'off-label' to treat neuralgia and chronic pain. Off-label means that TCAs are not approved for this indication and Medsafe advises that patients should be informed about and consent to this.[1] Cochrane Reviews find that amitriptyline[2] is effective in treating neuropathic pain for some patients, but find little evidence of effectiveness to support the use of nortriptyline[3] for neuropathic pain. Due to their side-effect profile, TCAs are third-line treatment for depression. The New Zealand Formulary (NZF) notes that care should be taken when using TCAs in elderly people as they are more susceptible to the adverse effects of these drugs.[4] Studies have not indicated any benefit of TCAs in children. **Questions that the data prompts** • Is low-dose TCA an issue? • Why are older people more likely to receive a TCA? • Why are rates much higher in European/other people compared with Asians? • Why do women receive almost double the rate of TCAs compared with men? • Are too many TCAs given to older people at high risk of falls? • Are patients being informed about and consenting to off-label use to treat pain? 1. Medsafe. 2014. Use of unapproved medicines and unapproved use of medicines. URL: www.medsafe.govt.nz/profs/RIss/unapp.asp (accessed 28 March 2020). 2. Cochrane Review: Amitriptyline for neuropathic pain in adults. URL: www.cochrane.org/CD008242/SYMPT_amitriptyline-neuropathic-pain-adults (accessed 28 March 2020). 3. Cochrane Review: Nortriptyline for neuropathic pain in adults. 2015. URL: www.cochrane.org/CD011209/SYMPT_nortriptyline-neuropathic-pain-adults (accessed 28 March 2020). 4. New Zealand Formulary. Tricyclic and related antidepressant drugs. URL: https://nzf.org.nz/nzf_2232 (accessed 28 March 2020). **Further reading** BPAC. 2016. Managing patients with neuropathic pain. *Best Practice Journal* 75: 20–30. URL: https://bpac.org.nz/BPJ/2016/May/docs/BPJ75-pain.pdf (accessed 28 March 2020).

Indicator 5	**People regularly dispensed a tricyclic or related antidepressant**
Numerator	• Count of distinct master NHI numbers • A regular dispensing of a tricyclic or related antidepressant. 'Regular' was defined as people who received the medicine class in three or four quarters over the year

Denominator	New Zealand population, using Stats NZ population projections for the relevant years
Analysis	By year (2016–18), by age (0–14, 15–24, 25–44, 45–64, 65–74 and 75 and over), gender and ethnicity (Māori, Pacific peoples, Asian and European/other) Region: DHB of domicile and PHO most recently enrolled with
Chemicals	Cyclic and related agents: amitriptyline; clomipramine hydrochloride; dosulepin [dothiepin] hydrochloride; doxepin hydrochloride; imipramine hydrochloride; maprotiline hydrochloride; nortriptyline hydrochloride
Source	Pharmaceutical Collection, Stats NZ population projections
Rationale	Note: The definition of 'regular' allows people to change TCA throughout the year and still be counted as having regular medication.
Commentary	**5. People regularly dispensed a tricyclic or related antidepressant** **Description**: Data for 2016–18 is presented by year, ethnicity, age and sex. 'Regular' was defined as people dispensed any tricyclic or related antidepressant in three or four quarters over the year. **Why this is important** Some TCAs are indicated for panic and other anxiety disorders while others such as amitriptyline and nortriptyline are also used 'off-label' to treat neuralgia and chronic pain. Off-label means that TCAs are not approved for this indication and Medsafe advises that patients should be informed about and consent to this.[1] Cochrane Reviews find that amitriptyline[2] is effective in treating neuropathic pain for some patients, but find little evidence of effectiveness to support the use of nortriptyline[3] for neuropathic pain. Due to their side-effect profile, TCAs are third line in the treatment of depression. NZF notes that care should taken when using TCAs in elderly people as they are more susceptible to the adverse effects of these drugs.[4] Studies have not indicated any benefit of TCAs in children. **Questions that the data prompts** • Is low-dose TCA an issue? • Why are older people more likely to receive a TCA? • Are too many TCAs given to older people at high risk of falls? • Are patients being informed about and consenting to off-label use to treat pain? 1. Medsafe. 2014. Use of unapproved medicines and unapproved use of medicines. URL: www.medsafe.govt.nz/profs/RIss/unapp.asp (accessed 28 March 2020). 2. Cochrane Review: Amitriptyline for neuropathic pain in adults. URL: www.cochrane.org/CD008242/SYMPT_amitriptyline-neuropathic-pain-adults (accessed 28 March 2020). 3. Cochrane Review: Nortriptyline for neuropathic pain in adults. 2015.

	URL: www.cochrane.org/CD011209/SYMPT_nortriptyline-neuropathic-pain-adults (accessed 28 March 2020). 4. New Zealand Formulary. Tricyclic and related antidepressant drugs. URL: https://nzf.org.nz/nzf_2232 (accessed 28 March 2020). **Further reading** • BPAC. 2016. Managing patients with neuropathic pain. *Best Practice Journal* 75: 20–30. URL: https://bpac.org.nz/BPJ/2016/May/docs/BPJ75-pain.pdf (accessed 28 March 2020).

Indicator 6	**People dispensed an antipsychotic excluding low-dose quetiapine**
Numerator	• Count of distinct master NHI numbers • A dispensing of chemical grouping = antipsychotics
Denominator	New Zealand population, using Stats NZ population projections for the relevant years
Analysis	By year (2016–18), by age (0–14, 15–24, 25–44, 45–64, 65–74 and 75 and over), gender and ethnicity (Māori, Pacific peoples, Asian and European/other) Region: DHB of domicile and PHO most recently enrolled with
Chemicals	• First generation: chlorpromazine hydrochloride; haloperidol; pericyazine; zuclopenthixol hydrochloride • Second generation: amisulpride; aripiprazole; clozapine; olanzapine; olanzapine pamoate monohydrate; quetiapine (excluding low-dose, 25 mg); quetiapine fumarate; risperidone; ziprasidone • Levomepromazine hydrochloride; levomepromazine maleate • Depot injections: flupenthixol decanoate; haloperidol decanoate; olanzapine; paliperidone; risperidone; zuclopenthixol decanoate
Source	Pharmaceutical Collection, Stats NZ population projections
Rationale	Low-dose quetiapine was excluded on the basis that it is being used for its sedative and anxiolytic properties rather than to treat schizophrenia or bipolar disorder. The EAG discussed excluding low doses of other antipsychotics such as olanzapine or risperidone; however, it noted that these medications even in low doses are being used to treat psychotic symptoms, rather than for different indications as is the case with low-dose quetiapine. Antipsychotic drugs are used to reduce agitation and distress whatever the underlying psychopathology, which may be schizophrenia, mania, delirium or agitated depression. Antipsychotic drugs are sometimes used to alleviate severe anxiety but this should be a short-term measure. Due to the higher risk of adverse effects, NZF recommends that antipsychotics should not be used in elderly patients to treat mild psychotic symptoms.

Commentary	**6. People dispensed an antipsychotic excluding low-dose quetiapine** **Description**: Data for 2016–18 is presented by year, ethnicity, age and sex. **Why this is important** In young people, antipsychotics are typically indicated for the management of schizophrenia or mania. In older people, antipsychotics are sometimes used to manage behaviours such as wandering in people with dementia, despite a lack of evidence of effectiveness. Due to the higher risk of adverse effects, NZF recommends that antipsychotics should not be used in elderly patients to treat mild psychotic symptoms.[1] **Questions that the data prompts** • Why in some DHBs are over 1 in 16 people aged 75 years and over on an antipsychotic? Does this reflect patient preference or patient need or are other factors at play? • Does the higher rate of dispensing to Māori reflect the variation in severe mental health for Māori or would we expect this rate to be higher for other reasons? • How does this indicator compare with inpatient mental health treatment – for example, compulsory orders or acute presentations? 1. New Zealand Formulary. Antipsychotic drugs. URL: https://nzf.org.nz/nzf_2098 (accessed 28 March 2020). **Further reading** • Carton L, Cottencin O, Lapeyre-Mestre M, et al. 2015. Off-label prescribing of antipsychotics in adults, children and elderly individuals: a systematic review of recent prescription trends. *Current Pharmaceutical Design* 21(23): 3280–97. • Gareri P, Segura-García C, Manfredi VG, et al. 2014. Use of atypical antipsychotics in the elderly: a clinical review. *Clinical Interventions in Aging* 9: 1363. • Ndukwe HC, Wang T, Tordoff JM, et al. 2016. Geographic variation in psychotropic drug utilisation among older people in New Zealand. *Australasian Journal on Ageing* 35(4): 242–8.

Indicator 7	**People regularly dispensed an antipsychotic excluding low-dose quetiapine**
Numerator	• Count of distinct master NHI numbers • A dispensing in three or four quarters in the year • A dispensing of chemical grouping = antipsychotics
Denominator	New Zealand population, using Stats NZ population projections for the relevant years

Analysis	By year (2016–18), by age (0–14, 15–24, 25–44, 45–64, 65–74 and 75 and over), gender and ethnicity (Māori, Pacific peoples, Asian and European/other) Region: DHB of domicile and PHO most recently enrolled with
Chemicals	• First generation: chlorpromazine hydrochloride; haloperidol; pericyazine; zuclopenthixol hydrochloride • Second generation: amisulpride; aripiprazole; clozapine; olanzapine; olanzapine pamoate monohydrate; quetiapine (exclude low-dose 25 mg); quetiapine fumarate; risperidone; ziprasidone • Levomepromazine hydrochloride; levomepromazine maleate • Depot injections: flupenthixol decanoate; haloperidol decanoate; olanzapine; paliperidone; risperidone; zuclopenthixol decanoate
Source	Pharmaceutical Collection, Stats NZ population projections
Rationale	As noted above, the measure of 'regular' dispensing is added to highlight who is receiving any treatment as compared with regular treatment.
Commentary	**7. People regularly dispensed an antipsychotic excluding low-dose quetiapine** **Description**: Data for 2016–18 is presented by year, ethnicity, age and sex. 'Regular' was defined as people dispensed any antipsychotic in three or four quarters over the year. **Why this is important** In young people, antipsychotics are typically indicated for the management of schizophrenia or mania. In older people, antipsychotics are sometimes used to manage behaviours such as wandering in people with dementia, despite a lack of evidence of effectiveness. **Questions that the data prompts** • Why does the rate of antipsychotic use vary more than two-fold in those aged 75 and over? Does this reflect patient need or preference or are other factors at play? • Does the higher rate of dispensing to Māori reflect the variation in severe mental health for Māori or would we expect this rate to be higher for other reasons? • How does this indicator compare with inpatient mental health treatment – for example, compulsory orders or acute presentations? **Further reading** • Carton L, Cottencin O, Lapeyre-Mestre M, et al. 2015. Off-label prescribing of antipsychotics in adults, children and elderly individuals: a systematic review of recent prescription trends. *Current Pharmaceutical Design* 21(23): 3280–97. • Gareri P, Segura-García C, Manfredi VG, et al. 2014. Use of atypical antipsychotics in the elderly: a clinical review. *Clinical Interventions in Aging* 9: 1363. • Ndukwe HC, Wang T, Tordoff JM, et al. 2016. Geographic variation in

	psychotropic drug utilisation among older people in New Zealand. *Australasian Journal on Ageing* 35(4): 242–8.

Indicator 8	**People regularly dispensed low-dose quetiapine**
Numerator	• Count of distinct master NHI numbers • A dispensing of chemical grouping = quetiapine 25 mg • 'Regular' was defined as people dispensed low-dose quetiapine in three or four quarters over the year
Denominator	New Zealand population, using Stats NZ population projections for the relevant years
Analysis	By year (2016–18), by age (0–14, 15–24, 25–44, 45–64, 65–74 and 75 and over), gender and ethnicity (Māori, Pacific peoples, Asian and European/other) Region: DHB of domicile and PHO most recently enrolled with
Chemicals	Low-dose quetiapine (25 mg)
Source	Pharmaceutical Collection, Stats NZ population projections
Rationale	At low doses, quetiapine acts as a sedative and anxiolytic rather than as an antipsychotic agent. There is evidence that in New Zealand it is increasingly being used 'off-label' for its hypnosedative properties.[1] Less than 'regular' use of low-dose quetiapine is not reported here as it is regular use that raises questions about appropriate use and whether this represents good practice or not.
Commentary	**8. People regularly dispensed low-dose quetiapine** **Description**: Data for 2016–18 is presented by year, ethnicity, age and sex. 'Regular' was defined as people dispensed low-dose quetiapine in three or four quarters over the year. **Why this is important** At low doses, quetiapine acts as a sedative and anxiolytic rather than as an antipsychotic agent. There is evidence that in New Zealand, low-dose quetiapine is increasingly being used 'off-label' for its hypnosedative properties.[1] Off-label means that the drug is not being used for its approved indication and requires informed consent to be obtained.[2] Only 'regular' use of low-dose quetiapine is reported here as this raises questions about appropriate use and whether this represents good practice. **Questions that the data prompts** • Do the rates reported reflect treatment for insomnia? If so, are patients being informed about and consenting to off-label use? • Does prescribing reflect the local DHB policy or pathway? • Where rates are higher, what might be driving this? 1. Huthwaite M, Tucker M, McBain L, et al. 2018. Off label or on trend: a review of the use of quetiapine in New Zealand. *New Zealand*

	Medical Journal 131(1474): 45–50. 2. Medsafe. 2014. Use of unapproved medicines and unapproved use of medicines. URL: www.medsafe.govt.nz/profs/RIss/unapp.asp (accessed 28 March 2020).

Indicator 9	**People regularly dispensed a benzodiazepine or zopiclone**
Numerator	• Count of distinct master NHI numbers • A dispensing of chemical group = benzodiazepine or zopiclone • 'Regular' was defined as people dispensed a benzodiazepine or zopiclone in three or four quarters over the year
Denominator	New Zealand population, using Stats NZ population projections for the relevant years
Analysis	By year (2016–18), by age (0–14, 15–24, 25–44, 45–64, 65–74 and 75 and over), gender and ethnicity (Māori, Pacific peoples, Asian and European/other) Region: DHB of domicile and PHO most recently enrolled with
Chemicals	Clonazepam; diazepam; lorazepam; nitrazepam; oxazepam; temazepam; triazolam; zopiclone
Source	Pharmaceutical Collection, Stats NZ population projections
Rationale	NZF. Benzodiazepines are broadly effective in treating anxiety disorders; however, they are indicated only for short-term relief of severe anxiety, over two to four weeks. Due to the risk of dependence, long-term use should be avoided. For this reason, only 'regular' use is reported in this Atlas domain. This highlights people who are receiving this medicine over the course of a year. Any dispensing to people aged 65 years and over is reported in the Polypharmacy in people aged 65 and over Atlas.
Commentary	**9. People regularly dispensed a benzodiazepine or zopiclone** **Description**: Data for 2016–18 is presented by year, ethnicity, age and sex. 'Regular' was defined as people dispensed a benzodiazepine or zopiclone in three or four quarters over the year. **Why this is important** Benzodiazepines are an example of a medicine class that carries a higher risk of adverse effects in older people, specifically excess confusion, sedation and falls. This risk increases with age.[1] **Questions that the data prompts** • Why in some DHBs are up to one in four people aged 75 years and over receiving a benzodiazepine or zopiclone in a quarter? • Why does the dispensing of benzodiazepine or zopiclone increase so sharply with age? • Why do European/other people receive this treatment at a much higher rate than other ethnicities?

	• Why do females receive this treatment at a much higher rate than males? • Does prescribing reflect the local DHB policy or pathway? 1. Nishtala PS, Chyou TY. 2017. Zopiclone use and risk of fractures in older people: population-based study. *Journal of American Medical Directors Association* 18(4): 368.e1–368.e8.

Indicator 10	**People regularly dispensed a stimulant/ADHD treatment**
Numerator	• Count of distinct master NHI numbers • A regular dispensing of treatment for a stimulant or attention deficit hyperactivity disorder (ADHD) • 'Regular' was defined as people dispensed a stimulant/ADHD treatment in three or four quarters over the year
Denominator	New Zealand population, using Stats NZ population projections for the relevant years
Chemicals	Atomoxetine 3887; dexamphetamine sulphate 1389; methylphenidate hydrochloride 1809; methylphenidate hydrochloride extended-release 3880; modafinil 3935
Source	Pharmaceutical Collection, Stats NZ population projections
Analysis	By year (2016–18), by age (0–14, 15–24, 25–44, 45–64, 65–74 and 75 and over), gender and ethnicity (Māori, Pacific peoples, Asian and European/other) Region: DHB of domicile and PHO most recently enrolled with
Rationale	Central nervous system stimulants and drugs are used for ADHD. Regular use only is reported in the Atlas domain as most children who are started on this therapy will receive it long term. This indicator in part reflects access to treatment. The use of stimulants in children has increased recently. This is an important issue to monitor.
Commentary	**10. People regularly dispensed a stimulant/ADHD treatment** **Description**: Data for 2016–18 is presented by year, ethnicity, age and sex. 'Regular' was defined as people dispensed a stimulant/ADHD treatment in three or four quarters over the year. Regular use only is reported in the Atlas as most children who are started on this therapy will receive it long term. **Why this is important** The use of stimulants in children has increased recently, making this an important issue to monitor. This indicator in part reflects access to treatment. Patterns of who is regularly receiving treatment may highlight areas of under- and/or over-use. **Questions that the data prompts** • Why is there wide variation between DHBs? Does this represent

	differences in prevalence, diagnosis or treatment? • Does the four-fold variation in rates between boys and girls seem about right?

Indicator 11	**Does your GP or nurse spend enough time with you? Respondents with a self-reported long-term mental health condition**
Response options	Yes, always; yes, sometimes; no
Denominator	Those who selected anxiety, depression or other mental health condition as a long-term condition (expected to last six months or more) and who also answered the question above
Analysis	By year (2018), age (15–24, 25–44, 45–64, 65–74, 75 and over), gender and ethnicity (Māori, Pacific peoples, Asian, European/other)
Scoring	Yes, always = 10; yes, sometimes = 5; no = 0
Commentary	**11. Whether the GP or nurse spends enough time with people** **Description**: This question asks whether patients report that their GP or nurse spends enough time with them and responses are presented for those who also self-reported a long-term mental health condition. For a comparison with other populations, visit: www.hqsc.govt.nz/atlas/health-service-access. **Why this is important** Analyses of survey responses find scores for this question correlate strongly with scores for questions on being treated with kindness, understanding and respect. This finding suggests this question is a good marker for the quality of the interaction. That is, patients who report their GP or nurse spends enough time with them also report they are treated kindly and with respect. Spending enough time acknowledges the patient's effort to attend the appointment, gives the patient enough time to explain their symptoms and gives the GP or nurse enough time to explain the patient's diagnosis and treatment properly. **Questions that the data prompts** • How can this be changed? Research shows that health care practitioners often interrupt patients when they are telling their story.[1] If health care practitioners just listen, most people don't talk for long and report feeling they have been listened to. • How does patient health status and multimorbidity affect their reporting on whether their GP or nurse spends enough time with them? • How does the availability of an extended care team impact on responses? Do regions that use these teams have different responses? • Are there focus groups of young patients to understand why they

	have a less positive experience? Do you need to co-design a better way to engage young people? Do younger patients have a greater need for longer consultation times or do they access different types of medical centre? • Does length of time in consultation correlate with the patient having the same GP or nurse consistently? 1. Phillips KA, Ospina NS. 2017. Physicians interrupting patients. *Journal of the American Medical Association* 318(1): 93–4. DOI: 10.1001/jama.2017.649 (accessed 28 March 2020).
Discussion	Spending enough time with the patient correlates well with the GP or nurse overall score, suggesting it is a good marker of the interaction.

Indicator 12	**Have you been involved in decisions about your care and treatment as much as you wanted to be? Respondents with a self-reported long-term mental health condition**
Response options	Yes; yes, to some extent; no
Denominator	Those who selected anxiety, depression or another mental health condition as a long-term condition (expected to last six months or more) and who also answered the question above
Analysis	By year (2018), age (15–24, 25–44, 45–64, 65–74, 75 and over), gender and ethnicity (Māori, Pacific peoples, Asian, European/other)
Scoring	Yes = 10; yes, to some extent = 5; no = 0
Commentary	**12. Whether people have been involved in decisions about their care and treatment as much as they wanted to be** **Description**: This question asks whether patients were involved as much as they wanted to be in decisions about their care and treatment. Responses are presented for those who also self-reported a long-term mental health condition. For a comparison with other populations, visit: www.hqsc.govt.nz/atlas/health-service-access. **Why this is important** Being involved in decisions about care and treatment as much as patients want is a critical component of ensuring patients accept their practitioner's advice. **Questions that the data prompts** • Have local young people been asked how they would like to be involved in decisions about their care and treatment? Are there groups you could engage with? • If young people feel less involved in their care and treatment, might their understanding of their treatment plan also be impacted?

Appendix 1

Data source: National primary care patient experience survey
Survey responses are self-reported or completed on behalf of someone else (approximately 1.5 percent of responses are completed on behalf of someone else).
Privacy • All responses to the survey are voluntary and anonymous unless responders choose to provide their contact details because they wish to talk to someone at their general practice. All notices and correspondence relating to the survey make this clear. • Each survey has a unique identification, which enables line-by-line analysis of responses. When the patient data extract is imported to the national system, a number is assigned to each line of information. Neither the national survey nor the reporting process requires patient-identifiable information to be held in the database. Patient contact information is needed only initially to allow email and text correspondence to be addressed individually. Once each survey is closed, all identifiable information is deleted from the system. Demographic information is retained only to enable a comparison from time to time of who is not responding to the survey. The software Cemplicity is required to host the database within New Zealand and strict privacy and security protocols are maintained. Routine system penetration tests are run to maintain security. • A Privacy Impact Assessment has been completed and reviewed by the Privacy Commissioner. This is available at: www.hqsc.govt.nz/our-programmes/health-quality-evaluation/publications-and-resources/publication/3068/.
Survey testing and validation • The survey tool was adapted following international development and was cognitively tested for use in primary care in New Zealand. Details of this testing are provided at: www.hqsc.govt.nz/our-programmes/health-quality-evaluation/projects/patient-experience/primary-care-patient-experience/survey-development/

Appendix 2: Age and ethnicity of respondents, by question

Age group (years)	Ethnicity				
	Māori	**Pacific peoples**	**Asian**	**European/other**	**Total**
In the last 12 months, was there a time when you did not visit a GP or nurse because of cost? (People with a self-reported long-term mental health condition)					
Answered yes					
15–24	41	< 30	< 30	318	390
25–44	197	32	49	1,069	1,347
45–64	162	< 30	< 30	1,358	1575
65–74	< 30	< 30	< 30	392	420
75 and over	< 30	< 30	< 30	136	142
Total responded yes	421	81	99	3,273	3,874
Total respondents with a long-term mental health condition	***1,107***	***222***	***328***	***11,468***	***13,125***
Does your GP or nurse spend enough time with you? (people with a self-reported long-term mental health condition)					
Responded yes, sometimes or no					
15–24	30	< 30	< 30	217	266
25–44	114	< 30	< 30	647	801
45–64	107	< 30	< 30	977	1,125
65–74	< 30	< 30	< 30	418	443
75 and over	< 30	< 30	< 30	194	200
Total responded yes sometimes or no	271	42	69	2,453	2,835
Total respondents with a long-term mental health condition	***1,047***	***206***	***301***	***10,772***	***12,326***
Have you been involved in decisions about your care and treatment as much as you wanted to be? (People with a self-reported long-term mental health condition)					
Responded yes, sometimes or no					
15–24	< 30	< 30	< 30	204	248
25–44	98	< 30	36	579	729
45–64	113	< 30	40	886	1,061
65–74	< 30	< 30	< 30	377	410

75 and over	< 30	< 30	< 30	188	196
Total responded yes sometimes or no	266	52	92	2,234	2,644
Total respondents with a long-term mental health condition	***1,095***	***222***	***323***	***11,436***	***13,076***