

Mental Health and Addiction in Aotearoa New Zealand

Recent trends in service use, unmet need, and information gaps

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The EleMent/Otago University research was commissioned by the Mental Health and Addiction Inquiry to assist the Panel in its internal deliberations. As well as reviewing New Zealand and international literature, they also identified and proposed possible directions the panel could consider specific to the Terms of Reference.

This report should be read in conjunction with the initial EleMent/Otago University report titled "A background report prepared for the Inquiry panel", dated July 2018.

This work was produced as one input only amongst other commissioned research, and additional to information received by the Inquiry in over 5200 submissions and conveyed at over 400 meetings.

Executive Summary

This report supplements information in the Stocktake report by providing recent and previously unpublished information on the mental health and mental health service use of the groups of particular interest to the Inquiry. The focus is on comparisons between groups rather than absolute rates of service use or other outcomes.

Some groups of individuals have consistently higher mental health service use than others. A range of comparisons between groups are reported in Part 1 of this report. Recently released prisoners have very high rates of service use, and Māori and people in same-sex relationships also have high rates of service use. Rates of mental health service use are consistently higher amongst people living in more deprived areas. Conversely, there are groups who have consistently low rates of service use. Asian people have very low rates of service use and older people aged 65+ and people in rural areas also have consistently low rates. Many of these patterns are seen across a range of care settings, including hospital, secondary mental health care, and primary care. Some of these same trends are reflected in rates of death by suicide, which were static over the 10-year period from 2006 to 2015, but are higher in Māori, men, and people living in areas of high deprivation. These are reported in Part 2. Because of the small numbers of people in some specific groups, it was not possible to examine suicide rates for all population groups.

Information about service use is important, but it does not tell us about unmet need, or the numbers of people who are experiencing mental health problems and might benefit from treatment but for whatever reason are not accessing services. Unmet need information tells us about gaps and inequalities in service access. In parts 3, 4 and 5 we report other information that has the potential to inform us about unmet mental health need in New Zealand. Part 3 examines wait times for secondary mental health services and finds that, while wait times vary little between age, sex and ethnic groups, they vary considerably depending on how someone is referred in to services. Part 4 presents work completed by the Social Investment Agency examining mental distress and mental health service use by deprivation and ethnicity. This work shows that ethnic and deprivation patterns of treatment do not always align with patterns of mental distress, suggesting that there may be areas of under or over-treatment, although high scores on the screening tools used to measure distress do

not necessarily indicate need for treatment. Part 5 summarises previous published and unpublished research showing that people in contact with mental health services experience poorer health and excess mortality compared with the general population. This suggests that there is more that we could do to support the physical health of people using mental health services.

To examine unmet need more thoroughly would require reliable estimates of the prevalence of mental distress and mental disorder than is available in these current data sources. A lack of up to date prevalence estimates is one of the largest gaps in our mental health data in New Zealand and this is discussed in Part 6. While we can measure service use in publicly funded secondary care settings, we know little about the extent of mental health care in primary care settings, or privately funded care. Good quality data is a critical component of a mentally healthy society, but data alone is not enough. To make the best use of our data New Zealand needs to ensure that it can be accessed in a safe and effective way, and invest in research and analytical capacity.

As noted in our initial report, “A background report prepared for the Inquiry panel” (July 2018), ultimately the findings and recommendations arising out of this Inquiry will be determined by the Panel appointed by the Government, based on all the research, submissions and evidence they receive. Where we have suggested directions or recommendations in either of our reports, they are informed by the material reviewed or the views of the authors, and are to be read in that context.

Acknowledgements

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- James Stanley for peer review of this report

Disclaimer for the use of data from the Integrated Data Infrastructure

The results in this report are not official statistics. They have been created for research purposes from the Integrated Data Infrastructure (IDI), managed by Statistics New Zealand.

The opinions, findings, recommendations, and conclusions expressed in this report are those of the authors, not Statistics NZ.

Access to the anonymised data used in this study was provided by Statistics NZ under the security and confidentiality provisions of the Statistics Act 1975. Only people authorised by the Statistics Act 1975 are allowed to see data about a particular person, household, business, or organisation, and the results in this report have been confidentialised to protect these groups from identification and to keep their data safe.

Careful consideration has been given to the privacy, security, and confidentiality issues associated with using administrative and survey data in the IDI. Further detail can be found in the Privacy impact assessment for the Integrated Data Infrastructure available from www.stats.govt.nz.

Introduction

Purpose and scope of this report

The aim of this report is to provide recent and previously unpublished information on the mental health and mental health service use of the groups of particular interest to the Inquiry. This report supplements information provided to the Panel in the Stocktake report.

The report is not intended to be exhaustive. Instead, we have selected some specific analyses for which reliable data are available. For some of the identified population groups, further examination of the available data would be possible but would require additional time and resource and this is discussed. For other groups the limitations of the data mean that new data sources are needed to explore the situation for these groups.

The purpose of this report is to provide additional information about which groups have higher or lower levels of mental health service access and other measures of mental health need. In order to compare groups of interest to the Inquiry we have used data from within the linked data environment of the Integrated Data Infrastructure (IDI). In some cases the data available within the IDI is less up to date than that available publically or directly from data custodians. Some data therefore is not that most recently available from other sources. However, this report is not intended to stand alone, but to supplement other information that is available to the Inquiry.

The focus of this report is on comparisons between groups rather than absolute rates of service use or other outcomes. Comparisons are presented as rate ratios, where 1 represents no difference between groups. Rate ratios are standardised by age to take account of differences in age distribution between populations being compared. The rates measure the number of individuals in contact with services in a given year; they do not measure the total number of service use visits. Rate ratios are presented with 95% confidence intervals to give an indication of the uncertainty around the estimates presented – a wider confidence interval indicates a greater level of uncertainty.

This report is in six parts.

Part 1 looks at **health service contact for mental health and addiction conditions** for the groups of interest to the Inquiry. This section includes information on contact with secondary mental health services, primary mental health treatment (psychologist visits and extended GP consultations), hospitalisation for drug and alcohol harm, and emergency department visits and hospitalisation for

self-harm. The analyses for this part were conducted using the Statistics New Zealand Integrated Data Infrastructure (IDI) which is described below.

Part 2 describes the **rates of death by suicide** among the larger population groups identified. New analysis performed in the IDI is supplemented with reported data on time trends from the Ministry of Health.

Part 3 reports on **waiting times between referral and secondary mental health service contact**, using a data extract provided by the Ministry of Health. Waiting times are described for ethnic and age groups and for different types of referrer.

Part 4 considers **unmet need for mental health treatment** using data on mental distress from the New Zealand Health Survey compared to information on mental health treatment. This work was completed by Craig Wright of the Social Investment Agency.

Part 5 summarises what we know about **the physical health of people using mental health services in Aotearoa New Zealand** based on our previous published and unpublished work.

Part 6 reports on the **availability and gaps in data on mental health for Aotearoa New Zealand**. It is supplemented by a table describing available data sets in the appendix.

Data sources

The information in this report comes from a range of sources and these are described briefly below.

The Integrated Data Infrastructure

For many of the analyses in this report we have used data from Statistics New Zealand's Integrated Data Infrastructure (IDI). The IDI is a large database containing linked individual-level microdata about people and households in New Zealand.¹ The IDI consists of a range of government and non-government administrative and survey data sources connected to a central 'spine' containing a list of the New Zealand population. All data is de-identified² so that individuals are not identifiable, with access restricted to approved researchers accessing data in a secure environment, and all outputs must be aggregated and confidentialised and are checked by Statistics NZ before release.

One of the major advantages of IDI is that it allows us to connect information about an individual across different government sectors. By doing this, we are able to report information about groups who could not be identified from health data alone: refugees, people in same-sex partnerships, rural populations, recently released prisoners.

¹ For more information see <https://www.stats.govt.nz/integrated-data/integrated-data-infrastructure/>

² http://archive.stats.govt.nz/browse_for_stats/snapshots-of-nz/integrated-data-infrastructure/idi-data/de-identified-data.aspx

The datasets we have used within the IDI to identify mental health services and events are PRIMHD (the national collection of public specialist mental health service contacts), the national Mortality Collection, and hospitalisations including emergency department visits (National Minimum Data Set, NMDS) to identify self-harm and addiction related harm.³ We have linked this information about mental health to other data sets to identify particular populations, including the New Zealand Census, visa records, and Ministry of Justice records. We have also used an extract of ProCare primary care data (a large Primary HealthCare organisation providing services across the Auckland region) which was added to the IDI for use by the Social Investment Agency, but is not currently available for broader access.

We have also included some analysis done in the IDI by Social Investment Unit staff which has used Kessler 10 scores from the New Zealand Health Survey (which provide an indication of the level of psychological distress) and the Ministry of Health's Pharmaceutical Collection to identify community prescribing of psychiatric medications (captures all subsidised medications that are dispensed to NZers).

PRIMHD

Contact with public specialist mental health services has been identified from the PRIMHD data collection. This data set records all contacts with publicly funded DHB and NGO mental health services, including inpatient, residential and community services. The PRIMHD data collection commenced on 1 July 2008. For the analyses presented here data from 2011 to 2015 was used, which encompassed the most up to date information available to us within the linked data environment.

Data on contact with secondary mental health services for people aged 65 and older is not uniformly reported into the PRIMHD data collection. For some DHBs older people's mental health services are funded as part of Health of Older People (HOP) services rather than as mental health services, and so reporting into PRIMHD is not required. Where we have used data from PRIMHD to look at service use for older people we have restricted our analyses to the Northern (Northland, Waitemata, Auckland, Counties Manukau) and Midland (Waikato, Bay of Plenty, Lakes, Tairāwhiti, Taranaki) DHB regions of New Zealand which consistently report into PRIMHD for this older age group.⁴

Inpatient, community/outpatient, crisis, forensic and addiction service contacts, mental health contacts in the emergency department, and support (non-clinical) contacts with DHB services were examined separately. A full list of the PRIMHD codes used to define service contact type is provided in Appendix 1.

³ For more information see <https://www.health.govt.nz/nz-health-statistics/national-collections-and-surveys/collections>

⁴ personal communication, Matthew Dwyer, Ministry of Health 2017

Hospitalisation data (NMDS)

The national hospital discharge data set (NMDS) was used to identify hospital admissions (including emergency department stays longer than three hours) for self-harm or for alcohol or drug harm. Although substance use, in particular alcohol, contributes to many injuries and other conditions (including some cancers and cardiovascular disease) it was beyond the scope of this work to attempt to identify the burden of these conditions attributable to substance use. The measures used therefore represent a very conservative estimate of drug and alcohol harm, with a focus on some of the acute and direct impacts. The codes used to define these measures can be found in Appendix 1.

Mortality collection

Information from the national Mortality Collection was used to identify death by suicide. The mortality collection includes underlying cause of death information for all deaths registered in New Zealand. For the analysis of suicide rates presented here, deaths from 2011 to 2013 were used, which represents the latest information available within the linked data environment (IDI) at the time of writing.

Primary care mental health service use

A data extract provided by ProCare PHO (a large Auckland Primary HealthCare Organisation with more than 800,000 enrolled patients) to the Social Investment Unit and linked to other data in the IDI was used to examine primary mental health care. The extract provided information on ProCare funded mental health visits over the period January 2013 to December 2015. Funded mental health visits were of two types: extended GP consultations and psychologist visits. Information was not available on referrals to private psychologists for treatment not funded by the PHO.

Methods for identifying groups of interest

Not all groups of interest to the Inquiry can be identified in the data collections contained within the IDI. For example it was not possible to identify veterans and people serving in the armed forces, families and whanau of people experiencing mental health and addiction problems and families of people who have taken their own lives, and people who are most socially excluded.

While it would be possible to report on the mental health of disabled people and recent migrants using IDI data, this was not feasible in the timeframe for this report (with the exception of recent migrants who arrived as refugees).

Life course groups

We have chosen to focus on two life course groups in this report: Rangatahi / Youth aged 13-24, and Kaumātua / Later life aged 65 and over. Comparisons are made to the population aged 25 to 64. Tamariki / Children aged 0-12 have very low rates of mental health treatment and self-harm events, and therefore we have chosen not to include them in this report.

Groups sharing a common identity

Ethnic groups: Māori; Pacific peoples; Asian

Information about ethnicity is available in a range of national data collections, including health and mental health collections. This information is collated and linked to mental health service use data in the IDI. Ethnicity has been recorded and analysed in total response format (that is, an individual can identify with more than one ethnic group).

Disabled people

A question about disability is asked in the NZ Census, which could be used to identify disabled people in the IDI. However there is no way to distinguish psychiatric from non-psychiatric disability using the Census data. The New Zealand Disability Survey provides more detailed information on disability: the survey collects data from a sample of people who report a disability in the Census, and could be used to explore the mental health of people with non-psychiatric disabilities. While this survey is in the IDI it was not possible for us to access the survey in time to include analysis in this report.

LGBTIQ+ populations

There is currently no data source that can be used to identify a national population of LGBTIQ+ individuals in New Zealand. Information about sexual and gender orientation is not recorded in PRIMHD mental health service data or any other routine health data collection. For this report we have chosen to focus on a subgroup of the LGBTIQ+ community for whom information was available: people who reported living with a same-sex partner at the time of the 2013 Census.

People who share a common experience

Refugees and migrants

Refugees can be identified from the visa data in IDI. We have included all individuals with humanitarian or refugee visas and examined their health outcomes for the five years after their

arrival in New Zealand. Further work using visa data to identify recent migrants would be possible, but could not be completed in time to include in this report.

Prisoners and others involved in the justice system

The health care of people in prisons is managed by the Department of Corrections, and this information is not routinely available. Instead in this report we have focussed on mental health service use, self-harm and suicide in the year after release from prison.

Rural populations

The IDI contains information about where people live which allows us to identify people living in rural areas. The standard Statistics NZ 2017 urban classification⁵ was used to identify rural areas.

⁵ See <http://archive.stats.govt.nz/methods/classifications-and-standards/classification-related-stats-standards/urban-area.aspx> (rural centres and rural areas, codes 500 and above)

Part 1: Mental health service use for the New Zealand population

Key points

- Patterns of service use are similar across all measures: secondary mental health care, primary mental health care, alcohol and drug-harm hospitalisations, and self-harm.
- Māori have higher rates of service use across all measures.
- Asian people have lower rates of service use across all measures.
- Rates of service use for Pacific people were similar to non-Pacific people.
- Across all measures, rates of service use increased with increasing NZDep quintile. This was apparent across all measures but differences were largest for forensic, addiction services and alcohol and drug harm hospitalisations
- Recently released prisoners have substantially higher rates of service use across all measures.
- Older people 65+ had lower rates of service use, young people 13-24 had slightly higher use on secondary care measures but not for primary care usage.
- People in same-sex partnerships have higher rates of service use across most measures.
- People in rural areas had lower rates of service use than people in urban areas.
- Females had higher rates of self-harm, ED visits and GP mental health visits (especially primary care psychologist sessions) than males, but lower rates on all other measures of service use.
- Refugees had slightly lower rates of service use than the general population.

This section describes rates of mental health service use for different groups of interest to the Inquiry. This section is divided into four subsections each covering a different type of service use: specialist (secondary) mental health service use; primary care mental health service use; hospitalisations for alcohol and other drug-related harm; and hospitalisations for self-harm.

Data in this section is drawn from a range of sources including PRIMHD, primary care data, and hospitalisation data. Details are provided in the relevant sub-sections.

1.1 Secondary mental health service use

Data and methods

Data in this section has been extracted from PRIMHD data in the IDI. See appendix 1 for definitions of the different service use types.

Annual rates of service use for each year from 2011 to 2015 were calculated and then averaged.⁶

Rates were age standardised to the New Zealand resident population. Rate ratios were calculated by dividing the rate for each group of interest by the rate for the comparison group. A rate ratio of greater than 1 indicates a higher rate of service use in that group relative to the comparison group; a rate ratio below 1 indicates a lower rate of service use than the comparison group. The graphs of rate ratios are presented on the log scale⁷ so that rate ratios above and below 1 are visually comparable (i.e. a rate ratio of 2 (doubled risk in one group compared to the other) is the same distance from 1 as a rate ratio of 0.5 (halved risk in one group compared to the other)).

Results

Figure 1 shows rate ratios comparing inpatient and community mental health specialist services (inpatient, outpatient, crisis, forensic, addiction services, emergency department mental health services, and support contacts) by deprivation quintile. Service use for each quintile is compared to quintile 1 (the least deprived quintile). Across all services there is a pattern of increasing use in higher deprivation quintiles. The difference is especially large for forensic services where individuals in the most deprived quintile have rate of forensic service use more than 8 times higher than individuals in the least deprived quintile.

⁶ Rates for recently released prisoners are based on prison releases in 2013 only.

⁷ A logarithmic scale base 10 means that each tick mark on the graph scale is ten times the preceding step.

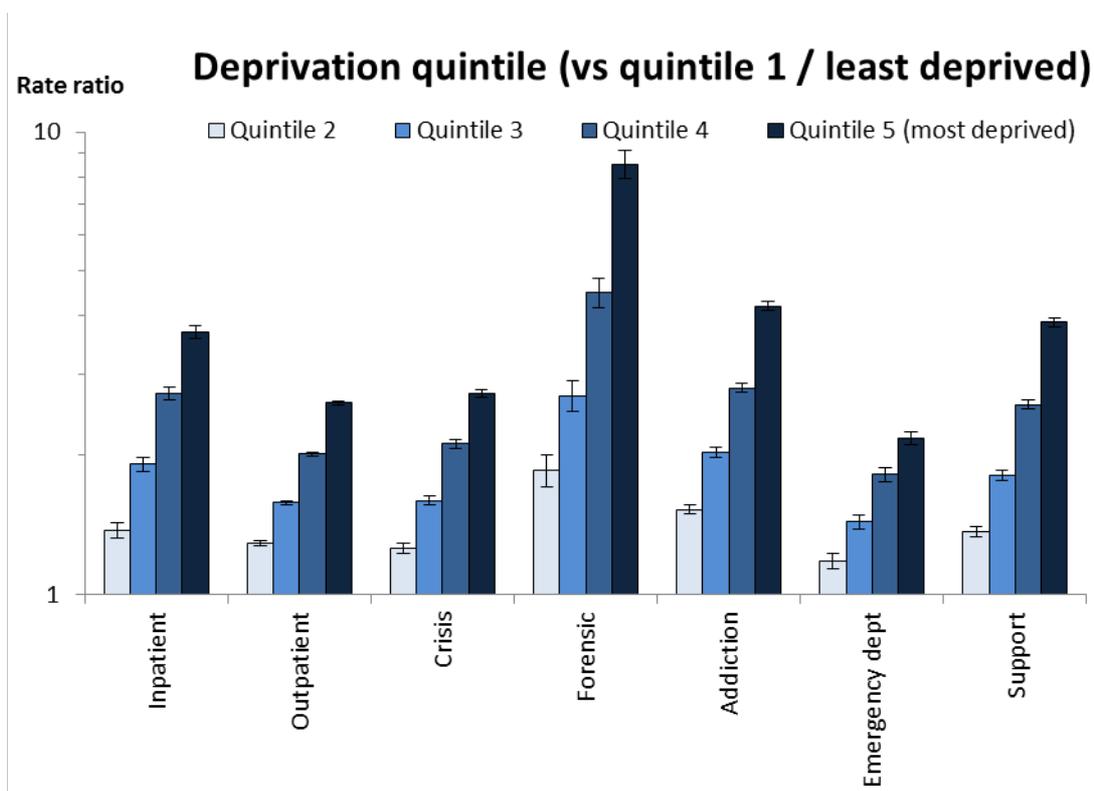


Figure 1. Rate ratio for mental health service use for each deprivation quintile (compared to the least deprived quintile)

Figures 2a-2c show rate ratios for service use for the 10 groups of individuals that are of interest to the Inquiry. These groups are not exclusive, i.e. individuals can be in more than one group, and each group is compared to the rest for the population not in that group. Where possible the scales on the vertical axis have been kept consistent to allow comparison between the different groups (the exception is recently released prisoners where the high rates of service use required a larger scale). Except for age group comparisons, all comparisons have been age standardised to account for any differences relating to the different age structure of populations.

It is clear that some groups use mental health services more than others: recently released prisoners and Māori have higher rates of service use than non-prisoners and non-Māori, while Asian people have substantially lower rates than non-Asian people. For other groups, the differences are smaller or more variable by service type. Young people aged 13-24 have slightly higher rates of service use than people aged 25-64 for all services except inpatient and addiction services. People living with same-sex partners have higher rates of use of all services except forensic than people living with opposite sex partners. People in rural areas, and older people aged 65 and over, have lower rates of service use than people living in urban areas and younger people respectively. Refugees have service use rates that are similar to or slightly lower than those in the general population. Pacific people

have slightly higher use of forensic, addiction and support services compared to others in the general population, but similar use of other services. Compared to males, females have higher rates of use of emergency department services for mental health but lower rates of forensic and addiction service use.

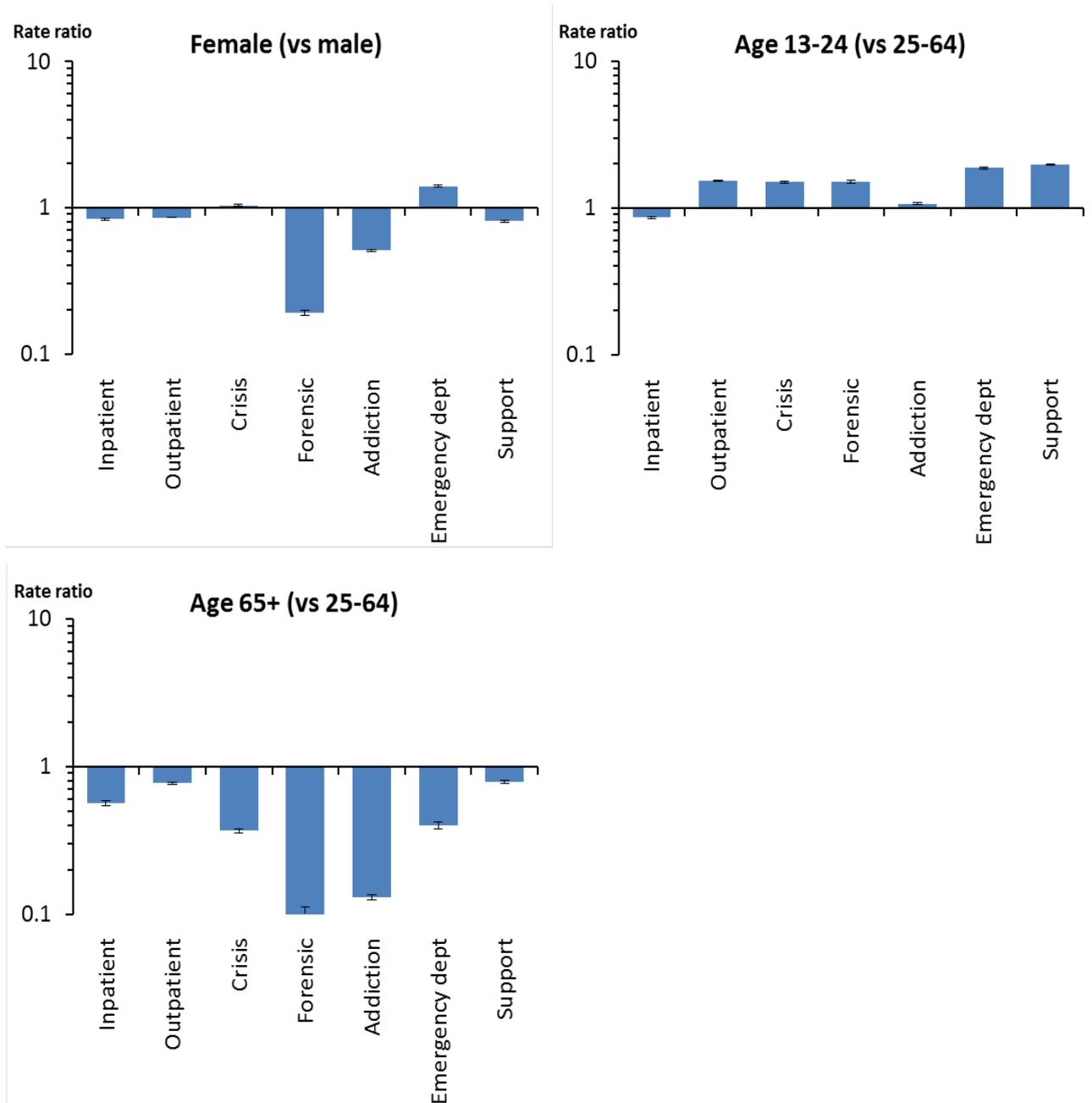


Figure 2a. Rate ratios for secondary mental health service use by sex and age group

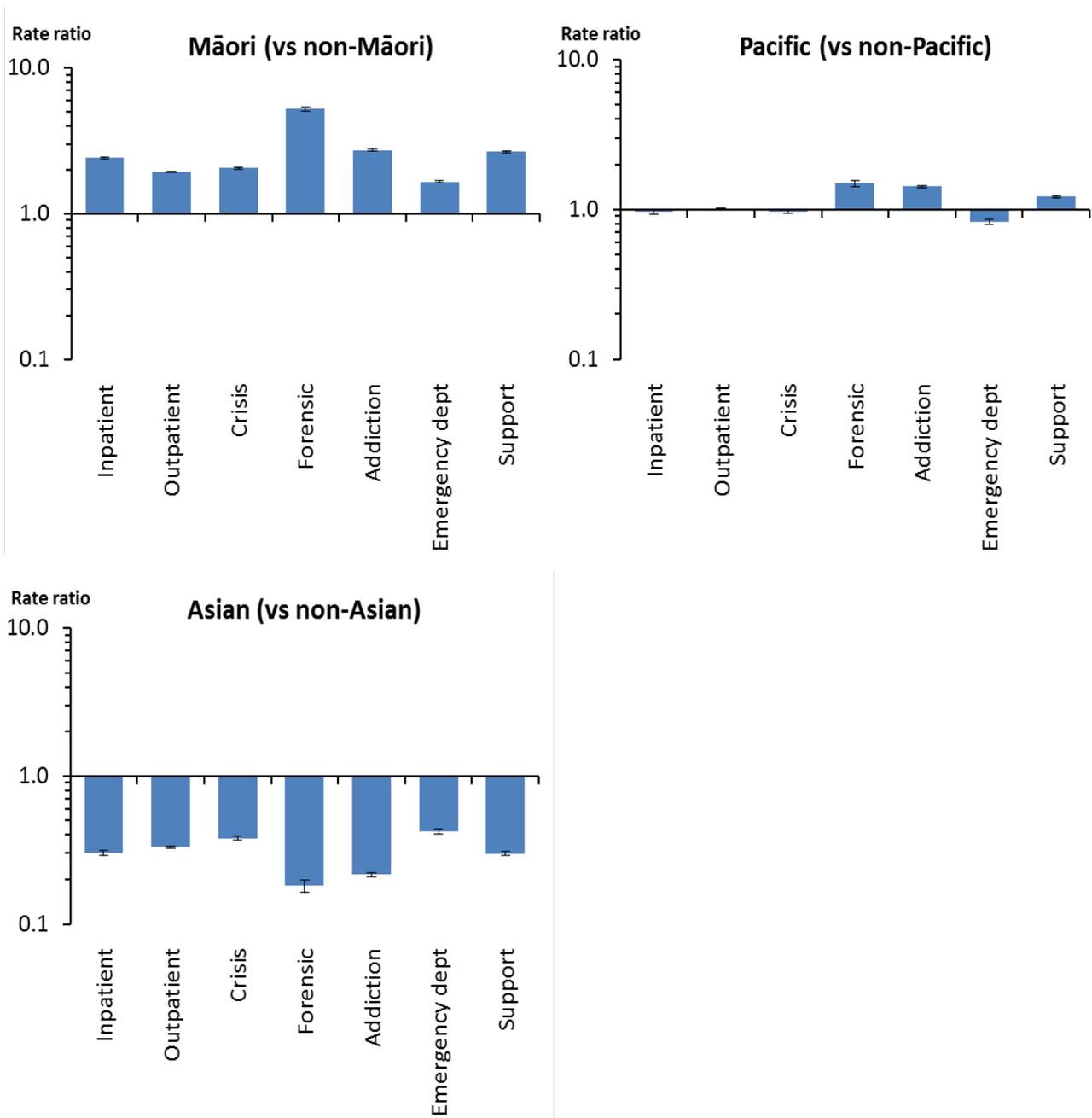


Figure 2b. Rate ratios for secondary mental health service use for ethnic groups

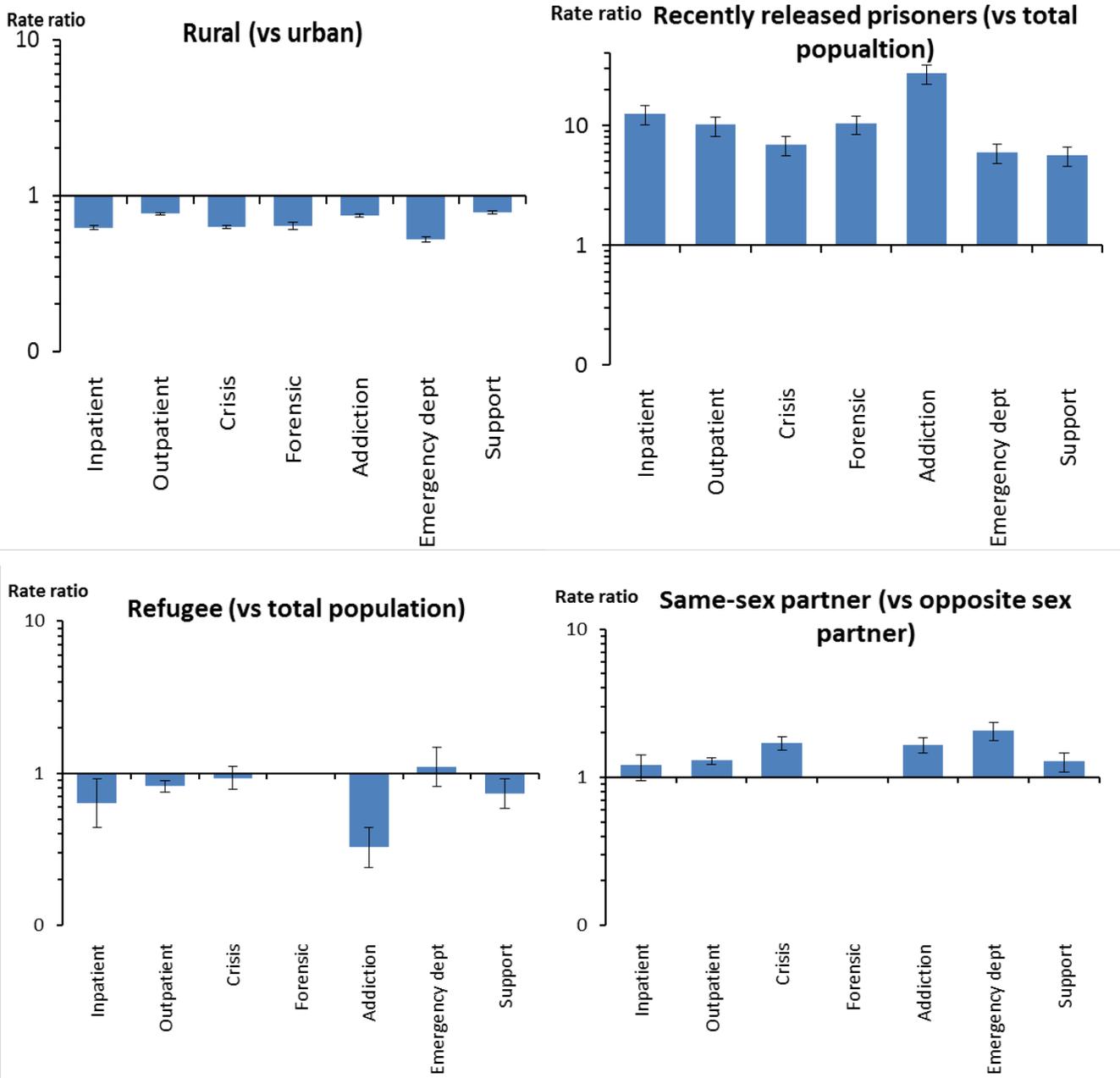


Figure 2c. Rate ratios for secondary mental health service use for selected groups

Note: Forensic service use for same-sex partner and refugee comparisons not shown due to small numbers

1.2 Primary mental health service use

This section describes the use of mental health services (extended GP mental health visits and psychologist sessions) in ProCare PHO over the 3-year period from 2013 to 2015.

Data and methods

Data for this section were sourced from a ProCare data extract placed within the IDI. This data was originally released by ProCare for use by the Social Investment Agency and was accessed for this report with permission from both SIA and ProCare. ProCare PHO covers the Auckland region and has more than 800,000 enrolled patients.

ProCare funds two types of mental health care in primary practice over and above routine GP visits: extended visits with a GP for mental health concerns, and psychologist sessions.⁸ These sessions are provided at lower cost to people meeting certain criteria. Data is recorded if individuals are referred to the service by a ProCare GP. Individuals receive a maximum of 6 visits per referral. Figures in this section present rates for any ProCare funded mental health visit (extended GP or psychologist visit) and for ProCare-funded psychologist visits alone.

Denominators used to calculate the rates in this section were sourced from the Ministry of Health's PHO enrolment dataset. Any individual who was enrolled with ProCare over the 3-year period was included in the denominator.

Due to the smaller numbers of people included in this analysis we were only able to report service use by the larger groupings: gender, age, ethnic and deprivation groups, and by whether living in same vs opposite sex partnership.

Results

Over the three year period from 2013 to 2015, approximately 23 out of every 1000 people in the ProCare enrolled population had a funded mental health visit, and the average number of visits (over the whole 3 year period) per person using the service was 3. Approximately 7.4 out of every 1000 enrolled people had a ProCare psychologist visit, and the average number of psychologist visits per person using the service was 4.1.

Figures 3a and 3b below show rate ratios for ProCare mental health service use for groups of individuals of interest to the inquiry. Groups with high rates of primary mental health service use

⁸ <http://www.procare.co.nz/community/patients/psychological-services/>

were females, Māori, and people with same-sex partners. Groups with low rates of service use were Asian and older people aged 65+.

Rates of ProCare mental health service use increased with increasing deprivation. Rates for those in the most deprived quintile were around 1.5 times higher than for those in the least deprived quintile.

For most groups the rate ratios for any service use (extended GP visit or psychologist sessions) and for psychologist sessions only were similar. The exceptions were females and older people aged 65+. While females were more likely than males to use primary mental health care services overall, the difference was larger for psychologist sessions indicating that females were relatively more likely to use the psychologist service. Older people were less likely than people aged 25-64 to use primary mental health care services; the difference was larger for psychologist visits, meaning that they were especially unlikely to use the psychologist service.

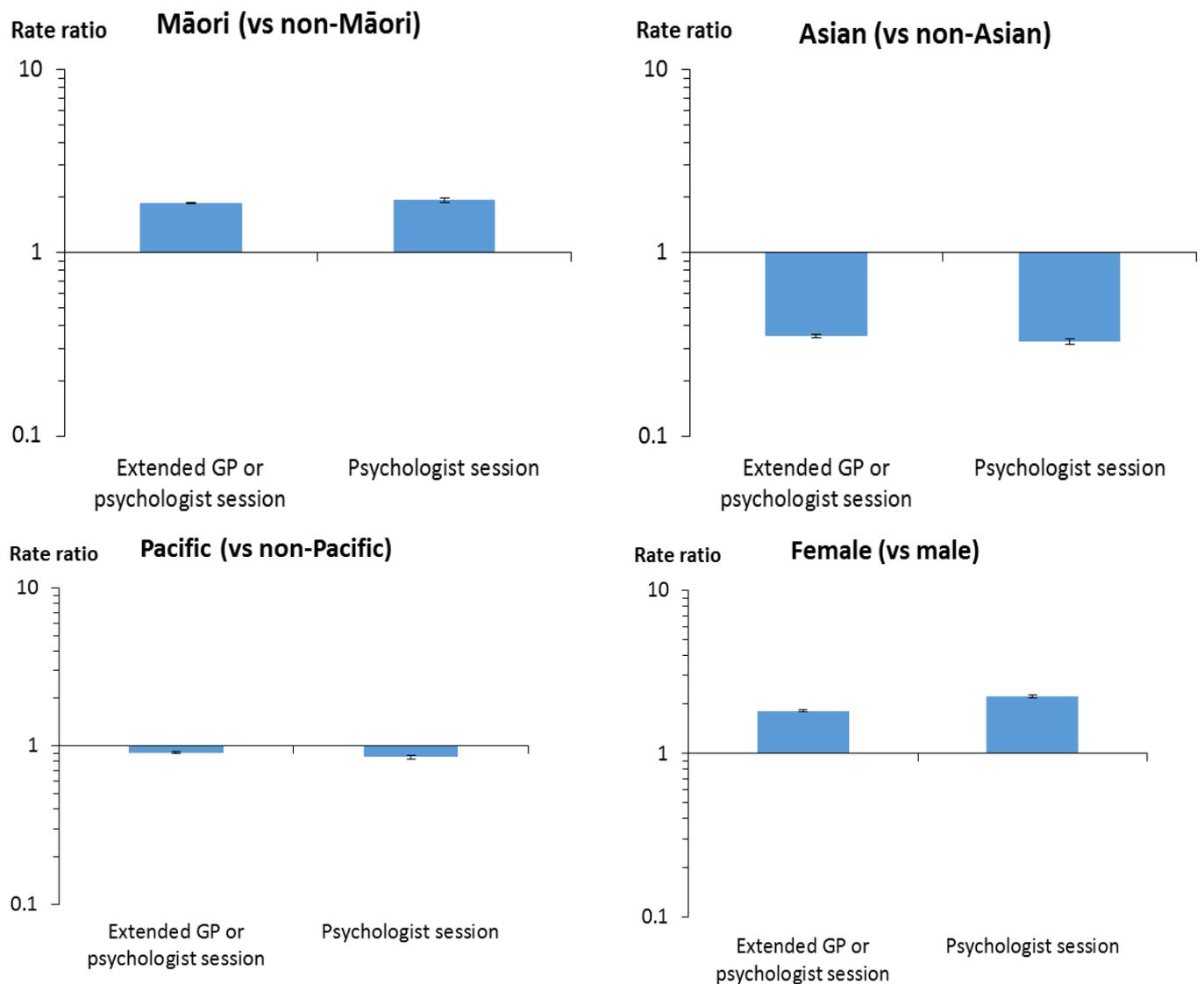


Figure 3a. Rate ratios for primary mental health care service use for selected groups, 2011 to 2013

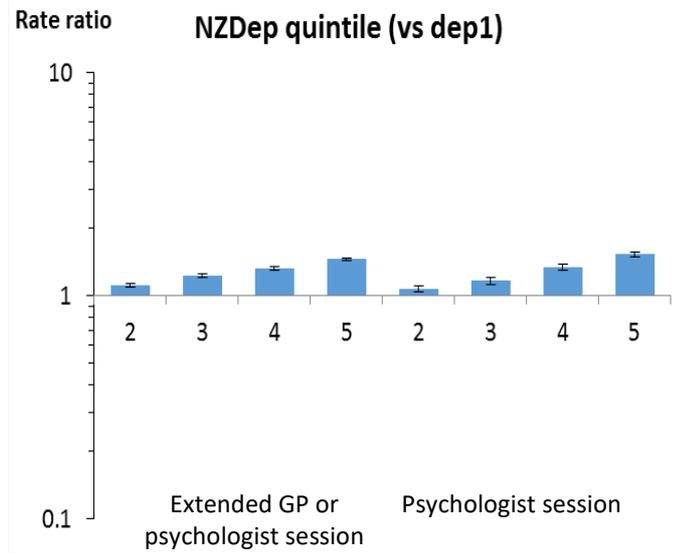
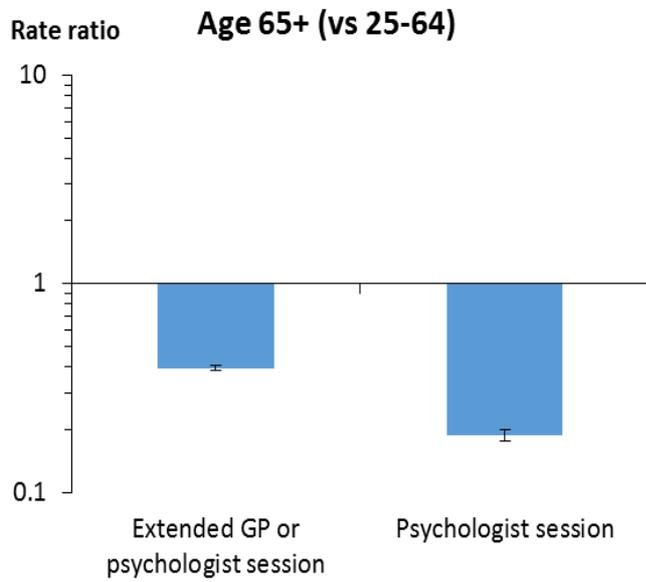
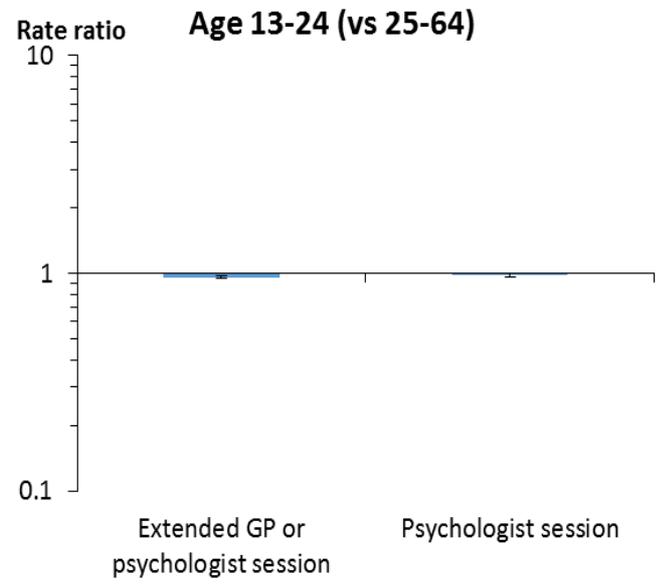
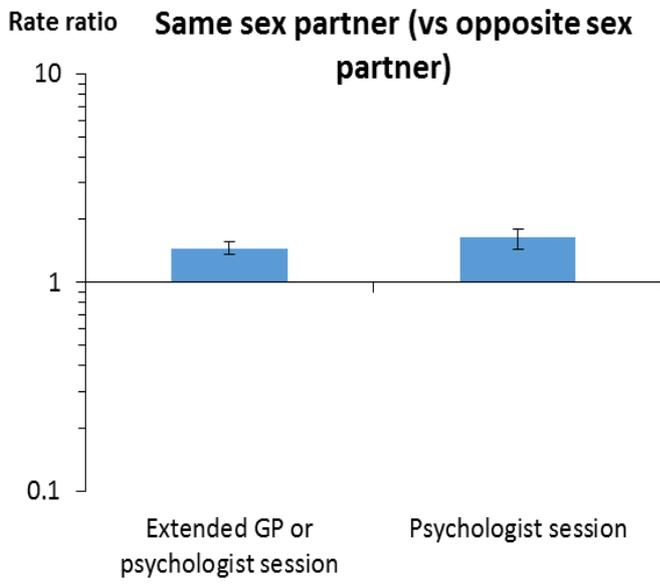


Figure 3b. Rate ratios for primary mental health care service use for selected groups, 2011 to 2013

1.3 Hospitalisation for drug and alcohol related harm

Data and methods

Data on alcohol and other drug-related harm were sourced from the national level hospital discharge (NMDS) data in IDI. All hospital admissions (including emergency department admissions longer than 3 hours) with an International Classification of Disease (ICD) diagnostic code indicating drug or alcohol harm were included. More information about the ICD codes used to define alcohol and drug-related harm can be found in Appendix 1.

Refugees have been excluded from the drug and alcohol analyses because rates of service use were too low to report.

Results

Figures 4 and 5 show rate ratios for hospitalisations for alcohol (Figure 4) and other drug-related harm (Figure 5) for groups of interest to the inquiry. Most of the patterns are similar to those reported in the secondary and primary care sections. For both alcohol and drug related harm rates increase as deprivation quintile increases. Recently released prisoners had substantially higher rates of hospitalisation for alcohol and drug harm. Māori and those with same-sex partners also had higher rates of hospitalisation than their respective comparison groups. Youth aged 13-24 had slightly higher rates of drug-related hospitalisations, but not for alcohol related hospitalisations. Older people aged 65+ and Asian people had lower rates of hospitalisation on both measures.

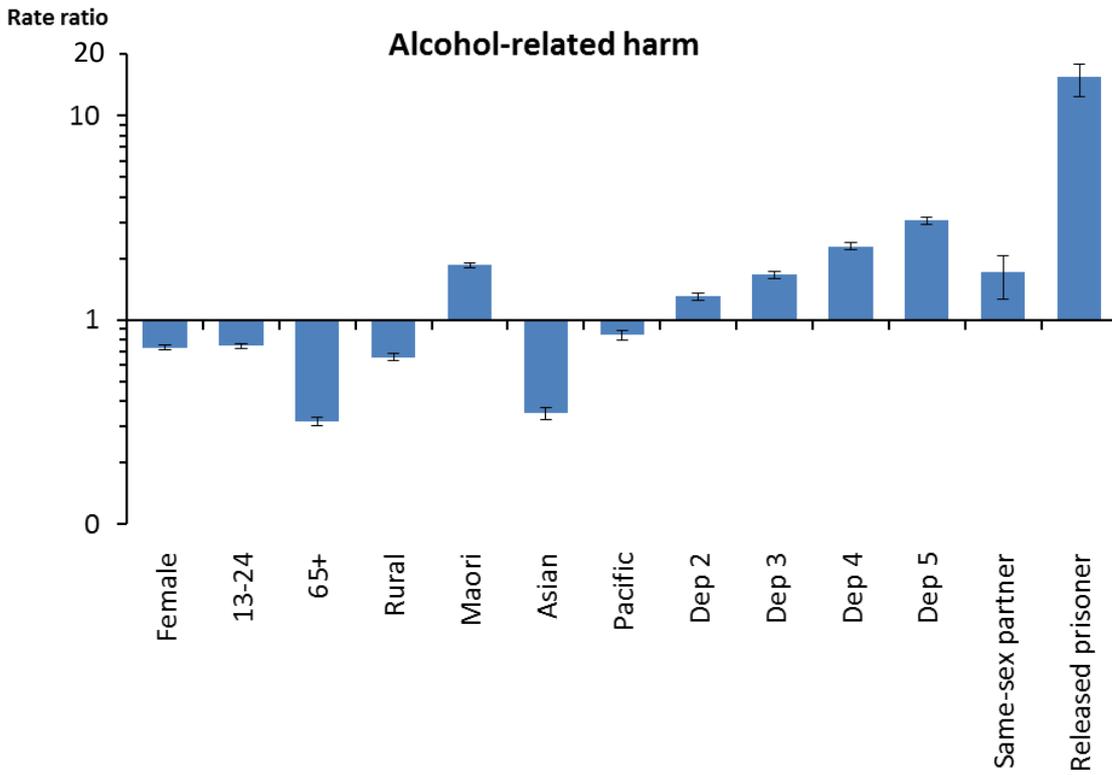


Figure 4. Rate ratios for alcohol harm hospitalisations for selected groups (see Figure 2 for comparison groups)

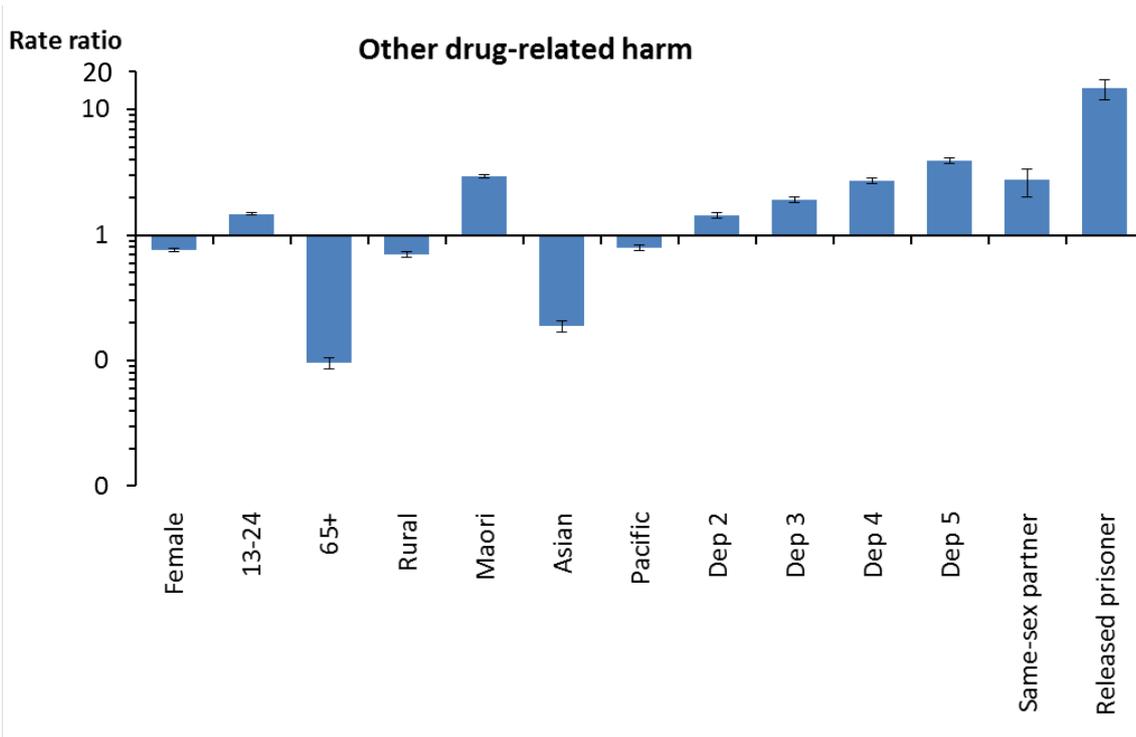


Figure 5. Rate ratios for other drug harm hospitalisations for selected groups (see Figure 2 for comparison groups)

1.4 Self-harm

Data and methods

Data on hospital admissions (including emergency department admissions longer than 3 hours) with an ICD diagnostic code for self-harm were sourced from the hospital discharge (NMDS) data in IDI. More information about the ICD codes used to define self-harm can be found in Appendix 1.

Refugees have been excluded from the drug and alcohol analyses because rates of service use were too low to report.

Results

Figure 6 shows rate ratios for hospitalisations for self-harm for groups of interest to the inquiry. As with other measures, recently released prisoners had considerably higher rates of hospitalisation for self-harm. Females, people with same-sex partners, and youth aged 13-24 also had higher rates of admission for self-harm than their respective comparison groups. Older people aged 65 and over, Asian people, and people living in rural areas also had lower rates of admission for self-harm. As reported for other service use measures, service use increased as deprivation increased.

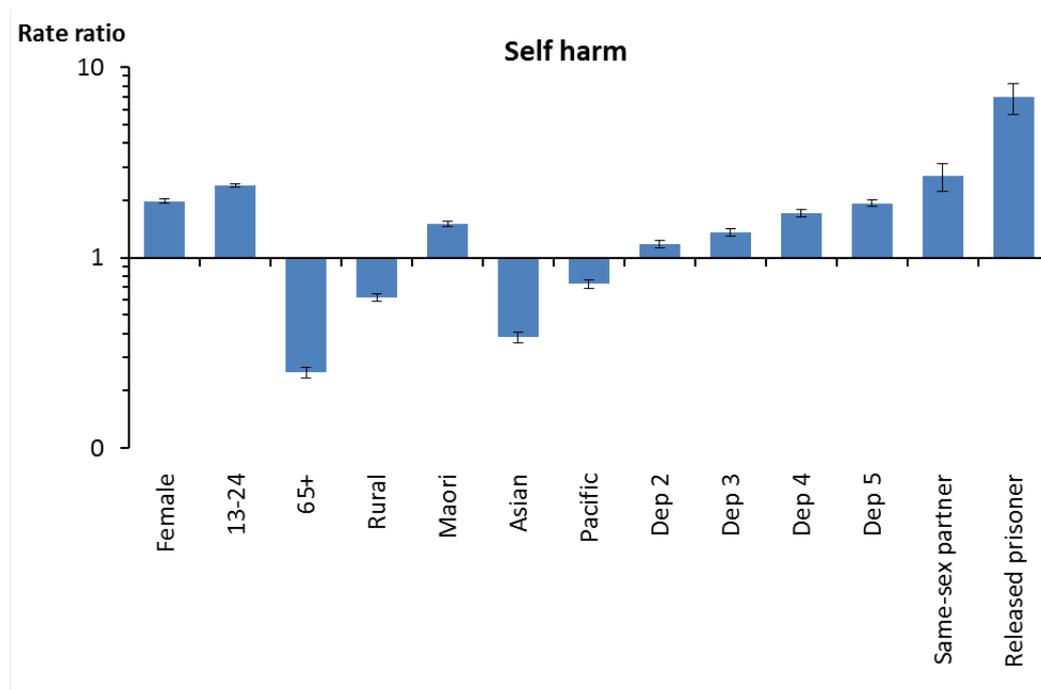


Figure 6. Rate ratios for self-harm hospitalisations for selected groups (see figure 2 for comparison groups)

Part 2: Death by suicide

Key points

- NZ has good quality data on deaths by suicide and summaries are published annually by MoH
- Rates of death by suicide for the population overall were static over the period 2006 to 2015.
- Rates of suicide are higher for males, Māori, and individuals living in high deprivation areas.
- Suicide rates are slightly higher for people in rural areas than in urban areas. This contrasts with the lower levels of mental health service use for people in rural areas reported in the previous section.
- Suicide rates are lower for the 65+ age group than for other ages, and are lower for people of Pacific and Asian ethnicity.
- As suicide is a rare event it is difficult to analyse suicide rates for small groups and so these rates are not presented here

This chapter describes rates of death by suicide in New Zealand for the groups of interest to the inquiry. Published suicide rates are available from the Ministry of Health up to the 2015 calendar year and selected information from those reports has been included here. Provisional suicide statistics are also reported by Coronial services, and have not been included in this report.⁹ This section also presents information from our own analysis of 2011 to 2013 suicide rates for some of the groups of special interest to the inquiry: youth, older people, and rural populations.

Data on deaths by suicide were sourced from the Ministry of Health's Mortality Collection, and accessed through the IDI. The small number of deaths by suicide in New Zealand means that it is only possible to report suicide rates for the larger groups of interest (age, sex and ethnicity groups, deprivation quintiles, and rural populations). It is not possible to report reliable suicide rates for refugees, recently released prisoners, or people in same-sex partnerships.

⁹ <https://coronialservices.justice.govt.nz/suicide/annual-suicide-statistics-since-2011/>

Figures 7, 8 and 9 are sourced from Ministry of Health suicide publications.¹⁰ They show annual suicide rates for the period 2006 to 2015. Suicide rates are shown for the total population, by sex, age group, and Māori/non-Māori ethnicity. The figures show that overall suicide rates have been static since 2006. Suicide rates are higher for males than for females (Figure 7). People aged 65 and over have lower suicide rates than other age groups (Figure 8). Suicide rates are higher for Māori compared to non-Māori, and rates for Māori women are higher than for non-Māori men (Figure 9).

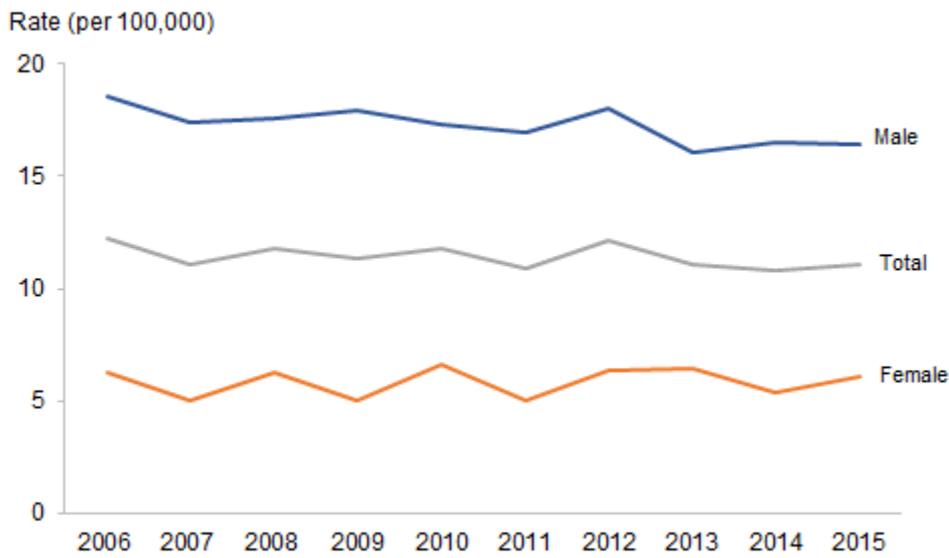


Figure 7. Annual suicide rates for males, females and total population, 2006 to 2015

Source: New Zealand Mortality Collection⁷

¹⁰ 'Suicide Facts: 2015 Data', available from <https://www.health.govt.nz/publication/suicide-facts-2015-data>

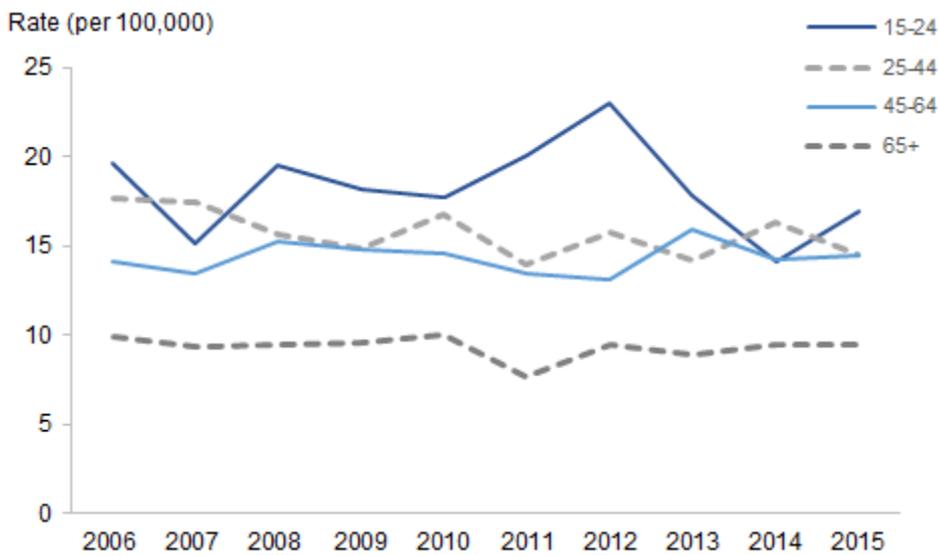


Figure 8. Annual suicide rates by age group, 2006 to 2015

Source: New Zealand Mortality Collection⁷

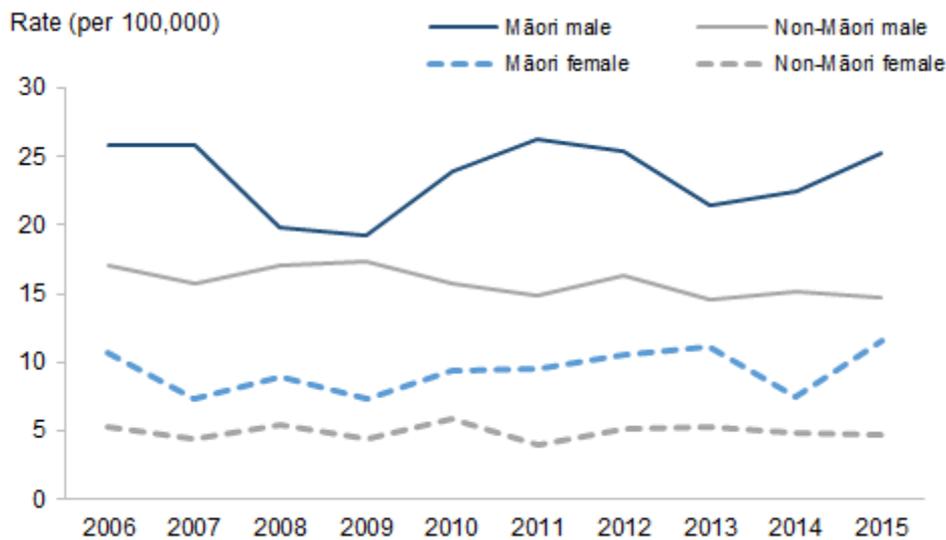


Figure 9. Annual suicide rates by sex and ethnicity, 2006 to 2015

Source: New Zealand Mortality Collection⁷

Figure 10 below shows suicide rates from our own analysis of New Zealand Mortality Collection data from 2011 to 2013. This shows the rate ratio for the suicide rate for the group of interest against a comparison group (specific to each group, as per analyses in other sections). A rate ratio above 1 indicates that suicide is more likely in that group than in the comparison group; a rate ratio of less than 1 indicates that suicide is less likely.

Consistent with the Ministry of Health figures above, suicide rates are higher for males and Māori, and lower for people aged 65 and over (compared to ages 25-64). Suicide rates are slightly higher for people living in rural areas (compared to urban areas) and people aged 13-24 (compared to ages 25-64). Suicide rates increase with increasing deprivation (NZDep) but are lower for Pacific and Asian people compared to non-Pacific and non-Asian respectively.

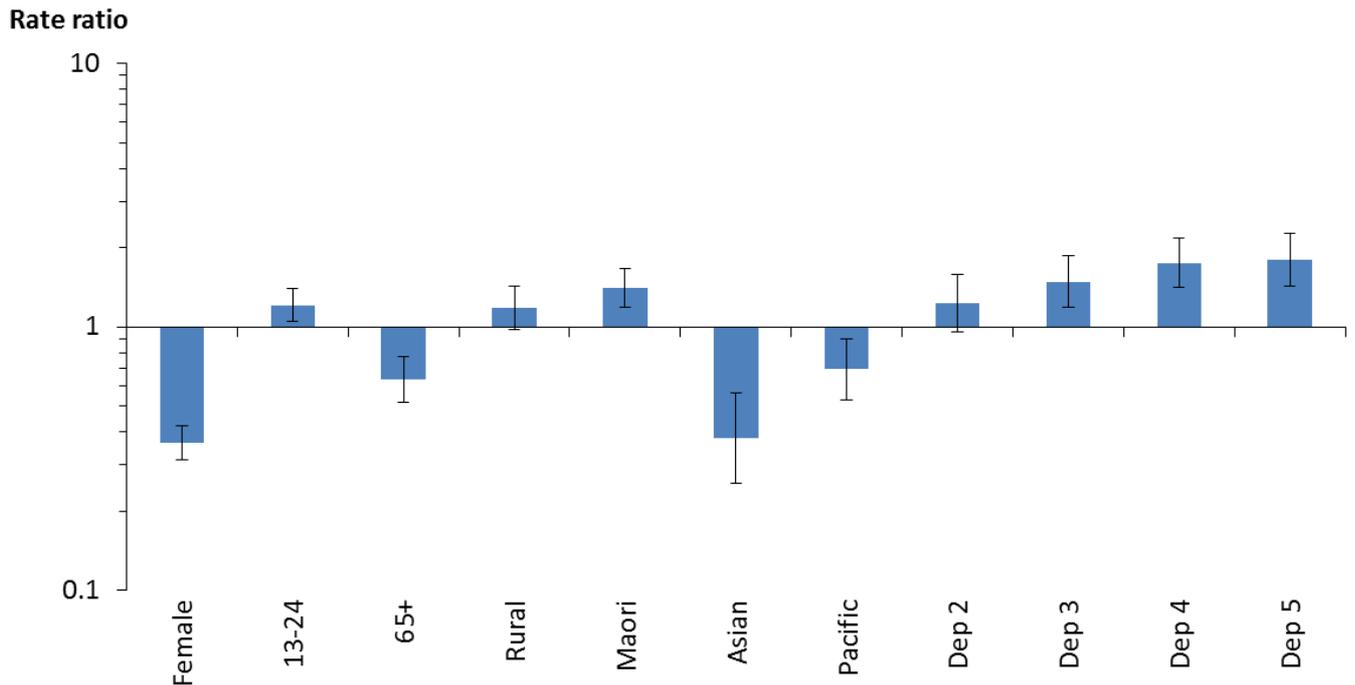


Figure 10. Rate ratio for suicide for selected groups, 2011 to 2013 (see Figure 2, previous section, for comparison groups)

Part 3: Waiting times for specialist mental health services

Key points

- More than 80% of new referrals are seen within 3 weeks of referral, with around 40% being seen on the day of referral
- Waiting times are longer for some referral pathways than others. Wait times are longest for GP referral and shortest for Emergency department or Police referral.
- There is a small amount of variation in wait times between age, sex and ethnicity groups. This may in part reflect the different referral pathways for these groups.
- As the waiting times do not include declined referrals or time spent waiting for referral, they may underestimate the overall delay experienced by people seeking access to secondary mental health services.

This section describes waiting times from referral to first face-to-face or clinical contact for specialist mental health services.

Data and methods

The method used to calculate wait times for this report is the same as that used to calculate the wait times for MoH publications reporting on wait time targets. The method used to calculate the wait times is described in more detail on the MoH website.¹¹

Data on waiting times for the 12 months from 1 April 2017 to 31 March 2018 were provided by the Ministry of Health. These are calculated from PRIMHD data. The waiting time is the number of calendar days from the date a new client was referred to an organisation to the first face-to-face or clinical activity the client attended at that organisation.

Declined referrals, NGO contacts, and crisis contacts are excluded, and wait times are only calculated for new clients (clients who had not accessed mental health and addiction services in the past year).

¹¹ Ministry of Health (2015), Mental health and addiction services data: calculating waiting times. Available from <https://www.health.govt.nz/nz-health-statistics/national-collections-and-surveys/collections/primhd-mental-health-data/mental-health-and-addiction-services-data-calculating-waiting-times>

Referral sources are based on the 'referral from' variable in PRIMHD. Further details are available in Appendix 1.

Results

Figure 1 below shows the age, sex and ethnicity breakdown for all eligible and in-scope referrals in the wait times dataset. Referrals were equally split by gender. More than half of referrals were for the 25-64 age group, with just over a third for the 13-24 age group. Just under a quarter (23%) of referrals were for Māori, and 7% for Pacific.

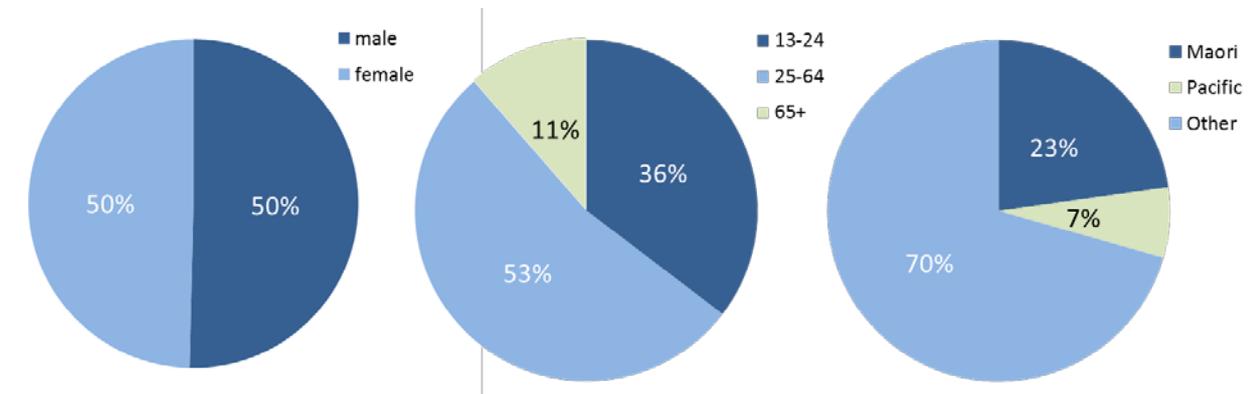


Figure 1. Age, sex and ethnicity composition of the referrals used to calculate wait times, 2017/18

Figure 2 below shows the referral source for referrals in the dataset. A third of referrals (33%) came from a General Practitioner, and a further 19% were self-referrals. Less common referral sources were Emergency departments, Police, Justice, health system and psychiatric services.

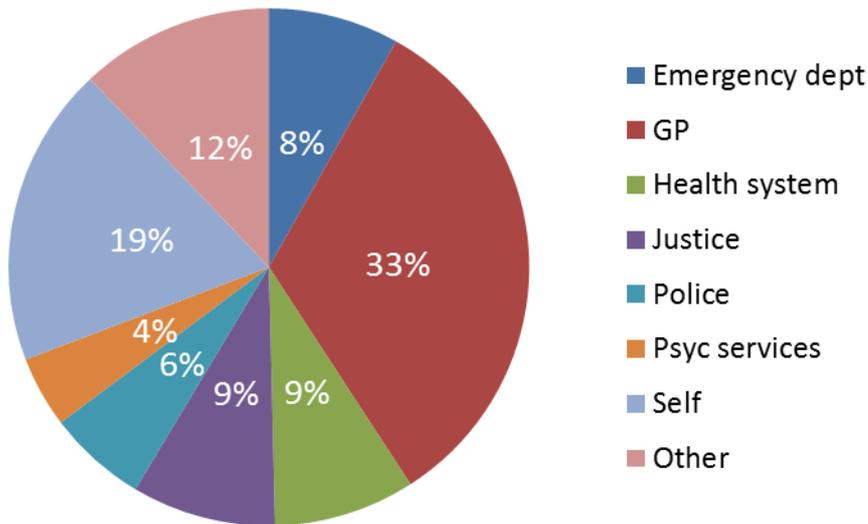


Figure 2. Sources of referrals in the wait times dataset, 2017/18

Figure 3 below shows the overall breakdown of wait times in the year. Wait time is measured in days. Around 40% of referrals had a wait time of 0 days, that is, they were seen on the day of referral. A further 42% had a wait time of between 1 day and 3 weeks, meaning that 82% of people were seen within 3 weeks of referral. The current Ministry of Health targets are 80% seen within 3 weeks and 95% within 8 weeks for non-urgent referrals.¹²

¹² <https://www.health.govt.nz/nz-health-statistics/national-collections-and-surveys/collections/primhd-mental-health-data/mental-health-and-addiction-services-data-calculating-waiting-times>

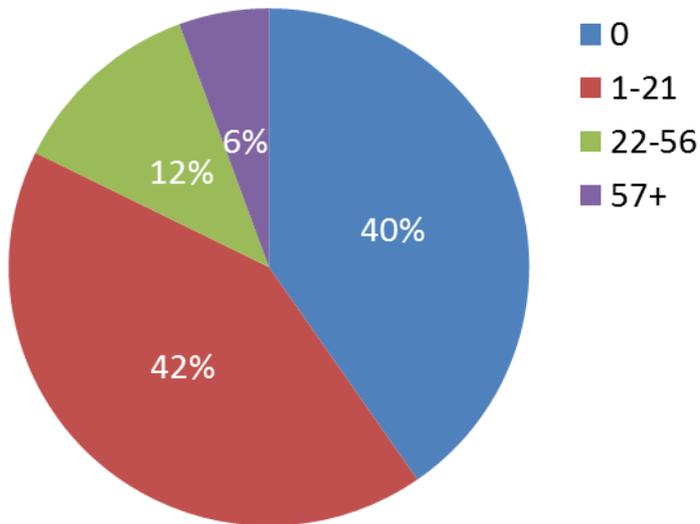


Figure 3. Wait time (in days) for secondary mental health services, 2017/18

Figures 4 to 6 below shows the waiting time (in days) by gender, age group, and ethnicity. While there are small variations between groups (for example, the 65+ age group has slightly longer wait times than the other age groups), the overall pattern is similar by gender, age and ethnic groups. It is likely that the small differences in wait times between groups reflect different referral pathways (see next figure).

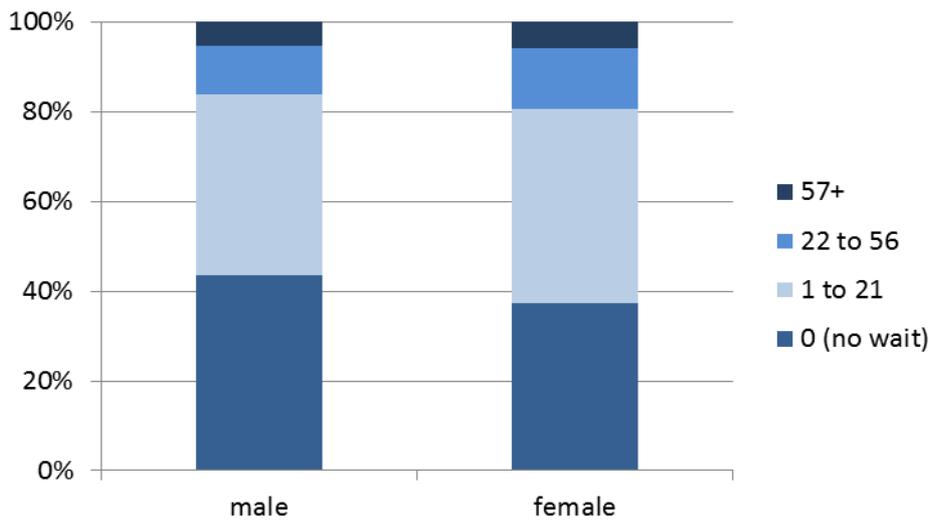


Figure 4. Wait time (in days) for secondary mental health services, by sex, 2017/18

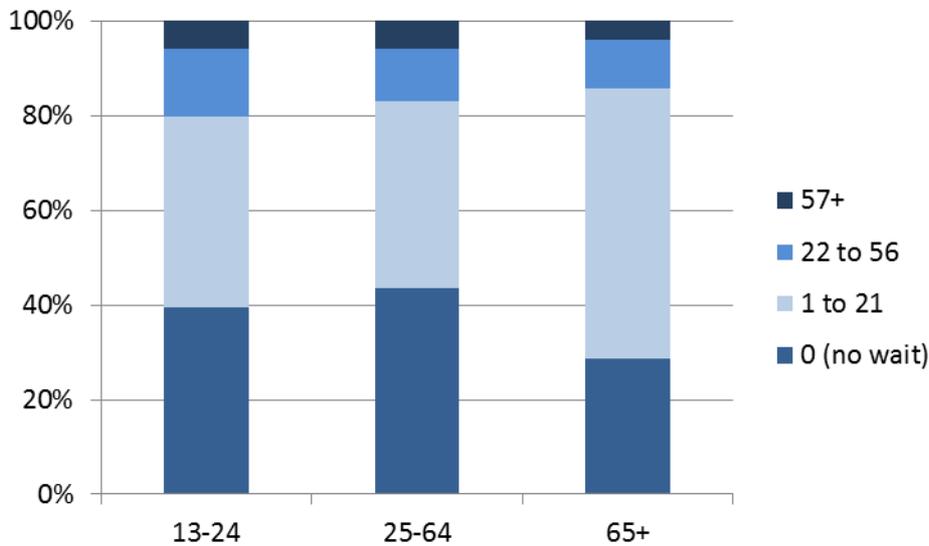


Figure 5. Wait time (in days) for secondary mental health services, by age group, 2017/18

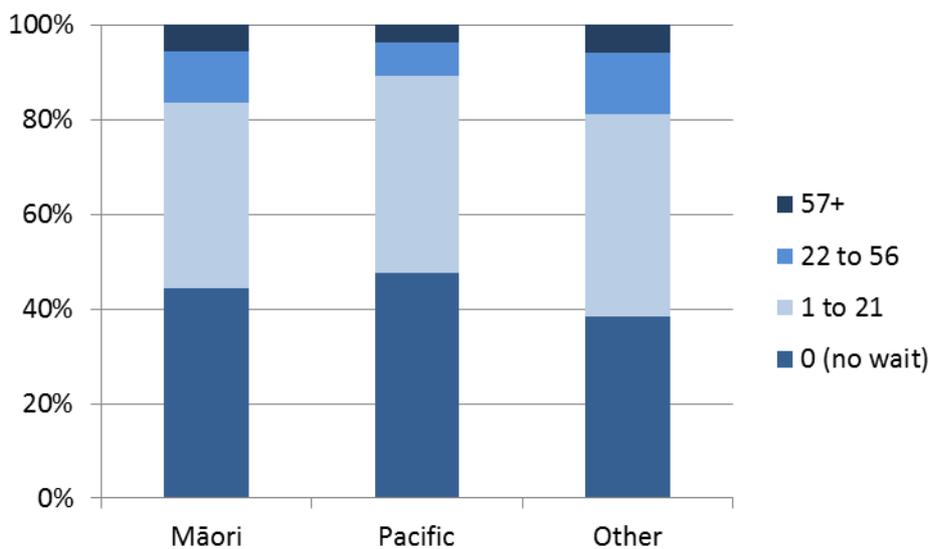


Figure 6. Wait time (in days) for secondary mental health services, by ethnicity, 2017/18

Figure 7 shows waiting times by source of the referral. There are substantial differences in wait times between different referral sources. Wait times are longest for GP referral, with less than 20% having no wait, and around 30% of people waiting more than 3 weeks. Wait times are shortest for Emergency department and Police referrals, with the majority of people having no wait, and almost all (>95%) being seen within 3 weeks.

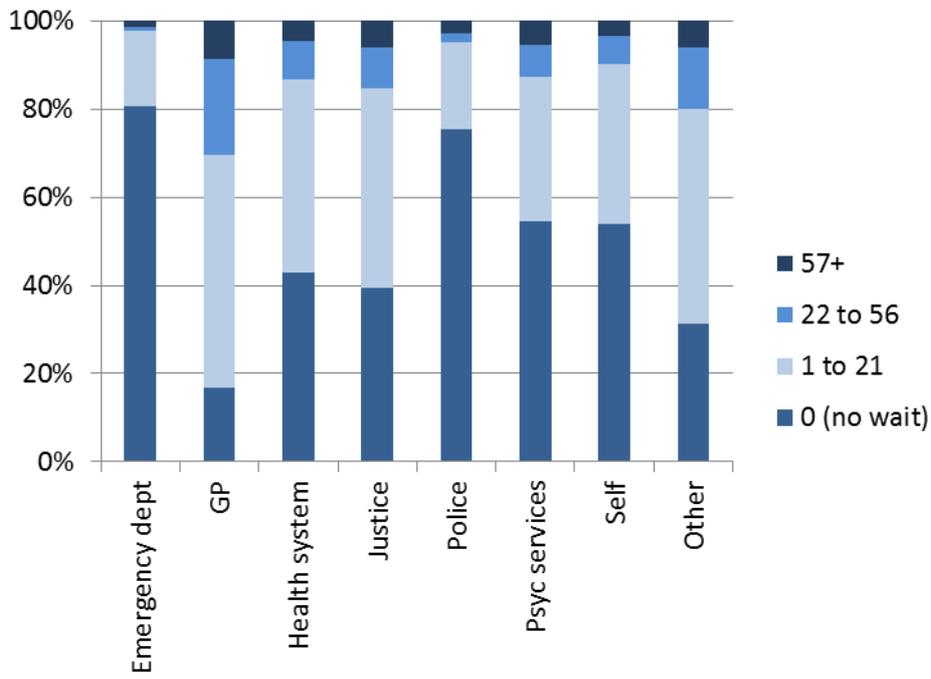


Figure 7. Wait time (in days) for secondary mental health services, by referral source, 2017/18

Part 4: Mental distress, service use, and unmet need

Key points

- Mental distress increases as deprivation increases
- Use of secondary mental health services follows a similar pattern to distress, increasing as deprivation increases
- Use of mental health pharmaceuticals is similar for all levels of deprivation. This may indicate under-treatment at high deprivation levels and/or over-treatment in low deprivation levels, and this could be related to cost, access or cultural acceptability.
- Patterns of service use vary by ethnicity, independent of level of psychological distress. In particular, people of non-Māori and non-Pacific ethnicity use mental health pharmaceuticals at higher rates than Māori or Pacific people
- Combining pharmaceutical use and secondary mental health service use in composite measures of “mental health services use” can obscure patterns of service use by deprivation

This section summarises previously unpublished work from the Social Investment Agency that examines patterns of mental distress and mental health treatment by deprivation and ethnicity. It points to some possible areas of unmet need.

Data and methods

Data in this chapter comes from a combination of sources:

- Mental health distress was measured using the Kessler-10 (K-10) questionnaire that asks respondents to answer ten questions about common symptoms of anxiety and depression that they have experienced over the last four weeks. The data was sourced from the New Zealand Health Survey 2015/16, a large nationwide survey of the general NZ population conducted annually by the Ministry of Health.¹³ For some analyses the K-10 score has been categorised into: low (<10); mild (10-19); moderate (20-29); and high (30+) levels of distress. These

¹³ <https://www.health.govt.nz/publication/annual-update-key-results-2015-16-new-zealand-health-survey>

categories have been validated as indicating the chance that an individual will meet diagnostic criteria for a common mental health disorder (anxiety or depression).

- Secondary service use rates were derived from the Ministry of Health's PRIMHD dataset
- Pharmaceutical use rates were derived from the Ministry of Health's Pharmaceutical Collection
- Area-based deprivation was measured using the New Zealand Deprivation index (NZ Dep) and was grouped into deciles where 1 is least deprived and 10 is most deprived. Note that in the earlier sections of this report the NZDep was grouped into quintiles (from 1 least deprived to 5 most deprived).

Results

Figure 1 below shows the percentage of people with a K-10 score of 15 or over by deprivation decile, and shows that distress increases as deprivation increases.

% with K10 of 15+

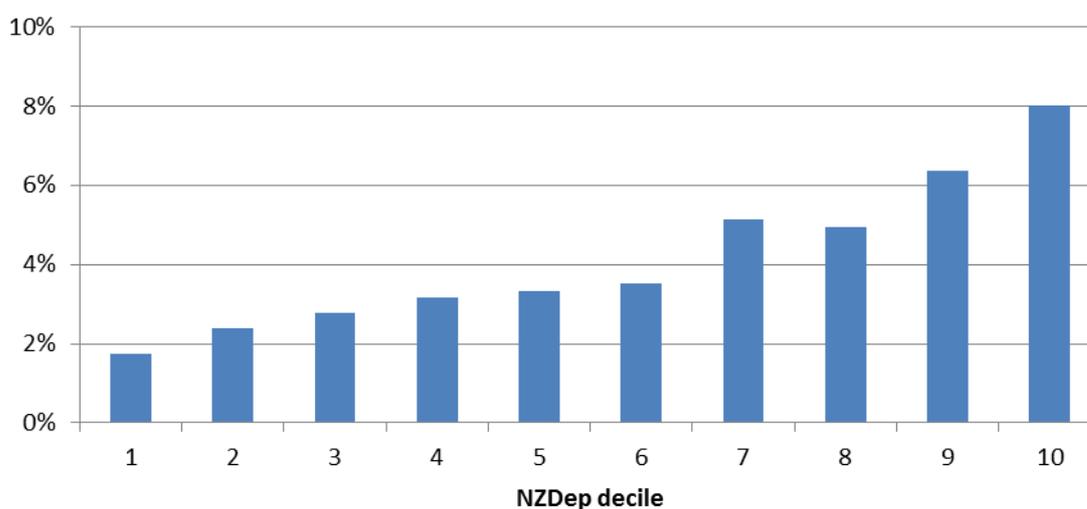


Figure 1. Percentage of people with Kessler-10 score of 15 or higher, by deprivation

Figure 2 below shows the percentage of individuals accessing mental health treatment, by deprivation. Figure 2 shows the percentage accessing secondary mental health services, while Figure 3 shows the percentage accessing mental health pharmaceuticals. The pattern of access by deprivation is different for the two types of treatment. For secondary mental health service access the pattern is similar to that for distress with access increasing as deprivation increases. This pattern was also demonstrated in Part 1 of this report (see Figure 1). For pharmaceutical treatment there is

no consistent pattern by deprivation, with rates of pharmaceutical treatment being similar across all levels of deprivation.

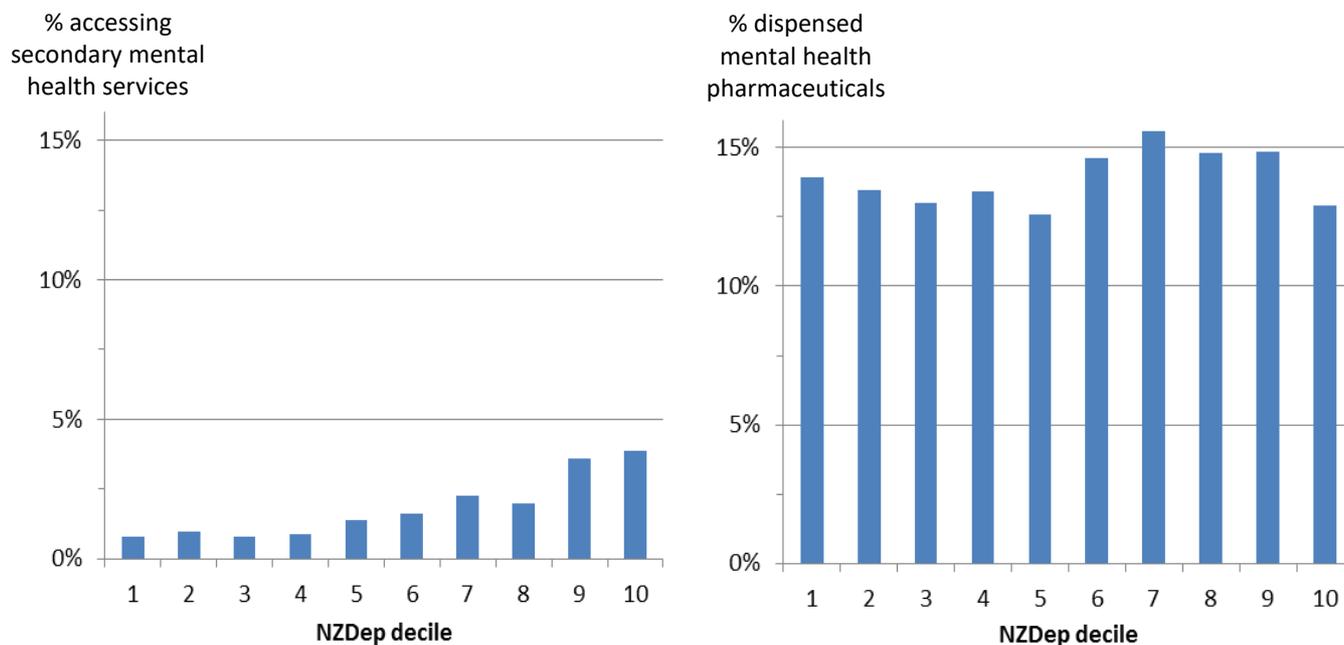


Figure 2. Percentage of people accessing secondary mental health services and mental health pharmaceuticals, by deprivation

Given the higher levels of distress in the highest deprivation deciles, we would expect pharmaceutical treatment to follow a similar pattern with higher rates of mental health medication dispensing in the higher deciles. One possible explanation for this is that there is under-treatment in the highest deprivation deciles with some individuals with high levels of distress not accessing appropriate pharmaceutical treatment. In addition, or instead, there may be over-treatment in the lower deprivation deciles with some individuals accessing pharmaceutical treatment despite having low levels of mental distress. Under or over-treatment could be related to a range of factors including access, cost, and cultural acceptability.

The following figures examine service use for Māori, Pacific and Other ethnic groups. As in the previous figures, two types of service use are examined: secondary mental health service use and mental health pharmaceutical use.

Figures 3 and 4 below show service use by level of psychological distress (grouped K-10 score) for Māori, Pacific, and Other ethnic groups. For secondary mental health services, the percentage of people using the service increases for people with higher K-10 scores (i.e. those with higher levels of

psychological distress). This pattern is apparent for all ethnic groups, although for Māori service use plateaus at the highest levels of distress.

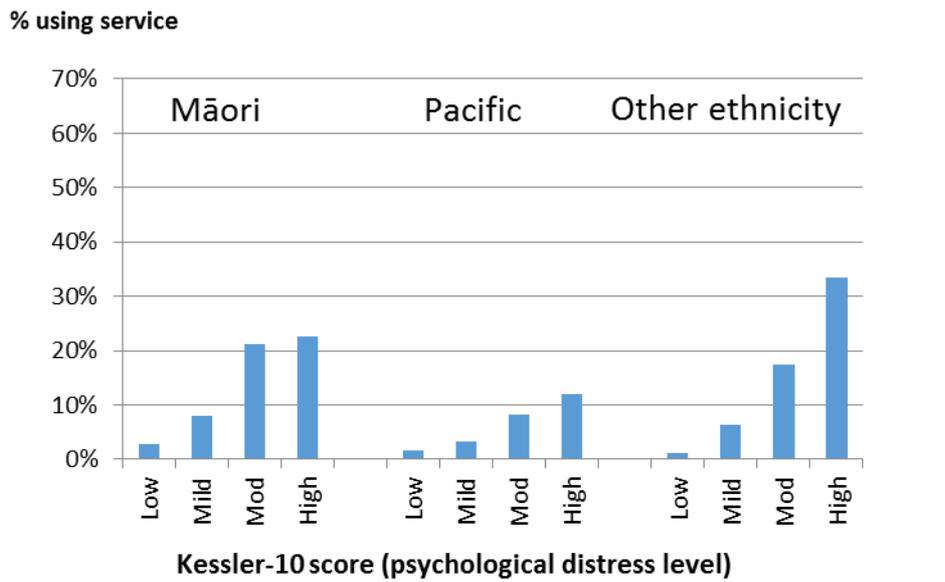


Figure 3. Percentage of people accessing secondary mental health services, by K-10 score, for Māori, Pacific and Other ethnic groups

For pharmaceutical use, the pattern is different for the three ethnic groups. For Māori, use of pharmaceuticals plateaus at high levels of distress. For Pacific, use is highest at moderate levels of distress and lower at other levels (although note small numbers in this ethnic group). For the Other ethnic group use of pharmaceuticals increases as distress increases. At all levels of psychological distress, mental health pharmaceutical use is higher in the Other group than in the Māori or Pacific groups. As discussed above, this could represent under or over-treatment in some groups, and could be related to a range of factors including access, cost, and cultural acceptability.

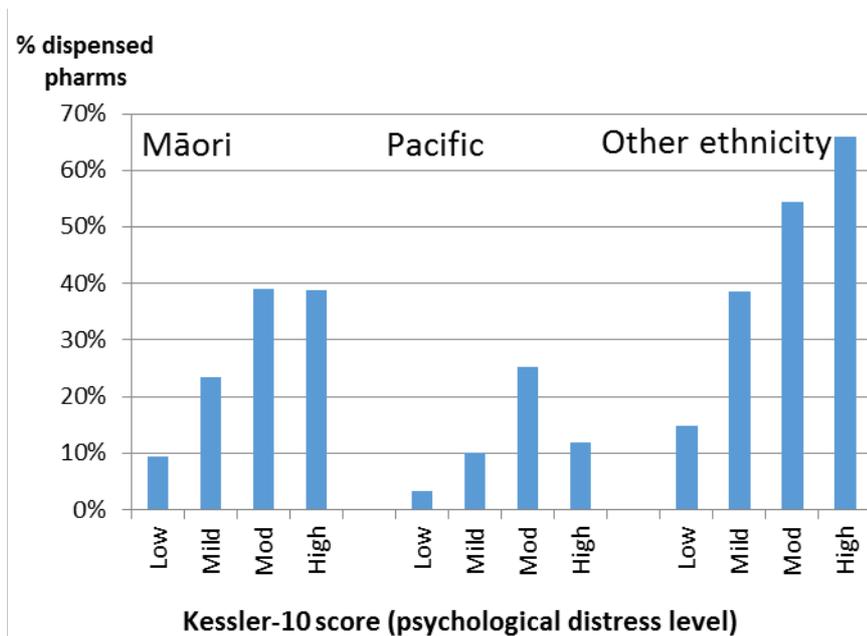


Figure 4. Percentage of people dispensed mental health pharmaceuticals, by K-10 score, for Māori, Pacific and Other ethnic groups

Taken together these results suggest that service use varies between ethnic and deprivation groups independent of the level of psychological distress experienced. Access to mental health pharmaceuticals in particular is patterned by deprivation and ethnicity, and access to services and dispensing of medications are not always proportional to levels of distress. These results are preliminary and are based on small samples of individuals. More work is needed to understand whether, and how, some groups of individuals in New Zealand experience barriers to appropriate mental health treatment.

An important implication of these results for mental health research is that relying on pharmaceutical treatment as a measure of mental health service use will give a different pattern of service use by deprivation and ethnicity. This is the case even when pharmaceutical use is combined with secondary mental health service use into a 'total mental health service use' measure, as the high rates of pharmaceutical use relative to secondary service use (approximately 15% compared to approximately 2%) mean that trends are dominated by pharmaceutical use.

Part 5: Physical health of people with mental health conditions

Key points

- People with severe mental illness have higher rates of many physical health conditions and shorter life expectancy, and this gap has increased over time
- The gap in physical health status between those with and without mental illness is greater for women.
- Māori with severe mental illness experience disparities in physical health compared to non-Māori with severe mental illness.
- High mortality from physical health conditions is due to both a higher risk of developing a condition, and also to worse outcomes once a condition has developed.
- The inequality in physical health associated with experience of mental health conditions and addictions is now becoming more recognised in the health sector and at a policy level in New Zealand and internationally

In this section we summarise our previous work on the physical health of people with experience of mental illness, particularly people accessing specialist mental health services.

Data and methods

The information presented is published in two papers relating to premature mortality and cancer survival.¹⁴ We also include some work in progress examining the risk of cardiovascular events among people using mental health services or prescribed antipsychotic medication.

All the work presented here draws on linkage studies using routine data on mental health services use linked to mortality data, cancer registration data and hospitalisation data. The cardiovascular

¹⁴ Cunningham R, et al. Premature mortality in adults using New Zealand Psychiatric Services. *New Zealand Medical Journal*. 2014;127(1394).
<https://www.researchgate.net/publication/263097886> Premature mortality in adults using New Zealand psychiatric services

Cunningham R, et al. Cancer Survival in the Context of Mental Illness: A National Cohort Study. *General Hospital Psychiatry* 2015;37(6). <https://doi.org/10.1016/j.genhosppsych.2015.06.003>

work also links this information to the PREDICT database of primary care cardiovascular risk assessments.¹⁵

5.1 Premature mortality and mental illness in Aotearoa New Zealand

There is now ample evidence that people with severe mental illness including schizophrenia and bipolar disorder, as well as all those in contact with specialist mental health services, have higher rates of many physical health conditions and a shortened life expectancy.¹⁶ There is also evidence that the mortality gap between those using psychiatric services and the general population has increased over time.¹⁷

Our analysis¹⁸ confirms that the situation in New Zealand is in line with the international evidence. People using mental health services having twice the risk of premature mortality (before age 65) compared to the general population. People with a diagnosis of schizophrenia or bipolar disorder or a primary diagnosis of substance use disorder are at even higher risk of premature mortality (see Figure 1 below). While the risk of suicide is high in this population, the majority of premature deaths are in fact due to cardiovascular disease, cancer and other chronic disease, including endocrine and respiratory conditions (see Figure 2).

Table 1 shows that women using mental health services have nearly a ninety percent increase in the risk of death before age 65 from medical causes (causes other than deliberate or accidental injury), while for men using mental health services the increase is 78%, compared to women and men in the general population.

Moreover inequalities exist within those using mental health services. For example, Māori in contact with mental health services have higher rates of premature mortality than non-Māori in contact with

¹⁵ University of Auckland, PREDICT in Primary care <https://www.fmhs.auckland.ac.nz/en/soph/about/our-departments/epidemiology-and-biostatistics/research/view-study/research/predict-in-primary-care.html>

¹⁶ Thornicroft G. Physical health disparities and mental illness: the scandal of premature mortality. *British Journal of Psychiatry* 2011;199(6):441–2.
Lawrence D, et al. The gap in life expectancy from preventable physical illness in psychiatric patients in Western Australia: retrospective analysis of population based registers. *British Medical Journal* 2013;346:f2539.

¹⁷ Wahlbeck K, et al. Outcomes of Nordic mental health systems: life expectancy of patients with mental disorders *British Journal of Psychiatry*. 2011;199(6):453–458.

¹⁸ Cunningham R, et al. 2014

services, just as Māori in the general population experience unequal health status compared to non-Maori.

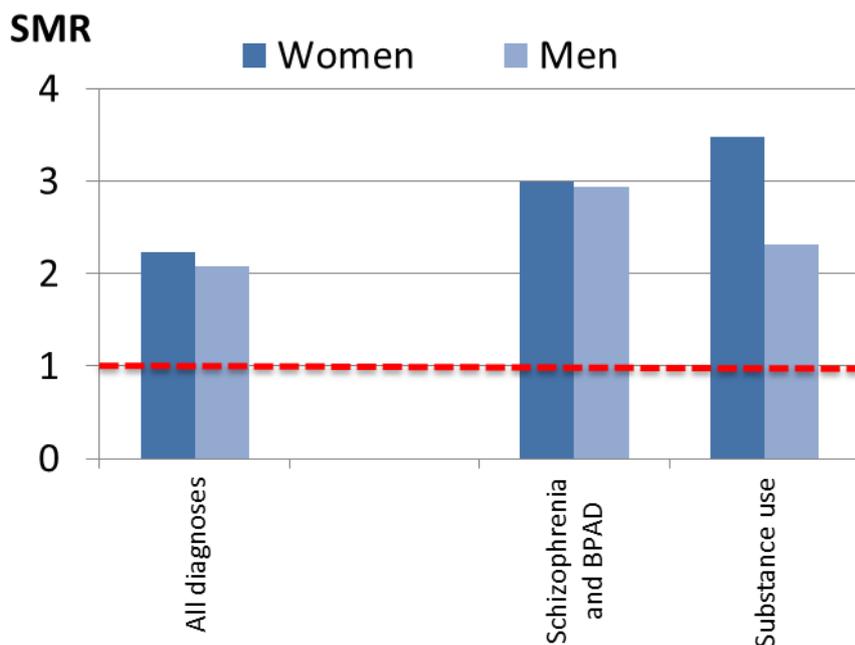


Figure 1. Standardised Mortality Ratio (SMR)¹⁹ for adults using mental health services in NZ 2002-2010 compared to the NZ population, mortality before age 65

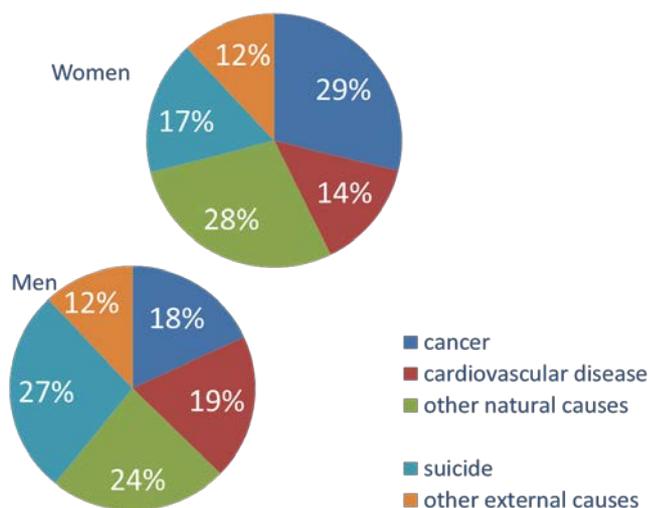


Figure 2 Causes of death before the age of 65 among people using mental health services in NZ 2002-2010

¹⁹ Standardised Mortality Ratio (SMR) is the ratio of the risk of premature death (before the age of 65) in those using mental health services compared to the risk in the general population, adjusted for age differences between the two groups. An SMR of 1 represents no difference in the risk of premature death, while an SMR of greater than 1 represents an increased risk among those using mental health services.

Table 1 Standardised Mortality Ratios (SMRs)²⁰ by cause of death for adults (18-64) using Mental Health Services in New Zealand 2002-2010 compared to the New Zealand population

Cause of death	Women (n)	SMR	95% CI ²¹	Men (n)	SMR	95% CI
All natural causes	2092	1.89	(1.81,1.97)	2611	1.78	(1.72,1.85)
• Cancer	805	1.26	(1.18,1.35)	759	1.29	(1.20,1.38)
• Cardiovascular	399	1.95	(1.76,2.15)	816	1.59	(1.48,1.70)
All external causes	832	4.27	(3.99,4.57)	1864	2.78	(2.65,2.91)
• Intentional self-harm	489	5.97	(5.46,6.52)	1075	3.90	(3.67,4.14)
• Accidental injury	343	3.04	(2.74,3.38)	789	2.00	(1.86,2.14)
All causes	2924	2.23	(2.15,2.32)	4475	2.08	(2.02,2.14)

²⁰ See note 18. An SMR of 1 represents no difference in risk of mortality between the group with mental illness and the general population. An SMR of 1.8 represents an 80% increase in risk, while an SMR of 3.0 represents a 300% increase in risk, or a risk 3 times as great in the group with mental illness compared to the general population.

²¹ The 95% confidence interval (95%CI) shows the range within which the true value of the ratio is likely to lie. In this case none of the confidence intervals include 1.0 (no difference) so we can be confident that the finding of an increased rate of premature death among people using mental health services due to each cause examined is not due to chance.

5.2 Understanding the reasons for premature mortality

The reasons for the differences in mortality from chronic physical conditions among those with experience of mental illness are complex, and include individual risk factors such as diet and smoking, health care factors such as the effects of psychiatric medications and access to quality health care, and societal level factors such as social deprivation and stigma and discrimination. High mortality from physical health conditions in mental health service users relates not just to a higher risk of developing a disease, but also to worse outcomes once a disease has developed.

For example, our work in cancer has shown that among those diagnosed with colorectal or breast cancers, survival is much poorer for those with a history of recent contact with mental health services.²² The figures below show that survival over the five years after diagnosis with breast (Figure 3) and colorectal cancers (Figure 4) is poorest among those with a diagnosis of schizophrenia or bipolar disorder (red/lower line), but is also worse among others with recent contact with mental health services (green/middle line) compared to those cancer patients without any such contact (blue/higher line).²³

²² Cunningham R et al 2015

²³ In these survival curves the proportion of people still alive is shown on the right hand (y) axis, and time is shown along the bottom (x) axis. At the start (time 0) everyone is alive and the proportion remaining alive decreases over time. In these graphs both Group A and Group B are more likely to have died at any given point in time than those with no mhs use.

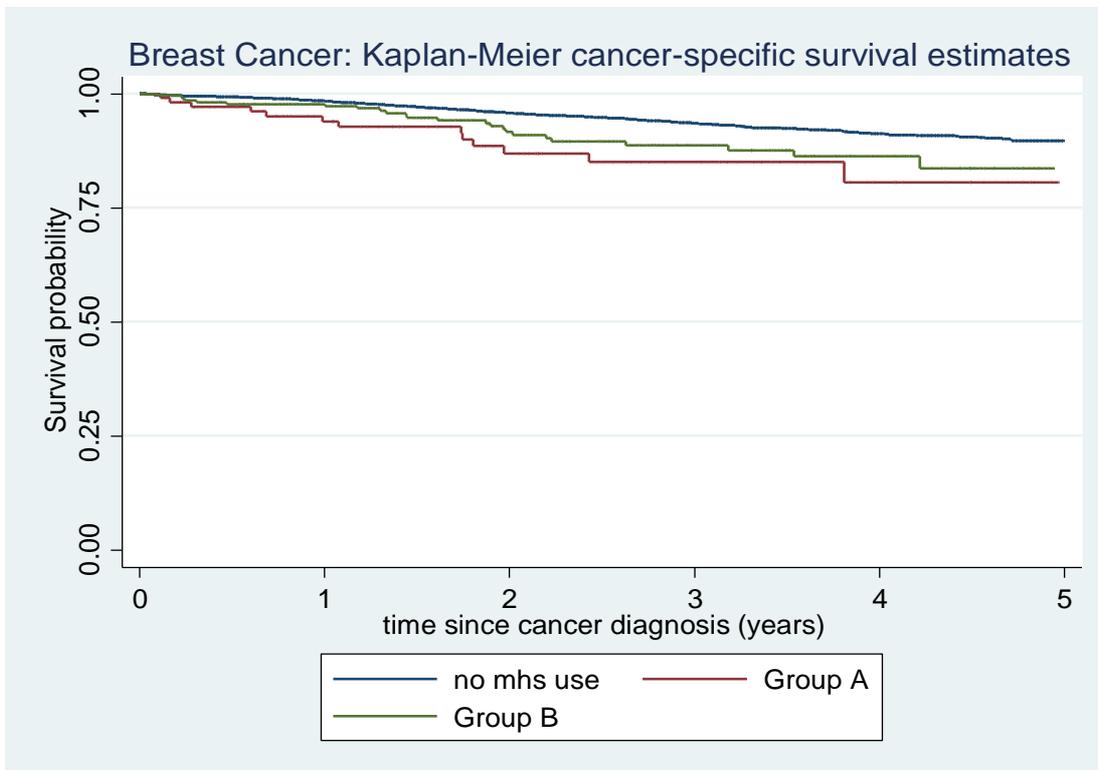


Figure 3 Breast cancer survival among people with a diagnosis of schizophrenia or bipolar disorder (Group A, red line), other using mental health services (Group B, green line) and those not using mental health services (blue line)

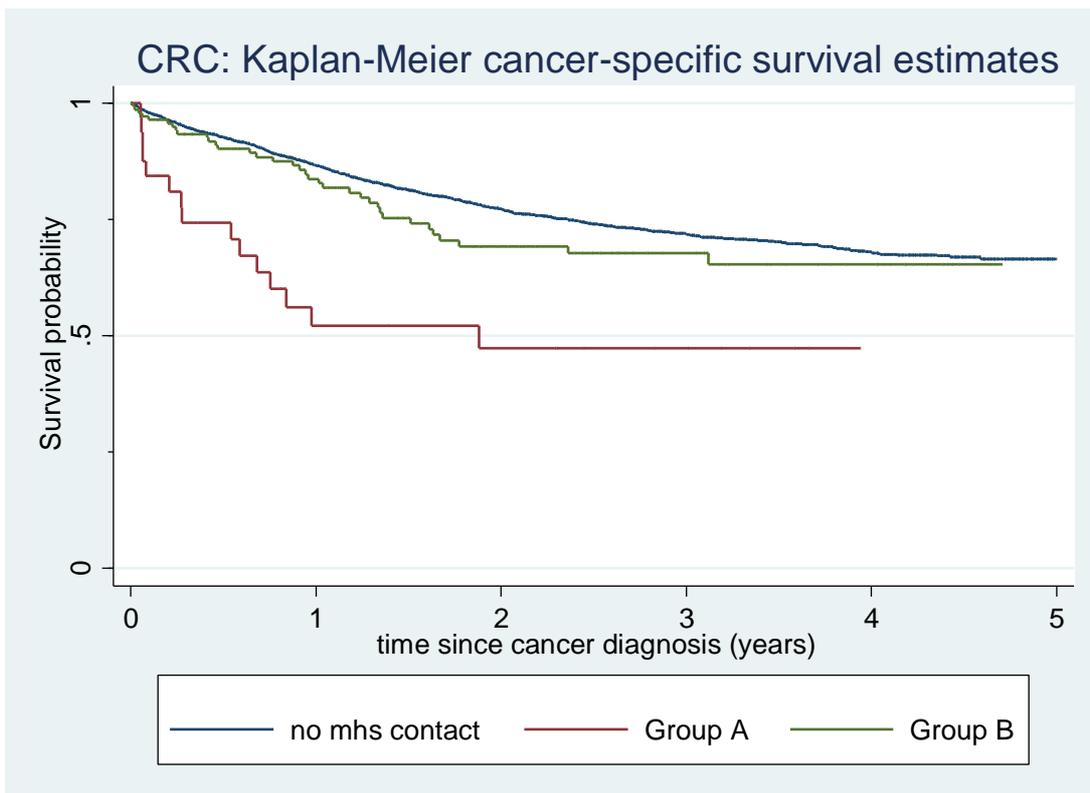


Figure 4 Colorectal cancer survival among people with a diagnosis of schizophrenia or bipolar disorder (Group A, red line), other using mental health services (Group B, green line) and those not using mental health services (blue line)

Similarly, preliminary results from a current project using the PREDICT dataset of cardiovascular risk assessments (not yet published) show that while the incidence of cardiovascular disease (CVD) is higher among those using mental health services and those on antipsychotic medications, the mortality from cardiovascular disease is even more elevated. For example as shown in Table 2 the risk of a cardiovascular event such as a heart attack or stroke is 42% higher among those with recent contact with mental health services compared to those without, while the risk of dying from a cardiovascular event is more than doubled (111% higher).

Table 1 Comparison of risk of non-fatal CVD events (such as heart attacks) and CVD deaths among people with mental health conditions and those without, using data from the PREDICT cohort

	CVD events		CVD deaths	
	adj HR* ²⁴	95% CI	adj HR*	95% CI
Mental health service contact prior 5 years	1.42	1.32-1.53	2.11	1.55-2.87
Schizophrenia or Bipolar Disorder diagnosis	1.51	1.31-1.75	3.83	2.45-5.98
Antipsychotic prescription prior 5 years	1.39	1.25-1.55	3.04	2.15-4.29

*Adjusted for age, sex, ethnicity, deprivation

Poorer survival after diagnosis with a disease may be due to delays in diagnosis, other differences in health status, or differences in access to indicated treatment. Figure 5 is a simplified causal diagram of some of the important factors in cancer survival: many of these factors and pathways will apply in other settings such as cardiovascular disease.

²⁴ HR = Hazard ratio, which is the ratio of the risk of CVD events or death among people using mental health services compared to those without. As with the rate ratios in the earlier parts of this report, an HR of 1 indicates no difference between the groups being compared.

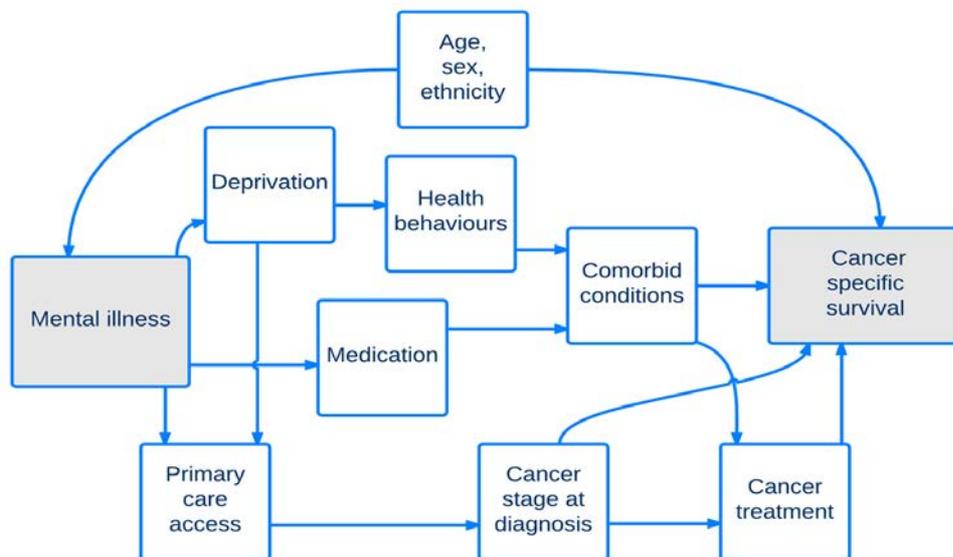


Figure 5 Potential pathways between mental illness and cancer survival

Our work investigating cancer survival has shown that late diagnosis is an important contributor to poor cancer survival among those with a diagnosis of schizophrenia or bipolar disorder. This is seen in Table 3, where the adjustment for late stage at diagnosis explains nearly half the difference in breast cancer survival relative to those not using MH services (this is the difference between Models 1 and 2). Late diagnosis may relate to access to cancer screening and/or overshadowing of physical health problems by mental health ones (known as diagnostic overshadowing).

Being more likely to have other physical health conditions at the time of cancer diagnosis (comorbidity) is also an important factor in poor survival for those using mental health services. While we were not able to examine access to cancer treatment in this study, the remaining differences after adjusting for other factors, together with international evidence of inequities in access to indicated physical health care,²⁵ suggest that differences in cancer treatment may also be an important part of the observed survival inequity.

²⁵ Osborn D. The poor physical health of people with mental illness. *West J Med* 2001;175(5): 329-332.

Table 2 Risk of breast cancer mortality in women using mental health services compared to no history of mental health service use

Model*	Schizophrenia, Bipolar Affective Disorder		Other mental health service users	
	HR ²⁶	95% CI	HR	95% CI
0	2.62	1.54 - 4.46	1.72	1.17 - 2.54
1	2.55	1.49 - 4.35	1.62	1.09 - 2.39
2	1.85	1.08 - 3.17	1.63	1.10 - 2.41
3	1.81	1.05 - 3.11	1.60	1.08 - 2.36
4	1.65	0.96 - 2.84	1.41	0.95 - 2.09

*0 = crude survival; 1 = adj for age + ethnicity; 2 = 1 + SEER stage at diagnosis; 3 = 2 + NZ Deprivation Index score; 4 = 3 + NMDS Comorbidity Index score

5.3 Action to reduce inequalities in physical health

The inequality in physical health associated with experience of mental health conditions and addictions is now becoming more recognised both in the health sector and at a policy level in New Zealand. The Equally Well collaboration (supported by Te Pou) has been an important part of this increased recognition, through its work in fostering local initiatives, information sharing, and working to put the physical health of people with mental illness and addictions on the health sector agenda.²⁷ All aspects of Equally Well are co-produced between people with personal experience of mental distress and health professionals.

The Health Quality and Safety Commission also recently launched a 5 year programme of mental health work, including a focus on the physical health of people using mental health and addictions services.²⁸

This disparity in health outcomes is also an increasing area of focus internationally. In the United Kingdom, reducing premature mortality of people with severe mental illness is an outcomes target in both the NHS and the Public Health Outcomes Frameworks.²⁹ The OECD Mental Health Systems

²⁶ HR = Hazard ratio which is the ratio of the risk of death among people using mental health services compared to others with a cancer diagnosis. As with the rate ratios in the earlier parts of this report, an HR of 1 indicates no difference between the groups being compared.

²⁷ Te Pou o the Whakaaro Nui (2018) Equally Well webpage <https://www.tepou.co.nz/initiatives/equally-well-physical-health/37>

²⁸ Health Quality and Safety Commission 2018 Mental Health and Addiction Quality Improvement Programme: <https://www.hqsc.govt.nz/our-programmes/mental-health-and-addiction-quality-improvement/programme/>

²⁹ HMG. No Health Without Mental Health. 2011. London. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/213761/d_h_124058.pdf

Monitoring Indicators also highlight premature mortality among people using mental health services. The Equally Well approach has recently also been adopted in the UK (<https://www.centreformentalhealth.org.uk/campaigns/equally-well>) and Australia (<https://www.equallywell.org.au/>).

Part 6: Gaps in New Zealand’s mental health data environment

This section summarises the ways in which New Zealand collects data to help us understand mental health and wellbeing, and identifies gaps in this data collection that limit our ability to investigate these areas.

To understand mental health and unmet need in New Zealand it is critical to measure both the prevalence of mental distress or mental health conditions (indications of need) and service use and access (indications of whether the need is being met). It is also key to measure service performance in order to understand how well our mental health services are meeting need in a timely, appropriate, and cost-effective way. Finally, measures of mental wellbeing can tell us whether people using mental health services and the New Zealand population in general are leading meaningful and fulfilling lives.

This section provides a brief summary of data available in each of these four areas (prevalence, service use, service performance, and wellbeing). It points out any areas in which we are not using data as effectively as we could, or where data are not available, and provides suggestions for how this could be improved.

This section is supplemented by a table in Appendix 2 outlining the specific datasets and what they cover.

6.1 Prevalence of mental distress and disorder

New Zealand currently has no national estimates of the prevalence of mental distress or mental disorder. The last national mental health survey was completed 14 years ago and prevalence estimates from that survey are now out of date.

6.1.1 What is available

- The most robust information about the prevalence of mental health and addictions conditions comes from surveys which use a clinical diagnostic tool such as the World Health Organisation Composite International Diagnostic Interview (CIDI). Such surveys are able to identify undiagnosed conditions and therefore better reflect need in the population. Te Rau Hinengaro: The New Zealand Mental Health Survey (NZMHS) used the CIDI and was conducted 14 years ago, in late 2003 and 2004. The estimates are therefore considerably out of date.
- New Zealand has robust estimates of suicide prevalence from the Mortality Collection

- Problem gambling prevalence estimates are available from the longitudinal New Zealand Gambling Study (NGS) 2012-2015.
- Estimates of prevalence of mental disorders and addictions are also available for certain groups. The prison population was studied within the Comorbid Substance Use Disorders and Mental Health Disorders among New Zealand Prisoners study undertaken in 2015. The Youth 2000 series of surveys provide good information on mental distress and self-harm, but do not include a diagnostic interview.
- We also have prevalence estimates, and other detailed data, for specific birth cohorts studied within the longitudinal studies, including the Dunedin Multidisciplinary Health and Development Study and the Christchurch Health and Development Study, and more recently the Growing Up in New Zealand study.
- Estimates of treated prevalence can be derived from specialist service use and pharmaceutical data administrative collections (although the latter is complicated by the dual-use of many medications across conditions). The New Zealand Health Survey mental health module (2015/16) also asked about diagnosed mental disorders.
- Screening tools such as the Kessler 10 Psychological Distress Scale are used in the New Zealand Health Survey (NZHS), Survey of Family, Income, and Employment (SoFIE), New Zealand Mental Health Monitor (NZMHM), and Health and Lifestyles Survey (HLS). These tools provide an indication of the level of psychological distress in the population.
- Information on the prevalence of hazardous drinking, risky drinking status and risky substance use from the NZHS, HLS and the Attitudes and Behaviour towards Alcohol Survey.
- Information on emotional, hyperactivity and behavioural symptoms among children is collected within the NZHS and B4 School Checks (B4SC).

6.1.2 Filling information gaps

- An up to date population-based survey using a clinical diagnostic tool is needed to accurately understand population prevalence.
- Some administrative data, available to analysts/researchers within Statistics New Zealand's Integrated Data Infrastructure (IDI), can be used to derive rough proxies for prevalence based mainly on specialist service use data. Primary mental healthcare diagnosis and service use data would improve these proxies. More primary care data would also help to understand mental health services provided in that setting.

- Continuing to collect frequent, good quality³⁰ mental health information within the NZMHM and NZHS is also important. Most of the mental health information in the NZHS was collected within the mental health and substance use add-on module (only collected in 2016/17), except for psychological distress and hazardous drinking which are collected within the core NZHS on an annual basis. Although comprehensive information is available within the module, it has been only used once and will not sustainably fill gaps unless data is collected on a regular basis.

6.2 Use of Services and Informal Help

New Zealand has comprehensive data on publicly funded mental health specialist service use but limited data on other care. In particular, more information is needed on privately funded services and primary mental health care.

6.2.1 What is available

- The key administrative collections that contain specialist service use data are the Programme for the Integration of Mental Health Data (PRIMHD, mental health and addiction specialist services), National Minimum Dataset (NMDS, hospital events), National Non-Admitted Patient Collection (NNPAC, outpatient and emergency department events), Client Information Collection (CLIC, gambling harm interventions) and Contract Management System (CMS). These collections include data on the type of specialist services received, demographic information, referral pathways, outcomes, diagnoses, legal status data and the funding of services. Administrative data collections contain a number of known data quality issues, but most have whole population coverage and they are not subject to recall bias, unlike other surveys and studies detailed within this report.
- Information on pharmaceutical use is available within the administrative Pharmaceutical Collection and the NZHS mental health module, with the Pharmaceutical Collection containing all publicly subsidised community dispensing³¹.
- No comprehensive collection of primary mental healthcare data is available, but limited data is available in some collections. The NZMHS and the NZHS (mental health module) collect information on the type of service used including treatment that took place at a GP. Most GP patient management systems (PMS) collect detailed information about mental health, e.g. data collated from the Medtech PMS within the HealthStat collection. Many PHOs

³⁰ Although both surveys are of good quality, they are subject to usual survey recall bias and exclude most non-private residences such as mental health residential facilities.

³¹ With the exception of oncology drugs dispensed in hospital.

collate this data into PHO-level collections. However, little is known about the quality of this data, and it is often disparate and/or region-specific.

- We also know little about privately funded mental health services as these are not covered in the national collections. No information is collected on privately funded hospital events that are mental health related, apart from limited hospice/geriatric data, and longitudinal study data for specific age-groups. Some survey information is collected on services that are often funded privately, e.g. counselling data in the NZHS, but these surveys do not distinguish between public/private provision of these services.
- Information is also collected on knowledge and attitudes towards services in the New Zealand Mothers' Mental Health Survey (NMMHS), Gaming and Betting Activities Survey (GBAS), NZMHM and HLS; and unmet need/barriers to access in the NZMHS, NZHS (mental health module) and the longitudinal studies.
- Self-reported service use is available within the longitudinal studies noted earlier, including data on help-seeking, treatment provider (e.g. GP, Psychiatrist, counsellor, private hospital) and the nature of treatment received. Study data is linked to other service use data allowing for further analyses and data validation.
- Data on other services and informal help is also collected within the NZHS (mental health module), NZMHS, NGS and HLS. More specifically, these collections detail the type of care received including data on self-help groups, helplines, friends/family, counselling, the internet, community support, human services, complementary or alternative therapies, specialist services, primary mental healthcare and pharmaceutical use. NGS and HLS data focuses on treatment for problem gambling and includes no information on mental healthcare.

6.2.2 Filling information gaps

- The largest gap in mental health information is within primary mental healthcare data. Ideally, comprehensive primary care data would be available within a national collection. Such a collection may be available in the future: the Ministry of Health are currently investigating developing a National Primary Care Data Service. The report writers do not know whether this collection will fill the gaps in primary mental health data, but it is worth investigating further.
- In the absence of a new collection, we could use available primary mental healthcare data more effectively. The first step is to investigate what is collected by GPs, understand the quality of data and whether we could make it more accessible, and then potentially, combine it and attempt to standardise.

- Similarly, we know little about the extent of treatment within privately funded settings and more data is needed.
- The NZMHM and NZHS data are also important for understanding service use³². All NZHS data on services and informal help was collected within the mental health and substance use module (2016/17). Without the NZHS module data, we would have limited information on primary mental health service use and no recent information on other mental health and substance use disorder treatment, provided outside of a primary or specialist setting, such as counselling. While this module was included quite recently and is hence quite up to date for the current report, it is unknown when this module might be repeated.

6.3 Service Performance

More information is needed to measure the performance of the wider mental health system. Current indicators of service performance focus on specialist mental health services and are limited by the availability of high quality information

6.3.1 What is available

- The performance of specialist services has been assessed for several years by the MoH and the health sector, in the form of DHB performance measures³³, and the Key Performance Indicators³⁴. These indicators mainly use data from PRIMHD and include measures of wait times and post-discharge community follow-up, amongst others.
- The MoH is currently developing a new System Level Measure (SLM) on youth access to, and utilisation of, youth-appropriate health services³⁵, including mental health services. The SLM will include indicators of self-harm, alcohol-related ED presentations from specialist service use collections (NMDS and NN PAC), as well as data on youth experiences of specialist services from the Marama Real-time Consumer Experience Feedback survey.
- The Health Quality and Safety Commission (HQSC) is developing indicators for the mental health and addiction quality improvement programme³⁶. The quality improvement programme will include measures of service transitions, learning from serious adverse

³² Although there may be some data quality issues because of recall bias, i.e. people may find it hard to recall the exact services received within the past year.

³³ <https://nsfl.health.govt.nz/accountability/performance-and-monitoring/baseline-data-quarterly-reports-and-reporting/mental>

³⁴ <https://www.mhakpi.health.nz/>

³⁵ <https://www.health.govt.nz/new-zealand-health-system/system-level-measures-framework/system-level-measure-youth-access-and-utilisation-youth-appropriate-health-services>

³⁶ <https://www.hqsc.govt.nz/our-programmes/health-quality-evaluation/projects/atlas-of-healthcare-variation/mental-health/>

events, medication management, and maximising physical health, using pharmaceutical and specialist service use data, and potentially using other limited primary care data.

- The performance of the New Zealand health system has been assessed internationally by the Organisation for Economic Co-operation and Development (OECD), the World Health Organization (WHO) and the International Initiative for Mental Health Leadership (IIMHL). Key indicators of performance include the OECD Healthcare Quality Indicators³⁷, the WHO Mental Health Atlas³⁸ and IIMHL indicators not yet published.
- Information is available about DHB workforce capacity within the Health Workforce Information Programme (HWIP). The most up-to-date information on NGO workforce is available in the Adult Mental Health and Addiction Workforce: 2014 Survey of Vote Health Funded Services and the Child and Youth specialist services from the Workforce Stocktake (2012). The NGO workforce data is currently out-of-date, and Te Pou is going through the process of collecting more.

6.3.2 Filling information gaps

- Although government measures of the mental health system exist, they are mainly based on specialist secondary services due to the lack of data on other services. More data is needed to develop broader measures that assess the performance of the whole mental health system.
- For practical reasons, current indicators are also restricted to readily available administrative data, such as the datasets available in the IDI. Other datasets may be more appropriate for assessing system performance. Further work is needed to evaluate available data and make it accessible for indicator development.
- Any new measures should be evidence-based, and could potentially use good quality national and international examples as a starting point. For example, the American Psychiatry Association (APA) have compiled a list of mental health performance measures³⁹. Also, the National Health Service (NHS) England have published a report⁴⁰ on developing quality and outcome measures.

³⁷ <http://www.oecd.org/els/health-systems/hcqi-mental-health-care.htm>

³⁸ http://www.who.int/mental_health/evidence/atlas/mental_health_atlas_2017/en/

³⁹ <https://www.psychiatry.org/psychiatrists/practice/quality-improvement/mental-health-performance-measures>

⁴⁰ <https://www.england.nhs.uk/mentalhealth/wp-content/uploads/sites/29/2016/02/mh-quality-outcome.pdf>

- HoNOS⁴¹ data have been available for many years but are not often used by the research community, because of incompleteness and concerns about quality. Further work could be done to assess whether the quality is good enough to use in specific circumstances.
- More complete data is due to become available soon. Te Pou will make more up-to-date NGO workforce data available after it has been collected and supplementary consumer record data will be able to be used more widely once it has reached completeness thresholds.

6.4 Wellbeing

6.4.1 What is available

- The main datasets on wellbeing are the New Zealand General Social Survey (NZGSS), the NZMHM and the longitudinal studies.
- The NZGSS, NZMHM and the longitudinal studies have data about social connectedness, social engagement, social competence, prosocial values and, inversely, anti-social behaviour and social isolation. The NZHS and the HLS also capture some of this information.
- The NZGSS, NZMHM and the longitudinal studies, as well as the New Zealand Disability Survey and Te Kupenga, have information on life satisfaction.
- Additionally, the Dunedin study and the NZGSS measure sense of purpose and sense of meaning and the Dunedin study and NZMHM measure the ability to cope with everyday stress. The NZMHM also measures participants' perceptions about whether the things they did were worthwhile and the Christchurch study measures resilience.
- PRIMHD includes outcomes data, related to wellbeing, in the form of the HoNOS family of measures and supplementary consumer records, although these datasets are incomplete.
- Te Kupenga measures overall wellbeing for Māori and measures kaupapa Māori specific information, e.g. tikanga (Māori customs and practices) and the relationship with life satisfaction.

6.4.2 Filling information gaps

- Linking the information collected in surveys on wellbeing to information in the IDI has the potential to enhance our understanding of the causes and consequences of the range of aspects of wellbeing investigated, and therefore better understand how to support the

⁴¹ HoNOS (Health of the Nation Outcomes Scale) is a standard rating tool used to collect information about a person's mental health and social functioning using 12 items (scales). HoNOS is collected in PRIMHD and can be used to measure change between points in the service user's journey. More information is available at: <https://www.tepou.co.nz/uploads/files/resource-assets/honos-ebook-final.pdf>

wellbeing of different groups. Te Kupenga and NZGSS are already linked to the IDI. There may be opportunity to link additional surveys, where appropriate consent has been given.

- Further work to improve the quality and utility of outcomes measures collected in PRIMHD is needed. It will also be important to work with people using services to develop meaningful measures of the wellbeing of people using mental health services.

6.5 Making the best use of the information we have

Collecting comprehensive and high quality data is essential to a good mental health system.

However, data collection alone is not enough. There are additional requirements for turning data into useful information about mental health:

- **Data access.** It is essential that researchers, service providers and others have timely and safe access to data. Access needs to be balanced against privacy and security to ensure that data can be accessed in a safe and secure way. Recent developments such as the Integrated Data Infrastructure have led the way in this area, but there is still room for improvement. For example, mental health data in the IDI is currently subject to additional confidentialisation requirements that reduce the precision and scope of work undertaken with this data.
- **Funding for research and analysis.** Mental health research is essential to generate information about mental health in New Zealand and to identify ways in which this could be improved. This includes traditional research projects and also basic but critical methodological research about the quality of our mental health data. The latter will become especially important as new sources of mental health data (such as primary care data) become available. There is currently only one small dedicated funding pool for mental health research in New Zealand.⁴²
- **Analytical capacity.** Data analysis and research are specialised work and require training and experience if they are to be done well. This is especially true for the analysis of large administrative and linked datasets, such as those in the IDI, where appropriate analysis requires a higher level of coding, data management, and data knowledge. Currently pockets of expertise in working with mental health data exist across government departments and universities, but better collaboration between these sectors and further investment in analytical capacity would improve our ability to work with mental health data.

⁴² <http://www.oakleymentalhealth.co.nz/>

Appendix 1

Codes used to define service use measures

Measures from PRIMHD	
Inpatient	Bednight in a DHB-run mental health inpatient unit, activity codes T02, T03, T04
Outpatient	Face to face non-crisis treatment contacts in a community or outpatient setting, activity code T01, T07, T09, T22, T36, T42 and activity setting NP, ED, CM, CO, CR, CT, DM, MC, OP, OS, PR, RU and did not occur during an inpatient stay
Crisis	Face to face contacts with the activity type T01 and activity setting NP, ED, CM, CO, CR, CT, DM, DP, MC, OP, OS, PR, RU
Forensic	Forensic service bednight (activity codes T11, T12, T13, T14) or face to face treatment contact with forensic teams (activity codes T01, T07, T09, T22, T36, T42) and team type 5
Addiction	Face to face contacts with substance use teams (activity codes T01, T07, T09, T22, T36, T42) and team type 3
Emergency department	Mental health service contacts with an emergency department setting (activity codes T01, T07, T09, T22, T36, T42) and activity setting ED
Support	Face to face non-treatment contacts including needs assessment, peer support, cultural support (activity codes T23, T24, T43, T45, T38, T39, T40, T41, T32)
Measures from NMDS	
Self-harm	ICD-10 diagnosis codes of X71-X83 (Intentional self-harm)
Alcohol harm	ICD-10 diagnosis codes of F10.1x – F10.99 (Alcohol use disorders: abuse, dependence, alcohol induced mental disorders), T51.0, T51.1, T51.9 (Toxic effects of alcohol: ethanol, methanol and unspecified alcohol), K70 (Alcohol induced liver disease), K85.2, K86.0 (Alcohol induced pancreatitis).
Drug harm	ICD-10 diagnosis codes of F11x-F12.99, F14-F16.99, F18-F19.99 (Illicit drug use disorders), T40 (Poisoning by, adverse effect of, under-dosing of narcotics and hallucinogens).
Referral code groups for wait times dataset	
GP	Referral from GP
Emergency department	AE
Psychiatric services	AD, CA, AM, CS, DH, PI and OP
Health services	NP and PD
Police	PO
Justice	JU
Self	SR
Other	ES, KM, KP, OT, PH, PP, RE, SE, SW, UN, and VS

Appendix 2

Detailed stocktake of mental health data in New Zealand

Author: Kendra Telfer

Dataset	Owner	Topics	Groups of Interest	Target Population	Summary	Time Period	Important Notes and Data Quality Issues
Programme for the Integration of Mental Health Data (PRIMHD)	Ministry of Health	Mental illness Substance use disorder Specialist mental healthcare Groups of interest to MHI	Māori Pacific Youth Prison population Rural population Data on older people is available but incomplete	People that are receiving specialist services funded by the Ministry of Health (MoH).	PRIMHD (pronounced primed) includes information on the mental health and addiction specialist services provided by district health boards (DHBs) and non-government organisations (NGOs). More specifically, PRIMHD contains demographic information on who uses services and their referral, diagnosis, outcome and legal status information.	July 2001 -	PRIMHD data has a number of known data quality issues and analyses should be performed with care and consideration. Important considerations include coding changes that cause artificial variance and trends, increased NGO reporting that influences trends and incomplete data on older people. We recommend getting specific advice from the MoH (data-enquiries@moh.govt.nz) before using PRIMHD data.
National Minimum Dataset (NMDS)	Ministry of Health	Mental illness Substance use disorder Specialist mental healthcare Groups of interest to MHI	Māori Pacific Youth Older people People living with a disability Rural population	People with a hospital discharge event over three hours.	The National Minimum Dataset (NMDS) is a national collection of public and private hospital discharge information, including coded clinical data for inpatients and day patients. NMDS holds mental health and addiction data on publicly funded discharges that contain mental health and self-harm diagnoses and alcohol or drug-related hospitalisations. No information is held with privately funded discharge records, apart from hospice/medical geriatric records that sometimes contain mental health and addiction diagnoses, e.g. when a patient has dementia and a secondary diagnosis of depression.	1988 -	The NMDS includes all hospital discharge events over three hours in duration except for some short stay emergency department (SSED) events. SSED events have been reported inconsistently across DHBs and across time. This inconsistent reporting affects trends for conditions that are more likely to be treated in the emergency department, e.g. short stay alcohol-related events and self-harm hospitalisations. For some conditions, there are also clinical coding changes that may create artificial trends. We recommend getting specific advice about any changes before using NMDS data (email data-enquiries@moh.govt.nz).

Dataset	Owner	Topics	Groups of Interest	Target Population	Summary	Time Period	Important Notes and Data Quality Issues
Pharmaceutical Collection	Ministry of Health	Mental illness Substance use disorder Groups of interest to MHI	Māori Pacific Youth Older people Rural population	People with a publicly subsidised community dispensed pharmaceuticals.	<p>The Pharmaceutical Collection contains publicly subsidised community dispensed pharmaceuticals, including pharmaceuticals used to treat mental illness and addiction.</p> <p>The Pharmaceutical Collection does not contain:</p> <ul style="list-style-type: none"> • Prescriptions that weren't dispensed. • Dispensings within hospitals (except for oncology drugs). • Before July 2012, pharmaceuticals dispensed where the healthcare user's co-payment covered the entire cost of dispensing, affecting trends for drugs with a low cost. • Pharmaceuticals that were not publicly subsidised, i.e. drugs that were not on the Pharmaceutical Schedule. 	2005 - Before 2005, a low proportion of records hold National Health Index (NHI) numbers, affecting person centred analyses.	<p>Therapeutic information, within the Pharmaceutical Collection, does not necessarily suggest indication or diagnosis. Most psychotropics cannot be used to identify people with a mental illness because they treat multiple conditions.</p> <p>Drugs can be dispensed to multiple people but recorded as one dispensing record. An example of this is a practitioner supply order of contraceptives to a family planning clinic. The clinic dispenses the contraceptives to multiple people who should all be counted, but only one dispensing record is submitted. Analysts can determine if this is a problem by counting the number of bulk and practitioner supply orders, using the order type variable, and the number of units dispensed for these order types. Some of these records will have no NHI recorded, and some will hold the prescriber's NHI.</p>
Mortality Collection	Ministry of Health	Mental illness Substance use disorder Groups of interest to MHI	Māori Pacific Youth Older people Rural population	People who are dead (including registered stillbirths)	The Mortality Collection classifies the underlying cause of death for all deaths registered in New Zealand, and all registerable stillbirths (fetal deaths). The Mortality Collection was established to provide data on causes of death for New Zealand's vital statistics, for public health research, policy formulation, monitoring the effectiveness of health programmes, and cancer survival studies.	1988 -	Accidental poisoning records include overdoses, as well as wrong drugs given in error, drugs taken by mistake and accidents in the use of drugs in medical and surgical procedures.

Dataset	Owner	Topics	Groups of Interest	Target Population	Summary	Time Period	Important Notes and Data Quality Issues
					The Mortality Collection contains data on suicide deaths and accidental poisonings.		
New Zealand Health Survey	Ministry of Health	Mental illness Gambling harm Substance use disorder Primary mental healthcare Specialist mental healthcare Groups of interest to MHI	Māori Pacific Youth Older people People living with a disability Rural population	New Zealand's 'usually resident' population of all ages, including those living in non-private accommodation. The survey is designed to yield an annual sample size of approximately 14,000 adults and 5,000 children.	<p>The New Zealand Health Survey (NZHS) provides information about the health and wellbeing of New Zealanders. Data about mental health and addiction is available within the core component, problem gambling, alcohol, drug and mental health and substance use modules.</p> <p>The core survey contains some information about mental illness, addition and associated factors and the 2016/17 mental health and substance use module contains extensive information. The core component includes data related to mental illness includes psychological distress (K10, Kessler Psychological Distress Scale), ever diagnosed with a common mental health disorder and hazardous drinking (AUDIT, Alcohol Use Disorders Identification Test).</p> <p>The module includes data on specific provisional diagnoses (PHQ-SADS, Patient Health Questionnaire Somatic, Anxiety, and Depressive Symptom Scales), substance abuse (ASSIST, Alcohol, Smoking and Substance Involvement Screening Test), suicidal ideation, social isolation, service use, unmet need, emotional,</p>	Ad hoc data collection from 1992 onwards, with core component collected annually from July 2011 onwards. Mental health and substance use module - 2016/17 only.	<p>The NZHS only uses screening tools, e.g. the K10, ASSIST and PHQ-SADS, not tools that are not used to give diagnoses. These tools only collect information on the risk of disorder but not whether the person has the disorder.</p> <p>The survey population excludes:</p> <ul style="list-style-type: none">• most types of non-private dwellings (prisons, mental health residential facilities, hospitals, hospices, dementia care units and hospital-level care in aged-care facilities)• households located on islands other than the North Island, South Island and Waiheke Island. <p>In 2016/17, the final weighted response rate was 80 percent for both adults and children.</p>

Dataset	Owner	Topics	Groups of Interest	Target Population	Summary	Time Period	Important Notes and Data Quality Issues
					hyperactivity and behavioural symptoms among children (SDQ, Strengths and Difficulties Questionnaire) and parental stress.		
Te Rau Hinengaro: The New Zealand Mental Health Survey	Ministry of Health	Mental illness Substance use disorder Primary mental healthcare Specialist mental healthcare Groups of interest to MHI	Māori Pacific Youth Older people People living with a disability Refugees and new migrants Rural population	People aged 16 and over living in permanent private dwellings throughout New Zealand. The survey design was for a nationally representative sample.	The four primary objectives of Te Rau Hinengaro: The New Zealand Mental Health Survey were to: <ul style="list-style-type: none"> • describe the one-month, 12-month and lifetime prevalence rates of major mental disorders among those aged 16 and over living in private households, overall and by sociodemographic correlates • describe patterns of and barriers to health service use for people with mental disorder • describe the level of disability associated with mental disorder • provide baseline data and calibrate brief instruments measuring mental disorders and psychological distress to inform the use of these instruments in future national health surveys. 	Data collected in late 2003 and 2004. Findings published in 2006.	Data was collected in late 2003 and 2004 and is now out-of-date. The response rate was 73.3 percent. Detailed information about limitations are available within the Te Rau Hinengaro report (link provided).
International Resident Assessment Instrument (interRAI)	Central TAS	Mental illness Substance use disorder Groups of interest to MHI	Māori Pacific Older people People living with a disability Rural population	All older people with high needs that require support in the community and aged residential care.	Data collected on older people, using the interRAI suite of standardised clinical assessment tools. InterRAI used five different assessments within New Zealand, Long Term Care Facilities (LTCF) assessments in aged residential care facilities, and Homecare (HC) assessment data being the most complete for research purposes. Data is collected on the person's	Data available from 2012 and complete enough for national analyses from 2015/16.	Completeness - in July 2015 it became compulsory to use the interRAI assessment tool within LTCF. Assessments are compulsory within 21 days of admission and reassessment is required every six months. LTCF data collection increased from 2014 onwards becomes relatively stable in 2015/16. Given interRAI is used for assessments of people with high

Dataset	Owner	Topics	Groups of Interest	Target Population	Summary	Time Period	Important Notes and Data Quality Issues
					cognition, mood and behaviour, with information about previous mental health diagnoses collected from doctor notes. In addition, interRAI contains derived variables including six clinical assessment protocol variables and the Depression Rating Scale. The Depression Rating Scale has been validated against the Hamilton Depression Rating Scale, the Cornell Scale for Depression and the Calgary Depression Scale. Some data is collected on alcohol use but not enough to form conclusions about alcohol abuse.		needs, data should not be used to form conclusions about the health of the elderly population. In 2016/17 approximately 10 percent of the population aged 65 and older had an interRAI assessment.
Survey of Family, Income and Employment (SoFIE)	Statistics New Zealand (SNZ)	Mental illness Substance use disorder Groups of interest to MHI	Māori Pacific Youth Older people	The resident population of New Zealand living in private dwellings.	<p>The Survey of Family, Income, and Employment (SoFIE) collected information on respondents' work, family, household circumstances, income, and net worth. It is a nationally representative longitudinal study of approximately 20,000 adults drawn by random sampling of households and interviewed face-to-face. All adults in the original sample are followed over time, even if their household or family circumstances change.</p> <p>SNZ included the SoFIE-Health add-on in waves 3 (2004/05), 5 (2006/07) and 7 (2008/09), in the following health-related domains: health status (SF36, the Short Form (36) Health Survey, and K10), chronic conditions (heart disease, diabetes, and injury-</p>	Health information collected between 2004/05 and 2008/09. No intention for further collection in future.	<p>SNZ collected the SoFIE health questionnaire on behalf of the University of Otago, Wellington.</p> <p>The data can only be accessed in the SNZ data lab to give effect to the confidentiality provisions of the Statistics Act 1975.</p> <p>Studies have used SoFIE data to generate derived variables and measures for analyses.</p>

Dataset	Owner	Topics	Groups of Interest	Target Population	Summary	Time Period	Important Notes and Data Quality Issues
					related disability), physical activity, tobacco smoking, alcohol consumption, health care utilization, and access and continuity of primary health care. SF36 has mental health and emotional role sections.		
The Dunedin Multidisciplinary Health and Development Study (the Dunedin study)	University of Otago	Mental illness Gambling harm Substance use disorder Primary mental healthcare Specialist mental healthcare Groups of interest to MHI	Māori Pacific Youth People living with a disability LGBTIQA+ community Prison population Rural population	1037 babies born between 1 April 1972 and 31 March 1973 at Queen Mary Maternity Hospital, Dunedin.	<p>The Dunedin study is a longitudinal study that has followed the lives of 1037 babies born between 1 April 1972 and 31 March 1973 at Queen Mary Maternity Hospital, Dunedin, New Zealand, since their birth. The Dunedin study research unit was based within Otago University's Department of Psychology since 2015.</p> <p>The study examines almost all aspects of participants physical and mental health - this includes mental health, psychosocial wellbeing, and detailed interviews about relationships, behaviour and family. Researchers have estimated the prevalence of mental illness using the Diagnostic Interview Schedule (DIS) and other tools. The study strives to use the gold-standard tool at the time of research.</p>	1972 -	<p>The study collects comprehensive data of good quality.</p> <p>The retention rate is good, for example at age 38, a sample of 961 respondents was studied, representing 95% of the living respondents.</p> <p>A journal article within Social Psychiatry and Psychiatric Epidemiology provides a useful summary of the study and is available through the following link, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4412685/</p>
The Christchurch Health and Development Study	University of Otago Christchurch	Mental illness Gambling harm Substance use disorder Primary mental healthcare Specialist mental healthcare Groups of	Māori Pacific Youth People living with a disability LGBTIQA+ community Prison population Rural population	1,265 children born in the Christchurch urban region in mid-1977.	Health, education and life progress of a group of 1,265 children born in the Christchurch (New Zealand) urban region during mid-1977. The research unit is based within the Department of Psychological Medicine at the University of Otago Christchurch and focusses	1977 onwards - the cohort has now been studied on a total of 24 occasions from birth to age 40 (age 40 data	<p>The study collects comprehensive data of good quality.</p> <p>The retention rate is good, for example at age 35 a sample of 962 respondents was studied, representing 79% of the cohort.</p> <p>Researchers compared some</p>

Dataset	Owner	Topics	Groups of Interest	Target Population	Summary	Time Period	Important Notes and Data Quality Issues
		interest to MHI			<p>on a range of social and health issues. Extensive information relating to mental health and addiction has been collected and published, for example, data on alcohol, smoking, depression, suicide and self-harm, anxiety, psychosis, childhood ADHD and conduct problems, personality, genetics, mental health and abortion, traumatic brain injury, bullying, antisocial and criminal behaviour.</p> <p>A few points about the study are relevant to highlight:</p> <ul style="list-style-type: none"> • As the study covers an extended period, birth to age 40, and ongoing, it can be used to examine both the causes and outcomes of mental health problems in both childhood and adulthood. • The study used a number of tools to classify mental illness and substance use: including DISC (Diagnostic Interview Schedule for children) at the 15th and 16th-year assessments and CIDI (Composite International Diagnostic Interview) at age 30 and 35. • The study is the only one in the world that can prospectively measure the impact of a major natural disaster on mental health. 	collection nearing completion).	data against other sources, e.g. administrative hospital event data, but comparison is not always possible nor practical.
Client Information Collection (CLIC)	Ministry of Health	Mental illness Gambling harm Substance use disorder Specialist mental	Maori Pacific Youth Older people Prison population	People experiencing gambling harm.	CLIC contains data on problem gambling intervention services funded by the Ministry of Health. Intervention services provide psychosocial support and clinical	July 2004 - Data that is available before this	The linked manual gives technical information about data submission requirements and can be used to understand what is collected.

Dataset	Owner	Topics	Groups of Interest	Target Population	Summary	Time Period	Important Notes and Data Quality Issues
		healthcare Groups of interest to MHI			<p>interventions for individuals affected by their own or someone else's gambling. Detailed event level data is available about the intervention, for example, data on the Problem Gambling Severity Index score, co-existing problems, suicide risk, the service type, the treatment provided, facilitation of access to other services and follow-up.</p> <p>CLIC cannot be linked to other datasets because it does not currently hold the NHI nor names for data linkage; however, data users can use the client ID for distinct counts.</p>	point is not good enough for research purposes.	<p>The Problem Gambling Service Intervention Service Practice Requirements Handbook also provides useful context about problem gambling services. The handbook can be found on the Ministry of Health's website, https://www.health.govt.nz/publication/problem-gambling-service-intervention-service-practice-requirements-handbook.</p> <p>Direct comparison between the July 2004 - June 2008 and July 2008 - present data has limitations for the following reasons:</p> <ul style="list-style-type: none"> • new service specifications for problem gambling intervention service providers were implemented from January 2008 • equivalent intervention services provided by the Gambling Helpline have been included in the data since November 2008.
The New Zealand Mental Health Monitor (NZMHM)	Health Promotion Agency	Mental illness Primary mental healthcare Specialist mental healthcare Groups of interest to MHI	Māori Pacific Youth Older people LGBTIQ+ community* (see note)	Adults aged 15 and over. In 2016: n=1646, including 340 Māori, 345 Pasifika.	<p>The New Zealand Mental Health Monitor (NZMHM) is a nationally representative face-to-face survey, conducted for the first time in 2015. The purpose of the NZMHM is to provide useful and up-to-date information about issues relating to mental distress and wellbeing in New Zealand.</p> <p>The NZMHM used the following psychometric scales Reported and Intended Behaviour Scale (RIBS), Mental Health Knowledge Schedule (MAKS), New Zealand Community Attitudes towards the Mentally Ill Scale (NZCAMI),</p>	NZMHM years are 2015, 2016 and 2018 (in the field mid-2018)	<p>The survey questionnaire is also available on HPA's website, https://www.hpa.org.nz/research-library/research-publications/2016-new-zealand-mental-health-survey-questionnaire</p> <p>Small numbers of participants identifying as LGBTIQ+, therefore limited analysis opportunities; Combined 2015/16 dataset with Health and Lifestyles Survey (HLS) are available for some topics; Suite of questions on Māori social connectedness and connectedness to culture</p>

Dataset	Owner	Topics	Groups of Interest	Target Population	Summary	Time Period	Important Notes and Data Quality Issues
					Patient Health Questionnaire (PHQ-9), Generalized anxiety disorder (GAD-7) and Kessler psychological distress (K-10).		(reporting in progress mid-2018); increased focus on measures of connectedness in 2018 NZMHM. The overall weighted response rate for all components is 75.0%.
New Zealand National Gambling Study	Auckland University of Technology	Mental illness Gambling harm Substance use disorder Specialist mental healthcare Groups of interest to MHI	Māori Pacific Older people Refugees and new migrants Rural population	Adults aged 18+	<p>The New Zealand National Gambling Study (NGS) is a nationally representative longitudinal survey of adults aged 18 years and older. The purpose of the NGS is to provide information on the prevalence, incidence, nature and effects of gambling in New Zealand. Participants in the NGS (n = 6,251) were recruited in 2012 (Wave 1), and then re-interviewed annually from 2013 to 2015 (Waves 2 to 4). An additional cohort of 106 regular gamblers was recruited in 2014/15 and re-interviewed in 2015/16 to boost the sample of high-risk gamblers in the study. A qualitative phase of 50 semi-structured interviews with NGS participants is taking place in 2018.</p> <p>The study covers extensive topics relating to gambling harm, mental illness and risk factors, including leisure activities, gambling participation, gambling behaviour change, problem gambling, help-seeking, other people's gambling, major life events, attitudes towards gambling, mental health, quality of life, alcohol use/misuse,</p>	<p>2012 - 2015, main NGS</p> <p>2014/15 - 2015/16, additional cohort</p> <p>2018, qualitative study</p>	A number of other reports were produced, see New Zealand 2012 National Gambling Study: Gambling harm and problem gambling. Report number 2, New Zealand 2012 National Gambling Study: Attitudes towards gambling. Report number 3, New Zealand National Gambling Study: Wave 2 (2013). Report number 4, New Zealand National Gambling Study: Wave 3 (2014). Report number 5 and New Zealand National Gambling Study: Wave 4 (2015). Report number 6.

Dataset	Owner	Topics	Groups of Interest	Target Population	Summary	Time Period	Important Notes and Data Quality Issues
					tobacco use, other drug use/misuse, health conditions, social connectedness and cultural identity.		
Health Workforce Information Programme	Central TAS	Mental illness Substance use disorder Specialist mental healthcare Groups of interest to MHI	Māori Pacific	DHB Employed Workforce	<p>The Health Workforce Information Programme is a well-established programme that has been capturing and reporting DHB employee demographic data since 2006. The data collected consists of 29 variables supported by an agreed data standard and code sets. The HWIP information is used to inform strategic and operational workforce analysis, development and planning at the local, regional and national level as well as inform ER strategic negotiations. It provides a foundation on which to build a richer picture of how best to deliver to New Zealand's future health sector workforce needs.</p> <p>Data is available by demographic and geographic breakdowns as well as the length of service and FTE turnover. The mental health and addiction workforce can be identified using the primary area of work codes, the job title and ANZSCO classification.</p>	2010 - Data available from 2006 onwards but considered unreliable.	<p>Link to further detail about the 29 variables, https://tas.health.nz/assets/SWS/HWIP/2018/HWIP-dataset-standard-2018-V.9.pdf</p> <p>Central TAS excludes staff with zero contracted hours, on parental leave, on leave without pay and contractors from their reporting.</p>
Comorbid Substance Use Disorders and Mental Health Disorders among New Zealand Prisoners	Corrections	Mental illness Substance use disorder Groups of interest to MHI	Māori Pacific Youth Older people Prison population	The prison population. 1209 prisoners across 13 prisons were studied.	The study measures the prevalence for the 12-month and lifetime diagnosis of mental health and substance use disorders, using CIDI and Personality Diagnostic Questionnaire 4+ (PDQ-4). Data can be broken down by gender,	The study was carried out between March and July 2015.	The study used validated instruments; the study sample was large; trained lay interviewers conducted the survey; the data was extensively checked for quality and consistency and weighted to reflect the New Zealand prison population as a

Dataset	Owner	Topics	Groups of Interest	Target Population	Summary	Time Period	Important Notes and Data Quality Issues
					age, and ethnicity.		<p>whole. However, it was not possible to quantify the number of people approached to take part who declined. A high number of people did not complete the survey due to its length. The study did not over-sample certain population groups which limited the ability to obtain valid estimates for comparison with the general population. Translation services were not available for non-English speaking prisoners. The presentation of psychosis symptoms should not be interpreted as a diagnosis for psychosis.</p> <p>Methamphetamine use disorders among New Zealand prisoners is another key report published on Corrections' website, http://www.corrections.govt.nz/resources/newsletters_and_brochures/journal/volume_5_issue_2_november_2017/methamphetamine_use_disorders_among_new_zealand_prisoners.html</p>

Dataset	Owner	Topics	Groups of Interest	Target Population	Summary	Time Period	Important Notes and Data Quality Issues
National Non-Admitted Patient Collection (NNPAC)	Ministry of Health	Mental illness Substance use disorder Specialist mental healthcare Groups of interest to MHI	Māori Pacific Youth Older people People living with a disability Rural population	People with an outpatient or emergency department event.	The National Non-Admitted Patients Collection (NNPAC) includes event-based purchase units that relate to medical and surgical outpatient events and emergency department events. NNPAC's primary use is for the calculation of Inter-District Flows, but data is also used to measure health outcomes and inform decisions on funding allocations and policy. NNPAC contains events that are purchased using a mental health or addiction purchase unit code.	July 2007 -	NNPAC contains no diagnostic information, but the purchase unit code can be used to get a basic understanding of the event. The purchase unit code indicates which contract the Ministry of Health funded the event under and the description contains some details about the types of services reported. An example of this is the PU code of ED02001 with a description of Emergency Dept - Level 2 can be used, in conjunction with other codes, to identify emergency department events.
Laboratory Claims Collection	Ministry of Health	Mental illness Groups of interest to MHI	Māori Pacific Youth Older people Rural population	People with a laboratory test performed within a community laboratory.	The Laboratory Claims Collection contains claim and payment information for community laboratory tests, including tests of lithium levels.	2003 -	
New Zealand Disability Survey	Statistics New Zealand	Mental illness	Māori Pacific Youth Older people People living with a disability	Usually resident population of New Zealand, living in occupied private dwellings or group homes on the night of the 2013 Census of Population and Dwellings.	The Disability Survey is designed to collect data on the prevalence of disability in New Zealand, and how this varies across key subgroups. The survey also aims to answer questions such as how the socioeconomic outcomes differ for disabled and non-disabled people, whether their needs are met, what factors help or hinder their participation in life activities. Information on psychiatric/psychological impairment and self-rated health and life satisfaction is available.	SNZ ran the post-census survey, approximately every 5 years, from 1996 to 2013, with the next one intended in 2023.	SNZ report on upcoming improvements to disability data.
The New Zealand General Social Survey	Statistics New Zealand	Mental illness Groups of interest to MHI	Māori Pacific Youth	The target population for the NZGSS is the	The NZGSS provides a cross-domain perspective of social well-being for the population of New	Every 2 years since 2008.	The 2018 NZGSS includes a module on sexual orientation. Due to the small sample size, SNZ is

Dataset	Owner	Topics	Groups of Interest	Target Population	Summary	Time Period	Important Notes and Data Quality Issues
(NZGSS)			Older people People living with a disability LGBTIQA+ community (2018 only) Refugees and new migrants Rural population	usually resident population aged 15 years and over in private dwellings in the North Island, South Island, or Waiheke Island of New Zealand.	Zealand. The survey measures life satisfaction, sense of purpose, social connectedness, safety and security, housing quality, self-assessed health, civic and human rights, material standard of living, paid work, culture and identity, amongst other variables. Before 2018 self-rated mental health was measured using the SF-12 (Short Form-12) questionnaire and from 2018 onwards it will be measured using the WHO-5 (the 5-item World Health Organization Well-Being Index) questions on emotional well-being. Distributional splits are available by total population, life stage, age (10-year groupings), sex, labour force status, highest qualification, household income, personal income, housing tenure, family type, migrant status, ethnicity, region, disability status and sexual orientation.		not yet certain what level of granularity they will be able to output this data. Link to final content: https://www.stats.govt.nz/methods/general-social-survey-2018-final-content The weighted response rate for 2016 was 72.5 percent, and the sample size was approximately 12,000 households.
National Telehealth Service	Homecare Medical	Mental illness Gambling harm Substance use disorder Groups of interest to MHI	Māori Pacific Youth Older people	People that accessed a telehealth helpline.	The National Telehealth Service provides an integrated platform for people to access health information, advice and support from trained health professionals. When people access this platform, basic information is collected. Mental health or addiction helplines include: <ul style="list-style-type: none"> • Alcohol and other Drug Counselling • Mental Health, Depression and Anxiety Counselling Support • Gambling Counselling and 	Data collected from late 2015 onwards.	NA

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Before School Checks (B4SC)	Ministry of Health	Mental illness Groups of interest to MHI	Māori Pacific Youth People living with a disability	All 4-year-old children.	<p>Support</p> <p>Data collected during the B4 School Check, a nationwide programme offering a free health and development check for 4-year-olds.</p> <p>The B4SC contains data on patient demographics, assessments events, results and any follow-ups required. Information about the child's behaviour and social-emotional development is collected using the Strengths and Difficulties Questionnaire (SDQ) as well as the Parental Evaluation of Developmental Status (PEDS) response form.</p>	2011 onwards (available from 2009 but incomplete)	<p>The dataset includes checks that have not been completed, are still in progress, or have been partially completed and abandoned. Use check_status to differentiate between these.</p> <p>The Auckland University of Technology undertook a formal validation study of the SDQ data in B4SC in 2014. This study identified some data quality issues, specifically related to internal consistency of SDQ question responses, a low inter-rater agreement between parents and teachers and some spurious data.</p> <p>For more detail, please see https://www.health.govt.nz/publication/validation-and-norming-study-strengths-and-difficulties-questionnaire-new-zealand-context.</p>
Socrates	Ministry of Health	Mental illness Substance use disorder Groups of interest to MHI	Māori Pacific Youth Older people People living with a disability Rural population	People with a disability that require disability support services	<p>Ministry funded Needs Assessment and Service Coordination (NASC) agencies use Socrates (the National NASC Information System) to record information about clients who are eligible for Disability Support Services.</p> <p>Diagnosis data is recorded in Socrates to describe the client's disability. Socrates enables the NASCs to record up to 15 diagnoses/disabilities, using a two-tier code set. Mental health</p>	Socrates went live in 2007, but a small amount of historical data migrated from previous DHB systems from 1999 onwards.	NA

Dataset	Owner	Topics	Groups of Interest	Target Population	Summary	Time Period	Important Notes and Data Quality Issues
					and addiction diagnoses can be recorded as secondary diagnoses and whether the person has mood and behavioural support needs is also recorded.		
Contract Management System (CMS)	Ministry of Health	Mental illness Gambling harm Substance use disorder Specialist mental healthcare Groups of interest to MHI	Māori Pacific Youth Older people	Any health service contracts between the Ministry of Health and service providers (organisations and individuals).	The purpose of the CMS is to manage contracts between MoH and external entities, specifying services and payment schedules. The collection contains details of services contracted for (description, rate, start date, duration) and contract administration details. Used by Health to identify an NGO's funding DHB, mental health funding, FTE and beds estimates.	1998 -	Unit record data is not available to researchers, and only summary data is available at this stage. Health holds further contracting information is stored within Oracle and the Clients Claims Processing System (CCPS). These collections are out of scope for this stocktake.
ProCare primary healthcare data	ProCare	Mental illness Primary mental healthcare Groups of interest to MHI	Māori Pacific Youth Older people Rural population	Patients enrolled with the ProCare PHO	Mental health information about patients enrolled with the ProCare PHO. Detailed information is available, including data on MHA funded GP (general practitioner) services, K10 scores, MHA related pharmaceuticals, visits to practice psychologists at the GP, the GP visits themselves and geodemographic data.	Data is available within Statistics New Zealand's Integrated Data Infrastructure (IDI) on patients enrolled with ProCare before 31 December 2015.	The data available in the IDI is not a comprehensive sample of all of the PHO data available in the country. ProCare is the largest PHO in the country, with over 800,000 patients, but only services have only been provided to the Auckland region. Data available in the IDI is only available over a 10 year period.
Te Kupenga	Statistics New Zealand	Mental illness Groups of interest to MHI	Māori Youth Older people	The usually resident Māori population, 15 years old and above, living in occupied dwellings	Te Kupenga collected information on a wide range of topics to give an overall picture of the social, cultural, and economic well-being of Māori in New Zealand. The survey also contains key	2013 and 2018	The survey provides accurate national estimates, however, being a sample survey, it is subject to sample errors which get larger, as the estimate of interest gets smaller. This means, for

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				on census night in March 2013 and June 2018.	<p>information about the health of the Māori language and culture.</p> <p>In 2013 the Te Kupenga health module included information about overall health and sets of questions about physical and mental health.</p> <p>For Te Kupenga 2018, SNA shortened the health module. Physical and mental health series from 2013 removed (11 questions) and replaced with World Health Organisation-5 mental well-being questions (5 questions). SNZ summarised the difference between the surveys on their website https://www.stats.govt.nz/reports/differences-between-te-kupenga-2013-and-2018-surveys</p>		<p>example, that it should be possible to analyse data for larger iwi (that will have relatively low sample errors) but it may not be possible to analyse data for smaller iwi.</p> <p>For further information about data quality see http://archive.stats.govt.nz/browse_for_stats/people_and_communities/maori/TeKupenga_HOTP13/Data%20Quality.aspx#pop</p>
HealthStat	CBG Health Research Limited	Mental illness Substance use disorder Primary mental healthcare Groups of interest to MHI	Māori Pacific Youth Older people	<p>Patients receiving primary healthcare enrolled in a PHO with a Medtech patient management system (PMS).</p> <p>CBG can provide a random sample of this population, e.g. 10 percent of the population stratified by DHB.</p>	<p>HealthStat collects data from general practices with Medtech Patient Management Systems. Analysts/Researchers can use data from HealthStat at a practice, DHB and national level.</p> <p>HealthStat collects all primary care data in the PMS except the text of the consultation. All diagnostic codes are collected and reasons for the visit etc. All clinical data entered in a structured format is collected, e.g. K10 and PHQ-9.</p>	2005 -	CBG can provide customised datasets, with the general practitioner's permission. HealthStat only provides aggregated, anonymous data to clients and practices are never identified.
Marama Real-time Consumer Experience Feedback	CBG Health Research Limited	Mental illness Substance use disorder Specialist mental	Māori Pacific Youth Older people	Consumers of mental health services	Mārama collects real-time feedback from mental health consumers, and their family/whānau, and presents the	2015 -	NA

Dataset	Owner	Topics	Groups of Interest	Target Population	Summary	Time Period	Important Notes and Data Quality Issues
		healthcare Groups of interest to MHI	Rural population		results in attractive graphical displays. CBG Health Research Limited developed the tool for the Health and Disability Commission. As at mid-2018, 18 of the 20 DHBs, and NGO providers, used the tool.		
Attitudes and Behaviour towards Alcohol Survey	Health Promotion Agency	Mental illness Groups of interest to MHI	Māori Pacific Youth Older people LGBTIQ+ community Refugees and new migrants Rural population	Adults aged 15 and over.	The Attitudes and Behaviours towards Alcohol Survey provides nationally representative information on the attitudes and behaviour of New Zealanders aged 15 years and over concerning alcohol. The survey focuses on behaviour in the previous month and on the last drinking occasion and includes a range of questions on attitudes and opinions towards alcohol. Results from the survey are used to inform the planning and development of alcohol activities, policies and programmes that aim to reduce alcohol-related harm in New Zealand.	2008 -	The 2015/16 survey consisted of four waves of data collection (n=4,000 in total), as well as a boost of Pacific people (n=200), with one wave occurring each month between November 2015 and February 2016. Households with landline telephone numbers were selected using a Random Digit Dialling (RDD) approach. The youngest person in the household was interviewed. The mode of the interview was Computer-Assisted Telephone Interviewing (CATI). The response rate was 31.5 percent. Numbers on LGBTIQ+ and refugee and migrant communities may be too low to be considered meaningful.
Health and Lifestyles Survey	Health Promotion Agency	Mental illness Gambling harm Substance use disorder Specialist mental healthcare Groups of interest to MHI	Māori Pacific Youth Older people	Adults aged 15 years and over, and parents and caregivers of 5 to 16 year-olds. In 2016, n=3854 including 640 Māori and 430 Pasifika.	The Health and Lifestyles Survey (HLS) is a biennial face-to-face monitor of the health behaviour and attitudes of New Zealand adults aged 15 years and over, and parents and caregivers of 5 to 16 year-olds, first carried out in 2008. The HLS collects information relating to HPA's programme areas of alcohol,	The HLS is biennial from 2008: mental health data collected from 2012 onwards; problem gambling from 2008.	The survey questionnaire is available within the following link, https://www.hpa.org.nz/research-library/research-publications/2016-health-and-lifestyles-survey-questionnaire The weighted response rates are 66% for the adult sample and 65% for the parent/caregiver sample.

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					<p>tobacco control, sun safety, minimising gambling harm, nutrition and physical activity, mental health and immunisation.</p> <p>In regard to alcohol and gambling harm, information about demographics and attitudes are collected. Exposure and awareness of gambling harm is also measured as well as information about quitting and alcohol-related injuries. Mental health data is quite limited but includes K10 and data about stigma and discrimination. The survey enables linkage of alcohol, gambling harm and mental health data to risk behaviours.</p>		
Gaming and Betting Activities Survey	Health Promotion Agency	Mental illness Gambling harm Substance use disorder Primary mental healthcare Specialist mental healthcare Groups of interest to MHI	Māori Pacific Youth	1774 adults, aged over 18, and 199 young people, aged 15 to 17.	<p>Reports on participation in gambling and the prevalence of gambling harm.</p> <p>Although the focus is on gambling harm, limited information is also available on mental health, substance abuse and primary and specialist health services.</p>	This was a one-off survey conducted in 2006/2007. It was replaced by the HLS gambling module from 2008	NA
New Zealand Mothers' Mental Health Survey (NMMHS)	Health Promotion Agency	Mental illness Primary mental healthcare Specialist mental healthcare Groups of interest to MHI	Māori Pacific	805 women who had given birth during the previous 2 years.	The New Mothers Mental Health Survey measured postnatal depression using the Edinburgh Postnatal Depression Scale (EPDS). The survey also includes questions relating to respondents' sociodemographic characteristics, feelings of social connectedness, family / whānau wellbeing, personal wellbeing, and help-seeking attitudes. The	Conducted between July and September 2015	New mothers were surveyed as part of the 2015 New Zealand Mental Health Monitor (NZMHHM). The methodology for this part of the survey was sufficiently different to justify a separate section, within this stocktake. A list of new mothers was obtained from New Zealand hospitals, new mothers were then contacted over the phone and invited to take part

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					<p>family / whānau wellbeing measure was derived, with permission, from Statistics New Zealand's Te Kupenga 2013 questionnaire on Māori wellbeing.</p> <p>The survey was used to derive postnatal depression prevalence as well as social factors and life experiences and help-seeking.</p>		<p>in an online survey. The 2015 NZMHM was a face-to-face survey.</p> <p>The survey had a low response rate (56.5%).</p> <p>The survey called all respondents "new mothers" included women who had had a baby at any time in the previous two years but doesn't capture exactly when that was.</p>