Submission No 476

INQUIRY INTO HEALTH OUTCOMES AND ACCESS TO HEALTH AND HOSPITAL SERVICES IN RURAL, REGIONAL AND REMOTE NEW SOUTH WALES

Organisation: Mental Health Commission of NSW

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Mental Health Commission of New South Wales

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Inquiry into Health outcomes and access to health and hospital services in rural, regional and remote NSW

SUBMISSION BY THE MENTAL HEALTH COMMISSION OF NSW

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1. The Mental Health Commission of NSW

The Mental Health Commission of New South Wales (the Commission) was established in July 2012. The Commission's purpose is to monitor, review and improve the mental health and wellbeing of the community by undertaking strategic planning, systemic reviews and advocacy - all guided by the lived experience of people with mental health issues and caring, families and kinship groups.

The vision of the Commission is:

> That the people of NSW have the best opportunity for good mental health and wellbeing and to live well in the community, on their own terms, having the services and supports they need to live a full life.

2. This Submission

The Commission's submission focuses on the wellbeing and mental health aspects of people who live in rural, regional and remote NSW and their relative access to mental health services and wellbeing support services. It addresses the areas of mental health outcomes, access, workforce and experience of service issues for people living in rural, regional and remote NSW in comparison to metropolitan areas, where information is available.

The NSW population predominantly lives in major cities, where in 2016 approximately 75.0% of the population lived in major cities, 18.8% lived in inner regional areas, and 6.2% in outer regional and remote areas in 2016[1].

This submission is based on published sources and the findings from community consultations across NSW during the Commission's Living Well mid-term review between 2019 – 2020. The mid-term review heard from around 3,000 people in NSW including via a survey and visits to over 60 locations across 10 NSW Primary Health Networks (PHNs)/Local Health District (LHD) regions. Of these, more than half consultation activities (34) occurred in rural and regional locations comprising 4 regional workshops, 17 community consultations and 13 site visits[2].

[1] Centre for Epidemiology and Evidence. Health Statistics New South Wales. Sydney: NSW Ministry of Health. Available at: www.healthstats.nsw.gov.au. Accessed 17 November 2020

[2] These numbers include all activities in South Eastern NSW, Western NSW, Murrumbidgee and North Coast and the activities in rural parts of Nepean Blue Mountains, Hunter New England Central Coast, South Western Sydney PHNs.

3. Response to Terms of Reference

The Commission's submission addresses Terms of Reference, (a), (c), (d), (g) and (k).

(a) Health outcomes for people living in rural, regional and remote NSW

Mental health is an area of specific health risk for communities in rural and remote areas of Australia[3]. Not only are the risk factors for poor mental health greater, people in regional areas often wait longer to access mental health services[4] and the opportunities to seek help are substantially reduced due to challenges accessing an appropriate workforce[5].

In 2017-19, 15.5% of adults in outer regional and remote NSW had high to very high psychological distress, an increase from 13.9% in 2015-17[6]. The rates of high and very high psychological distress in these areas are lower compared to those in inner regional and metro areas, (Inner Regional 17.5%, Metro 16.2%)[7].

Suicide rates tend to increase with increasing remoteness. Suicide rates for residents (deaths per 100,000) of Inner Regional, Outer Regional and Remote areas increased between the years 2010 to 2019 as seen in the table below:

Regional Area	2010 suicide deaths per 100,000 population	2019 suicide deaths per 100,000 population
Inner Regional	12.6	16.8
Outer Regional	14.4	19.8
Remote areas	17.5	20.3

TABLE 1: Suicide rates for residents (deaths per 100,000) of Inner Regional, Outer Regional and Remote areas 2010 to 2019 [8] [9]

The suicide rate per 100,000 population was 10.9 in Major Cities in 2019, and has increased at a comparably smaller increment, rising from 10.1 in 2010[10].

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[3] Cosgrave, C, Maple, M & Hussain, R, 2018, Work challenges negatively affecting the job satisfaction of early career community mental health professionals working in rural Australia: Findings from a qualitative study. *The Journal of Mental Health Training, Education and Practice*.

[4] Lynne Wilson, R, Cruickshank, M & Lea, J, 2012, Experiences of families who help young rural men with emergent mental health problems in a rural community in New South Wales, Australia. *Contemporary Nurse* 42(2): 167-177.

[5] Cosgrave, C, et al,2018, op. cit.

[6] NSW Health Statistics, viewed at http://www.healthstats.nsw.gov.au/Indicator/men_distr_type/men_distr_type_aria_trend on 10 November 2020

[7] Ibid.

[8] Australian Institute of Health and Welfare, Suicide & Self-harm monitoring, viewed at https://www.aihw.gov.au/suicide-self-harm-monitoring/data/geography/suicide-by-remoteness-areas on 10/11/20

[9] Please see Appendix 1 for an explanation of the remoteness coding system used by HealthStats NSW.

[10] Ibid

Both suicide and intentional self-harm have increased in the majority of regional drought affected Local Health Districts (LHDs) over the past decade since 2010, as the following charts indicate.

Year	Rate per 100,000 population						
	Western NSW LHD	Murrumbidgee LHD	Southern NSW LHD	Hunter New England LHD	Northern LHD	Mid North Coast LHD	Total NSW
2001-2002	14.8	11.6	13.5	15.3	14.6	14	11.2
2002-2003	11.4	11.3	11.5	12	11.8	12	9.9
2003-2004	9.9	8	10.9	10.6	10.1	9	9
2004-2005	10.9	7.2	9.8	8.6	10.1	8.6	8.4
2005-2006	9.9	10.2	8.8	8.8	11	6	8.3
2006-2007	7.1	12.9	7.3	9.8	11.5	3.7	8.7
2007-2008	8.6	10.3	10.1	8.3	13.5	6.7	8.8
2008-2009	10.8	8.4	10.9	8.9	14	9.6	8.7
2009-2010	9.9	10.2	12.1	9.8	11.6	9.7	9
2010-2011	9.6	11.1	11.9	8.9	11	9.5	8.8
2011-2012	9.2	12.2	13.4	12	14.2	11	9.4
2012-2013	10.4	11.7	16.8	13.7	16.1	11.2	9.8
2013-2014	12.5	11.8	10	12.2	15.3	14.5	10
2014-2015	13.1	14.2	10.8	14.3	16.8	17.2	10.9
2015-2016	12.1	18.8	17.4	14.8	18.4	17.2	10.6
2016-2017	13.2	20.9	18.7	15.4	18.1	17.5	11
2017-2018	15.3	17.7	16.6	16	18.2	15.2	11.3

TABLE 2: Rates of suicide 2001-02 to 2017-18 by regional/rural Local Health Districts [11]
Note: Data for Far West NSW not included due to low numbers.

The Commission notes that the recent establishment of the NSW Suicide Monitoring and Data Management System, and the release of the first report from the new System in October 2020, will enable more timely release of data on recent suspected and confirmed suicides[12]. NSW Health is leading this work, and other initiatives under the Premier's priority to reduce the rate of suicide deaths by 20% by 2023 and under the Towards Zero Suicides program[13].

[11] Centre for Epidemiology and Evidence. Health Statistics New South Wales. Sydney: NSW Ministry of Health. Retrieved from: www.healthstats.nsw.gov.au,accessed 22 September 2020

[12] NSW Suicide Monitoring System Report 1, 2020. Retrieved from https://www.health.nsw.gov.au/mentalhealth/resources/Pages/suicide-monitoring-report-oct-2020.aspx

[13] NSW Government, Health, 2020, Towards Zero Suicides Initiatives. Retrieved from https://www.health.nsw.gov.au/mentalhealth/Pages/services-towards-zero-suicides.aspx, accessed 16 November 2020

Intentional self-harm hospitalisations are much higher in regional and remote LHDs compared to metropolitan LHDs[14].

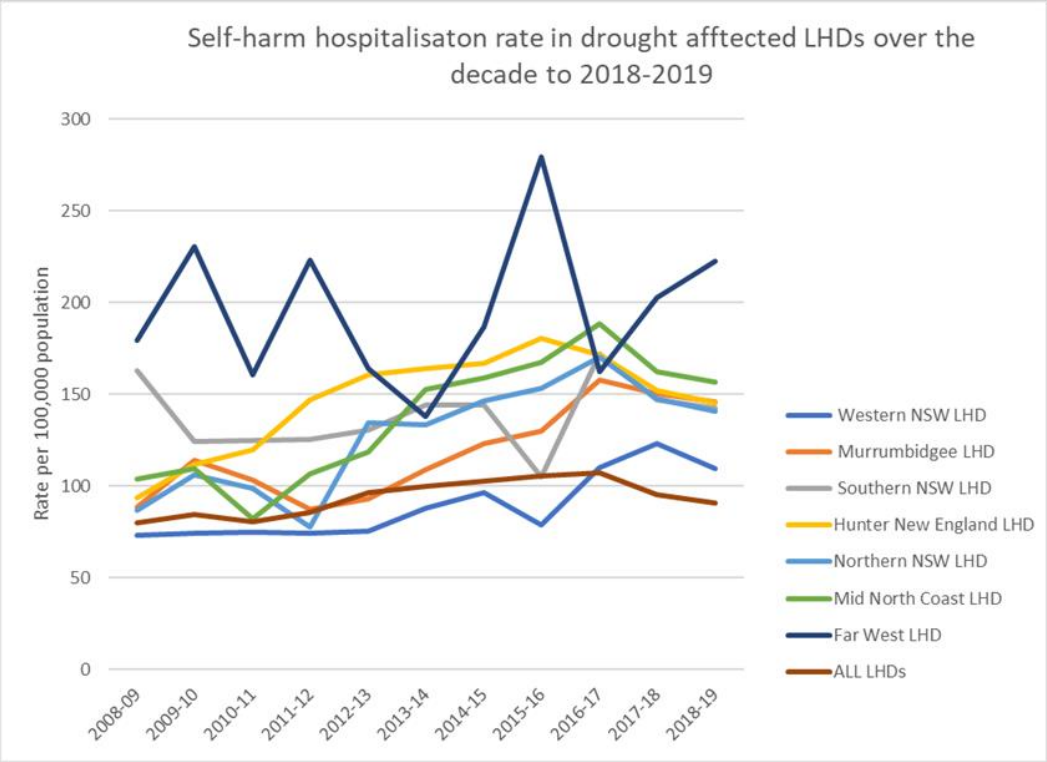

FIGURE 1: Self-harm hospitalisation rate in drought affected Local Health Districts 2008-09 to 2018-19 [15]
Note: Far West LHD are small numbers so are not as reliable as areas with higher reported numbers. As such these figures should be treated with caution.

[14] NSW Health Statistics, retrieved from http://www.healthstats.nsw.gov.au/Indicator/men_suihos/men_suihos_lhn on 10 November 2020

[15] Centre for Epidemiology and Evidence. Health Statistics New South Wales. Sydney: NSW Ministry of Health. Retrieved from www.healthstats.nsw.gov.au, on 22 September 2020

(c) Access to health and hospital services in rural, regional and remote NSW including service availability, barriers to access and quality of services

While the overall prevalence of mental illness is broadly similar in rural and urbanised regions, poorer outcomes are evident for rural and remote communities[16]. Rural and remote communities use Commonwealth subsidised mental health services at a much lower rate than those living in more urbanised regions. Across Australia reduced access to care is reflected in the Medicare Benefits Schedule (MBS) data which show that there were 482 MBS funded *mental health* encounters per 1,000 people in major cities, compared with 382 and 108 encounters per 1,000 people in *rural* and remote areas respectively[17].

Data on mental health-related prescriptions in Australia (per 1,000 of the specific population) for 2018-2019, show lower levels of prescriptions for remote and very remote areas compared to major cities and regional areas:

Regional area	Mental Health prescriptions per 1,000
Major Cities:	1,445.9
Inner regional:	1,977.1
Outer regional:	1,687.5
Remote:	1,105.7
Very remote:	564.5

TABLE 3: mental health-related prescriptions in Australia (per 1,000 of the specific population) for 2018-2019[18]

Interpretation of MBS and prescription data can be complex. The reasons why people living in remote and very remote areas cannot or do not access appropriate services are varied and are often unclear. Some contributing factors include: services do not exist or are not close enough, availability of workforce is limited, access to medications may be limited, or people may simply not access existing services for other personal reasons.

[16] National Mental Health Commission, 2018, Submission to the accessibility and quality of mental health services in rural and remote Australia Senate Inquiry, Executive Summary. Retrieved from https://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Community_Affairs/MentalHealthServices/Report

[17] Australian Institute of Health and Welfare, 2020, Mental health services in Australia: Medicare-subsidised mental health-specific services. Table MBS. 14 Canberra, AIHW

[18] Australian Institute of Health and Welfare, 2020, Mental health services in Australia: Mental health-related prescriptions 2018-19. Table PBS.9. Canberra, AIHW

(d) Patient experience, wait-times and quality of care in rural, regional and remote NSW and how it compares to metropolitan NSW

There are wide variations in patient experiences and timeliness of care across NSW LHDs. The Bureau of Health Information (BHI) reported in 2019 that patient experiences of care was overall more positive in rural areas and that timeliness of care varied across the LHDs. The BHI report also provides comparisons between metropolitan and rural areas [19]:

Primary and Community mental health services

- Use of specialised community mental health services was significantly higher among Aboriginal people and people in very remote communities. In 2016-2017, specialised community mental health care service usage rates for very remote communities was 10,610 services per 10,000 population compared with major cities at 3,834 services per 10,000 population. (BHI 2019, pages 30-31)

Emergency Department (ED) services

- There is significant variation in the percentage of patients presenting to an ED with a mental health-related emergency whose treatment started within the clinically recommended time across NSW LHDs. For example, for Far West LHD, 83% were treated within 4 hours compared to South Western Sydney LHD where 45% were treated within 4 hours. Overall, for rural LHDs, 72% were treated on time compared to the NSW average of 60%.
- There is also variation across NSW in the number of patients who presented with a mental health related issue and spent more than 24 hours in the ED. No patients exceeded 24 hours in Far West LHD and Southern NSW LHD, compared with 10% of patients in South Western Sydney LHD.
- People with long standing mental health conditions reported less positive experiences in EDs across a wide range of areas, when compared to people without mental health conditions. Whilst there is variation across the LHDs, overall patient experiences in rural LHDs are more favourable compared to metropolitan areas (BHI 2019, page 50, citing BHI Emergency Department Survey 2017[20]).

Inpatient services

- Discharge from hospital is a critical transition point for people with lived experience of mental health issues. Overall, 75% of patients admitted to a specialised acute mental health inpatient unit were contacted by community mental health services within a week of discharge. The rate of community follow up does vary across age groups and LHDs with a rural LHD experiencing a slightly lower rate of community follow up at 73% (BHI 2019, page 78).

[19] Bureau of Health Information (BHI), 2019, Healthcare in Focus – People's use and experiences of mental health care in NSW, Sydney, BHI

[20] Bureau of Health Information (BHI), 2017, Emergency Department Survey 2017., Sydney, BHI

(g) Staffing challenges and allocations that exist in rural, regional and remote NSW hospitals and the current strategies and initiatives that NSW Health is undertaking to address them

The mental health workforce profile in rural and remote communities is different from that in major cities. As outlined in the table below, fewer mental health specialists are available in rural areas, where the prevalence of health professionals decreases with remoteness: Psychiatrists are roughly 6 times less prevalent in very remote areas, psychologists are roughly 4 times less prevalent and mental health nurses are roughly 3 times less prevalent.

	Major cities	Inner regional	Outer regional	Remote	Very Remote
Psychiatrists	13.3	6.0	4.9	5.7	2.5
Mental Health Nurses	86.2	79	49.5	51.2	32.9
Psychologists	77.5	48.9	34.5	27.6	18.8

TABLE 4: Prevalence of mental health professionals, by Remoteness, 2018, Clinical FTE per 100,000 population [21]

Average total hours worked per week also increases with remoteness with psychiatrists in remote communities working 4.7 hours more per week, psychologists 5.0 hours per week and mental health nurses 3.3 hours per week than their metropolitan counterparts[22].

Another workforce challenge is the ageing of certain mental health professions: for example, 56.7% of all mental health nurses employed across Australia in 2018 were aged 45 years or older[23] and 72.9% of psychiatrists were aged 45 years and older [24]).

In addition to the clinical professions, specialist workforces such as Aboriginal health workers, peer workers and RAMHP (Rural Adversity Mental Health Program) workers are important to responding to the needs of particular communities. RAMHP, co-ordinated by the Centre for Rural and Remote Mental Health, University of Newcastle employs 20 RAMHP coordinators employed in 9 LHDs. Other workforce initiatives include the Djirruwang Program Aboriginal Bachelor of Health Science (Mental Health) course at Charles Sturt University and associated traineeship program, and the expansion of the community mental health and peer workforce by 180 positions though the 2020 mental health bushfire and pandemic investment initiative[25].

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[21] AIHW Mental Health Services Australia. Retrieved from https://www.aihw.gov.au/reports/mental-health-services/mental-health-services-in-australia/report-contents/mental-health-workforce/psychiatric-workforce on 11 November 2020

[22] Australian Institute of Health and Welfare, 2020, Mental health services in Australia: Mental health Workforce 2018-19. Table WK.4,12,20 Canberra, AIHW

[23] https://www.aihw.gov.au/reports/mental-health-services/mental-health-services-in-australia/report-contents/mental-health-workforce

[24] https://www.aihw.gov.au/getmedia/336a8730-fe0d-484b-8812-4cad6d3e893f/Mental-health-workforce-section.pdf.aspx

[25] NSW Government, 2002, Media Release, 24 April 2020, "$73 million to support mental wellness during COVID-19"

(k) Impact of health and hospital services in rural, regional and remote NSW on Indigenous and culturally and linguistically diverse communities

Aboriginal people and communities

In 2016, Aboriginal people comprised 265,685 people or 3.4% of the NSW population[26]. In 2019 the population had grown to an estimated 281,107 people, or 3.5% of the NSW population[27]. Of the total NSW population, 18.8% of Indigenous people live in outer regional, remote or very remote areas, while 5.6% of non-Indigenous people live in those areas[28].

The LHDs with the largest proportions of Aboriginal residents are Far West, Western NSW, Hunter New England, Mid North Coast, Murrumbidgee and Northern NSW, with 148,765 Aboriginal people, about 56% of the Aboriginal population in NSW. These are largely rural areas.

Local Health Districts (LHDs)	Aboriginal residents	Total Pop.	% of total pop.
Far West	3,866	29,828	13
Western NSW	35,514	279,422	12.7
Hunter New England	64,333	912,352	7.1
Mid North Coast	14,847	216,412	6.9
Murrumbidgee	14,112	240,965	5.9
Northern NSW	16,093	296,531	5.4
Central Coast	15,371	335,309	4.6
Nepean Blue Mountains	16,147	367,772	4.4
Illawarra Shoalhaven	16,908	405,534	4.2
Southern NSW	8,664	205,281	4.2
Albury Wodonga Health Authority (NSW Part)	1,724	52,227	3.3
South Western Sydney	20,102	964,342	2.1
Western Sydney	16,479	948,584	1.7
South Eastern Sydney	10,179	914,021	1.1
Sydney	7,294	656,460	1.1
Northern Sydney	4,051	914,233	0.4
All LHDs	265,685	7,739,274	3.4

TABLE 5: Aboriginal population by Local Health District, per cent total population comparison, NSW 2016 [29]

[26] Centre for Epidemiology and Evidence.2020, Health Statistics New South Wales. Sydney: NSW Ministry of Health. Retrieved from www.healthstats.nsw.gov.au, on 17 November 2020

[27] Australian Indigenous Health InfoNet, 2020, Overview of Aboriginal and Torres Strait Islander health status 2019: key facts, figures and tables. Perth, Edith Cowen University

[28] 2016 Census - Counting Persons, Place of Usual Residence (MB), Data Source: Census of Population and Housing, 2016, TableBuilder.

[29] Centre for Epidemiology and Evidence. Health Statistics New South Wales. Sydney: NSW Ministry of Health. Retrieved from www.healthstats.nsw.gov.au. on 17 November 2020

Aboriginal people have told us that cultural understandings of mental health as social and emotional wellbeing are important in considering how health services respond to and support Aboriginal communities, as Aboriginal social and emotional wellbeing (SEWB) is a broader concept than health alone which encompasses a holistic view of the person and community[30].

Aboriginal and Torres Strait Islander people (two thirds of whom live in rural, regional or remote areas) are more likely than non-Indigenous people to report high or very high levels of psychological distress[31]. In 2017-18, among Aboriginal and Torres Strait Islander adults living in NSW, the rate of Indigenous people reporting 'high or very high' levels of psychological distress was 1.4 times the rate for non-Indigenous people[32].

As part of the Mental Health Commission's community consultation process to support the mid-term review of *Living Well* over 2019 – 2020, the Commission held eight Aboriginal community consultations - in Dubbo, Orange, Wagga Wagga, Grafton, Casino, Broken Hill and Wilcannia and with Aboriginal mental health trainees and Aboriginal teaching staff at Charles Sturt University with 183 Aboriginal people participating in total.

During the Aboriginal community consultations, people raised issues regarding health and hospital services and also identified opportunities for the health system to improve responsiveness to the health and mental health needs of the Aboriginal community:

- cultural safety is important – places in hospitals (such as emergency departments and mental health units) are not always experienced by the community as always positive. Lack of cultural safety may lead to discharge against medical advice, if admission is voluntary or assessment is incomplete
- Aboriginal workforce are essential in providing social and emotional wellbeing and mental health services - recruitment is difficult, especially in rural and remote areas
- Aboriginal staff face unique challenges in their roles – working with cultural expectations and responsibilities to community, as well as to their employer and as part of the team
- Aboriginal artwork, acknowledgements and welcome to country protocols – these help recognise and pay respect to culture
- Early intervention or prevention is a priority – this is essential to avoid hospitalisation of people with serious acute illness or recurring episodes of illness requiring hospital admission, especially given the lower mental health outcomes of the Aboriginal community
- Inclusive discharge planning is important– discharge to home/community by a hospital is optimal when Aboriginal community controlled health services (ACCHSs) are to support client and family needs in the post discharge period.

[30] Commonwealth of Australia, 2017, National Strategic Framework for Aboriginal and Torres Strait Islander Peoples' Mental Health and Social and Emotional Wellbeing. Canberra: Department of the Prime Minister and Cabinet

[31] Australian Institute of Health and Welfare, 2015, The health and welfare of Australia's Aboriginal and Torres Strait Islander peoples 2015. Cat. no. IHW 147. Canberra: AIHW

[32] Australian Bureau of Statistics (ABS), 2018, *National Health Survey, 2017-18.*,ABS cat. no. 4715.0. Canberra, ABS [TableBuilder]. Retrieved from https://tablebuilder.abs.gov.au/webapi/jsf/tableView/tableView.xhtml# on 17 November 2020

Culturally and linguistically diverse (CALD) communities

In NSW, 27.6% of people were born overseas, 21.0% of whom were born in non-English speaking background countries. This is slightly above the national average of 26.3% and 17.9%, respectively[33].

In considering the impact of health and hospital services on CALD communities, it is important to take account of cultural views of mental health and social understandings, along with the impacts of living in rural and remote localities.

> "Social isolation and geographic remoteness from appropriate services are complex factors that can have an impact on the mental health status of CALD communities living in rural areas"[34].

A 2010 report from the Transcultural Mental Health Centre on a rural and remote outreach project identified that people from CALD backgrounds access mental health services comparably differently from that of the wider community in three key aspects: lower levels of seeking help with mental health care, reaching out to mental health services later in the course of their illness, and often experiencing admission to hospital on an involuntary basis[35].

Furthermore, this research acknowledged that these 'help-seeking behaviours' are also to be considered in the context of cultural understandings and concepts of 'mental health' and the associated stigma and shame held in some CALD communities. Community, culture, religious, linguistic and family networks also contribute to how people access health services[36].

A 2020 report from Western Australia reviewing mental ill health in CALD communities also noted that people from CALD communities often do not seek help for mental health or suicide prevention supports due to cultural or language barriers [37]. This report also cited a number of barriers to accessing services. These barriers included: stigma, poor mental health literacy, language and cultural barriers, health costs, privacy and confidentially (and use of interpreters), low workforce cultural understandings, fear of being admitted to hospital and 'a high regard for religious and traditional customs'[38]. Overcoming these barriers will be important for the planning and design of services to achieve equitable access and, in turn, improve the mental health outcomes for CALD communities.

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[33] Australian Bureau of Statistics (ABS), 2016 Census QuickStats. Available at https://www.abs.gov.au/websitedbs/D3310114.nsf/Home/2016%20QuickStats

[34] Senate Select Committee on Mental Health, http://www.aph.gov.au/SENATE/committee/mentalhealth_ctte/report/c15.htm

[35] Transcultural Mental Health Centre 2010. Transcultural Rural and Remote Outreach Project: Building Partnerships across the Great Divide. Transcultural Mental Health Centre, Parramatta. Retrieved from https://www.dhi.health.nsw.gov.au/transcultural-mental-health-centre-tmhc/resources/publications-and-reports/transcultural-rural-and-remote-outreach-project Page 19

[36] Ibid.

[37] Multicultural Futures, 2020. A review of mental ill health for culturally and linguistically diverse communities in Western Australia. Retrieved from https://multiculturalfutures.org.au/a-review-of-mental-ill-health-for-culturally-and-linguistically-diverse-communities-in-western-australia/ . Page 16

[38] Ibid. page 4

Appendix 1: Methods: Accessibility /Remoteness Index of Australia Plus (ARIA+) - HealthStats NSW

The Accessibility/Remoteness Index of Australia Plus (ARIA plus) is a remoteness index value (or score) based on road distance to major service centres (GISCA). In 2001, the Australian Bureau of Statistics (ABS) applied ARIA cut-off scores to define the Australian Statistical Geography Standard (ASGS) Remoteness Areas (ABS).

The service centre categories are based on population size, with the smallest centres in ARIA having populations of 1,000-4,999. Localities with populations greater than 1,000 persons are considered to contain at least some basic level of services (e.g. health, education, or retail) (GISCA). Service centres with larger populations are assumed to contain a greater level of service provision. ARIA scores are based over 20,000 such localities throughout Australia.

In HealthStats NSW, remoteness areas are classified as Major cities; Inner regional or Outer regional areas (these two are referred to as 'regional' when taken together); Remote and Very remote areas ('remote' when the last two are taken together). The term 'rural and remote' is used when referring generally to areas outside Major Cities.

Amalgamating ARIA categories to reduce variability associated with small numbers

In this report, increasing the size of areas considered is used for estimates in analysis by remoteness from service centres. Very remote areas are often amalgamated with Remote areas and occasionally Very remote, Remote and Outer regional areas are amalgamated. Notes under the graphs confirm the extent of amalgamation. Extending the period of time in which cases are counted is also used in some indicators presenting health data by ARIA.

Analysis of NSW Population Health Survey data by remoteness from service centres in HealthStats NSW

Postal areas are grouped according to the Australian Statistical Geographical Standard (ASGS) remoteness categories on the basis of Accessibility/Remoteness Index for Australia (ARIA+ version) score. For reporting purposes, outer regional, remote and very remote areas are aggregated in order to report reliable estimates of a range of health behaviours for non-metropolitan areas.

References

Australian Bureau of Statistics (ABS). 1270.0.55.005 -Australian Statistical Geography Standard (ASGS): Volume 5 - Remoteness Structure. Available at: http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/1270.0.55.005July%202011?OpenDocument

National Centre for Social Applications of Geographic Information Systems (GISCA). About ARIA (Accessibility/Remoteness Index of Australia). Available at: http://gisca.adelaide.edu.au/projects/category/about_aria.htmlHeading 1

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