SYDNEY NORTH PRIMARY HEALTH NETWORK

INTEGRATED MENTAL HEALTH ATLAS

THE UNIVERSITY OF SYDNEY

phn NORTHERN SYDNEY
An Australian Government Initiative

SYDNEY NORTH Primary Health Network

Disclaimer

Inherent Limitations

The Menzies Centre for Health Policy, University of Sydney and ConNetica (together the "project team") have prepared this report at the request of Sydney North Primary Health Network in our capacity as consultants and in accordance with the terms and conditions of the MENTAL HEALTH ATLAS FOR NORTHERN SYDNEY research project agreement.

The report is solely for the purpose and use of Sydney North Primary Health Network (ABN 38 605 353 884) trading as Northern Sydney PHN and has been prepared through a consultancy process using specific methods outlined in the Framework section of this report. The project team have relied upon the information obtained through the consultancy as being accurate with every reasonable effort made to obtain information from all mental health service providers across the region.

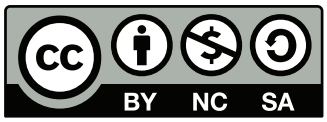
The information, statements, statistics and commentary (together the "information") contained in this report have been prepared by the project team from publicly available information as well as information provided by the Primary Health Network and service providers across the Northern Sydney catchment area.

The project team have not undertaken any auditing or other forms of testing to verify accuracy, completeness or reasonableness of the information provided or obtained. Accordingly, whilst the information presented in this report is provided in good faith, The Menzies Centre for Health Policy, University of Sydney and ConNetica can accept no responsibility for any errors or omissions in the information provided by other parties, nor the effect of any such error on our analysis, discussion or recommendations.

The language used in some of the service categories mapped in this report (e.g. outpatient-clinical, outpatient-social, day hospital) may seem to be very hospital-centric and even archaic for advanced community-based mental health services which are already recovery-oriented and highly developed. However, these categories are employed for comparability with standardised categories which have been used for some years in European mental health service mapping studies and the resulting Atlas (this standard classification system is the Description and Evaluation of Services and Directories in Europe for long-term care model).

Suggested Citation

Salvador-Carulla, L., Bell, T., Furst, M., McLoughlin, L., Mendoza, J. & Salinas-Perez, J. A. (2017). *The Integrated Mental Health Atlas of Sydney North PHN – version for public comments*. The Menzies Centre for Health Policy, University of Sydney and ConNetica.



ISBN:

Acknowledgements

The comprehensive nature of the data collected for this report would not have been possible without the active support and commitment provide by Sydney North Primary Health Network, Northern Sydney Local Health District and the service providers who participated in this project. In particular, the project team would like to thank Jim Keech (Planning and Performance Manager, Northern Sydney PHN) and Allison White (Acting Clinical Partnerships Coordinator, North Sydney Local Health District) for all the support and assistance they have provided.

The Menzies Centre for Health Policy, University of Sydney would also like to acknowledge and thank Honorary Professor Luis Salvador-Carulla, PSICOST Scientific Association, Loyola University and ConNetica Consulting for support on this project.

The combined experiences and insights provided have helped to establish, what we hope will be, a useful reference document that can guide future service planning and initiatives to best support the communities of Northern Sydney.

Authors

Principal Investigator:

Honorary Professor Luis Salvador-Carulla, Menzies Centre for Health Policy, University of Sydney

Co-investigators:

A/Prof. James Gillespie, University of Sydney

MaryAnne Furst, University of Sydney

Dr Jose Alberto Salinas, University of Sydney

Richa Jaswal, University of Sydney

Subcontracting: ConNetica Consulting Pty Ltd

Adjunct Professor John Mendoza, ConNetica

Dr Tanya Bell, ConNetica

Larisa McLoughlin, ConNetica

Alex Stretton, ConNetica

ConNetica
CREATING BETTER FUTURES

PO Box 484
Moffat Beach Qld 4551
ABN: 76 124 523 815
07 5491 5456
www.connetica.com.au

Table of Contents

1. **Introduction** **1**
   - Health Planning 1
   - Models of Care 2
   - Social Determinants 2
   - Integrated Atlases 3
   - Context 3
2. **Framework** **4**
   - 2.1 DESDE-LTC 4
   - 2.2 Basic Stable Inputs of Care 4
   - 2.3 Methodology 14
3. **SNPHN Catchment** **16**
   - 3.1 Population Health and Sociodemographic Indicators 17
4. **Mental Health Data for SNPHN** **37**
   - 4.1 Australian Prevalence 37
   - 4.2 NSW Prevalence 37
   - 4.3 Mental Health Services 38
5. **Mental Health Services in SNPHN** **43**
   - 5.1 Stakeholders 43
   - 5.2 Mental Health Services 43
   - 5.3 Residential Care 46
   - 5.4 Day Care 49
   - 5.5 Outpatient Care 51
   - 5.6 Accessibility Services 60
   - 5.7 Information and Guidance 61
   - 5.8 Self-Help and Voluntary Support 61
   - 5.9 Mental Health Workforce 62
6. **Patterns of Mental Health Care SNPHN** **65**
   - 6.1 National and International Comparisons 67
7. **Discussion** **80**

List of Tables

TABLE 1 Basic Stable Input of Care Criteria 5
TABLE 2 Service Inclusion Criteria 13
TABLE 3 Demographic Factors Examined 17
TABLE 4 Demographic Factors in SNPHN 18
TABLE 5 Socioeconomic Factors Examined 22
TABLE 6 Socioeconomic Factors in SNPHN 23
TABLE 7 Health and Mortality Indicators Examined 32
TABLE 8 Health and Mortality in SNPHN 33
TABLE 9 SNPHN MBS Utilisation by Provider Type 2014-15 40
TABLE 10 Main types of care in the SNPHN region by age groups and sector 45
TABLE 11 Residential Care for Children and Adolescents in the SNPHN Region 46
TABLE 12 Residential Care for Adults in the SNPHN Region 46
TABLE 13 Residential Care for Older Adults in the SNPHN Region 47
TABLE 14 Day Care Services for Children and Adolescents in the SNPHN Region 49
TABLE 15 Day Care Services for Adults in the SNPHN Region 49
TABLE 16 Outpatient Care for Children and Adolescents in the SNPHN Region 51
TABLE 17 Outpatient Care for Adults in the SNPHN Region 53
TABLE 18 Outpatient Care for Older Adults in the SNPHN Region 56
TABLE 19 Accessibility Services for Adults in the SNPHN Region 60
TABLE 20 Information and Guidance Services for Adults in the SNPHN Region 61
TABLE 21 Mental Health Team Size 62
TABLE 22 Occupation groups by sector 64
TABLE 23 Comparison between PHNs of the greater Sydney region 68

List of Figures

FIGURE 1 Long Term Care Mapping Tree 6
FIGURE 2 Residential Care Coding Branch 7
FIGURE 3 Day Care Coding Branch 8
FIGURE 4 Outpatient Care Coding Branch 9
FIGURE 5 Accessibility to Care Coding Branch 10
FIGURE 6 Information for Care Coding Branch 11
FIGURE 7 Self-Help and Volunteer Care Coding Branch 12
FIGURE 8 Integrated Mental Health Atlas Development Process 14
FIGURE 9 Example DESDE code and Components 15
FIGURE 10 Geographical Boundaries of SNPHN 16
FIGURE 11 Population By LGA for SNPHN 19
FIGURE 12 Indigenous Status BY LGA for SNPHN 20
FIGURE 13 Overseas by LGA for SNPHN 21
FIGURE 14 Single Parent Families by LGA for SNPHN 25
FIGURE 15 Needing Assistance with Core Activities by LGA in SNPHN 26
FIGURE 16 Early School Leavers by LGA for SNPHN 27
FIGURE 17 Unemployment by LGA for SNPHN 28
FIGURE 18 Income by LGA for SNPHN 29
FIGURE 19 Disadvantage by LGA for SNPHN 30
FIGURE 20 Disadvantage by SA1 for SNPHN 31
FIGURE 21 Fair/Poor Health by LGA for SNPHN 34
FIGURE 22 Psychological Distress by LGA for SNPHN 35
FIGURE 23 Suicide and Self Harm Rate by LGA for SNPHN 36
FIGURE 24 Estimated Prevalence of Adult Mental Illness in NSW 37
FIGURE 25 MHNIP clients and services, SNPHN 2011/12 – 2014/15 38
FIGURE 26 Medicare subsidised mental health related services and patient rates 2015-16 39
FIGURE 27 Australian Medicare subsidised mental health related rates 2015-16 39
FIGURE 28 Registered Access Plus 40
FIGURE 29 Location and type of ATAPS providers 41
FIGURE 30 ATAPS MDS total patients and sessions 2011/12 - 2014/15 42
FIGURE 31 Summary of Services Providing Care for Mental Health 43
FIGURE 32 SNPHN MTC by specific age and target groups 44
FIGURE 33 MTC by specific age and target groups – SWSLHD and WSLHD 44
FIGURE 34 Comparison of MTC by service type 45
FIGURE 35 Balance of Care Comparisons 45
FIGURE 36 Residential Care Services in the SNPHN Region 48
FIGURE 37 Day Care Services in the SNPHN Region 50
FIGURE 38 Acute Outpatient Care Services in the SNPHN Region 57

FIGURE 39 Non-Acute Mobile Outpatient Care Services in the SNPHN Region 58
FIGURE 40 Non-Acute Non-Mobile Outpatient Care Services in the SNPHN Region 59
FIGURE 41 Density of Mental Health FTE across SNPHN by sector 63
FIGURE 42 Workforce occupations by sector 64
FIGURE 43 Pattern of Care for Adults in SNPHN (MTC per 100,000) 66
FIGURE 44 Greater Sydney PHNs 67
FIGURE 45 Pattern of Care for Adults in SNPHN and WSLHD (MTC per 100,000) 69
FIGURE 46 Pattern of Care for Adults in SNPHN and SWSLHD (MTC per 100,000) 70
FIGURE 47 Pattern of Care for Adults in SNPHN and CESPHN (MTC per 100,000) 71
FIGURE 48 Number of beds per 100,000 adults 72
FIGURE 49 Pattern of Care for Adults in SNPHN and SØr-TrØndelag (Norway) (MTC per 100,000) 73
FIGURE 50 Pattern of Care for Adults in SNPHN and Helsinki and Uusimaa (Finland) (MTC per 100,000) 75
FIGURE 51 Pattern of Care for Adults in SNPHN and Verona (Italy) (MTC per 100,000) 76
FIGURE 52 Pattern of Care for Adults in SNPHN and Girona (Spain) (MTC per 100,000) 77
FIGURE 53 Pattern of Care for Adults in SNPHN and Hampshire (England) (MTC per 100,000) 78
FIGURE 54 Pattern of Care for Child and Adolescent in SNPHN, SESPHN, SWSLHD and WSLHD (MTC per 100,000) 79

List of Appendices

Appendix A 81
DESDE-LTC Quick Reference Guide 81
Appendix B 81
Non Government Organisations 82
Appendix C 83
Northern Sydney Local Health District 83

Abbreviations

Abbreviation	Definition
ABS	Australian Bureau of Statistics
ATAPS	Access to Allied Psychological Services
BSIC	Basic Stable Input of Care
CES	Central Eastern Sydney
CESPHN	Central Eastern Sydney PHN
DESDE	Description and Evaluation of Services and Directories in Europe
DESDE-LTC	Description and Evaluation of Services and Directories in Europe for Long-Term Care
ED	Emergency Department
ERP	Estimated Residential Population
FTE	Full Time Equivalent
GIS	Geographical Information System
GP	General Practitioner
HA	Health Authorities
HREC	Human Research Ethics Committee
ICD-10	International Classification of Diseases, Tenth Revision
ICF	International Classification of Functioning, Disability and Health
IRSD	Index of Relative Socio-economic Disadvantage
LGA	Local Government Area
LHD	Local Health District
MHNIP	Mental Health Nurse Incentive Program
MHPU	Mental Health Policy Unit, Brain and Mind Centre, University of Sydney
MHS	Mental Health Services
MTC	Main Type of Care
NDIS	National Disability Insurance Scheme
NGO	Non-Government Organisation (or community service provider)
NHSD	National Health Services Directory
NMHC	National Mental Health Commission
NSLHD	Northern Sydney Local Health District
SNPHN	Sydney North PHN
PECC	Psychiatric Emergency Care Centre
PHN	Primary Health Network
PIR	Partners in Recovery
SA1	Statistical Area Level 1
SNPHN	Sydney North Primary Health Network
SEIFA	Socio Economic Indexes for Areas

Abbreviation	Definition
SWS	South Western Sydney
SWSLHD	South Western Sydney Local Health District
WS	Western Sydney
WSLHD	Western Sydney Local Health District
WHO	World Health Organisation

Executive Summary

[Insert]

1. Introduction

There has been considerable reform in mental health science, treatment and care over the last four decades, both internationally and within Australia. Much of the philosophy of mental health care reform has been built on key principles of community psychiatry, with four linked areas of action (Vazquez-Bourgon et al., 2012):

1. Deinstitutionalisation and the end of the old model of incarceration in mental hospitals
2. Development of alternative community services and programs
3. Integration with other health services
4. Integration with social and community services

More recently this has also included a focus on recovery orientation and person-centred care (Ibrahim et al., 2014).

Australia started this journey of reform in 1983, with David Richmond's report on care for people experiencing mental illness and intellectual disabilities in New South Wales: Inquiry into Health Services for the Psychiatrically Ill and Developmentally Disabled. It took a further 10 years and the Human Rights Commission inquiry (The Burdekin Inquiry) to establish the first National Mental Health Strategy (Mendoza et al., 2013). Since then, there have been considerable systemic changes made, including the closure or downsizing of many large psychiatric hospitals, the development of the community Mental Health movement (NMHC, 2014), the implementation of the National Disability Insurance Scheme (NDIS) and the introduction of Primary Health Networks (PHNs) as commissioners of Mental Health services.

The journey is therefore still very much in progress and the application of reform has been patchy. For example, the Australian Mental Health system still has high rates of readmission to Acute Care, with at least 46% of patients hospitalised being readmitted during the year following the admission (Zhang et al., 2011). There are also high rates of compulsory community treatment orders, ranging from 30.2 per 100,000 population in Tasmania to 98.8 per 100,000 population in Victoria (Light et al., 2012) and high rates of seclusion with 10.6 seclusion events per 1,000 bed days in 2011-12 (AIHW, 2015). These features are associated with a system characterised by fragmented, hospital-based, inefficient provision of care. It has been argued that a clear service model is lacking, that reform has not been informed by evidence and that quality and access to care is a lottery dependent on postcode (Mendoza et al., 2013).

Health Planning

The World Health Organisation's Mental Health Gap Action Program (mhGAP) highlighted the need for a comprehensive and systematic description of all the mental health resources available and the utilisation of these resources (WHO, 2008). It is not only important to know the numbers of services in each health area, but also to describe what they are doing and where they are located. This information also enables an understanding of the context of health-related interventions that are essential for the development of evidence-informed policy (Health Foundation, 2014).

The National Mental Health Commission (NMHC) further supports this notion with one of the key recommendations from the National Review of Mental Health Programmes and Services being the need for comprehensive mapping of mental health services (NMHC, 2014). This review draws attention to the need for mental health planning in Australia and the relevance of a bottom-up approach to understanding service availability to the development of national policy. It also calls for responsiveness to the diverse local needs of different communities across Australia:

> *"Primary and Mental Health Networks, in partnership with Local Health Networks, should conduct comprehensive mapping of mental health services, programmes and supports available in regional, rural and remote areas through Commonwealth, state and territory and local governments, private and not-for-profit sectors."* (NMHC, 2014, p. 84)

The importance of regional mental health service planning to support service integration and clarity of responsibilities at a regional level has been highlighted as a priority area in the draft Fifth National Mental Health and Suicide Prevention Plan. The need for regional planning and integration is further supported through several recent state and territory mental health plans and frameworks as well as bilateral agreements to support coordinated care. In addition, the development of the National Mental Health Service Planning Framework ideally places PHNs to lead health service planning in partnership with Local Health District (LHDs) and other stakeholders.

Models of Care

The Integrated Care Model has challenged the way health-related care should be assessed and planned (Goodwin, 2016). It enables us to identify new routes for linked, consumer-centred approaches to care. Greater integration relies on a global picture of all the services available, regardless of which sector is funding them (e.g. Health, Social Welfare and Family, Employment, Criminal Justice). Such 'systems thinking' enables policy planners to capture the complexity of service provision holistically and ensures that planning of health services accounts for contextual factors that might affect its implementation and sustainability (context analysis). It offers a comprehensive way of anticipating synergies and mitigating problems and barriers, with direct relevance for creating policies that integrate the different systems of care (De Savigny & Adam, 2009; Aslanyan et al., 2010). This is particularly important in the social and disability care sector, which is characterised by increasing personalisation of services and care coordination programs such as Partners in Recovery (PIR) and the transfer of social services to the National Disability Insurance Scheme (NDIS). Across Australia, there are only a handful of locations who have develop innovative, system wide and sustainable service models for providing coordinated and integrated care services.

The balanced care model is also relevant to the development and application of integrated care and health atlases. This model refers to a balance between both hospital and community care as well as to a balance between all of the service components (e.g. clinical teams). To achieve this the development of outpatient clinics, community mental health teams, acute inpatient services and community residential care is required (Thornicroft & Tansella, 2013).

Social Determinants

Over the past 15 years, the evidence has strengthened in support of the two-way relationship that exists between mental disorders and socioeconomic indicators. Factors such as low income, unemployment and social exclusion are all positively associated with common mental disorders mental disorders with poor mental health linked to reduced income and employment which in turn increases the risk of mental disorders (WHO & Calouste Gulbenkian Foundation 2014; Lund et al., 2011). Social determinants of health are similarly implicated in other health related behaviours such as excessive alcohol consumption and drug use, as well as in comorbidities between mental health and substance use disorders (Marmot & Allen, 2014; Salom et al., 2014).

In recent years, the relationship between social and structural determinants and mental disorders has gained increasing research focus, particularly in relation to the frequency, severity and duration of stressful environments and experiences in early childhood (Schalinski et al., 2016). There are emerging theories to suggest that adverse childhood experiences can be moderated by personal and social

scaffolding – self-agency, self-regulation, emotional, informational, social connections and instrumental resources (Bell et al., 2013; ConNetica, 2015).

Integrated Atlases

Within these broad service and social contexts, Integrated Atlases are powerful tools for service planning and decision-making, particularly in times of fiscal constraint. Atlases include detailed information on social and demographic characteristics and health-related needs, as well as data on service availability and care capacity, providing opportunities to detect gaps and develop benchmark areas for change. Whilst the Integrated Atlases developed around the world to date have most often focused on mental health, the methodology and taxonomy can be readily applied to a range of other chronic health issues. Across Australia, the methodology has been applied to produce Atlases focused not only mental health but also alcohol and other drugs, homelessness, Diabetes, Chronic Obstructive Pulmonary Disease and Cardiovascular Disease.

Integrated Atlases allow comparisons between areas, highlighting variations (including areas of under- or over-supply) and provide opportunities to identify duplications and gaps in the system. The holistic service maps produced through an Integrated Atlas also allow policy planners and decision makers to more comprehensively understand the landscape in which they work and to make connections between the different sectors to improve the alignment of services to meet local needs (Salvador-Carulla et al., 2013). This is particularly important as mental health services become more 'person-centred' (placing the person and their needs at the centre of their care) and public investment focuses on person-centred care coordination programs. In addition, the data presented in the Atlas supports evidence informed planning, decision-making and future service commissioning.

Context

Evidence-informed policy combines international evidence, available from diverse populations across the world, with local evidence, from the specific setting in which decisions and actions will be taken. This includes a detailed analysis of the area, considering the prevalence of mental health problems and other demand driven indicators, together with the availability of resource (Oxman et al., 2009).

It is important however to highlight that evidence alone does not make decisions. An in-depth understanding of the local context is crucial to the implementation of any new strategy and local context and relevance shapes the lens through which policy makers appraise the salience of evidence (Oliver et al., 2014). Evidence has to also be valued and filtered by the policy makers and lack of perceived relevance is a frequently cited barrier to the uptake of evidence by policy makers (Oliver et al., 2014). Evidence must also be supported and supplemented by the knowledge and experience of the people working within and those using the services, provided by the system.

It is expected that the Integrated Mental Health Atlas of Sydney North PHN will support a systems approach to planning and consequentially, improve the provision of care through facilitating the integration and coordination of services, both in terms of service commissioning and delivery. Ultimately this will be reflected in the quality of care provided and in the longer term, better health outcomes for people with a lived experience of mental illness.

In this context, it is crucial to provide policy and service decision makers with every tool and opportunity to make better, more intelligent choices about future investments in mental health care, including which services are needed and where and how they can be most effectively delivered. In other words, they need a map that will guide them through the reform journey.

This Atlas is an ideal tool to help in this process.

2. Framework

Generally, the intent of health service mapping activities is to develop a list of services (or service directory) for a defined geographical area. In some instance, service directories will be accompanied by a visual representation of each service on a map to denote their physical location. The inclusion of a service in a service list or directory is typically based on the official (company name) or everyday title of the service with often little or no contact with the service itself. There are a number of key reasons that render this approach particularly problematic including:

1. The wide variability in services and program terminology, even within the same geographical area.
2. The lack of relationship between the names of services and their actual functions (e.g. day hospitals, day clinic), the service name may not reflect the actual activity performed in the setting.
3. The lack of a common understanding of what a service is. The word 'service' is an umbrella term that is used to describe very different components of the organisation of care. It merges permanent, highly structured services, with clinical units or even short-term programs and interventions (Salvador-Carulla et al., 2011).

2.1 DESDE-LTC

To overcome these limitations the Description and Evaluation of Services and Directories in Europe for Long-Term Care (DESDE-LTC) has been utilised in the development of this Integrated Atlas. This open-access, validated, international instrument for the standardised description and classification of services for long term care underpins the methodology for this report (Salvador-Carulla et al., 2013). Whilst originally developed around health issues requiring long term care, the application of the DESDE-LTC across chronic conditions in Australia includes services across a spectrum of care intensity and duration.

The DESDE-LTC includes a taxonomy tree and coding system that allows the classification of services in a defined catchment area according to the main care structure or activity offered, as well as the level of availability and utilisation. The classification of services based on the actual activity of the service, rather than the name of the service provider, therefore reflects the real provision of care.

In research on health and social services there are typically different units of analysis, however the Integrated Atlas requires that comparisons be made across a single and common 'unit of analysis' group. Different units of analysis include: Macro-organisations (e.g. Local Health Networks), Meso-organisations (e.g. hospitals), and Micro-organisations (e.g. services). It could also include smaller units within a service such as care: types, modalities, units, intervention programs, packages, activities, or philosophies.

Analysis based on DESDE-LTC is focused on the evaluation of individual service delivery teams or Basic Stable Inputs of Care (BSIC).

2.2 Basic Stable Inputs of Care

> *A Basic Stable Input of Care (BSIC) is a team of staff working together to provide care for a group of people, often referred to as a service delivery team.*

To be considered for inclusion, a team has to be stable both in terms of the longevity of the service as well as the structure of the service. The longevity of the service is related to the time period for which the service has been funded with a team considered to be stable if it has been funded three or more years or has funding secured for three years. The structural stability of a service is related to both

physical and administrative parameters with a team considered stable if it has administrative support and two of the following: their own space (e.g. dedicated building or shared office); their own finances (e.g. a specific cost centre); or their own forms of documentation (e.g. data collection or service reports) (Table 1).

TABLE 1 BASIC STABLE INPUT OF CARE CRITERIA

Criterion			
A	Has its own professional staff		
B	All activities are used by the same clients		
C	Time continuity		
D	Organisational stability		
	D.1	The service is registered as an independent legal organisation (with its own company tax code or an official register). **IF NOT**:	
	D.2	The service has its own administrative unit and/or secretary's office and fulfils two additional descriptors (see below) **IF NOT**:	
	D.3	The service fulfils three additional descriptors	
		D3.1	It has its own premises and not as part of other facility
		D3.2	It has separate financing and specific accountability
		D3.3	It has separate documentation when in a meso-organisation

BSIC Classification

Once a BSIC is identified utilising the criteria for inclusion, the Main Types of Care (MTC) provided are determined based on the Long Term Care Mapping Tree (Figure 1). Each of six main types of care (i.e. branches) are further classified depending on a range of other characteristics related to the service including acuity, mobility, intensity and access to health-related staff and/or information. The six main types of care include:

- **R** Residential Care - facilities which provide overnight beds related to clinical and social management of client health conditions (e.g. inpatient hospital wards, crisis shelters, residential rehabilitation services and inpatient withdrawal units) (Figure 2).
- **D** Day Care - facilities with regular opening hours, provide a combination of treatment options (e.g. support, social contact, structured activities) normally available to several clients at a time and expect clients to stay at the facility beyond allocated face to face contact with staff (Figure 3).
- **O** Outpatient Care - services that involve contact between staff and clients for some purpose related to the management of their condition and associated clinical and social needs and are not provided as a part of residential or day services. Includes outreach services (Figure 4).
- **A** Accessibility to Care - services whose main function is to facilitate access to care for clients with long-term care needs (e.g. care coordination services) (Figure 5).
- **I** Information for Care - services whose main function is to provide clients with information or assessment of their needs and are not involved in subsequent follow-up or direct provision of care (e.g. telephone information and triage type services) (Figure 6).
- **S** Self-Help and Voluntary Care - services which aim to provide clients with support, self-help or contact, with un-paid staff that offer any type of care (i.e. Residential, Day, Outpatient, Accessibility or Information) (Figure 7).

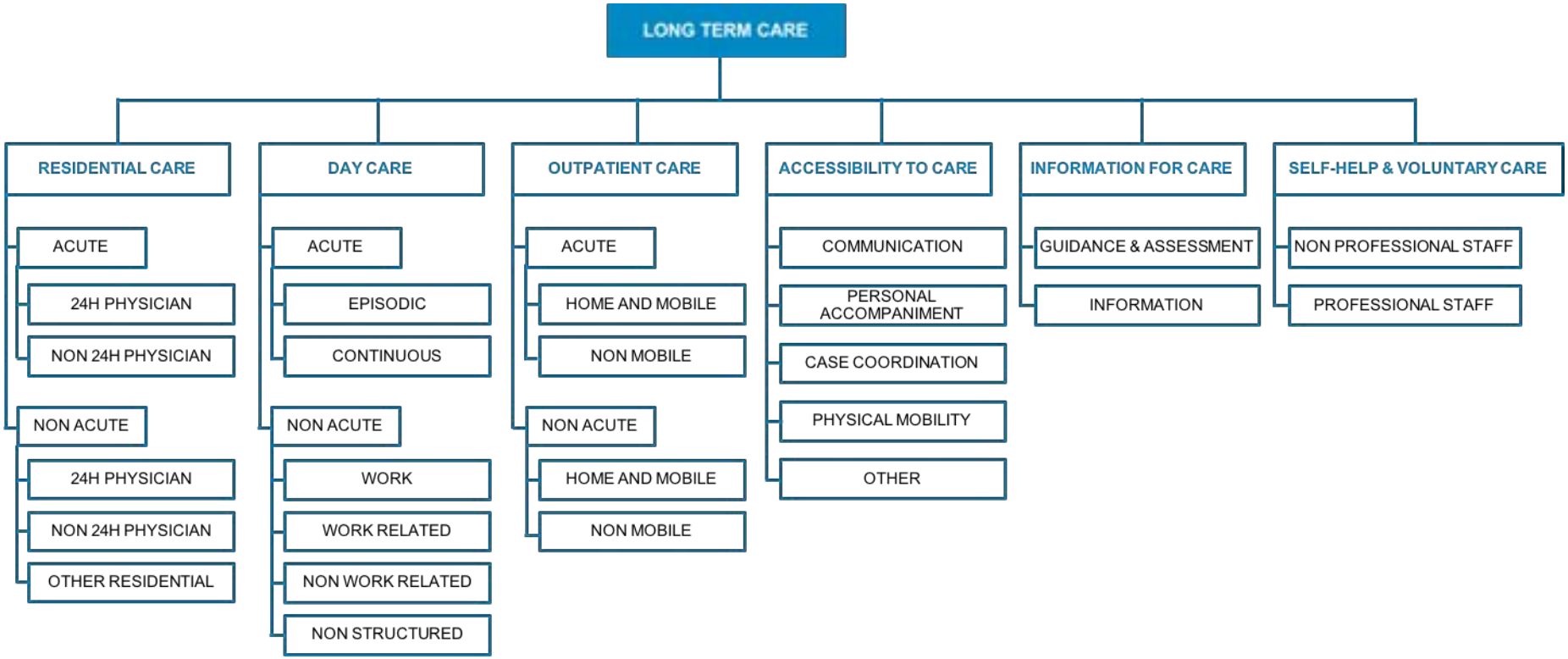


FIGURE 1 LONG TERM CARE MAPPING TREE

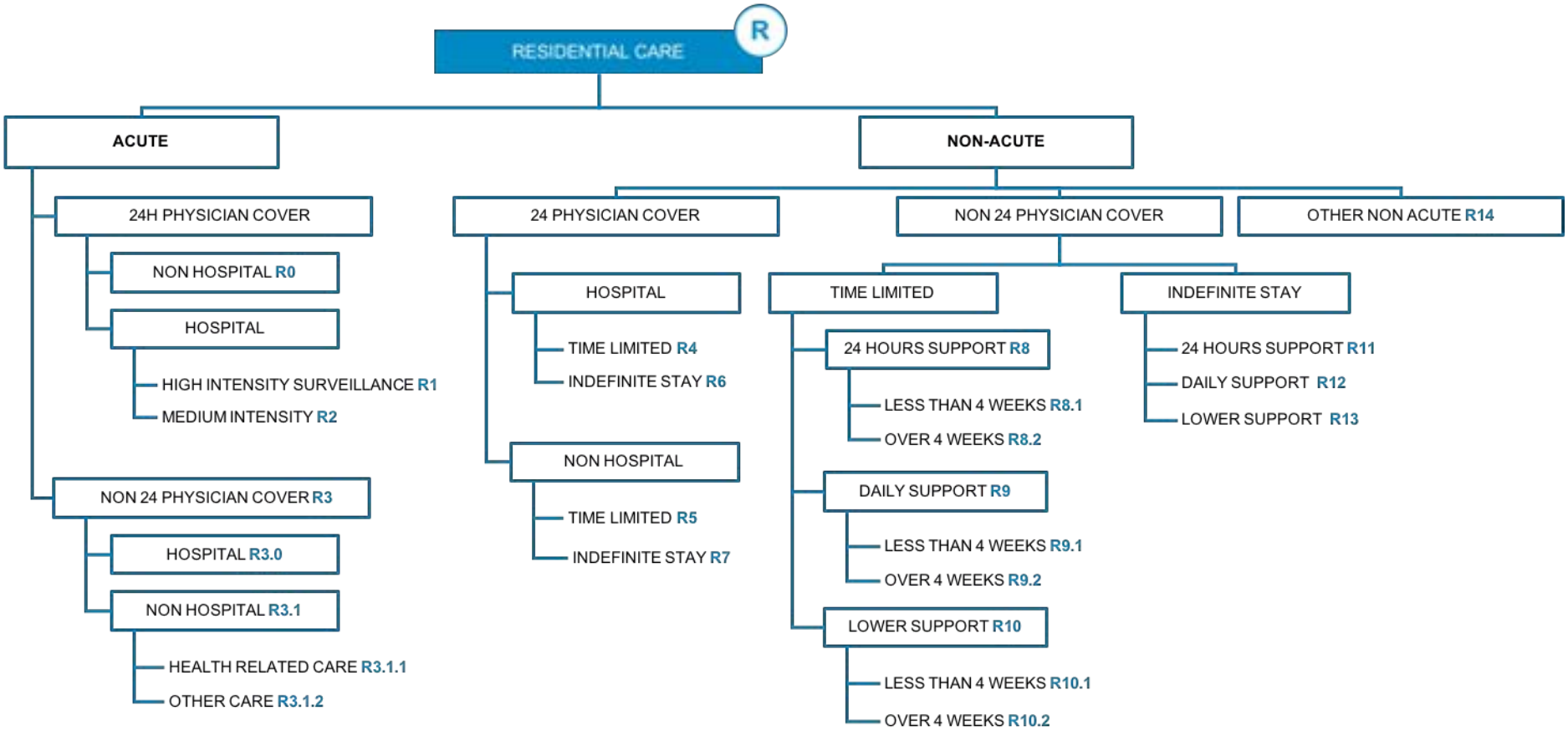


FIGURE 2 RESIDENTIAL CARE CODING BRANCH

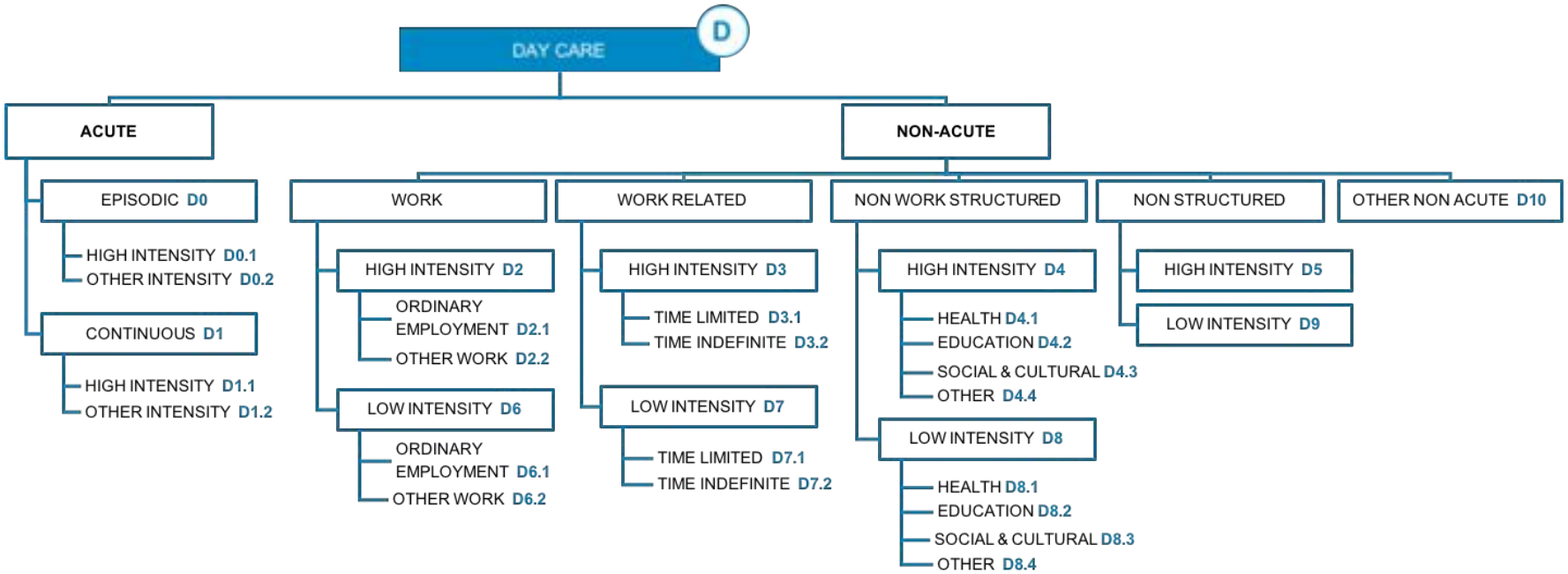


FIGURE 3 DAY CARE CODING BRANCH

FIGURE 4 OUTPATIENT CARE CODING BRANCH

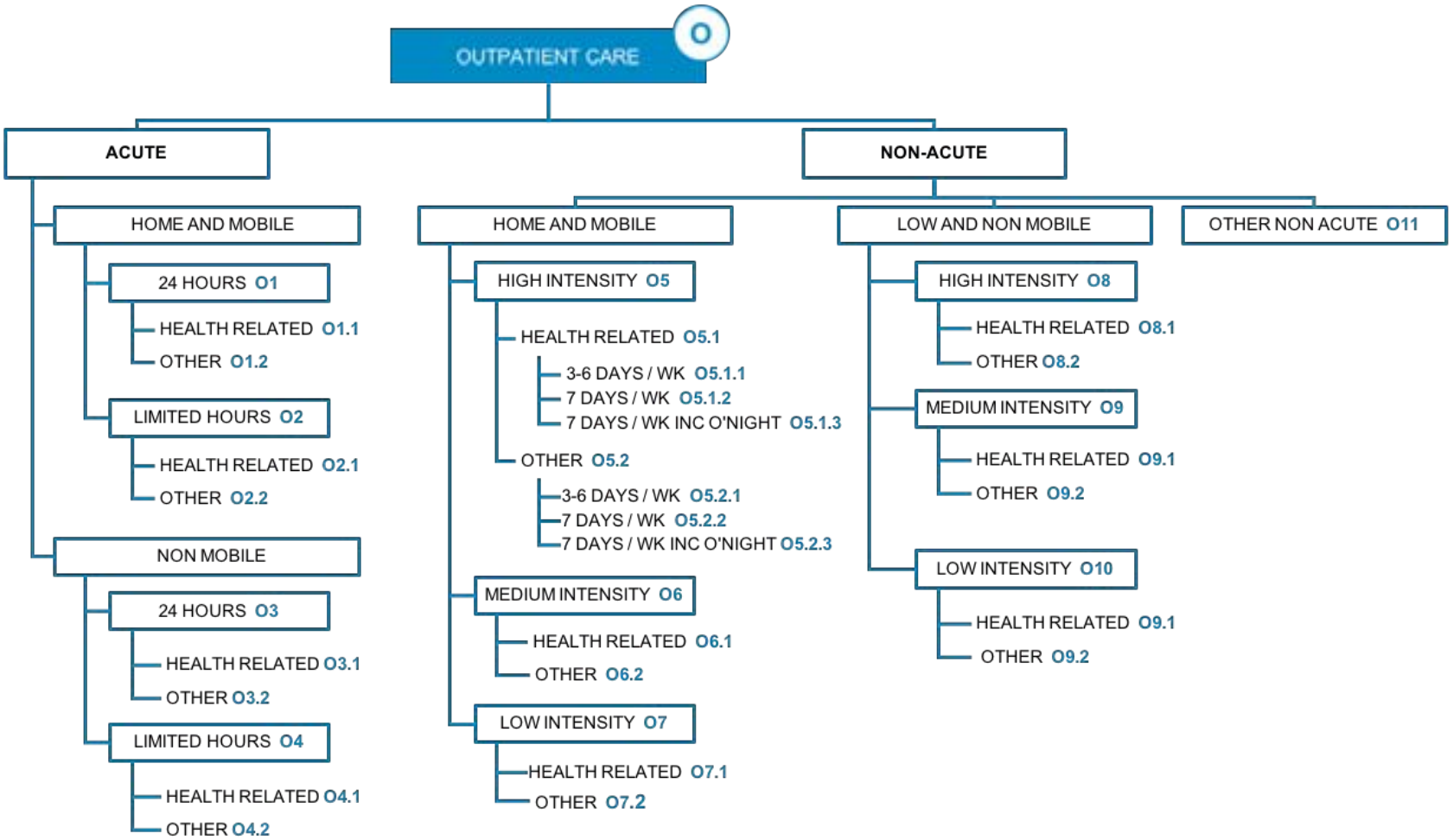


FIGURE 5 ACCESSIBILITY TO CARE CODING BRANCH

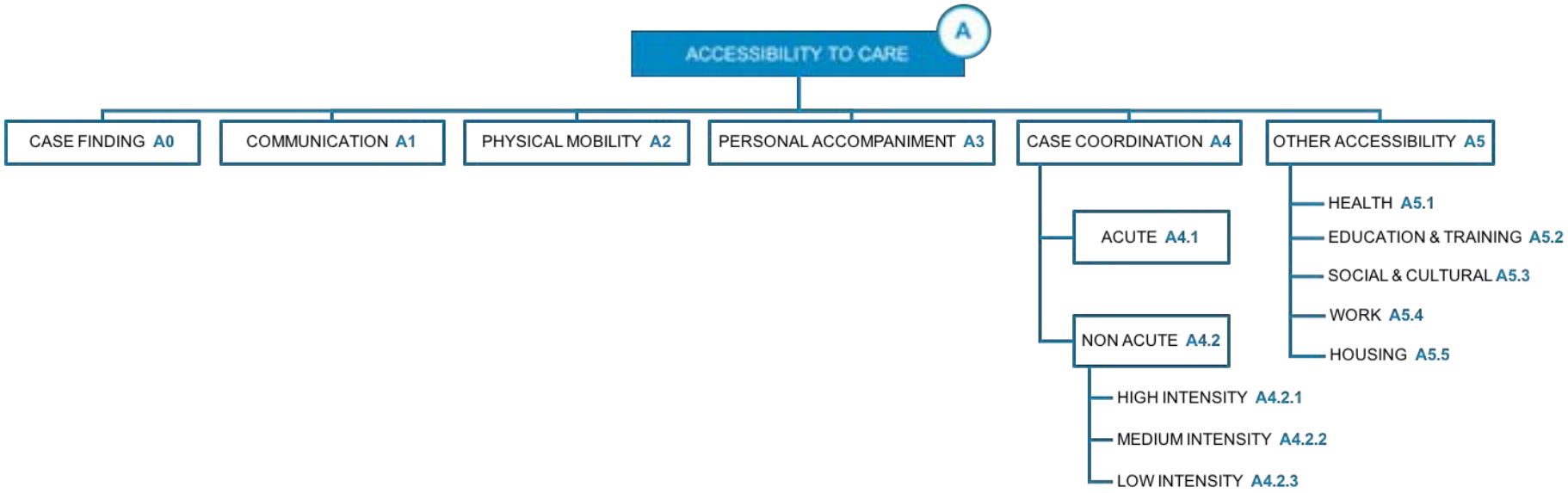


FIGURE 6 INFORMATION FOR CARE CODING BRANCH

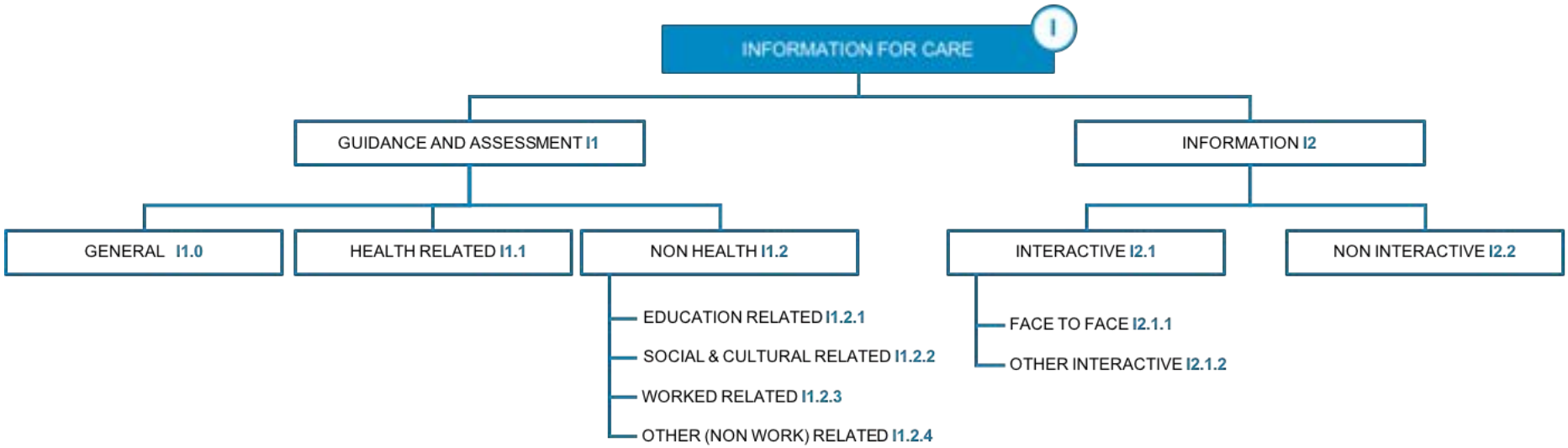
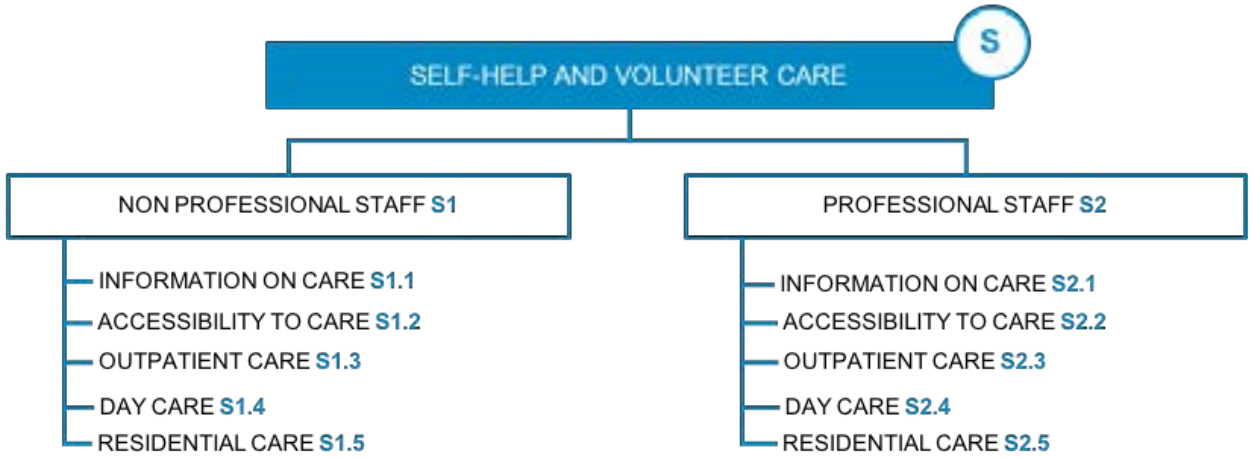


FIGURE 7 SELF-HELP AND VOLUNTEER CARE CODING BRANCH



Each BSIC is classified by using one or more codes based on the MTC they deliver. Some services might include a principal structure or activity (e.g. a Residential Care 'R' code) and an additional one (e.g. a 'Day Care' 'D' code).

Inclusion Criteria

To ensure consistency and comparability, both nationally and internationally, set inclusion criteria determine whether services are considered for analysis.

As part of the DESDE methodology, for a service to be included it has to be geographically relevant, specialised, universally accessible, stable and providing direct care or support (Table 2).

TABLE 2 SERVICE INCLUSION CRITERIA

Criterion	
Geographically relevant	Only service provide care within a predetermine set geographical region are included.
Specialised	Must specifically target people with a lived experience of mental illness i.e. the primary reason for using the service is for treatment of mental illness related issue. This excludes generalist services that may lack staff with specialised mental health training and experience.
Universally accessible	Regardless of whether they are publicly or privately funded, only services that do not have a significant out-of-pocket cost are included.
Stable	The service has or will receive funding for more than three years.
Providing direct care or support	Must provide direct contact to people with a lived experience of mental illness. Services that are only concerned with the coordination of other services or system improvement are excluded.

Services included in this Integrated Atlas are those which lie within the boundaries of Sydney North Primary Health Network (SNPHN). This is essential to ensure that a clear picture of the local availability of resources for the local population is highlighted.

Despite the availability of medicare-subsidised mental health-related services in Australia, access to most private mental health services requires an individual to have private health insurance coverage, higher income or savings. The inclusion of private providers would give a misleading picture of the resources available to most people living with mental health issues and obscures the data for evidence informed planning of the public health system. Most private services have some level of public funding, for example, Medicare provides some subsidies for private hospitals or community-based psychiatric specialist services.

The inclusion of stable services guarantees that the mapping reflects the robustness of the system as a basis for evidence informed planning. As such services that are pilot projects or are provided through short term grants are excluded. However, there is an appreciation that the current environment is one where there is significant uncertainty around the continuation of funding streams at both a state and national level. As such, some flexibility has been applied with this criterion. For example, services were included where they were considered to be ongoing, or had been delivered over a long period of time, even when their ongoing funding may not be secured beyond one year.

2.3 Methodology

As with other Atlases developed in Australia, there were five key steps involved in the creation of the Integrated Mental Health Atlas for Sydney North PHN (Figure 8).

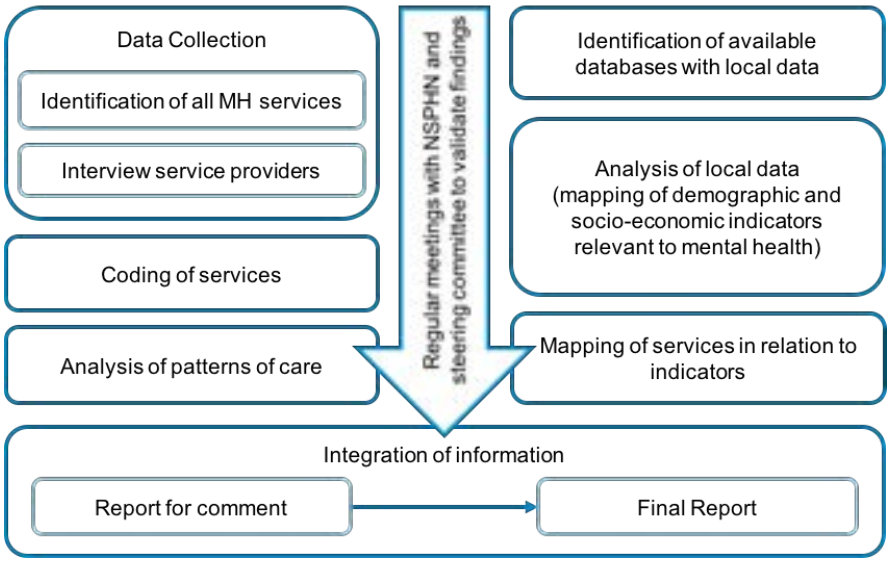


FIGURE 8 INTEGRATED MENTAL HEALTH ATLAS DEVELOPMENT PROCESS

Step 1: Governance and Ethics

A Steering Committee was established for the Integrated Atlas project comprised of representatives from SNPHN, Northern Sydney Local Health District (NSLHD), non-government organisations (NGOs) and project staff from the Mental Health Policy Unit (MHPU) at the Brain and Mind Centre. Terms of Reference for the Committee was developed and ratified along with a meeting schedule.

The NSLHD Human Research Ethics Committee (HREC) granted initial approval for the Integrated Mental Health Atlas of Sydney North PHN Region (LNR/16/HAWKE/338) on March 1, 2017.

Step 2: Data Collection

A preliminary list of NGO mental health service providers across the SNPHN catchment was provided by the PHN. Additional services were added to this list based on web searches and utilising the listings in the National Health Services Directory (NHSD). The final stakeholder list was reviewed and verified by SNPHN to determine their appropriateness for inclusion in the Atlas.

Working with the NSLHD representative from the Steering Committee, an email invitation was sent to each of the four Mental Health Directors to invite them to nominate a key contact person to participate in either a telephone interview or complete the on-line survey.

Once contact was made with either the NGOs or LHD representatives, participants were provided with an Information Sheet as well as a Frequently Asked Questions document and an interviewed scheduled or link to the on-line survey provided.

Key information for each service was collected including details related to:

- Basic service information (e.g. name, type of service, funding, opening hours)
- Service location and geographical catchment (e.g. physical address, service area)
- Service specifics (e.g. acuity, target population and age group, intensity)
- Staffing (e.g. Full Time Equivalent (FTE) information, types of professionals)

As required, follow-up contact was made with organisations to seek additional information and answer questions in order to support and verify classification decisions.

In some instances, if was difficult to contact specific organisations or service units to gather information directly in relation to the services provided. On those occasions, information was gathered individually via websites and annual reports and a DESDE code was assigned utilising the best available information to hand.

Step 3: Codification

Where the service delivery team met the inclusion criteria, the information gathered during interviews and surveys was utilised to classify each MTC and allocated a subsequent DESDE code.

Each DESDE code follows a standard format and is comprised of four main components which provide information relation to the **target population** for the service, the **diagnostic** code (i.e. ICD-10, ICF), the **MTC** code and any relevant **qualifiers** (Appendix A). For example, a non-acute outpatient service based in a hospital for adults with lived experience of mental illness which is currently in transition would receive the code: AX[F00-F99]-O10.1hv (Figure 9).

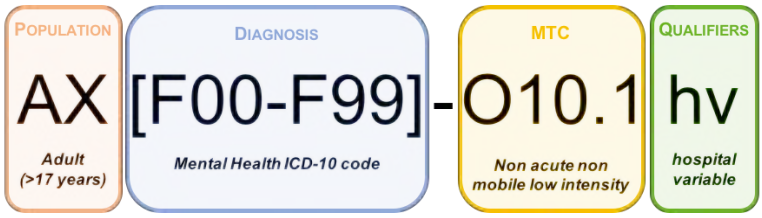


FIGURE 9 EXAMPLE DESDE CODE AND COMPONENTS

Step 4: Mapping

After coding, the DESDE data was exported into a Geographic Information System (GIS) for visualisation based on the physical location of the service. In some instance, the exact location of a service was not disclosed for privacy reasons. Where a specific address was not available the service is mapped to the suburb centroid. To add context, mental health services are populated over a base map which depicts the relative disadvantage of the SNPHN catchment at Statistical Area Level 1 (SA1).

Step 5: Analysis

The patterns of care for mental health services within the SNPHN catchment was examined utilising the MTC as well as the associated availability of the service. The availability of a services is defined as the presence, location and readiness for use of service delivery teams in a catchment area at a given time. A service is available when it is operable or usable upon demand to perform its designated or required function. The availability rate for the MTC is calculated per 100,000 of the target population. To understand the balance between the different types of care available in the SNPHN area, a radar chart is used to visually depict the pattern of care. Each of the 21 points on the radius of the diagram represents the number of MTC for a particular type of care per 100,000 population.

This analysis allows for comparisons of service availability with other areas and to estimate whether the provision of services is adequate with regard to the population need. SNPHN has been compared with South Western Sydney LHD (SWSLHD), Western Sydney LHD (WSLHD) and Central Eastern Sydney PHN (CESPHN) within Australia and with Finland (Helsinki and Uusimaa), Norway (Sør-Trøndelag), Italy (Verona), Spain (Girona) and England (Hampshire) internationally. Information on European countries has been developed as part of the Refinement Project, funded by the European Commission (The Refinement Project Research Consortium, 2013).

3. SNPHN Catchment

The SNPHN region encompasses a land area of approximately 900 square kilometres (km^2), stretching north-west through Hornsby, east toward the New South Wales (NSW) coastline and south connecting to Sydney Harbour. The geographical boundaries align with the NSLHD and encompass the nine Local Government Areas (LGAs) formed by the NSW Government in May 2016 including:

- Hornsby
- Hunters Hill
- Ku-ring-gai
- Mosman
- North Sydney
- Northern Beaches
- Lane Cove
- Ryde
- Willoughby

The formation of these new boundaries resulted in Manly, Pittwater and Warringah LGAs merging to form the Northern Beaches Council (Figure 10).

Due to availability, population health data presented in this Atlas is presented according to the 2011 LGA boundaries (n=11).

FIGURE 10 GEOGRAPHICAL BOUNDARIES OF SNPHN

3.1 Population Health and Sociodemographic Indicators

The most recent publicly available data sources have been examined in relation to social, economic and demographic indicators for the SNPHN region. The primary data sources for this information were:

- 2011 Census of Population and Housing (ABS, 2011)
- Social Health Atlases of Australia (PHIDU, 2017), and
- Small Area Labour Market Data (CDE, 2017).

Where data permitted, indicators have been reported at the level of LGA with comparison to the state and national averages. Geo-spatial mapping of data has been provided as within-catchment comparisons of each LGA contained within SNPHN, with the exception of the Index of Relative Socio-economic Disadvantage (IRSD) which is presented as deciles[1], ranked nationally.

Key demographic, socio-economic factors and health outcomes data relevant to mental health are included to better understand the population needs across the region.

Demographic Factors

For the purposes of this Atlas, a selection of population indicators are outlined for key population groups to create a demographic profile for the SNPHN region (Table 3).

TABLE 3 DEMOGRAPHIC FACTORS EXAMINED

Indicator	Description	Calculation
Area	Land area for geographical region (km^2)	Based on ABS LGA shp file data
Total Population	Estimated Residential Population (ERP)	Based on 2011 census population counts, adjusted for population growth including births, deaths and migration
Density Ratio	Ratio between (total) population and surface (land) area	Total population / Area (km^2)
Dependency Ratio	Portion of dependants (people who are too young or too old to work) in a population	Population aged 0-14 and >64 years / Population 15-64 years per 100 persons
Ageing Index	Indicator of age structure of population - elder-child ratio	Population >64 years / Population 0-14 years per 100 persons
Indigenous Status	People who identify as being of Aboriginal or Torres Strait Islander origin	Aboriginal population as per cent of total population (ERP - non-ABS)
Overseas Born	Proportion of the Australian population born overseas	Total people who stated an overseas country of birth as per cent of total population (ERP)

Population Profile

The North Sydney LGA is the most densely populated area within the SNPHN catchment with a population of 72,618 people within an area of just 11 km^2 (Table 4). The least densely populated LGA is

[1] Deciles are created by dividing the distribution of a variable into ten groups with equal frequencies, so that each part represents 1/10 of the sample or population.

Hornsby, with both the largest land area (462 km^2) and the highest ERP (170,563) within the SNPHN catchment (Figure 11).

The Dependency Ratio for SNPHN (50.6) is similar to the national ration and suggests that there are more people within the catchment who are available to provide support compared to the number of people who are dependants. With the highest ration in the catchment, the Pittwater LGA has slightly more dependants than supporting people compared to other LGAs.

With an Ageing Index over 100, North Sydney is the only LGA within the SNPHN to have more elderly than youth in their population (117.2) (Table 4). Mosman, Pittwater and Hunters Hills have the next highest Ageing Indexes with close to equal proportions of those aged over 65 years within their catchments compared to those aged under 15 years (96.7, 95.9 and 95.3 respectively).

TABLE 4 DEMOGRAPHIC FACTORS IN SNPHN

LGA	Area* (km^2)	Total Population†	Density Ratio	Dependency Ratio	Ageing Index	Indigenous Status (%)‡	Overseas Born (%)*
Hornsby	462	170,563	365.3	51.1	81.4	0.4	35.4
Hunters Hill	6	14,741	2561.3	59.0	95.3	0.5	26.0
Ku-ring-gai	85	122,859	1416.5	59.7	89.8	0.2	35.5
Lane Cove	11	35,959	3324.0	50.6	76.3	0.3	32.8
Manly	14	45,365	3119.9	48.3	71.4	0.3	33.3
Mosman	9	30,496	3499.7	54.6	96.7	0.1	32.2
North Sydney	11	72,618	6783.4	33.5	117.2	0.3	36.5
Pittwater	90	64,189	701.2	60.4	95.9	0.5	22.7
Ryde	41	117,171	2834.0	44.1	86.1	0.4	42.3
Warringah	149	156,693	1039.7	54.9	78.9	0.5	28.2
Willoughby	22	76,354	3304.8	46.0	72.6	0.2	42.4
SNPHN	**890**	**907,415**	**1019.6**	**50.6**	**85.2**	**0.4**	**34.3**
NSW	809,444	7.62 million	9.4	52.0	83.8	3.0	25.7
Australia	7.7 million	23.78 million	3.1	50.5	79.7	3.1	24.6

Sourced from: * ABS, 2011 Census; † ERP 2015 (PHIDU, 2017); ‡ ERP (non-ABS) 2015 (PHIDU, 2017)

Cultural Diversity

Overall the SNPHN has a considerably lower proportion of Aboriginal and Torres Strait Islander people (0.4%) when compared with both NSW (3.0%) and Australia (3.1%) (Table 4). The LGA of Mosman has the lowest proportion (0.1%) of its population identifying as Aboriginal and/or Torres Strait Islander across the region (Figure 12).

In contrast, SNPHN has a considerable number of people who were born overseas (34.3%), a proportion which is larger than both state (25.7%) and national (24.6%) levels. Across the SNPHN catchment, the proportion of overseas born varies widely from only 22.7% in Pittwater to 42.4% in Willoughby (Figure 13).

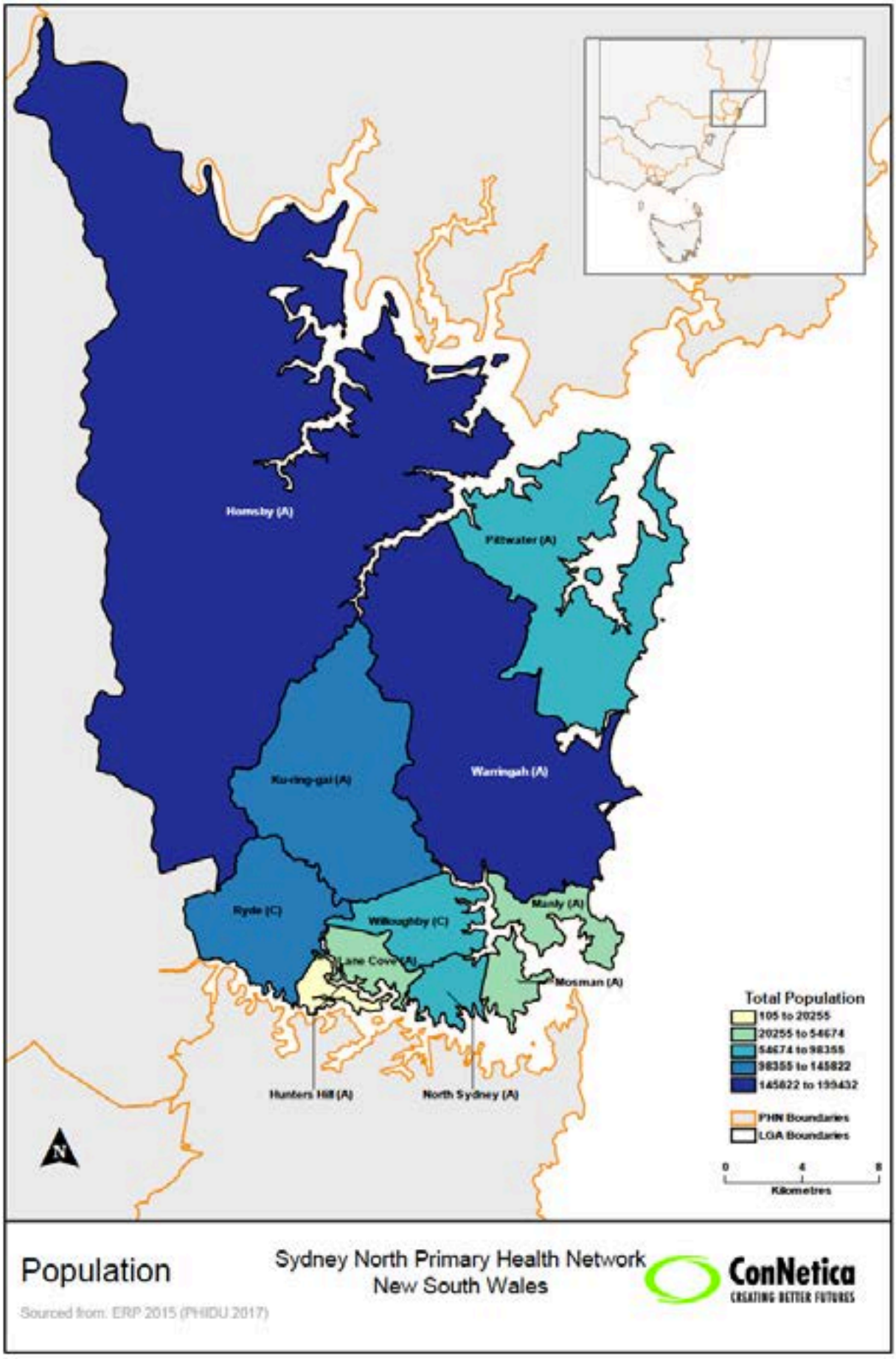


FIGURE 11 POPULATION BY LGA FOR SNPHN

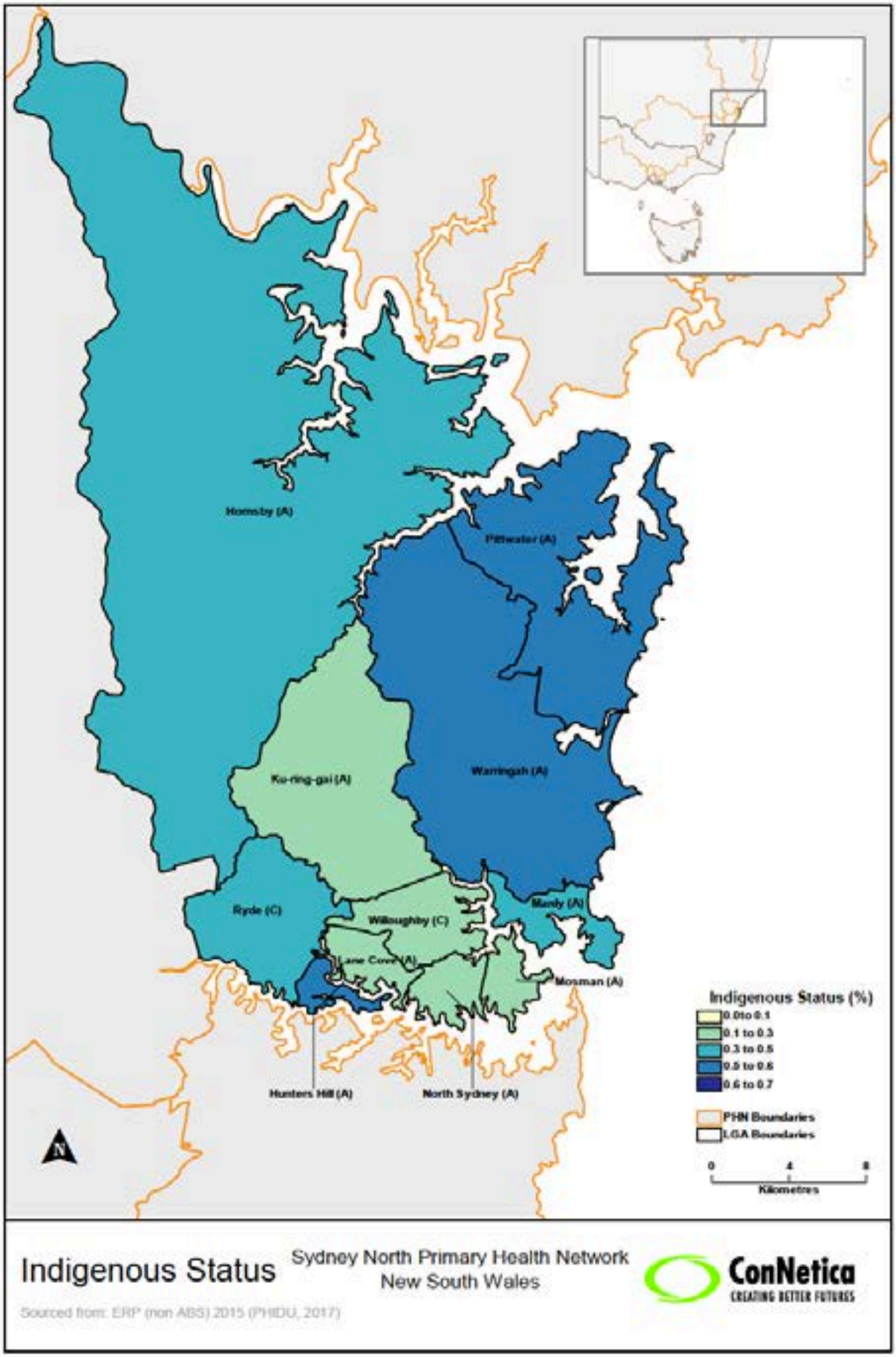


FIGURE 12 INDIGENOUS STATUS BY LGA FOR SNPHN

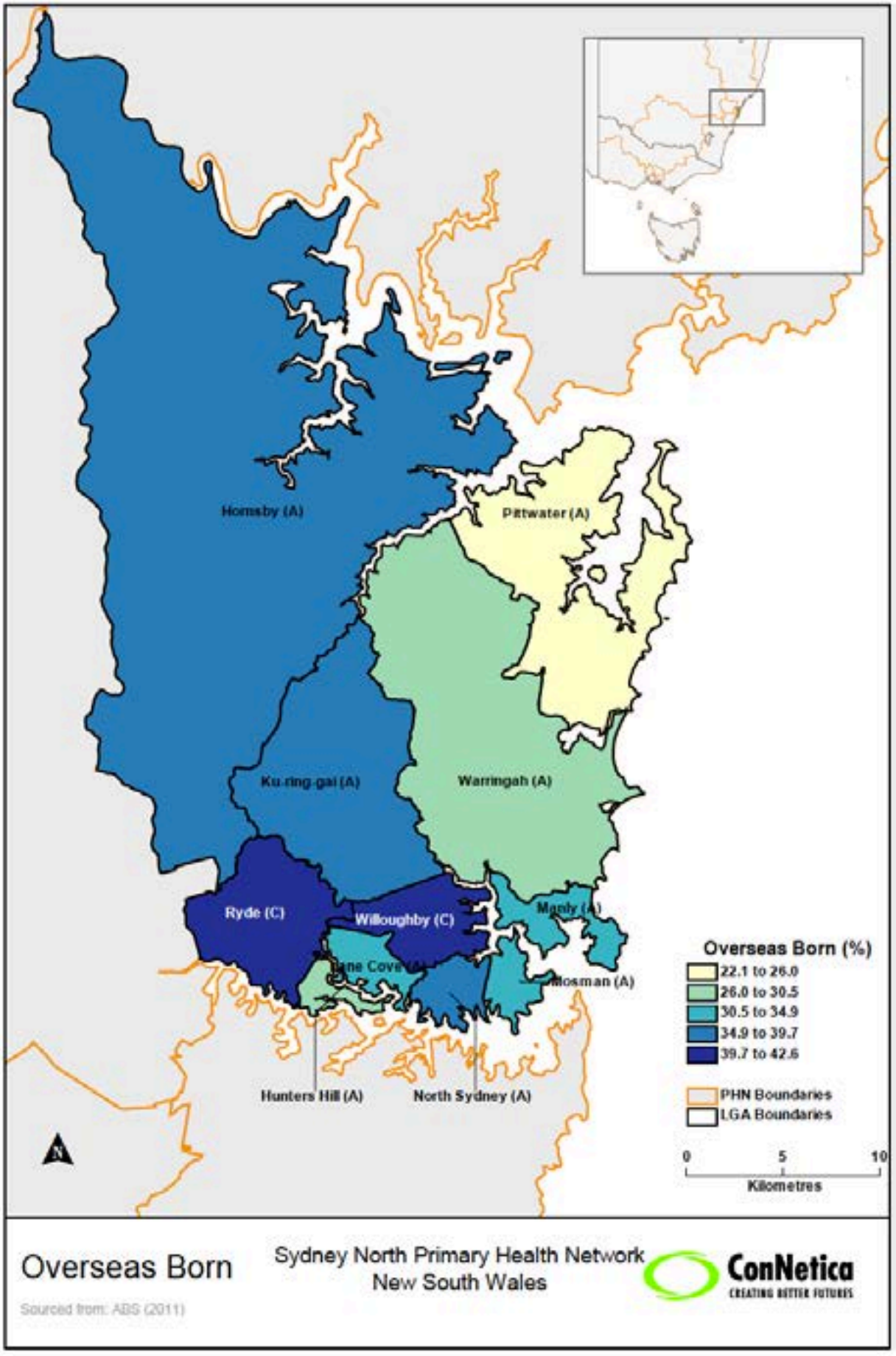


FIGURE 13 OVERSEAS BY LGA FOR SNPHN

Socioeconomic Indicators

The concept of social determinants of health acknowledges the importance of employment, housing, education and other social resources (such as isolation and community connectedness) to wellbeing. Social determinants are increasingly recognised as playing a major role in a raft of health-related behaviours and health disparities, including mental illness, suicide, excessive alcohol use and substance use (WHO & Calouste Gulbenkian Foundation 2014; Lund et al., 2011). Risk factors that have been shown to influence mental health and/or contribute to an increased risk of suicide and self-harm have been presented in this Atlas (Table 5).

Disadvantaged Australians have higher rates of almost all disease risk factors, use preventative health services less and have poorer access to primary care health services than Australians in average or higher socio-economic condition areas. One of the key measures of disadvantage is the Socio Economic Indexes for Areas (SEIFA) which compares the relative socio economic advantage and disadvantage across geographic areas.

The Index of Relative Socio-economic Disadvantage (IRSD) score is based on standardised distribution across all areas and is a measure of the relative disadvantage in a given geographic area; the lower the score the greater the level of relative disadvantage. The average IRSD score across Australia is 1,000 and nationally two thirds of all areas lie between an index score of 900 and 1,100. For further comparative purposes, the IRSD deciles (based on national ranking) is provided for each LGA with 1 representing the most disadvantaged areas and 10 representing the least disadvantaged areas.

TABLE 5 SOCIOECONOMIC FACTORS EXAMINED

Indicator	Description	Calculation
Single Parent Families	Proportion of single parent families with children aged less than 15 years	Single parent families with children under 15 years / Total families with children under 15 years per 100
Needing Assistance	Proportion of the population with a profound or severe disability – defined as people needing help or assistance in ≥1 of the 3 core activity areas, because of a disability, long term health condition (≥6 months) or old age	Number of people who need assistance with core activity / Total population per 100
Early School Leavers	People who left school at Year 10 or below, or did not go to school, per 100 people aged ≥15 years	People who left school at Year 10 or below, or did not go to school, ASR per 100 persons
Unemployment	The level of unemployment as a proportion of the labour force	Number of unemployed people / Population >15 years per 100
Low income	Proportion of individuals earning less than $400 per week, including those on negative incomes	Number of Individuals with income <$400 week / Total number of individuals per 100
IRSD	One of four SEIFA indexes, IRSD identifies the geographic distribution of potential disadvantage based on factors including employment, education, income and social resources	Please refer to the following technical paper: http://www.ausstats.abs.gov.au/ausstats/subscriber.nsf/0/22CEDA8038AF7A0DCA257B3B00116E34/$File/2033.0.55.001%20seifa%2011%20technical%20paper.pdf

Single Parent Families

SNPHN has a significantly lower rate of single parent families (11.8%) when compared with the state (21.2%) and national rates (21.3%) (Table 6). Across the catchment the LGA of Ku-ring-gai has the lowest rate at 9.4% with North Sydney LGA having the highest rate at 14.0% (Figure 14).

TABLE 6 SOCIOECONOMIC FACTORS IN SNPHN

LGA	Single parent families* (%)	Needing Assistance† (%)	Early School Leavers* (ASR per 100)	Un employment‡ (%)	Income <$400/wk† (%)	IRSD Score (Decile)†
Hornsby	11.2	3.8	23.6	5.7	35.8	1085 (10)
Hunters Hill	11.1	5.4	21.7	4.4	33.2	1092 (10)
Ku-ring-gai	9.4	3.2	14.9	3.1	33.2	1121 (10)
Lane Cove	11.5	3.1	15.6	3.6	27.2	1107 (10)
Manly	12.1	2.4	17.8	5.4§	25.5	1099 (10)
Mosman	12.6	3.1	12.7	2.7	25.1	1111 (10)
North Sydney	14.0	2.1	11.9	3.1	19.4	1105 (10)
Pittwater	12.7	3.3	26.1	5.4§	30.3	1094 (10)
Ryde	13.0	4.7	24.2	6.5	37.9	1050 (9)
Warringah	12.9	3.1	27.8	5.4§	30.6	1077 (10)
Willoughby	11.2	3.2	15.8	4.5	31.8	1083 (10)
SNPHN	11.8	3.4	20.9	4.0	31.6	1089
NSW	21.2	5.2	37.6	5.1	39.9	996
Australia	21.3	4.6	34.3	5.7	38.9	1000

Sourced from: *2011 (PHIDU, 2017); †ABS, 2011 Census; ‡ March Quarter 2017 (CDE, 2017); § Northern Beaches Council data

Needing Assistance

The proportion of the population needing assistance in SNPHN catchment (3.4%) is also below the state and national rates, 5.2% and 4.8% respectively (Table 6). Only two LGAs have higher proportions than the national rate, Hunters Hill (5.4%) and Ryde (4.7%) (Figure 15).

Education

The proportion of early school leavers within SNPHN (20.9%) is considerably lower than state (37.6%) and national (34.3%) rates (Table 6). This likely reflects the disparity between inner metro and regional areas in educational patterns. Of note is the North Sydney LGA having only 11.9% of its population leave school early, whilst Warringah has a rate over double that of North Sydney at 27.8% (Figure 16).

Unemployment

Based on data from the 2017 March quarter, the SNPHN catchment has lower unemployment rates (4.0%) than both the NSW (5.1%) and Australian (5.7%) rates (Table 6). Overall, unemployment is lowest in Ku-ring-gai and North Sydney (both at 3.1%) and highest in Ryde at 6.5% which is above the state and national rates (Figure 17).

Income

In general, the SNPHN catchment has lower proportion of people earning less than $400 per week (31.6%) when compared with state (39.9%) and national rates (38.9%) (Table 6). The Ryde LGA

approaches the state and national rates with 37.9% of its population earning less than $400 per week. The LGAs of North Sydney (19.4%), Mosman (25.1%) and Manly (25.5%) are well below state and national rates, and is to be expected for LGAs that are located close to the Central Business District of Sydney (Figure 18).

Disadvantage

Compared to many areas across Australia, SNPHN can be considered less disadvantaged with no LGAs within the catchment below the national average of 1000, nor below the state IRSD score of 996 (Table 6). All LGAs, with the exception of Ryde, are within the top IRSD decile nationally representing the least disadvantaged areas across Australia (Figure 19).

However, within the SNPHN catchment there are pockets of disadvantage when IRSD is examined at SA1 (Figure 20). In particular the areas around Narraweena and Hornsby have populations in the lowest decile for disadvantage nationally.

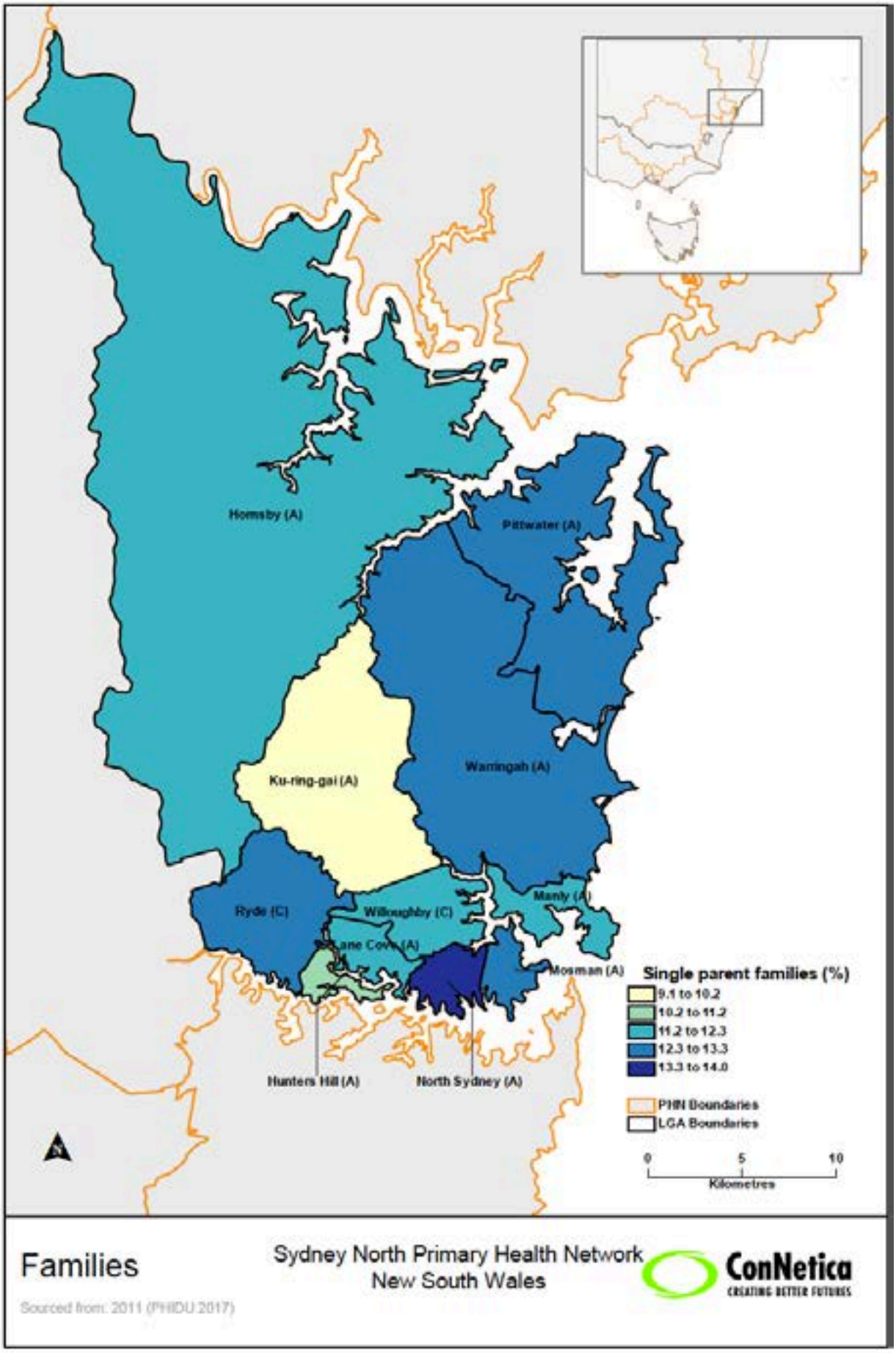


FIGURE 14 SINGLE PARENT FAMILIES BY LGA FOR SNPHN

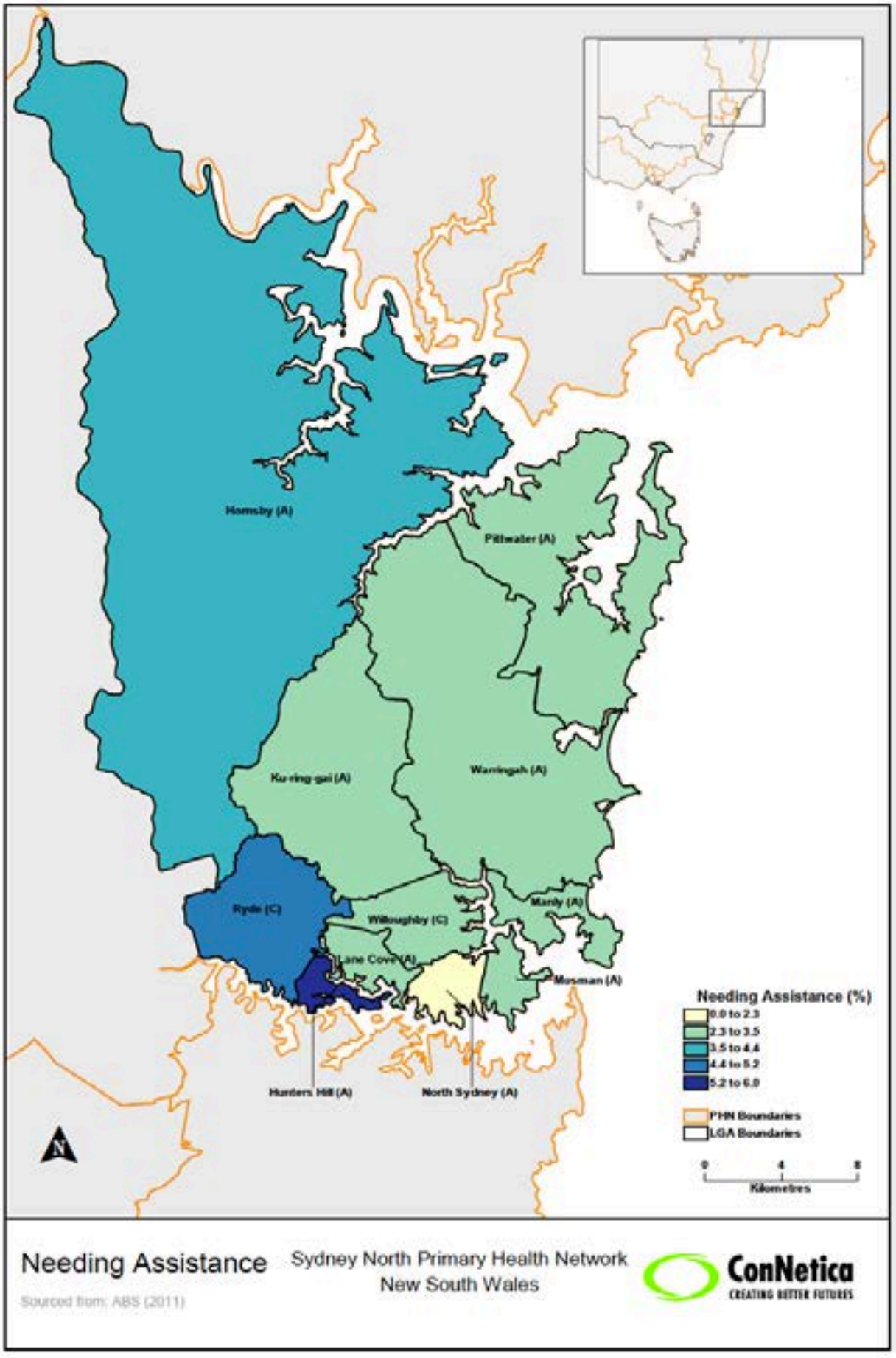


FIGURE 15 NEEDING ASSISTANCE WITH CORE ACTIVITIES BY LGA IN SNPHN

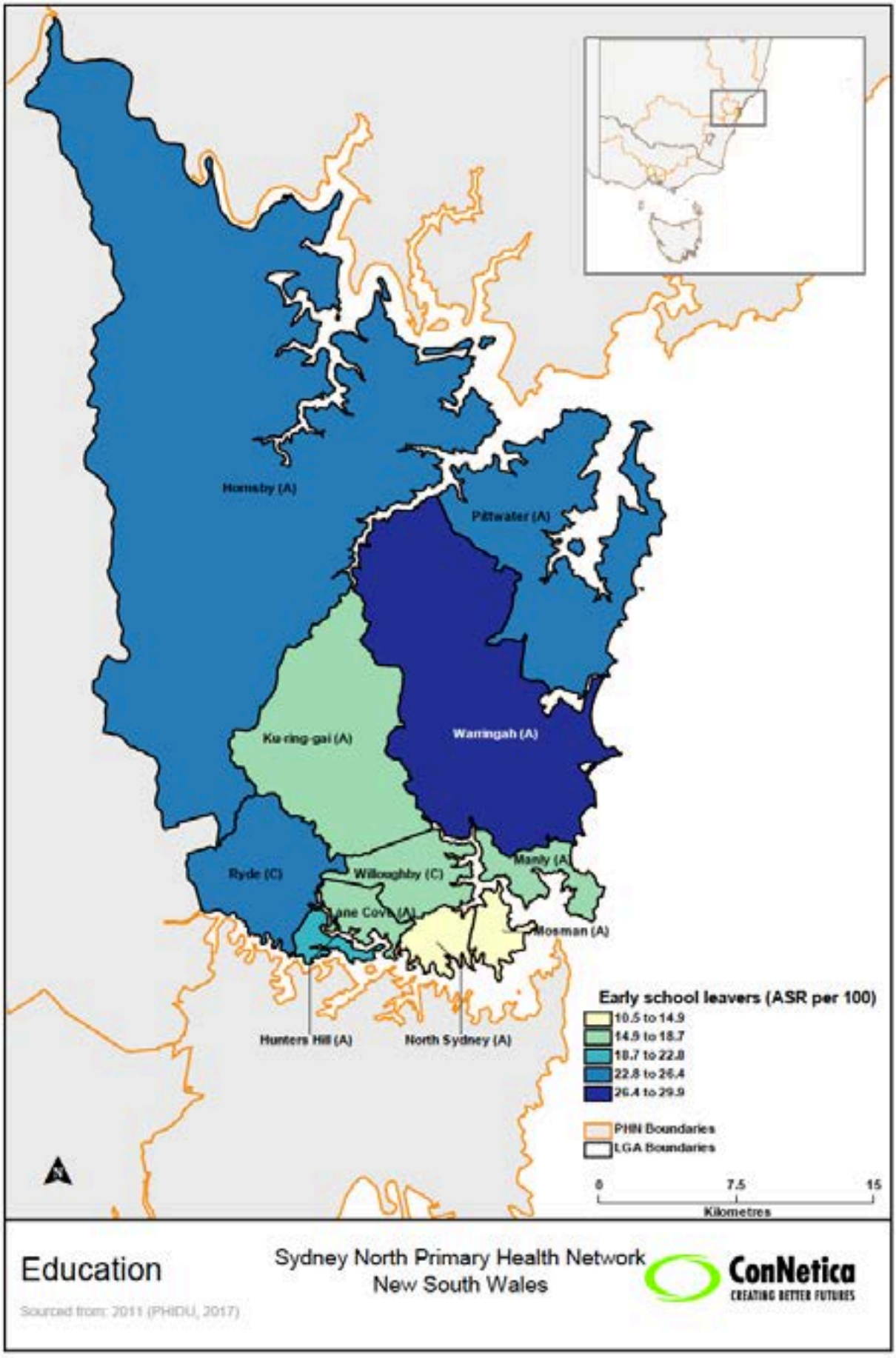


FIGURE 16 EARLY SCHOOL LEAVERS BY LGA FOR SNPHN

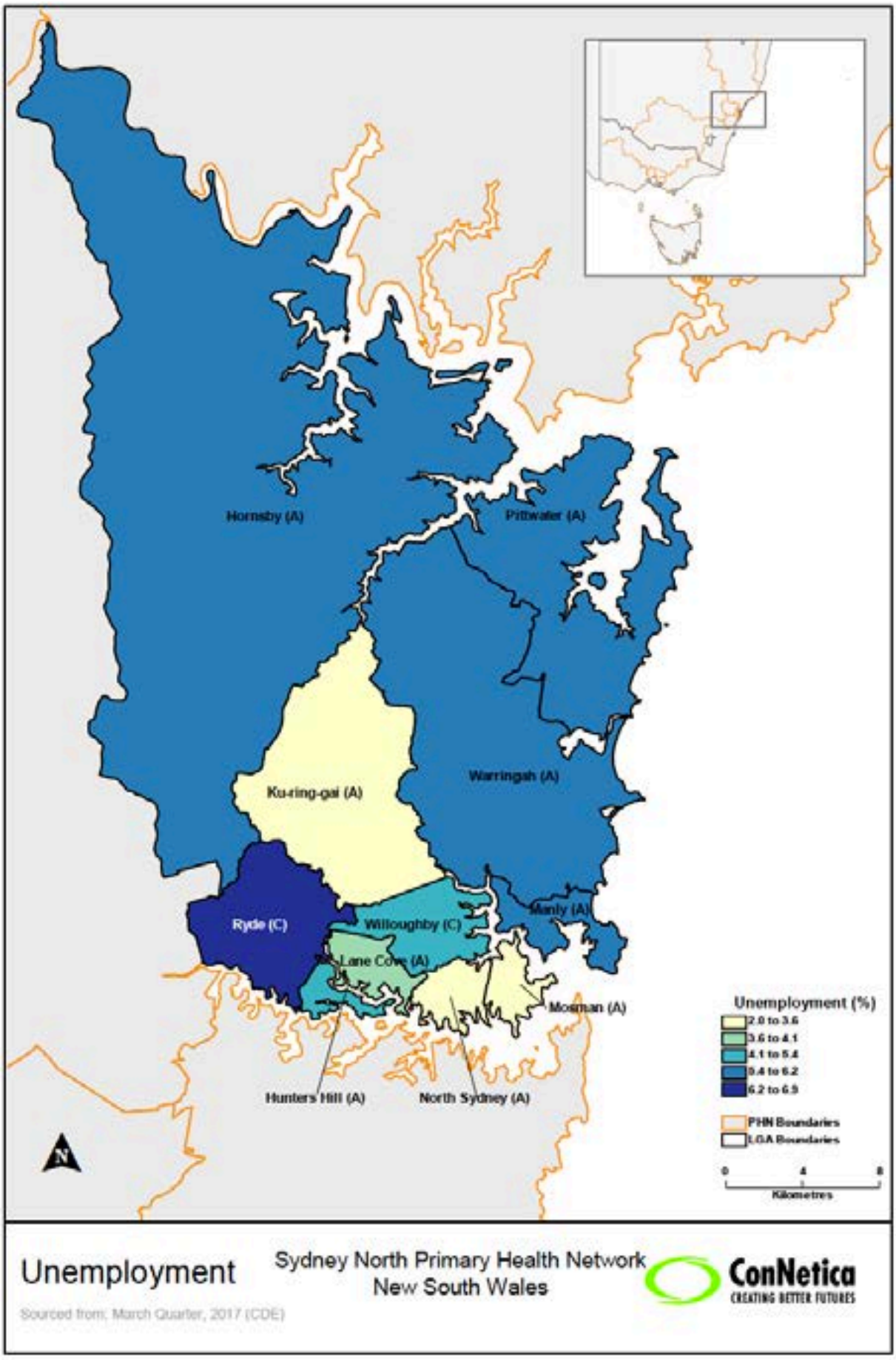


FIGURE 17 UNEMPLOYMENT BY LGA FOR SNPHN

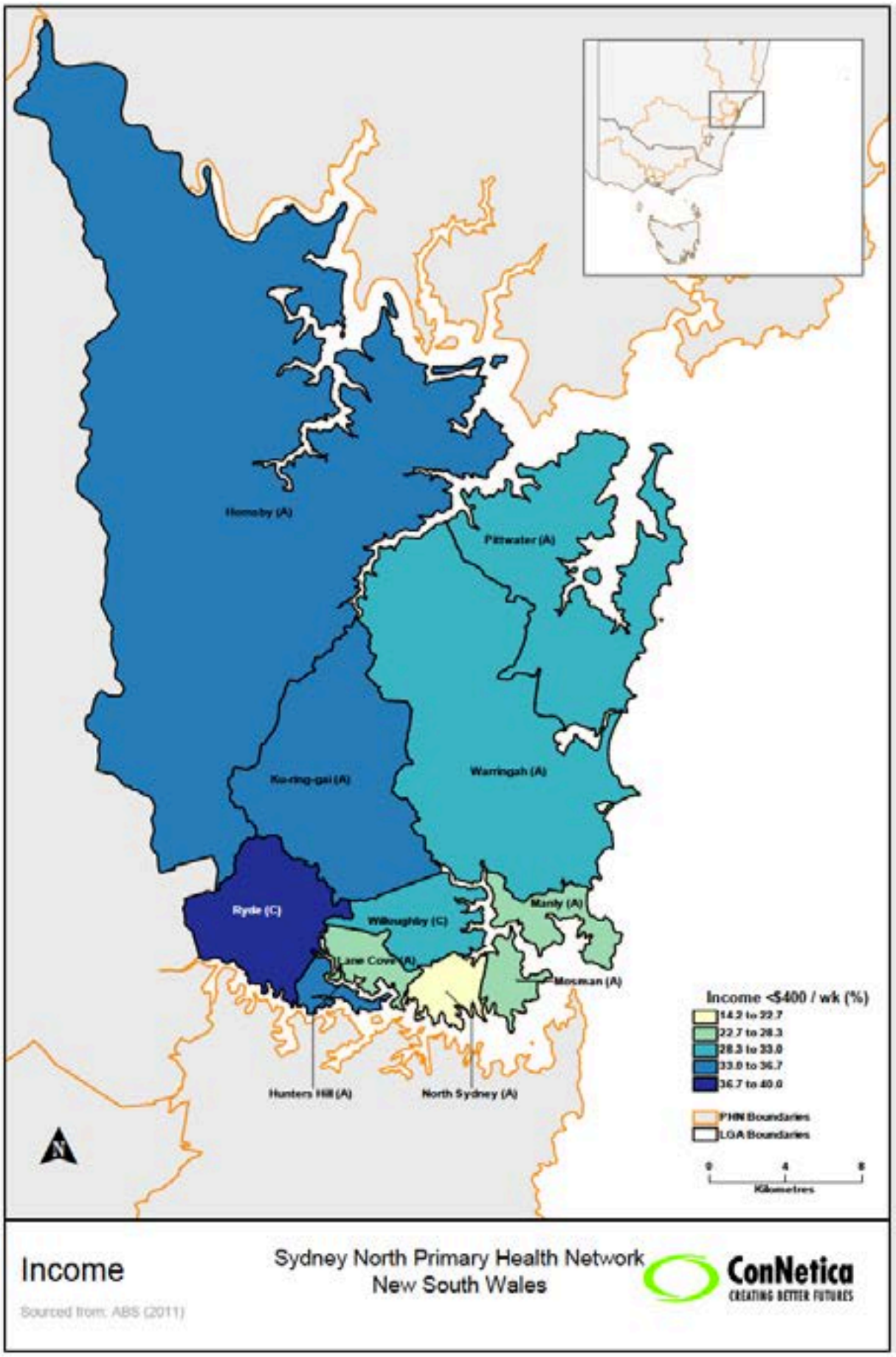


FIGURE 18 INCOME BY LGA FOR SNPHN

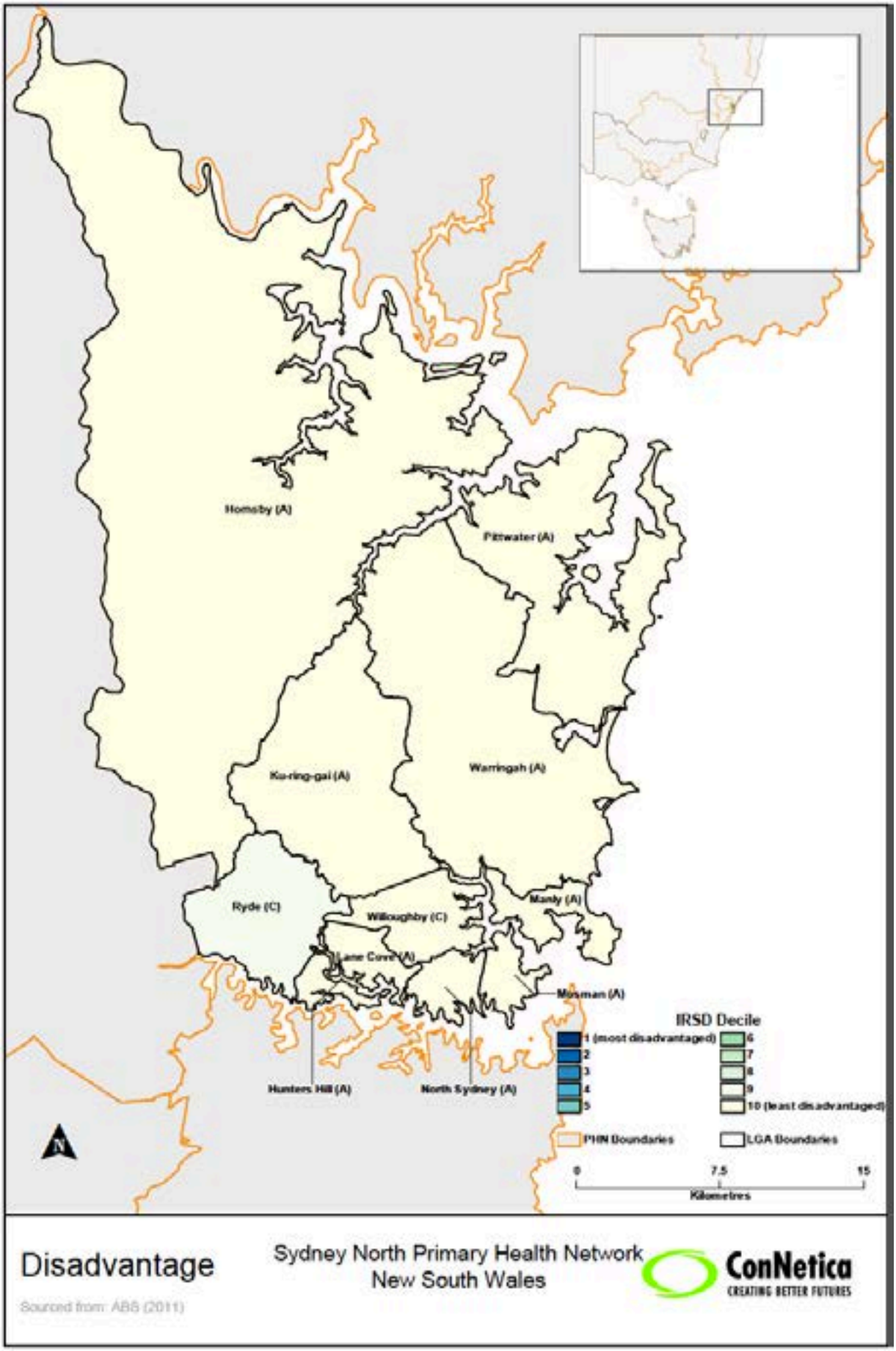


FIGURE 19 DISADVANTAGE BY LGA FOR SNPHN

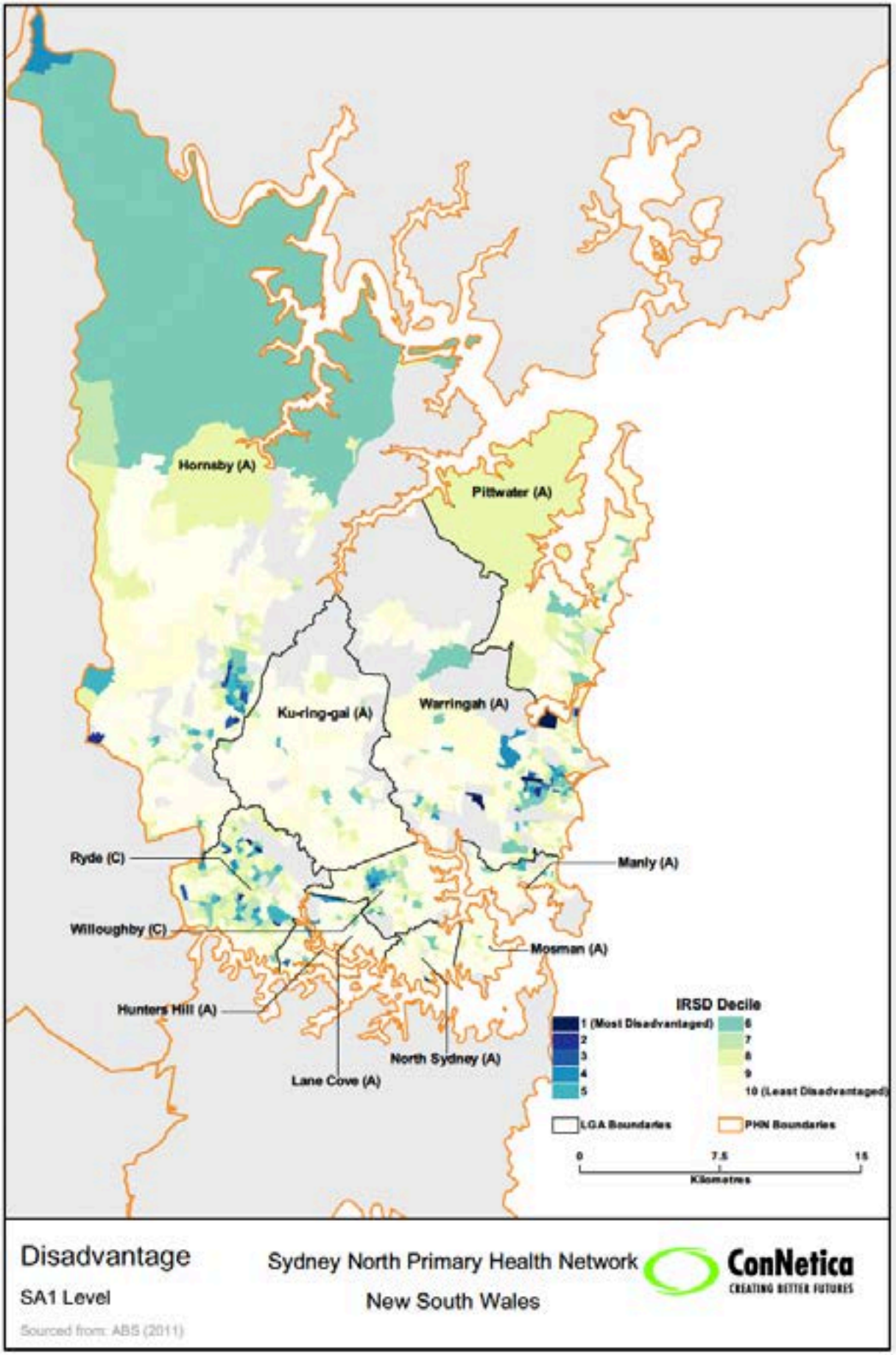


FIGURE 20 DISADVANTAGE BY SA1 FOR SNPHN

Health and Mortality

As health usually deteriorates with age and the majority of deaths occur at older ages, it is reasonable to expect areas with older populations to show lower self-assessed health and higher mortality rates. Therefore, to allow fair comparisons of rates amongst LGAs within SNPHN, with different age profiles, the age standardised rate (ASR) is used for the two selected health outcome indicators related to mental health and suicide and self-harm.

Self-assessed health status is a commonly used measure of overall health. It captures a person's perception of their own health and has been found to be a good predictor of morbidity and mortality (Joung et al., 2002). Psychological distress is an indicator of the mental health of a community and is the best population wide measure currently available. This indicator is a 'synthetic prediction' derived by the Public Health Information Development Unit (PHIDU) at the LGA level and as a result should be used with caution and be treated as indicative of the prevalence psychological distress within the SNPHN catchment (Table 7). Psychological distress is used as an indicative measure of the mental health needs of a population rather than measuring rates of mental illness (Statistics Solutions, 2016).

Premature mortality data between 2010 and 2014 for both suicide and self-harm is the key mortality indicator in this Atlas. This suicide and self-harm measure is the only one currently available at a lower geographical region than state level data so is utilised for the purpose of the Atlas as the best available data.

TABLE 7 HEALTH AND MORTALITY INDICATORS EXAMINED

Indicator	Description	Calculation
Fair/Poor Health	Modelled estimate based on self-reported and assessed health on a scale from 'poor' to 'excellent' – this measure is the sum of responses categorised as 'poor' or 'fair'.	Estimated population, aged 15 years and over, with fair or poor self-assessed health, ASR per 100
Psychological Distress	The proportion of adults with very high levels of psychological distress as measured by the Kessler Psychological Distress Scale—10 items (K10). (The K10 is a scale of non-specific psychological distress based on 10 questions about negative emotional states in the 4 weeks before being interviewed).	Estimated population, aged 18 years and over, with high or very high psychological distress based on the Kessler-10 Scale (K10), ASR per 100
Suicide	Data compiled from deaths data based on Cause of Death Unit Record Files - ICD-10 codes: X60-X84, Y87.0	Deaths from suicide and self-inflicted injuries, persons aged 0 to 74 years, ASR per 100,000

Health and Wellbeing

In line with the socioeconomic indicators presented previously, SNPHN has more positive health and wellbeing indicators when compared to state and national rates (Table 8). SNPHN has an ASR per 100 persons of 8.6 for self-rated fair/poor health, compared to 14.3 for NSW and 14.8 nationally. Within the catchment of the PHN Ryde's self-rated fair and poor health is highest at 11.3 per 100 persons, whilst Mosman is lowest at 5.4 per 100 persons (Figure 21). The rate of psychological distress in SNPHN is 7.3 per 100 persons, which compares favourably against the state (11) and national (11.7) rates. Ku-ring-gai has the lowest rate of psychological distress (5.5) and Ryde the highest (8.6) (Figure 22).

TABLE 8 HEALTH AND MORTALITY IN SNPHN

LGA	Fair/poor health* (ASR per 100)	Psychological Distress* (ASR per 100)	Suicide† (n)	Suicide Rate† (ASR per 100,000)
Hornsby	9.1	7.5	51	6.6
Hunters Hill	7.9	7.3	8	12.8
Ku-ring-gai	5.7	5.5	42	8.0
Lane Cove	7.4	7.0	15	9.4
Manly	7.5	6.7	13	6.2
Mosman	5.4	5.7	9	6.4
North Sydney	8.2	7.3	31	8.6
Pittwater	7.9	6.9	27	9.6
Ryde	11.3	8.6	31	5.8
Warringah	10.0	8.2	54	7.7
Willoughby	8.1	7.0	28	8.0
SNPHN	**8.6**	**7.3**	**309**	**7.6**
NSW	14.3	11.0	3,193	9.4
Australia	14.8	11.7	11,874	11.2

Sourced from: *2014-15 (PHIDU, 2017); †2010-2014 (PHIDU, 2017)

Mortality

The overall suicide rate for SNPHN (7.6 per 100,000) is lower than the NSW and national rates, 9.4 and 11.2 per 100,000 respectively (Table 8). However, within the PHN the suicide rate varies widely from the lowest rate in Ryde LGA (5.8 per 100,000) to the highest rate, which is more than double, in Hunters Hills LGA (12.8 per 100,000), which is higher than both the NSW and national rates (Figure 23).

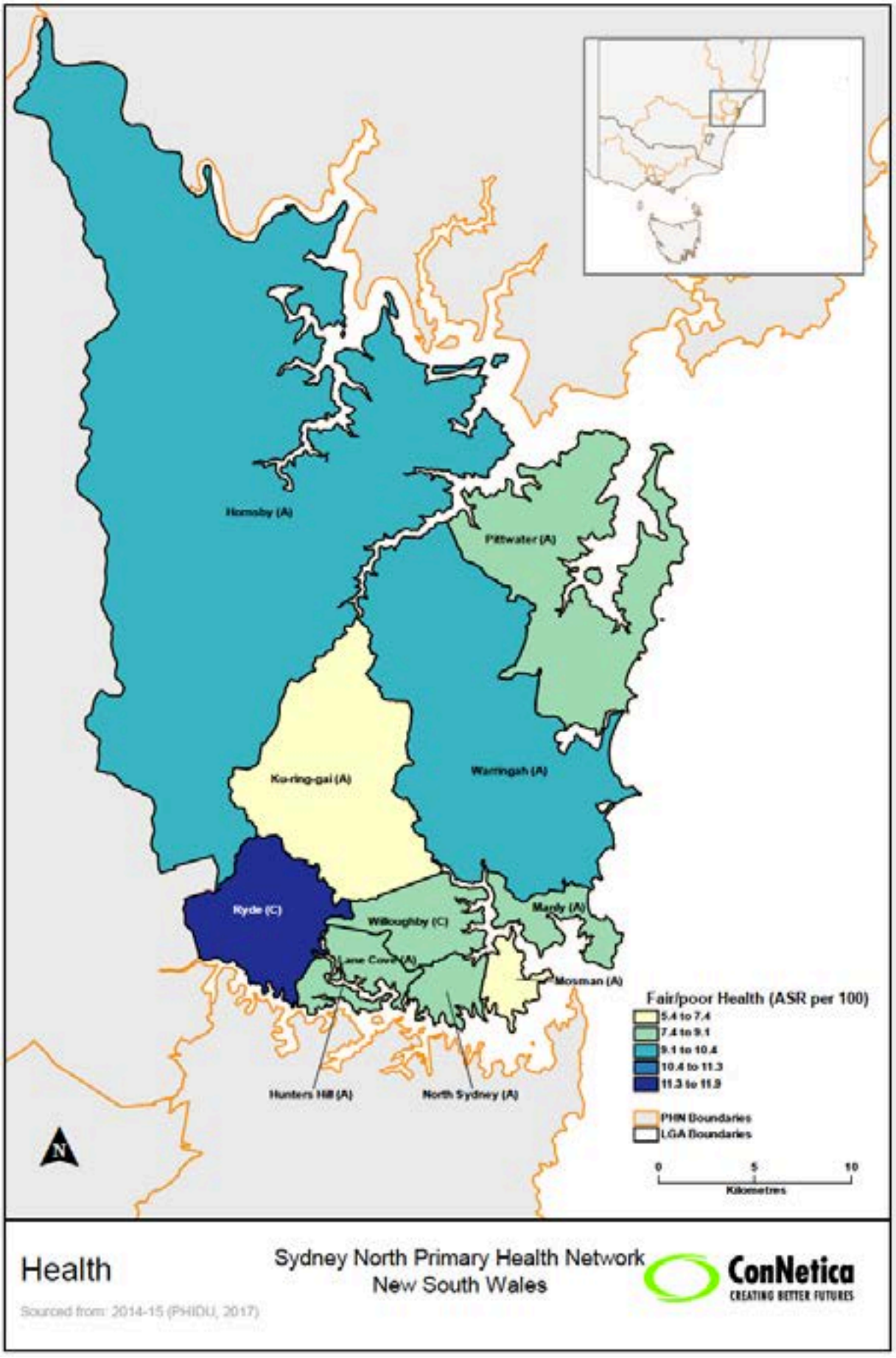


FIGURE 21 FAIR/POOR HEALTH BY LGA FOR SNPHN

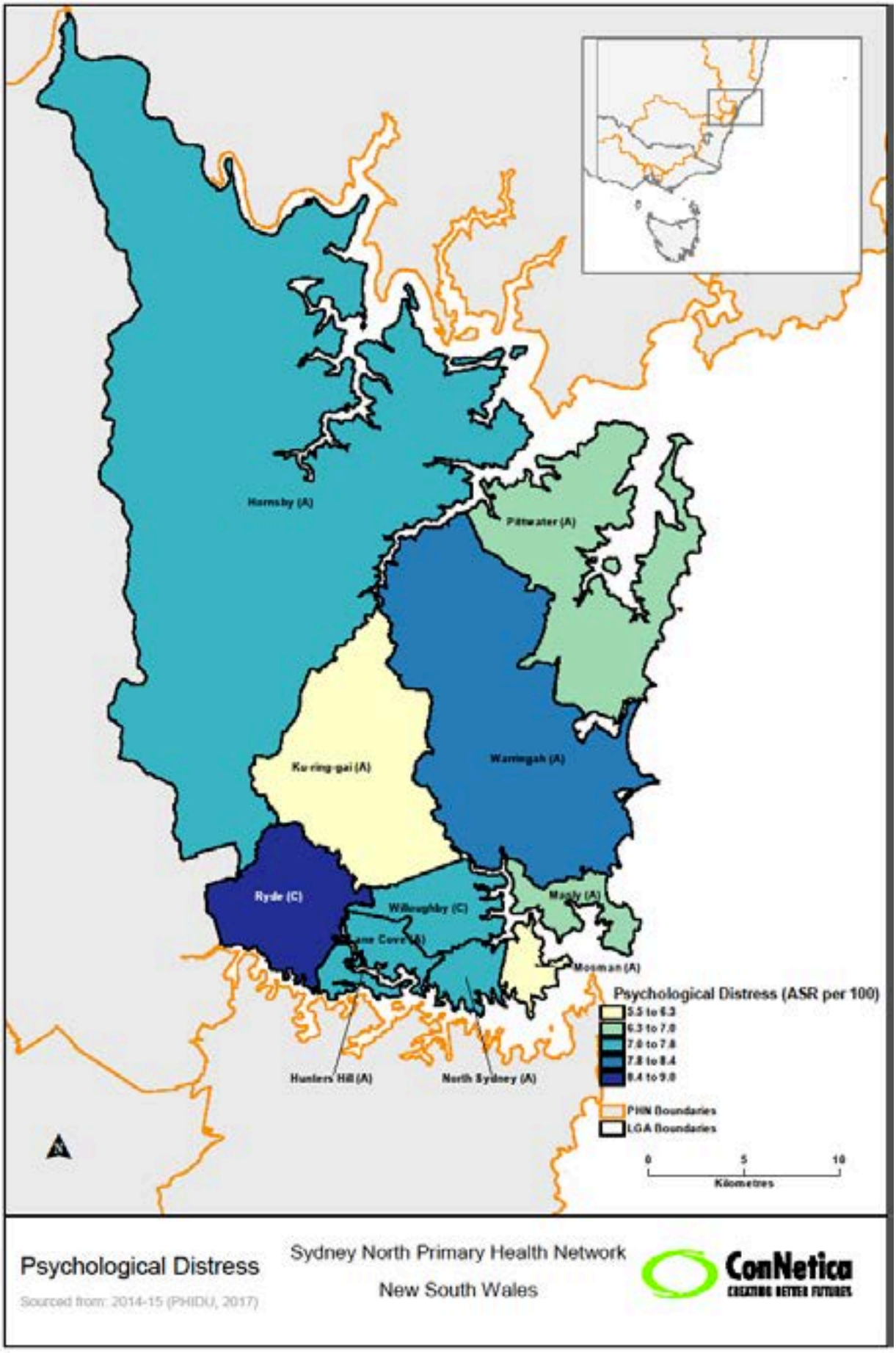


FIGURE 22 PSYCHOLOGICAL DISTRESS BY LGA FOR SNPHN

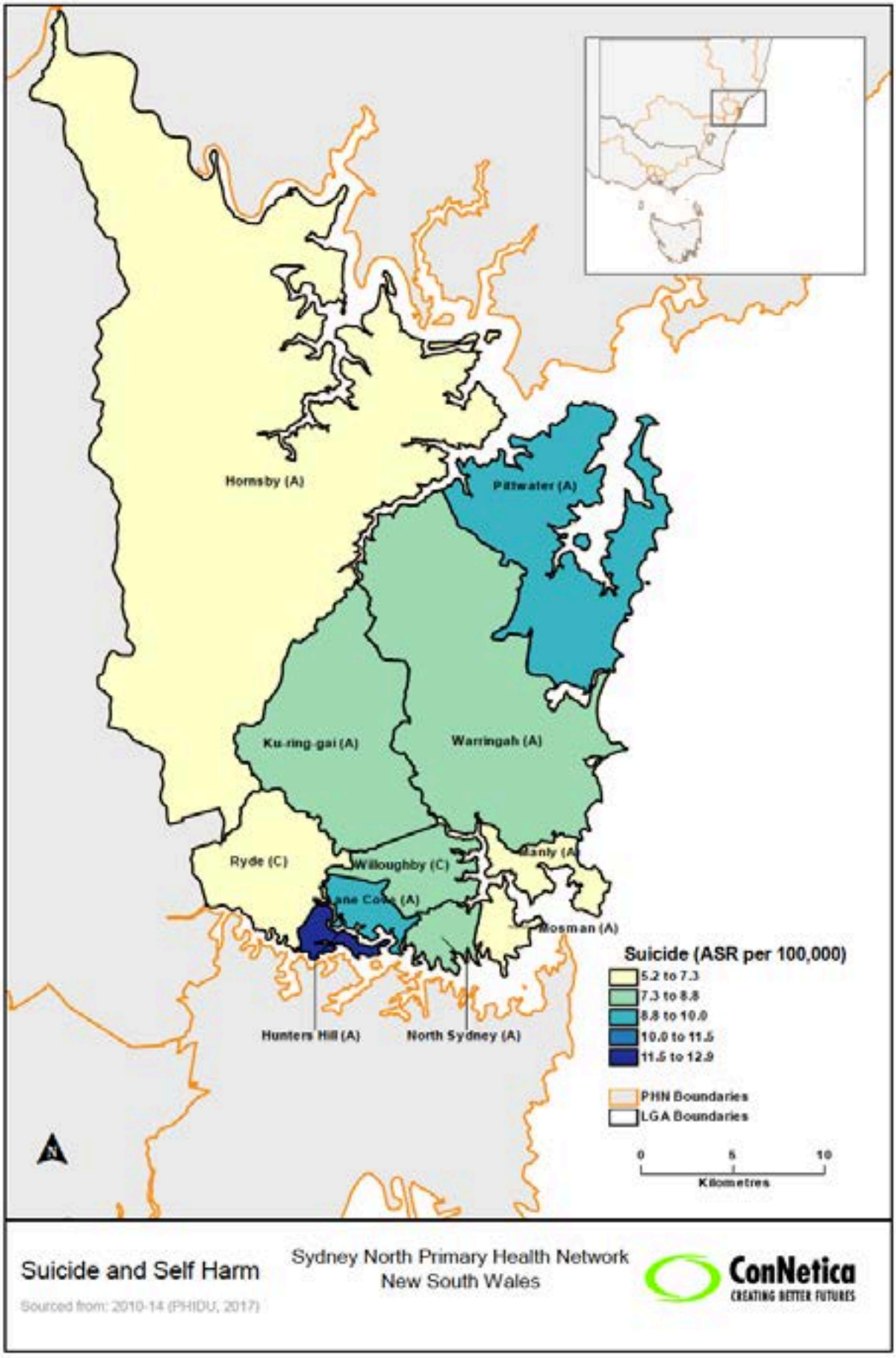


FIGURE 23 SUICIDE AND SELF HARM RATE BY LGA FOR SNPHN

4. Mental Health Data for SNPHN

Publicly available population mental health and mental health service data is included in this section to help 'complete the picture' of the region. For comparative purposes, a brief overview of Australian and New South Wales prevalence and service data is provided.

4.1 Australian Prevalence

In Australia, in any given year almost approximately 20% of the population experience some form of mental illness (Jorm et al., 2017). The NMHC report in 2014 estimated more than 3.6 million people aged 16-85 years experience mental illness each year. Around 625,000 Australian adults experience severe episodic or severe and persistent mental illness with a further 65,000 people identified as having severe and persistent illness with complex multi-agency needs. The most recent national survey of Australian children and young adults (aged 4-17 years) found 560,000 individuals (13.9%), had a mental health disorder in the previous 12 months (Lawrence et al., 2015). Approximately 82,000 children and young adults (2.1%) were identified as having a severe disorder with number increasing for those aged 12-17 year (3.3%).

Over a lifetime, nearly half of the Australian adult population will experience mental illness at some point which equates to nearly 7.3 million Australians aged 16-85 (AIHW, 2016). It is estimated that the community prevalence of mental and substance use disorders in Australia in 2011-2012 was 19.9% (Diminic et al., 2013). The prevalence was highest in the adult (25-64 years) age group (22.6%), followed closely by the youth (15-24 years) population (19.8%), which is partially due to much higher rates of substance use disorders in these age groups compared to children (0-14 years) (15.4%) and older adults (65+ years) (15.5%).

4.2 NSW Prevalence

It is estimated that at any one time, approximately 1.7 million or 23% of people in NSW have an underlying or undiagnosed mental health problem. Approximately 670,000 (9%) have a mild mental illness, 340,000 (5%) a moderate mental illness and 230,000 (3%) a severe mental illness (NSW Mental Health Commission, 2014) (Figure 24).

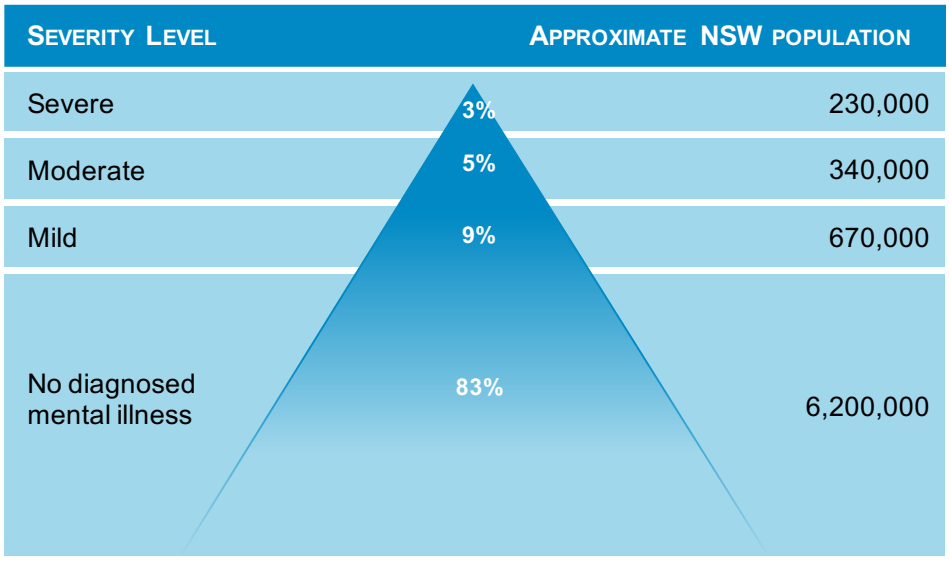


FIGURE 24 ESTIMATED PREVALENCE OF ADULT MENTAL ILLNESS IN NSW
[Adapted from: NSW Mental Health Commission, 2014, p.12]

The prevalence of mental disorders and illness is likely to be an underestimation for a variety of reasons: reluctance to seek treatment, lack of access to treatment, inconsistencies in diagnosis among providers, confidentiality of diagnosis/treatments, and poor data capture. In addition, there are wide discrepancies in treatment and prescribing patterns which are conflicting. Improved data capture and consistency of data would provide a more in-depth insight into current and future trends.

4.3 Mental Health Services

Mental Health Nurse Incentive Program (MHNIP)

The Mental Health Nurse Incentive Program (MHNIP) provides a non-MBS incentive payment to community based general practices, private psychiatrist services and Aboriginal and Torres Strait Islander Primary Health Care Services who engage mental health nurses to assist in the provision of coordinated clinical care for people with severe mental disorders. Mental health nurses provide an accessible service in a non-stigmatised setting. They can provide services to children and young people, women in the peri-natal period and seniors, who are more likely to be in contact with their General Practitioner than with other health or community services.

SNPHN currently funds three service providers to deliver the MHNIP across the region. Data extracted from the MHNIP data tables indicate that the number of services provided by MHNIP in the SNPHN catchment declined sharply between the 2013-2014 and 2014/15 financial years (DoH, 2015) (Figure 25).

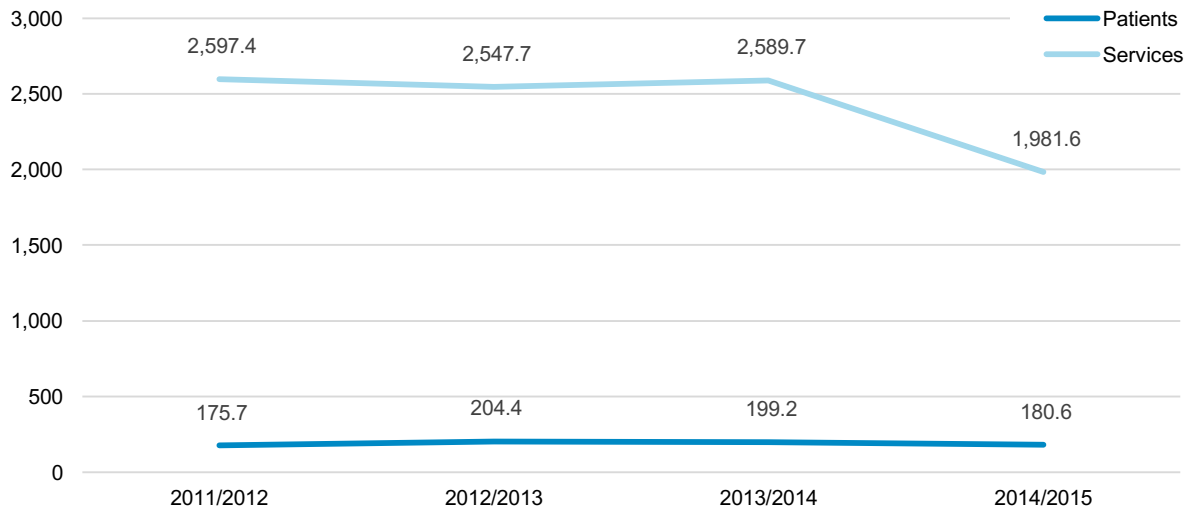


FIGURE 25 MHNIP CLIENTS AND SERVICES, SNPHN 2011/12 – 2014/15

Medical Benefits or Medicare Funded Services

Across Australia in 2015-16, more than 10.6 million Medicare-subsidised mental health-related services were provided by psychiatrists, General Practitioners (GPs), psychologists and other allied health professionals to almost 2.3 million patients (AIHW, 2017). This represented an average of 4.7 services per patient over the year with GPs providing more services to more patients than the other provider types (AIHW, 2017).

Overall, NSW had the third highest rate of services provided (432.3 per 100,000 population), and third highest rate of patients (94.2 per 100,000 population) (Figure 26). NSW figures closely mirrored the national rates in 2015-16 (443.6 services and 94.5 patients per 1,000 population) (AIHW, 2017).

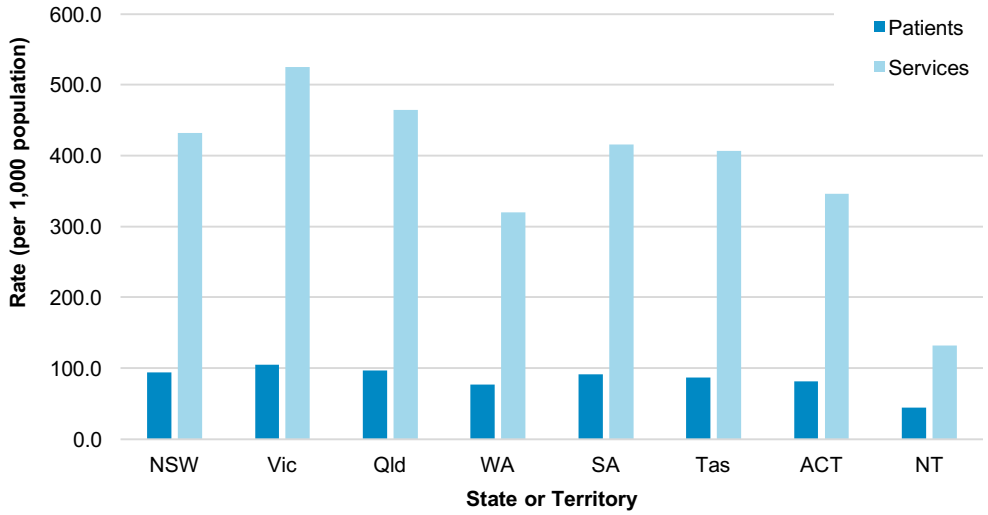


FIGURE 26 MEDICARE SUBSIDISED MENTAL HEALTH RELATED SERVICES AND PATIENT RATES 2015-16

Across Australia, the highest number of services were provided by General Practitioners (3.2 million or 30.6%) followed by other psychologist services (2.6 million or 24.8%) and psychiatrists (2.4 million or 22.2%) (Figure 27).

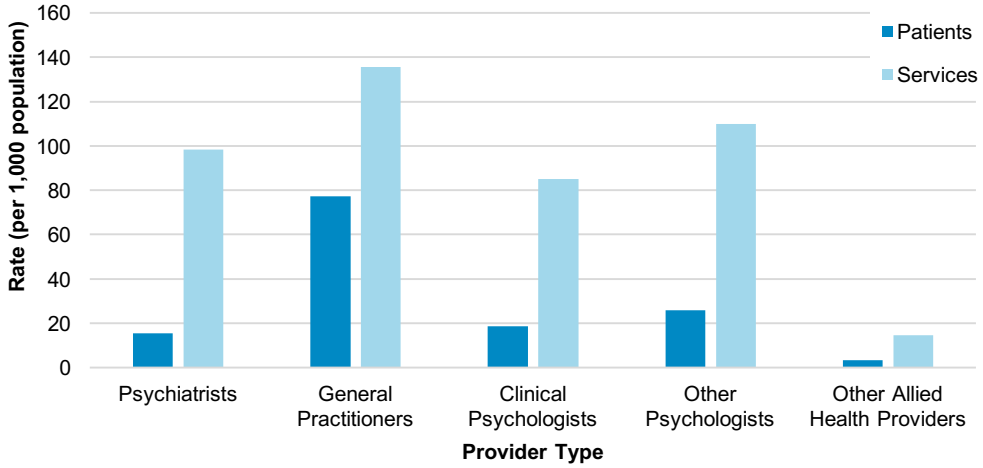


FIGURE 27 AUSTRALIAN MEDICARE SUBSIDISED MENTAL HEALTH RELATED RATES 2015-16

Across SNPHN in 2014-15, the highest number of services were provided by psychiatrists (130,384) with the number of services provided by GPs, clinical psychologists and other allied health providers all very similar ranging from 80 to 90 thousand services (Table 9). Women consistently accessed services more than men, with around 60% of services for all provider types being delivered to women.

TABLE 9 SNPHN MBS UTILISATION BY PROVIDER TYPE 2014-15

Provider Type	Gender	Patients (n)	%	Services (n)	%	Benefits Paid	Fees Charged
Psychiatrists	Male	8,093	46.2	54,399	41.7	$9,117,077	$12,305,430
	Female	9,412	53.7	75,985	58.3	$12,702,966	$16,865,477
	Total	**17,504***	**100.0**	**130,384**	**100.0**	**$21,820,043**	**$29,170,907**
General Practitioners	Male	18,286	36.9	29,345	36.3	$2,580,049	$2,853,942
	Female	31,238	63.1	51,375	63.7	$4,497,213	$4,949,049
	Total	**49,523***	**100.0**	**80,720**	**100.0**	**$7,077,262**	**$7,802,991**
Clinical Psychologists	Male	6,507	35.8	30,623	35.0	$4,128,244	$5,482,797
	Female	11,646	64.2	56,919	65.0	$7,618,603	$10,026,229
	Total	**18,153***	**100.0**	**87,542**	**100.0**	**$11,746,847**	**$15,509,026**
Other Allied Health Providers	Male	6,632	36.8	29,564	37.0	$2,796,997	$4,117,602
	Female	11,376	63.1	51,225	63.0	$4,821,397	$7,092,481
	Total	**18,008***	**100.0**	**80,789**	**100.0**	**$7,618,394**	**$11,210,083**
	Total	**67,227***		**379,450**		**$48,265,584**	**$63,696,712**

* The number of patients may not sum to the total as a patient may receive more than one type of service but will be counted only once in the total.

Access to Allied Psychological Services (ATAPS)/ Access Plus

Access to Allied Psychological Services (ATAPS) was previously provided under the Better Access to Services strategy to enable people with a clinically diagnosed mental health disorder to access assistance for short-term mental health interventions and services through psychiatrists, psychologists, GPs and other eligible allied health providers. The ATAPS program was targeted at improving access to support and treatment for people who have mild to moderate mental illness.

Recent changes to the ATAPS program has seen SNPHN now begin to commission services under the Access Plus program across the region. Under this program, there are a total of 131 approved providers registered with SNPHN many of these providers are the same as those previously registered as ATAPS providers. Providers are located across 50 suburbs with the majority being registered psychologists (51%) or clinical psychologists (26%) (**Error! Reference source not found.**).

With the exception of those service providers located in Hornsby, the majority of providers are located in the southern and eastern areas of the SNPHN catchment (Figure 29).

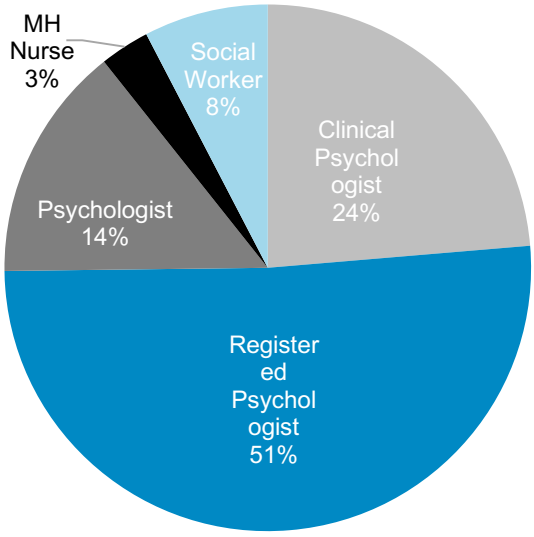


FIGURE 28 REGISTERED ACCESS PLUS PROVIDERS FOR SNPHN BY TYPE

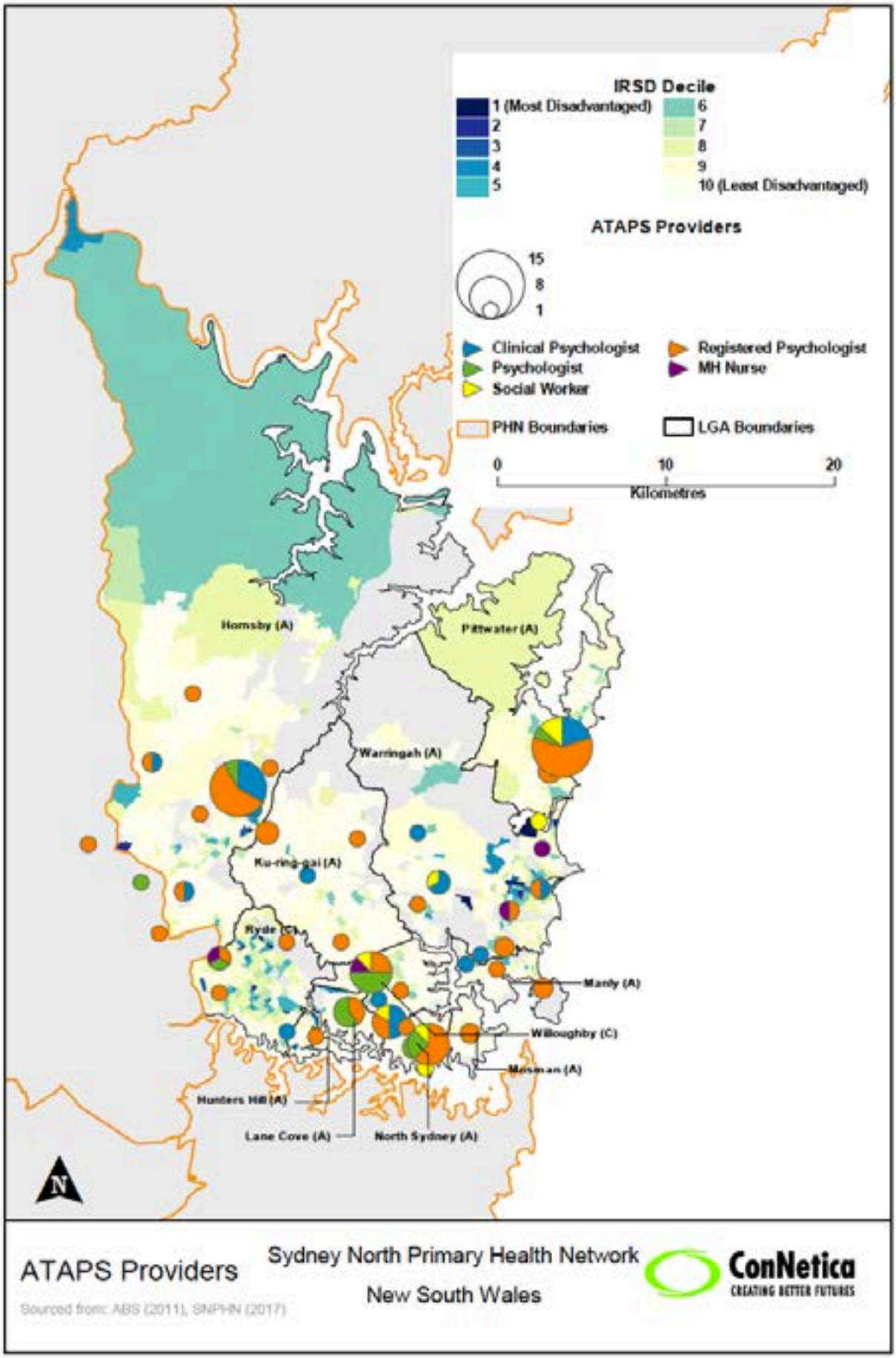


FIGURE 29 LOCATION AND TYPE OF ATAPS PROVIDERS

Historical data from the ATAPS program indicates that a total of 7,207 clients accessed the program in SNPHN over the period 2011/12 – 2014/15 (DoH, 2016). The number of clients steadily increased from 1,184 in 2011/12 to 2,203 in 2013/14, then dropped slightly in the following financial year (Figure 30). Similarly, the number of sessions also increased over the same period albeit at a slightly higher rate from 5,134 services in 2011/12 to 11,915 in 2013/14 (DoH, 2016).

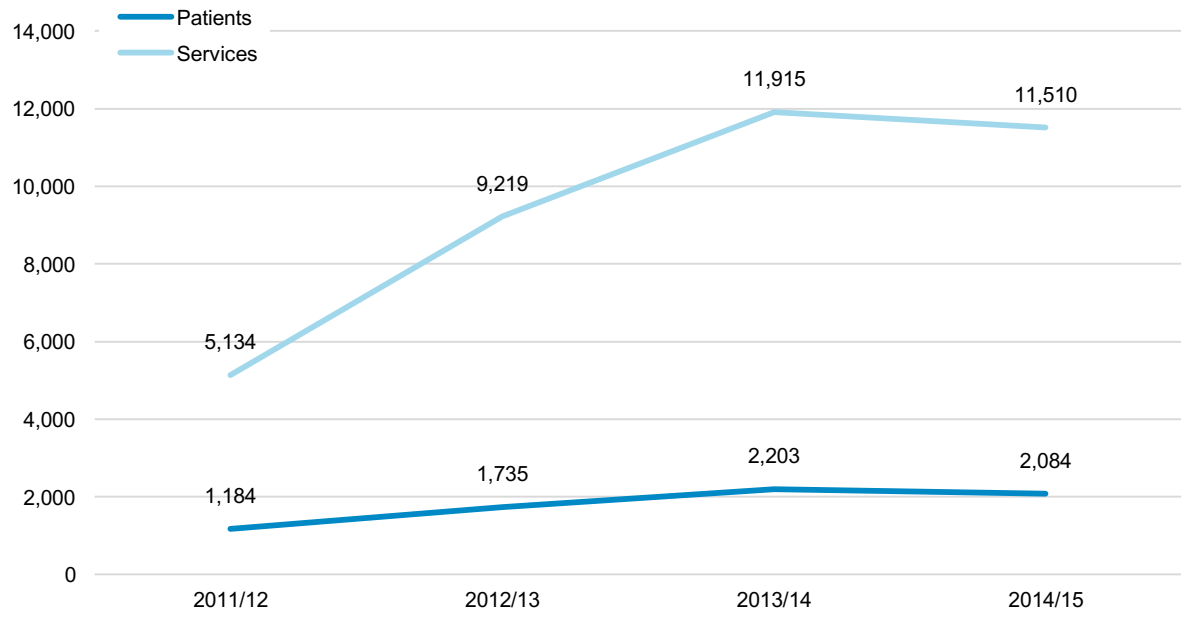


FIGURE 30 ATAPS MDS TOTAL PATIENTS AND SESSIONS 2011/12 - 2014/15

5. Mental Health Services in SNPHN

Data on services providing care for people with a lived experience of mental illness in SNPHN was collected from 18th April 2017 to 14th July 2017 using interviews (face-to-face and telephone) and an on-line survey tool.

5.1 Stakeholders

Non Government Organisations

Utilising information provided by SNPHN and service information available through the NHSD, a total of 26 NGOs were considered for inclusion in the Atlas. After initial contact was made with each organisation, three services were removed as the service was either closed or a duplication of another service already listed. Of these remaining organisations, almost 80% participated in the data collection process (17 interviews; 1 on-line survey). For organisations who were not able to participate directly in data collection (n=5) coding of their services was based on information publically available on the internet.

Of the 23 NGOs across SNPHN, 74% were considered to deliver services which were eligible for inclusion under the DESE methodology (Appendix B).

Northern Sydney Local Health District

As the only Local Health District within the SNPHN catchment, interviews (n=6) and surveys (n=2) were conducted with key NSLHD staff in relation to mental health services provided across the six main hospitals including: Hornsby, Manly, Mona Vale, Royal North Shore and Ryde (Appendix C).

After the completion of the interviews and surveys, a number of data gaps remained in relation to some services, particularly those at Macquarie Hospital as well as specialised services such as the Specialist Rehabilitation Clinicians and Clozapine Clinic. As with missing NGO data, coding of these services was based on information from publically available sources including the NSLHD website.

5.2 Mental Health Services

Across Sydney North a total of 109 Basic Stable Inputs of Care (BSIC) or service delivery teams were identified that deliver mental health care in the NSPHN region (Figure 31). The majority (87%) of these BSIC received only one Main Types of Care (MTC) code with 125 MTC allocated across 41 different DESDE code types.

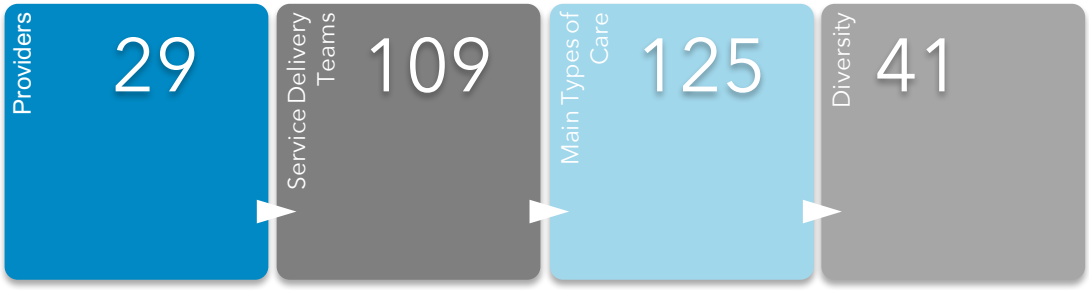


FIGURE 31 SUMMARY OF SERVICES PROVIDING CARE FOR MENTAL HEALTH

The majority (77%) of services identified were for the adult (or general population) with the remainder of services specifically targeted for older adults (17%) and for children and adolescents (6%) (Figure 32). Further analysis reveals that 8 of the adult services are targeted toward specific population groups

including service for females (n=4), males (n=3) and indigenous people (n=1). A number of services within the SNPHN region (5%, n=6) have a specific focus on providing care for the period between adolescence and adulthood (12 to 25 years).

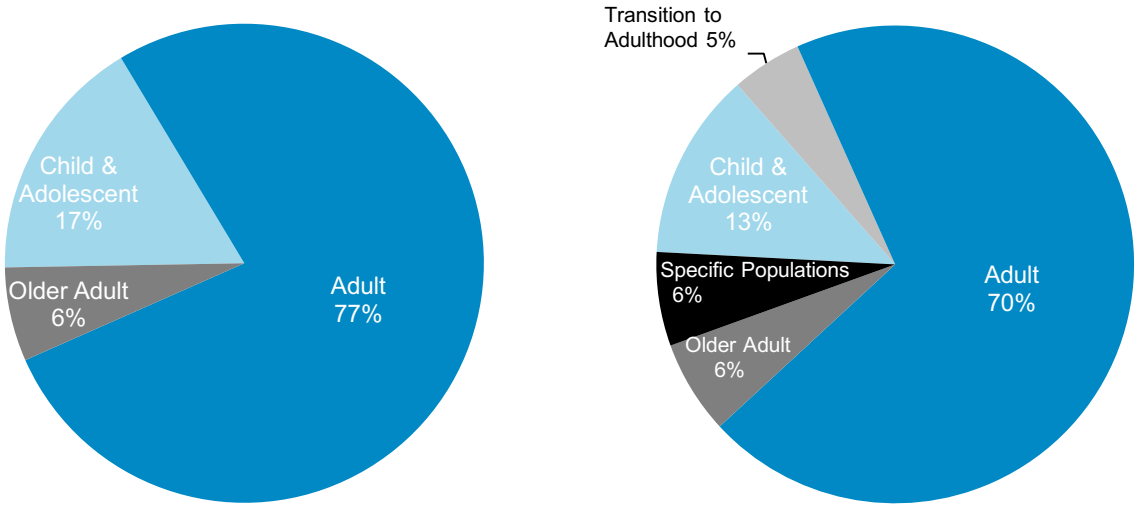


FIGURE 32 SNPHN MTC BY SPECIFIC AGE AND TARGET GROUPS

In comparison to data collected for the SWSLHD region in 2015, SNPHN has similar proportions of services for the transition to adulthood, adults and older adults (Salvador-Carulla et. al., 2015a). However, SWSLHD had fewer child and adolescent service but more services for specific population groups compared to SNPHN (Figure 33).

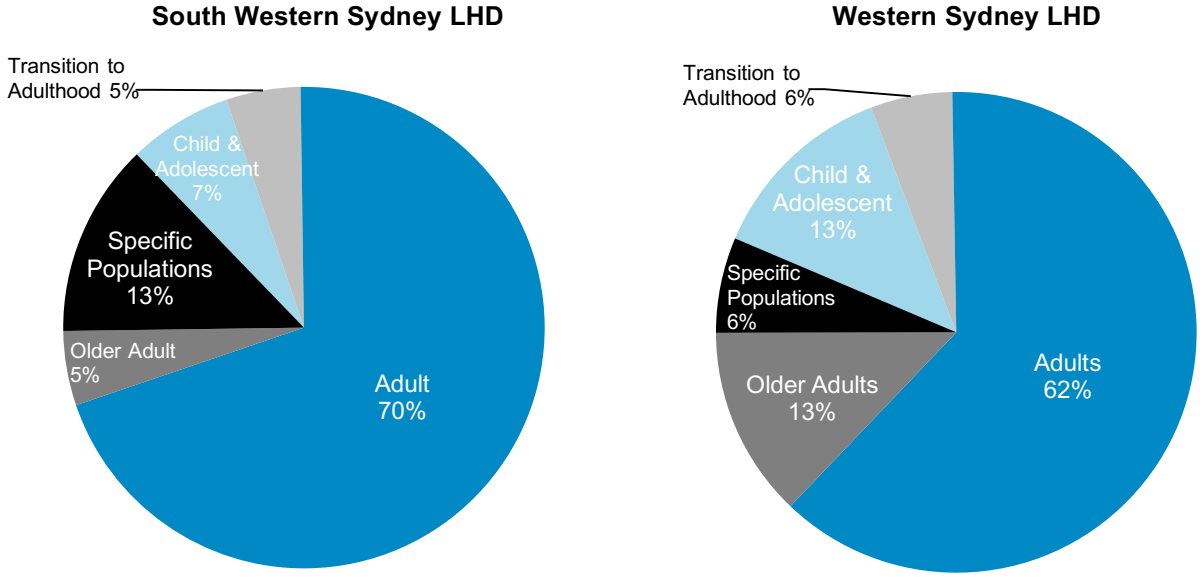


FIGURE 33 MTC BY SPECIFIC AGE AND TARGET GROUPS – SWSLHD AND WSLHD

The proportion of child and adolescent and services for specific population was similar to the proportions identified for the WSLHD in 2015 (Salvador-Carulla et. al., 2015b). However, WSLHD had a higher proportion of services for older adults compared to SNPHN (Figure 33).

The majority of service teams in SNPHN are delivering either Outpatient Care (66%) or Residential Care (22%) with the remainder of teams responsible for the delivery of Day Care (5%), Accessibility (5%) or Information services (2%) (Figure 34). There were no Self-Help or Volunteer services identified for mental health in the NSPHN region.

The breakdown of service types is similar to the pattern observed in SWSLHD data with WSLHD overall having higher proportions of Residential Care services and lower proportions of Outpatient Care.

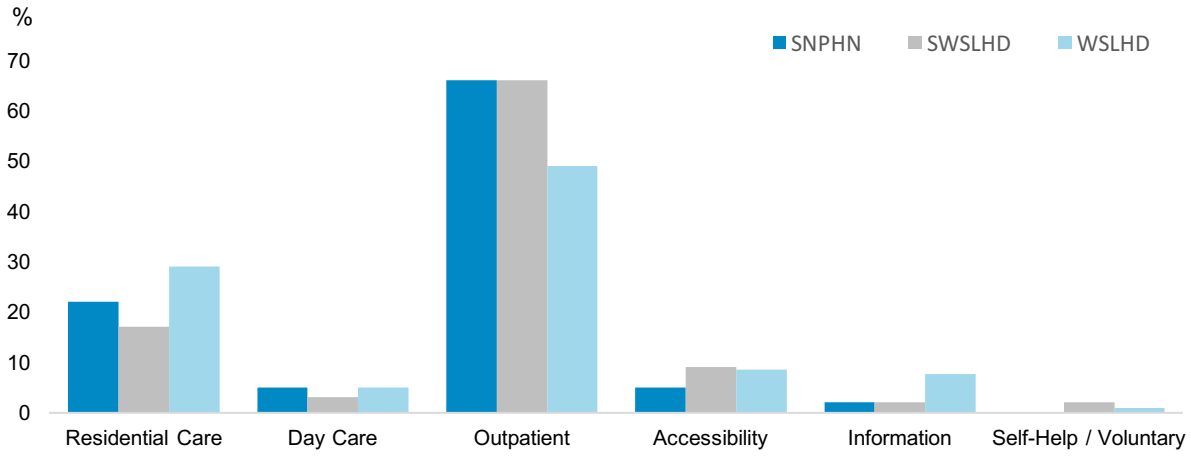


FIGURE 34 COMPARISON OF MTC BY SERVICE TYPE

Within the SNPHN region the balance is almost even between services provided by the health sector (57%) and those provided by others such as NGOs (43%). However, the public health sector was the only sector identified as providing services for the older adult population and the majority of services for the child and adolescent population (Table 10). The six Day Care MTC identified were provided exclusively by NGOs. Overall the largest number of MTC were identified as Outpatient services provided by NGOs for the adult (or general population) (n=31) which makes up almost one quarter of all services identified.

TABLE 10 MAIN TYPES OF CARE IN THE SNPHN REGION BY AGE GROUPS AND SECTOR

Population	Sector	R	D	O	A	I	S	TOTAL
Child & Adolescent	*Health*	2	0	13	0	0	0	15
	NGO/Other	0	1	4	1	0	0	6
	Sub-total	**2**	**1**	**17**	**1**	**0**	**0**	**21**
Adult	*Health*	16	0	30	1	1	0	48
	NGO/Other	6	5	31	4	2	0	48
	Sub-total	**22**	**5**	**61**	**5**	**3**	**0**	**96**
Older Adult	*Health*	3	0	5	0	0	0	8
	NGO/Other	0	0	0	0	0	0	0
	Sub-total	**3**	**0**	**5**	**0**	**0**	**0**	**8**
	TOTAL	**27**	**6**	**83**	**6**	**3**	**0**	**125**

The SNPHN balance of care between health or other sectors is similar to the balance observed in WSLHD (Figure 35). However, when compared to SWSLHD, SNPHN has a greater proportion of services provided by the health sector.

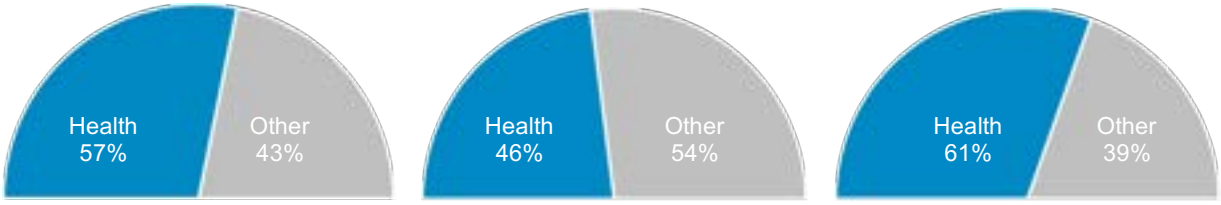


FIGURE 35 BALANCE OF CARE COMPARISONS

5.3 Residential Care

Child and Adolescent Services

Two teams providing Residential Care to children and adolescents in the Sydney North PHN region were identified, both provided by the public health sector (Table 11). At the Brolga Unit at Hornsby Hospital, a multidisciplinary team provides statewide acute inpatient care for young people aged 12 to 17 years with serious mental health issues. A non-acute but intensive short term residential program for primary school aged children and their families, is provided by Coral Tree Family Service. This multidisciplinary team is located at Macquarie Hospital and also has a statewide catchment area.

TABLE 11 RESIDENTIAL CARE FOR CHILDREN AND ADOLESCENTS IN THE SNPHN REGION

Provider	Team	Suburb	DESDE (beds)	Area
NSLHD CYMHS	Coral Tree Family Service	North Ryde	CC[F00-F99][Z63] - R8.1h (2 families) CC[F00-F99][Z63] - O10.1h CC[F00-F99] - O8.1mh	Statewide
	Brolga Unit-Hornsby Hospital	Hornsby	CX[F00-F99] - R2 (12)	Statewide

Adult Services

In the Sydney North PHN region, 18 teams (21 MTC) were identified as providing Residential Care or support to adults with a lived experience of mental illness (Table 12). The majority of teams (n=12) (15 MTC) are provided by the public health sector in a hospital setting; 7 of which (10 MTC) provide acute care, including emergency and intensive care. The inpatient units located at Manly, Royal North Shore and Hornsby Hospital include an additional MTC for higher dependency patients. The other 5 public health sector teams provide short term or extended care rehabilitation support to units in the grounds of Macquarie Hospital, including two secure units, one of which is for males only.

A total of 6 teams, provided by three NGOs, deliver non-acute Residential Care in several locations across the region. Under a consortium arrangement Mission Australia and New Horizons have four Housing and Accommodation Support Initiative (HASI) Plus teams that provide either 24 hour or daily support in properties located in Eastwood, North Ryde, Chatswood and Narraweena. Bowering House in Brookvale (Mission Australia) provides support to service users requiring a lower level of support, whilst Manly Sanctuary Respite Centre (One Door) is a very short-term respite service providing support as required to carers of people with a lived experience of mental illness.

TABLE 12 RESIDENTIAL CARE FOR ADULTS IN THE SNPHN REGION

Provider	Team	Suburb	DESDE (beds)	Area
Hornsby Hospital	Acute Mental Health Unit	Hornsby	AX[F00-F99] - R2.2 (25) AX[F00-F99] - R1 (10)	Hornsby-Ku-ring-gai
	Mental Health Intensive Care Unit	Hornsby	AX[F00-F99] - R1c (12)	North Sydney, Central Coast LHD
Macquarie Hospital*	Acute Admission Unit-Parkview	North Ryde	AX[F00-F99] - R1 (14)	
	Extended Care Mental Health Rehabilitation Unit-Hamilton Hostel	North Ryde	AX[F00-F99] - R4c (20)	
	Extended Care Mental Health Rehabilitation Unit-Manning	North Ryde	AX[F00-F99] - R4 (26)	
	Extended Care Mental Health Rehabilitation Unit-Tarban	North Ryde	AXM[F00-F99] - R4c (20)	

Provider	Team	Suburb	DESDE (beds)	Area
Macquarie Hospital*	Open Mental Health Rehabilitation Unit-Cottages	North Ryde	AX[F00-F99] - R4	
	Short term Mental Health Rehabilitation Unit-Bridgeview	North Ryde	AX[F00-F99] - R4	
Mission Australia	HASI Plus - Eastwood	Eastwood	AX[F00-F99] - R8.2 (5)	Eastwood
	HASI Plus - North Ryde	North Ryde	AX[F00-F99] - R9.2 (8)	North Ryde
	Bowering House	Brookvale	AX[F00-F99] - R10.2 (8)	
New Horizons	HASI Plus - Chatswood	Chatswood	AX[F00-F99] - R8.2 (5)	Chatswood
	HASI Plus - Naraweena	Narraweena	AX[F00-F99] - R9.2 (2)	Narraweena
Northern Beaches MHS	Inpatient Services - Manly Hospital	Manly	AX[F00-F99] - R2 (12) AX[F00-F99] - R1 (8)	Northern Beaches
	Psychiatric Emergency Care - Manly Hospital	Manly	AX[F00-F99] - R2.1 (4)	
One Door	Manly Sanctuary Respite Centre	Manly	AX[F00-F99][Z63] - R10v (9) AX[F00-F99][Z63] - D9.1	
Royal North Shore Hospital	Mental Health Inpatient Unit	St Leonards	AX[F00-F99] - R2 (20) AX[F00-F99] - R1 (12)	Lane Cove, Mosman, North Sydney, Willoughby
	Psychiatric Emergency Care Centre (PECC)	St Leonards	AX[F00-F99] - R2.1 (6)	

* Services coded based on information available from website information ONLY.

Older Adult Services

Only three teams providing Residential Care specifically to older adults aged over 65 years were identified for the Northern Sydney region (Table 13). All are provided by the public health sector, in a hospital setting; two of these (i.e. Manly Hospital and Greenwich Hospital) provide acute inpatient care, while Lavender House, located at Macquarie Hospital, provides non-acute care for an indefinite period of time. Some long stay service users residing at Lavender House are now being relocated into community based housing through the Community Living Initiative.

TABLE 13 RESIDENTIAL CARE FOR OLDER ADULTS IN THE SNPHN REGION

Provider	Team	Suburb	DESDE (beds)	Area
Macquarie Hospital	Non Acute MH Inpatient Unit-Lavender House	North Ryde	OX[F00-F99] - R6 (30)	Northern Sydney
Northern Beaches MHS	SMHSOP Acute Inpatient Unit-Manly Hospital	Manly	OX[F00-F99] - R2 (10)	Northern Beaches
	SMHSOP Acute Inpatient Unit-Riverglen	Greenwich	OX[F00-F99] - R2 (20)	Ryde, North Shore, Hornsby priority residents

Residential Care services for children and adolescents, adults, and older adults are primarily clustered around four hospital sites in the southern reaches of the SNPHN catchment (Figure 36).

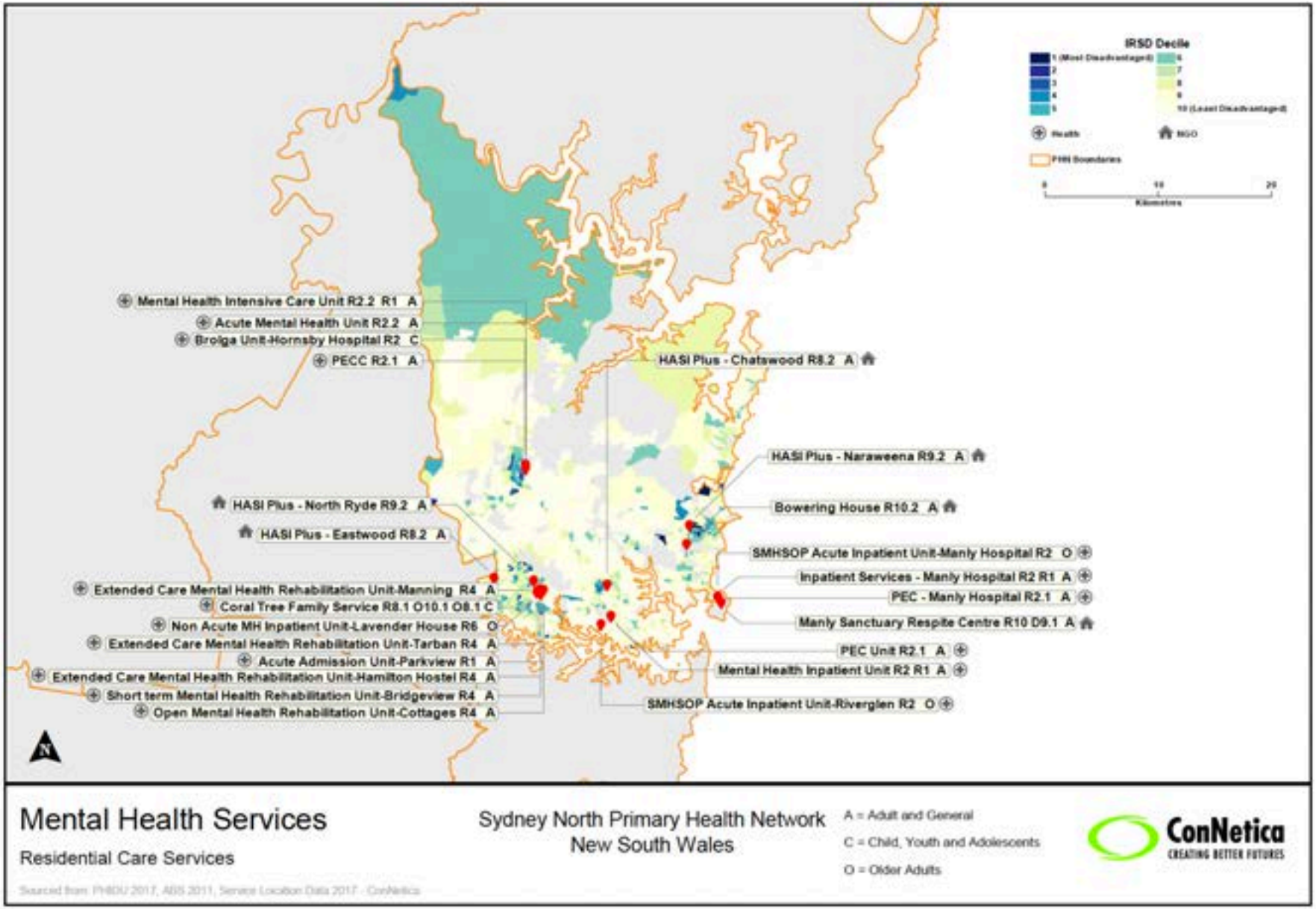


FIGURE 36 RESIDENTIAL CARE SERVICES IN THE SNPHN REGION

5.4 Day Care

Across the SNPHN region there was a total of six Day Care services, all provided by NGOs and located within 12 km of Sydney's Central Business District (Figure 37).

Child and Adolescent Services

One team providing Day Care to children and adolescents in the SNPHN region was identified (Table 14). Phoenix House is a NGO providing early intervention and support to challenged young people aged 12 to 24 years. While it is primarily a social business enterprise focusing on building resilience in young people, 20% of its clients use the service for their mental health issues. It provides an educational service through a 15-week Certificate II program, as well as a Year 10 equivalent program.

Arndell School is a specialised school for primary school aged children with emotional and behavioural difficulties. The school is located in the grounds of Macquarie Hospital and works together with the family to address the social, educational and behavioural needs of the students. Whilst the school was not able to be coded, the Clinical School Program provided by Coral Tree Family Service has been coded as an additional MTC for the team in the Residential Care section above.

TABLE 14 DAY CARE SERVICES FOR CHILDREN AND ADOLESCENTS IN THE SNPHN REGION

Provider	Team	Suburb	DESDE	Area
Phoenix House	Phoenix House	Crows Nest	CY[F30-F49] - D4.2 CY[F30-F49] - A4.2.1 CY[F30-F49][Z63] - O8.1	North Sydney

Adult

Four teams providing Day Care services to adults in the SNPHN region were identified (Table 15). The majority of these teams (n=3) are from the NGO sector, providing programs including music therapy, arts, cooking and life skills training, while the CREATE program (Community Education, Rehabilitation Access, Training and Employment Team) is comprised of vocational trainers provided by NSW Health working with service users employed by an NGO (Macquarie Area Rehabilitation Services Inc.) with Macquarie Area Rehabilitation Service (MARS) providing one vocational trainer (a chef).

TABLE 15 DAY CARE SERVICES FOR ADULTS IN THE SNPHN REGION

Provider	Team	Suburb	DESDE	Area
Action Foundation	Music Therapy	Chatswood	AX[F00-F99] - D8.3gv	
NSW Health/MARS	CREATE	Gladesville	AX[F00-F99] - D2.1	Gladesville, Turramurra
One Door	Pioneer Club House	Balgowlah	AX[F00-F99] - D8.4	
	Day Care Team	Chatswood	AX[F00-F99] - D4.1	

In addition, the team from Manly Sanctuary Respite Centre (outlined in the Residential Care section above) also provides two Day Care programs as a second MTC: a weekly art program for carers; and a weekly men's group to provide the carer respite while their family member attends the group. One of the teams has the 'v' qualifier applied, indicating that it does not have guaranteed funding for next three years.

Older Adults

There were no Day Care services for Older Adults identified within the Sydney North region.

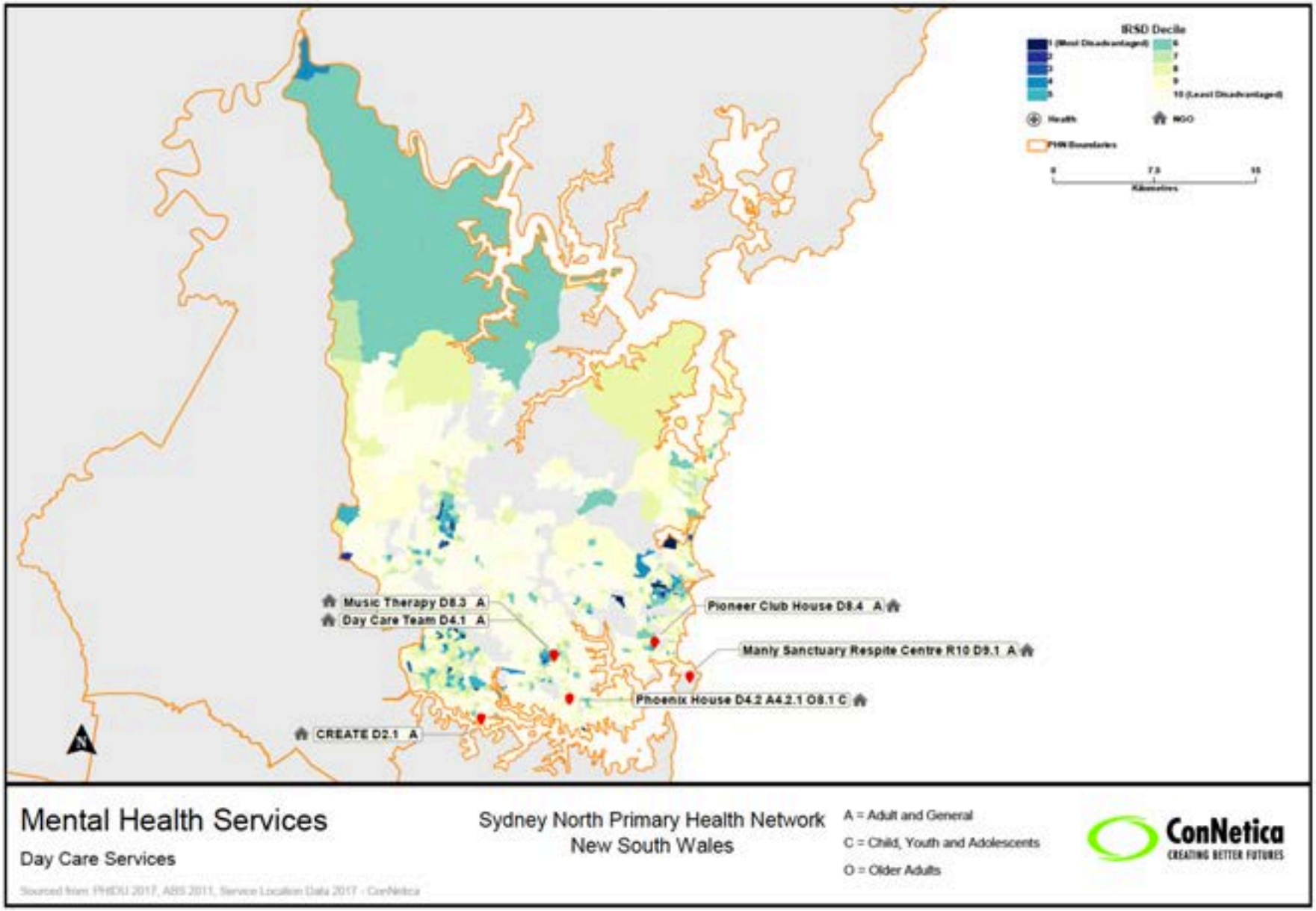


FIGURE 37 DAY CARE SERVICES IN THE SNPHN REGION

5.5 Outpatient Care

Child and Adolescent Services

A total of 10 teams providing Outpatient Care to children and adolescents with a lived experience of mental illness in the SNPHN region were identified (Table 16). All teams provide non-acute care with the majority (n=7) of these being community teams provided by the public health sector. These include four community teams providing centre based interventions, support to Emergency Departments (EDs) and wards during business hours, as well as some outreach and three Outreach Support for Children and Adolescents (OSCA) teams, which are highly mobile and provide more intensive support. The four community teams also include a second MTC providing support to children of parents with mental illness (COPMI).

In addition to these, the Coral Tree Family Service team (outlined in the Residential Care section above) also provides two additional Outpatient Care services in addition to their Residential Care service. These include: (i) a Day Attendance program, which may be a one-off session with the team, attended by the whole family, providing them an opportunity for in-depth assessment of particular issues; and (ii) a Clinical School Program, in partnership with Arndell School. In this program, support, which may be direct support and/or some case management, is provided to the school as needed.

The remaining three teams are provided by NGOs and include two Headspace teams, for adolescents aged between 13 and 25 years and a Play Therapy team provided by Be Centre in Warriewood for children aged between 3 and 13 years who have emotional, behavioural or psychological difficulties arising from experiences such as family breakdown, anxiety, domestic violence, major trauma/torture, or sexual assault.

Additionally, Phoenix House (outlined in the Day Care section above) also provides an Outpatient Care service in addition to their Day program; a counselling service to carers and siblings.

TABLE 16 OUTPATIENT CARE FOR CHILDREN AND ADOLESCENTS IN THE SNPHN REGION

Provider	Team	Suburb	DESDE	Area
Be Centre	Play Therapy	Warriewood	CX[Z55-Z65] [ICF3] - O9.1	Hornsby, Northern Beaches
CYMHS	OSCA-Hornsby	Hornsby	CX[F00-F99] - O5.1.1h	Hornsby Ku-ring-gai
	OSCA-Northern Beaches	North Manly	CX[F00-F99] - O5.1.1	Manly, Pittwater, Warringah
	OSCA-North Shore	St Leonards	CX[F00-F99] - O5.1.1	North Shore
	Hornsby Community MH Team	Hornsby	CX[F00-F99] - O9.1h CX[F00-F99][Z63] - O10.1gh	Hornsby Ku-ring-gai
	Northern Beaches Community MH Team	North Manly	CX[F00-F99] - O9.1 CX[F00-F99][Z63] - O10.1g	Manly, Pittwater, Warringah
	North Shore Community MH Team	St Leonards	CX[F00-F99] - O9.1h CX[F00-F99][Z63] - O10.1gh	Lane Cove, North Sydney, Mosman, & Willoughby
	Ryde Community MH Team	Top Ryde	CX[F00-F99] - O9.1 CX[F00-F99][Z63] - O10.1g	Hunters Hill and Ryde
Headspace	Headspace - Brookvale	Brookvale	CY[F00-F99] - O9.1	
	Headspace - Chatswood	Chatswood	CY[F00-F99] - O9.1	

Adult Services

In the SN PHN region, 59 teams (60 MTCs) providing Outpatient Care to adults with a lived experience of mental illness were identified (Table 17). The majority of the teams (n=31) are provided by the NGO sector with 29 teams (30 MTCs) provided by the public health sector.

A total of 5 MTCs provide acute Outpatient Care: of these, one of which is a telephone crisis line, two are provided in EDs, one is an Extended Hours crisis assessment team provided by Manly Hospital, and one is a Consultation/Liaison team based at Royal North Shore Hospital (Figure 38). All other teams providing Outpatient Care for adults are non-acute.

Public health sector Outpatient teams are provided by the four main hospitals in the region, and by the three community Mental Health Services (i.e. North Shore Ryde, Hornsby Ku-ring-gai and Northern Beaches). Hospitals provide acute care (ED - Royal North Shore Hospital) and non-acute care (Specialist Rehabilitation Clinicians at Macquarie and Hornsby Ku-ring-gai Hospitals and Clozapine Clinic at Manly Hospital). The Mental Health Services provide non-acute care through mobile teams such as Early Intervention and Outreach, and non-mobile teams such as the Peer Worker/Consumer Participation Service teams (North Shore Ryde and Hornsby Ku-ring-gai MHS), as well as Rehabilitation clinicians (Northern Beaches and Hornsby Ku-ring-gai MHS). The Perinatal and Infant Mental Health team is a 'virtual' Outpatient team which is hospital based but highly mobile and works across all areas. Due to the fine balance between mobile and non-mobile care provided by community mental health teams, some community teams have been coded as mobile and others as non-mobile, according to how they have been described during data collection.

Eleven NGOs provide 30 of the teams identified and all are non-acute services with the exception of the telephone crisis team provided by One Door. Most teams have the capacity to provide either high intensity (n=6) (i.e. can make face to face contact with users at least 3 times a week when clinically indicated) or medium intensity (n=18) (i.e. capacity to provide contact with users at least once a fortnight if indicated) care.

A third of the NGO teams (n=10) are mobile and include those teams that provide individual support in the home and community (e.g. HASI, PHAMS, Community Living Support and PIR), and those providing social activities such as the Well Together and GP Prescribing for Injured Workers program provided by PCCS.

Although the Partners in Recovery (PIR) model is one of care co-ordination and provision of accessibility to services, the three PIR services included in this section are in fact also providing a level of direct care to their service users, and thus have been coded as Outpatient Care services.

Half (n=15) of the Outpatient Care teams provided by NGOs provide health related care, most commonly counselling by a psychologist. All teams providing health-related care are centre based (i.e. non-mobile).

In addition to these, Mindspot (see Information and Guidance section below) includes a second Outpatient MTC, providing service users with the opportunity for telephone or online counselling following an initial online assessment.

The majority of the Outpatient Care teams provided by the NGO sector (n=20) have a 'v' qualifier indicating that these services do not have guaranteed funding for three years.

TABLE 17 OUTPATIENT CARE FOR ADULTS IN THE SNPHN REGION

Provider	Team	Suburb	DESDE	Area
Adult Mental Health Services	Perinatal and Infant MH - Northern Beaches	Manly	AXF[F53] - O6.1ht	Northern Beaches
	Perinatal and Infant MH - Hornsby	Hornsby	AXF[F53] - O6.1ht	Hornsby Ku-ring-gai
	Perinatal and Infant MH - North Shore/Ryde	St Leonards	AXF[F53] - O6.1ht	North Shore, Ryde
The Cottage Counselling Centre*	Counselling Services	Narrabeen	GX[F00-F99] - O8.1	Northern Beaches and North Shore
Gidget Foundation	Gidget House	North Sydney	AXF[090.6] - O9.1	
Hornsby Hospital*	Specialist Rehabilitation Clinicians	Wahroonga	AX[F00-F99] - O9.1	Hornsby-Ku-ring-gai
Hornsby-Ku-ring-gai MHS	Acute Care Community Mental Health Team	Hornsby	AX[F00-F99] - O6.1h	Hornsby-Ku-ring-gai
	Consumer Participation Service	Hornsby	AX[F00-F99] - O10.2g AX[F00-F99] - I2.1.1	
	Early Psychosis Intervention Service	Hornsby	AY[F20-F29] - O5.1h	
	Assertive Outreach and Residential Service	Hornsby	AX[F00-F99] - O5.1.1	
	Rehabilitation Service-Wahroonga	Wahroonga	AX[F00-F99] - O9.1g	
Ku-ring-gai Youth Development Service*	Counselling Services for Young People	Lindfield	CY[F00-F99] - O9	
LifeLine Harbour to Hawkesbury	Clinical Services Team	Gordon	AX[F00-F99] - O9.1gv	Central Northern Sydney from North Sydney up to Brooklyn
	Gambling Support Team	Gordon	AX[F00-F99] - O10.1v	
Macquarie Hospital*	Specialist Rehabilitation Clinicians	North Ryde	AX[F00-F99] - O9.1h	
Macquarie Hospital - MHDA	Family and Carers Mental Health	North Ryde	GX[F00-F99][Z63] - O10.1h	North Sydney
Manly Hospital	Extend Hours Team	Manly	AX[F00-F99] - O2.1 AX[F00-F99] - O3.1	
	Clozapine Clinic*	Manly	GX[F20-F29] - O10.1hs	
Mission Australia	HASI	Waterloo	AX[F00-F99] - O5.2.1	North Sydney, Northern Beaches
New Horizons	HASI	North Ryde	AX[F00-F99] - O5.2d	North Ryde, Hornsby
	PIR / PHAMS	North Ryde	AX[F00-F99] - O6.2dv	Northern Beaches, North Shore, North Ryde, Hornsby
Northern Beaches MHS	Community Team: Queenscliff	North Manly	AX[F00-F99] - O9.1	Northern Beaches
	Assertive Outreach Team	Manly	AX[F00-F99] - O5.1.2h	
	Specialist Rehabilitation Clinicians*	Brookvale	AX[F00-F99] - O9.1	
	Beaches Early Intervention Centre	Brookvale	AY[F00-F99] - O5.1	

Provider	Team	Suburb	DESDE	Area
Northern Beaches MHS	Community Team: Frenchs Forest	North Manly	AX[F00-F99] - O9.1	Forestville, Killarney Heights, Frenchs Forest, Beacon Hill, Oxford Falls, Duffy's Forest, Terrey Hills, Belrose & Davidson
	Community Team: Mona Vale	Mona Vale	AX[F00-F99] - O9.1	Pittwater
North Shore Ryde MHS	Community Team-North Shore	St.Leonards	AX[F00-F99] - O6.1h	Lane Cove, Mosman, North Sydney and Willoughby
	Community Outreach Team-North Shore	St.Leonards	AX[F00-F99] - O5.1.2h	
	Early Intervention Team-North Shore	St.Leonards	AY[F00-F99] - O5.1h	
	Consumer/Peer Workers Team-North Shore	St.Leonards	AX[F00-F99] - O9.2	
	Community Team-Ryde	Eastwood	AX[F00-F99] - O6.1	Ryde and Hunters Hill
	Community Assertive Outreach Team-Ryde	Eastwood	AX[F00-F99] - O5.1.2	
	Early Intervention Team-Ryde	Eastwood	AY[F00-F99] - O5.1h	
	Consumer/Peer Workers Team-Ryde	Eastwood	AX[F00-F99] - O9.2t	
One Door	PIR	Balgowlah	AX[F00-F99] - O6.2mv	
	One Door Health Service	Chatswood	AX[F00-F99] - O9.1v	
	Telephone Support	Gladesville	AX[F00-F99] - O4.1e	
Primary and Community Care Services	PIR	Thornleigh	AX[F00-F99] - O6.2v	Hornsby, Ryde, Hunters Hill, Ku-ring-gai
	GP Prescribing for Injured Workers	Thornleigh	AX[F30-F49][V00-Y99][Z57] - A4.2.2v AX[F30-F49][V00-Y99][Z57] - O6.2gv	Metropolitan Sydney
	Well Together	Thornleigh	AX[F00-F99] - O6.2gv	Hornsby, Ryde, Hunters Hill, Ku-ring-gai
Recovery Station*	Cammeray Service OTMH	Cammeray	AX[F00-F99] - O8g	
Relationships Australia	Family Therapy Team-Macquarie Park	Macquarie Park	GX[Z55-Z65] - O9.1v	Sydney North PHN
	Family Therapy Team-Neutral Bay	Neutral Bay	GX[Z55-Z65] - O9.1v	
	Family Therapy Team-Dee Why	Dee Why	GX[Z55-Z65] - O9.1v	
	Family Dispute Resolution Service	Macquarie Park	GX[Z55-Z65] - O9.2gv	
	Family Dispute Resolution Service-Dee Why	Dee Why	GX[Z55-Z65] - O9.2gtv	
	Relationship Education Service	Macquarie Park	GX[Z69] - O9.1gv	
	Relationship Education Service-Neutral Bay	Neutral Bay	GX[Z69] - O9.1gtv	
	Relationship Education Service-Dee Why	Dee Why	GX[Z69] - O9.1gtv	
	Early Intervention Service	Macquarie Park	GX[Z55-Z65] - O6.2gv	

Provider	Team	Suburb	DESDE	Area
Relationships Australia	Male Domestic and Family Violence Victim Support Service	Macquarie Park	AXM[Z69] – O10.1emv	North Sydney
	Male Domestic and Family Violence Victim Support Service- Dee Why	Dee Why	AXM[Z69] – O10.1emv	
Royal North Shore Hospital	Emergency Department	St Leonards	AX[F00-F99] - O3.1	
	Consultation Liaison Psychiatry	St Leonards	AX[F00-F99] - O4.1lh	Lane Cove, Mosman, North Sydney and Willoughby
Uniting Recovery	Community Living Support - North Shore/Ryde	Ryde	AX[F00-F99] - O5.2.2	North Shore, Ryde
	Community Living Support - Outreach Chatswood	Chatswood	AX[F00-F99] - O5.2.1	Chatswood
	Family and Carers Mental Health	Chatswood	AX[F00-F99] [Z63] - O10.1g	Hornsby, Chatswood, Brookvale
	Problem Gambling Counselling	Manly Vale	AX[F00-F99] - O10.1v	Pittwater

* Services coded based on information available from website information ONLY.

Older Adult Services

There were five teams providing Outpatient Care for people aged over 65 years with a lived experience of mental illness identified in the SNPHN region, all provided by the public health sector, and all providing mobile care (Table 18). The majority of teams (n=4) are community teams, providing assessment, consultation and some case management. The Behaviour Management and Assessment Service (BAMS) team is a multidisciplinary team based at Macquarie Hospital which provides a range of assessment and intervention services for people aged over 65 with behavioural disturbance from dementia and/or mental illness.

TABLE 18 OUTPATIENT CARE FOR OLDER ADULTS IN THE SNPHN REGION

Provider	Team	Suburb	DESDE	Area
Hornsby-Kuringai MHS	SMHSOP Hornsby Community MH Team	Hornsby	OX[F00-F99] - O6.1hq	Hornsby
Northern Beaches MHS	SMHSOP Northern Beaches Community MH Team	Brookvale	OX[F00-F99] - O6.1q	Northern Beaches
North Shore Aged Care and Rehab	North Shore Aged Care and Rehab	St Leonards	OX[F00-F99] - O6.1h	North Shore
North Shore Ryde MHS	SMHSOP - Community Team Ryde	Eastwood	OX[F00-F99] - O6.1q	Ryde
SMHSOP	BAMS	North Ryde	OX[F00-F99] - O6.1mh	Northern Sydney

Across the SNPHN region there are slightly fewer teams (n=34) delivering non-acute mobile care (Figure 39) compared to the number of teams (n=39) delivering non-acute non-mobile care (Figure 40).

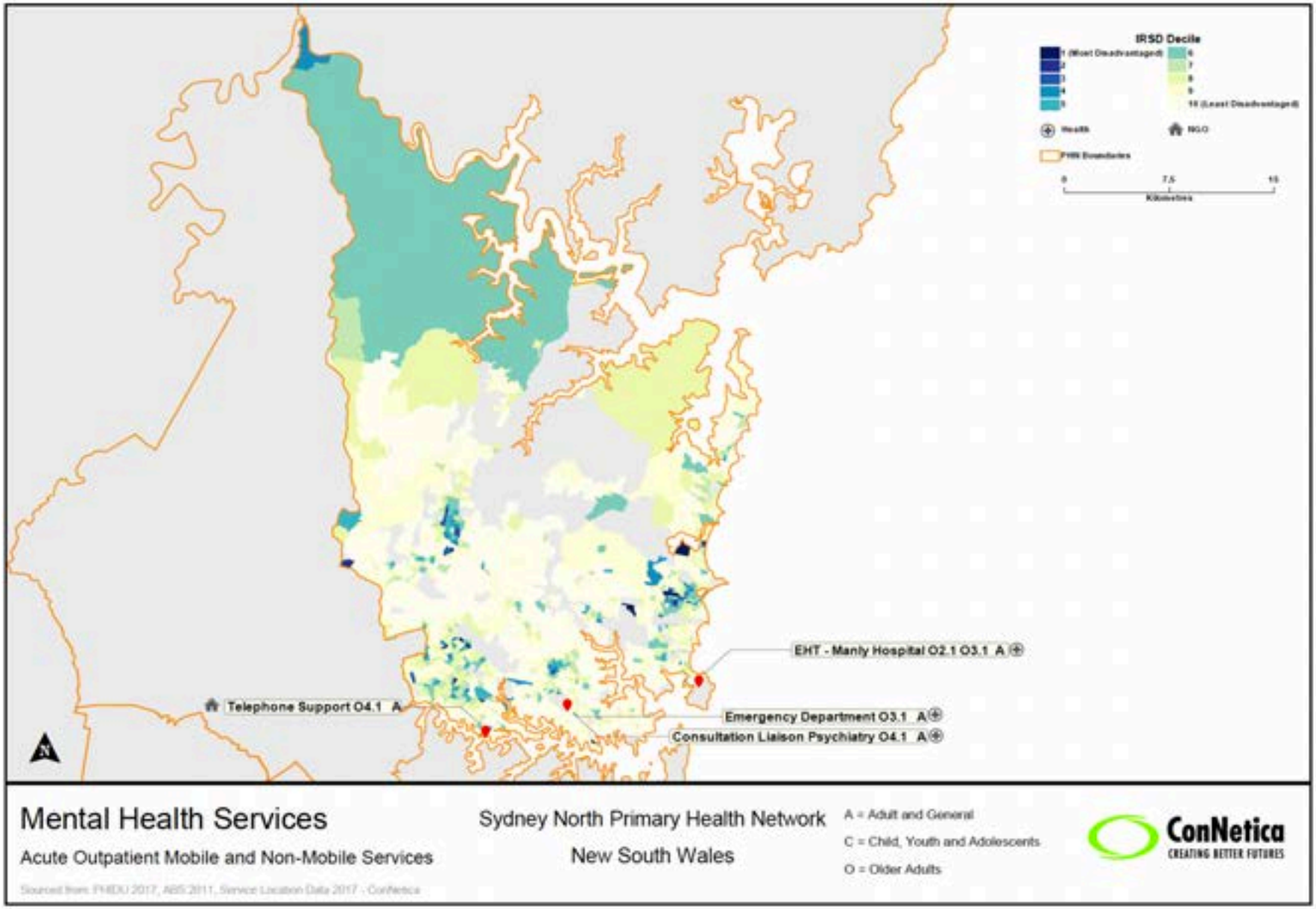


FIGURE 38 ACUTE OUTPATIENT CARE SERVICES IN THE SNPHN REGION

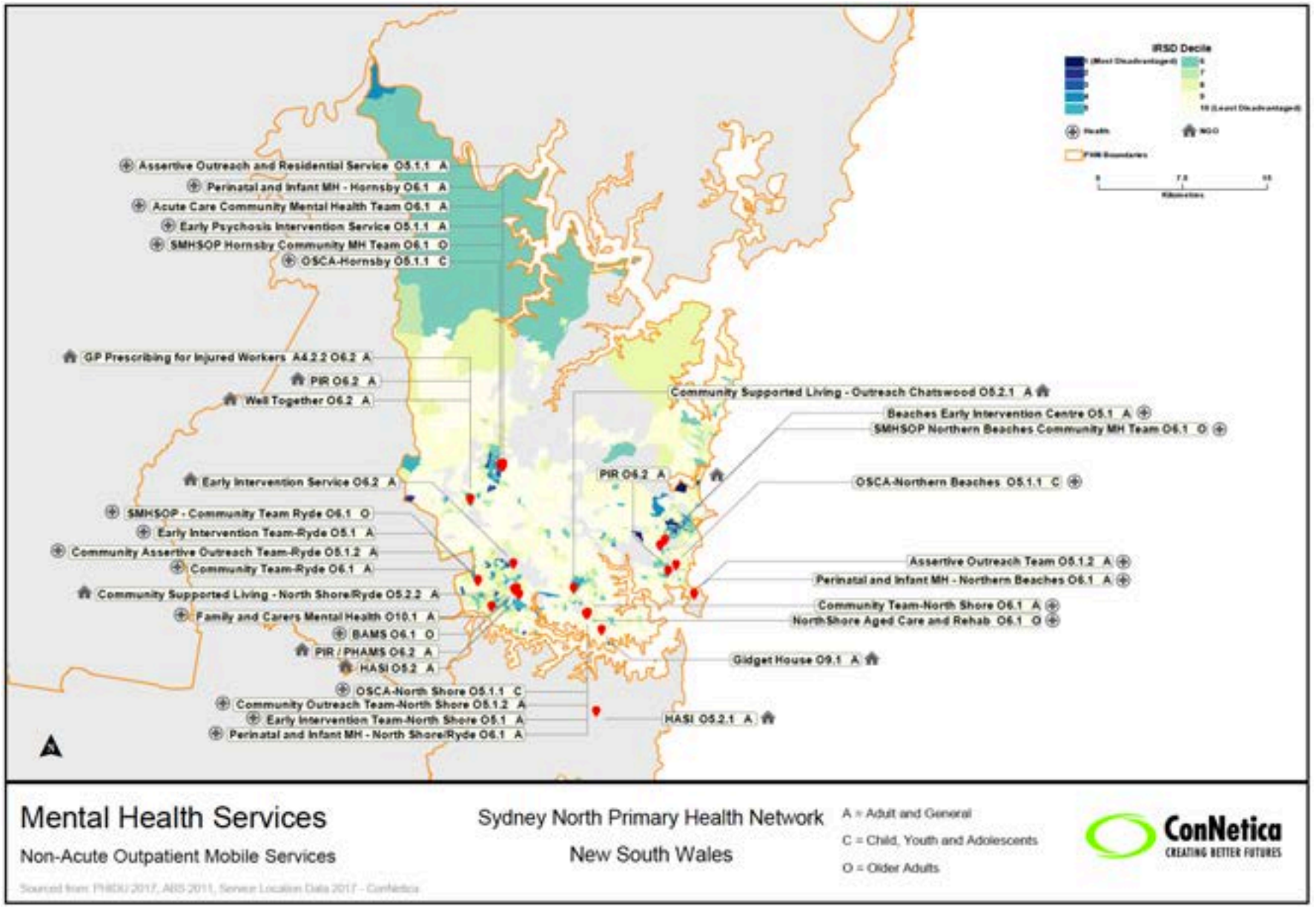


FIGURE 39 NON-ACUTE MOBILE OUTPATIENT CARE SERVICES IN THE SNPHN REGION

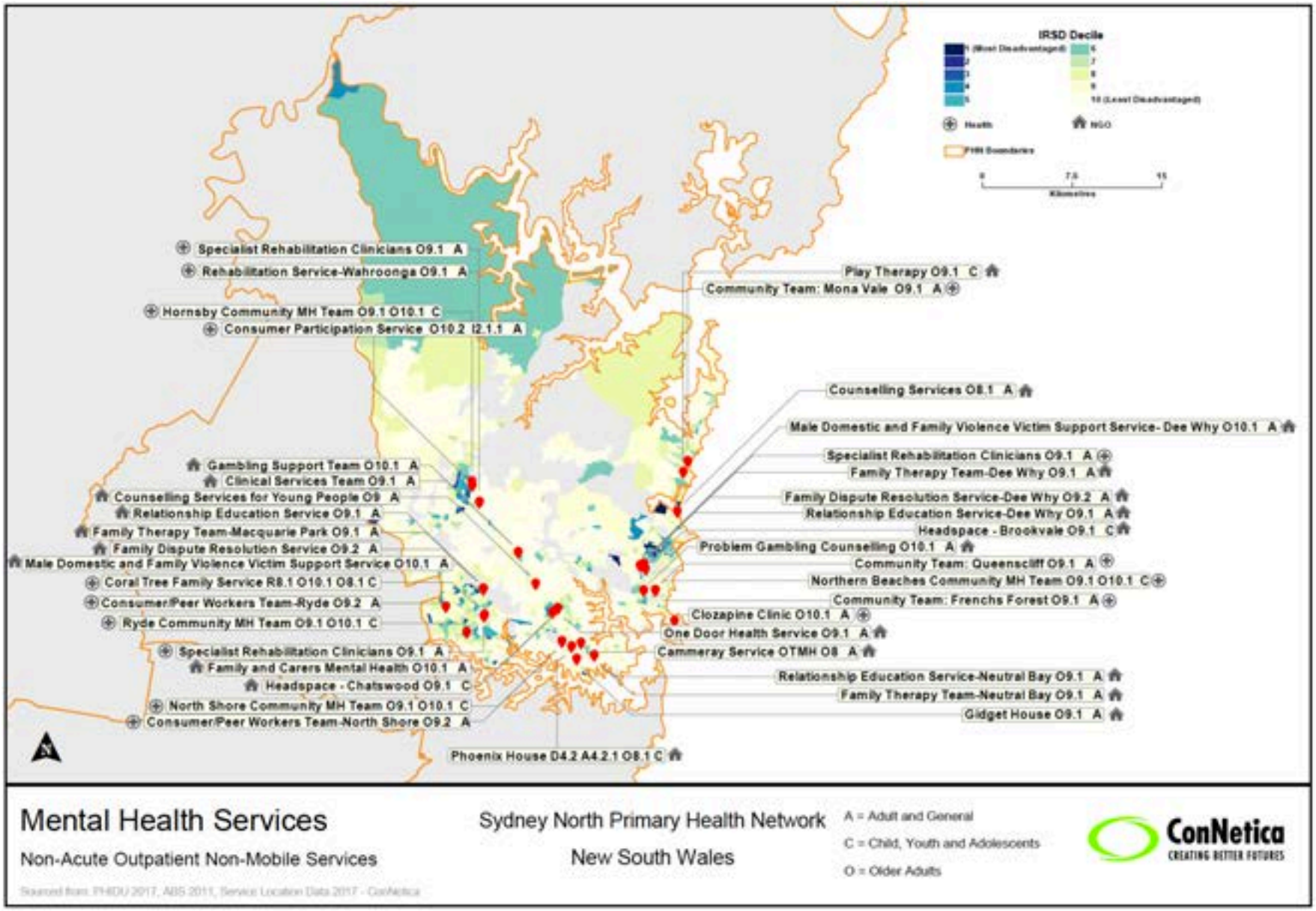


FIGURE 40 NON-ACUTE NON-MOBILE OUTPATIENT CARE SERVICES IN THE SNPHN REGION

5.6 Accessibility Services

Child and Adolescent Services

There were no Accessibility services for children or adolescents identified within the SNPHN region. However, the team at Phoenix House (outlined Day Care outlined above) provides an additional Accessibility related MTC, providing case management and accessibility to services as part of their early intervention for challenged young people aged 12 to 24 years.

Adult Services

All of the four teams identified as providing Accessibility support for adults in the SNPHN region are provided by NGOs (Table 19). Uniting Recovery's PIR is one of four PIR teams in the region, however the other three teams have been coded as Outpatient Care (outlined in Outpatient section above). The Pathways to Community Living team is a multidisciplinary team based at Macquarie Hospital which helps long stay patients (over one year) into community services. They work with inpatient units to identify patients in scope and work with them and their families to relocate them in the community. Cabera-ra-nanga is a mobile service funded by SNPHN, which, in partnership with the Gaimaragal group, is an Aboriginal community engagement and suicide prevention program, providing cultural wellness support and facilitating access to primary care services, providing referrals, service co-ordination and cultural advice. A new suicide prevention service, commissioned by the PHN and provided by CCNB, will provide care co-ordination and accessibility to services for around 12 weeks for people who have attempted suicide, commencing as soon as possible after the attempt, with targeted referrals including from emergency services such as ED, Triple zero service, PECC, as well as GPs, and self-referral: "no wrong door".

Additional to these, GP Prescribing for Injured Workers (see Outpatient section above) includes a second MTC, linking service users to relevant services to increase their social participation.

Three teams have the 'v' qualifier, meaning that they do not have guaranteed funding for 3 years.

TABLE 19 ACCESSIBILITY SERVICES FOR ADULTS IN THE SNPHN REGION

Provider	Team	Suburb	DESDE	Area
CCNB	Suicide Prevention	Mona Vale	AX[T14.91] - A4.1.2v	Sydney North PHN
Macquarie Hospital	Pathways to Community Living Initiative	North Ryde	AX[F00-F99] - A5h	Statewide
Relationships Australia	Cabera-ra nanga	Macquarie Park	GXIN[F00-F99] - A4.2.1v	Sydney North PHN
Uniting Recovery	PIR	Chatswood	AX[F00-F99] - A4.2.2v	Northern Sydney

Older Adult Services

There were no Accessibility services for older adults identified within the SNPHN region.

5.7 Information and Guidance

Child and Adolescent Services

There were no Information and Guidance services for children or adolescents identified within the SNPHN region.

Adult Services

Only two Information and Guidance teams providing support to people with a lived experience of mental illness were identified in the SNPHN region (Table 20). Mindspot is an online and telephone service run from Macquarie University, which provides online assessment and follow up treatment through telephone counselling where indicated. MARS (Macquarie Area Rehabilitation Services Inc.) also provide a face to face Information Service, providing people with information about local services.

TABLE 20 INFORMATION AND GUIDANCE SERVICES FOR ADULTS IN THE SNPHN REGION

Provider	Team	Suburb	DESDE	Area
Mind Spot	Mindspot	Macquarie University	AX[F30-49] - I1.1e AX[F30-49] - O9.1e	Australia wide
MARS	Information team	Chatswood	AX[F00-F99] - I2.1.1	Lower North Shore

Older Adult Services

There were no Information and Guidance services for older adults identified within the SNPHN region.

5.8 Self-Help and Voluntary Support

There were no Self-Help or Voluntary Support services identified within the SNPHN region.

5.9 Mental Health Workforce

One of the data components for this Atlas was the collection of details related to both type (i.e. profession) and level (i.e. FTE) of staffing associated with each BSIC. Unfortunately, not all organisations were able to provide detailed information in relation to these variables and at times, what was provided was more of an estimation or lacked specificity. As such, the data presented here should be interpreted with caution and used only as an approximation of the workforce characteristics.

Capacity

Workforce data was collected for 69 of the 109 mental health teams identified in this project (63.3%) with a collective total of 631.1 FTE, of which the majority was provided by the health sector (468.2 FTE).

In terms of capacity, teams were categories as either extra small (<1 FTE), small (2-5 FTE), medium (from 6-20 FTE) or large (over 20 FTE). For those teams across SNPHN were data was available, the majority of were classified as either small (48%) or medium (30%) in size (Table 21). Teams working in NGOs are generally smaller than those working in the health sector with an average team size for NGOs of 4.7 FTE compared to 13.8 FTE for the health sector.

TABLE 21 MENTAL HEALTH TEAM SIZE

Team Size	Health n (%)	NGO/Other n (%)	TOTAL n
Extra Small (<1 FTE)	2 (29)	5 (71)	**7**
Small (1-5 FTE)	13 (39)	20 (61)	**33**
Medium (6-20 FTE)	11 (52)	10 (48)	**21**
Large (>20 FTE)	8 (100)	0 (0)	**8**
TOTAL	34 (49)	35 (51)	**69**
Total FTE	468.2	162.9	**631.1**
Average FTE	13.8	4.7	**9.1**

As expected, the greatest density of mental health FTE workforce for the health sector is centralised around the main hospital campuses across the region (Figure 41). In contrast, the NGO workforce is more dispersed across the catchment, however, there are patches of higher FTE density particularly in the LGAs of Ryde and Hornsby.

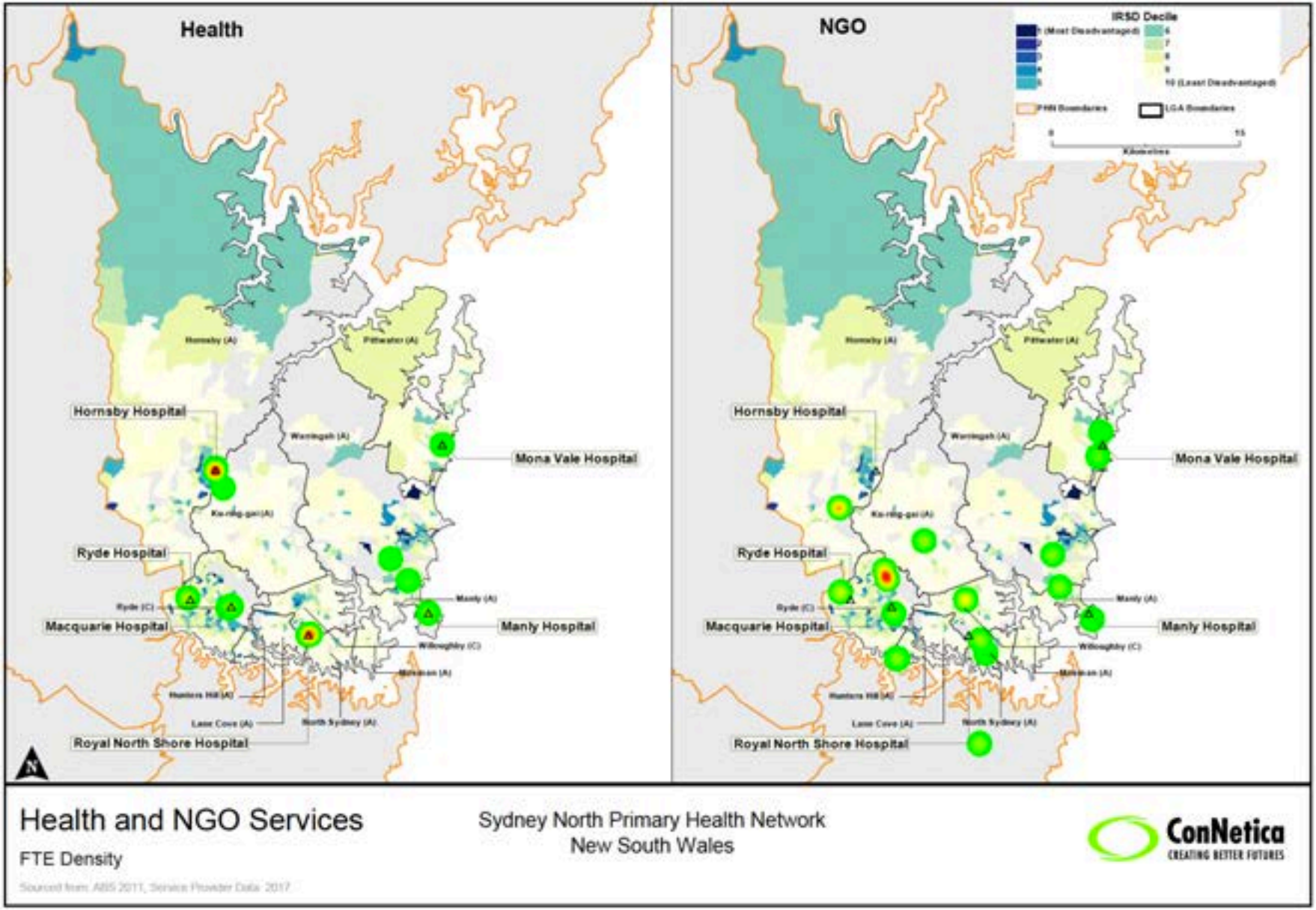


FIGURE 41 DENSITY OF MENTAL HEALTH FTE ACROSS SNPHN BY SECTOR

Occupation Groups

Of the 69 teams where information on FTE was available, a breakdown of this FTE into the different types of professions was only available for 55 teams (80%). There is an inconsistency in the fullness or accuracy of the detail provided, however analysis has been conducted for the available information.

The majority of mental health staff within the health and NGO sector have formal qualifications in a range of disciplines including Nursing, Psychiatry, Psychology and Social Work (Table 22). Whilst these disciplines are evident in the NGO sector other disciplines including Support Workers and Counsellor also comprise a large proportion of the workforce.

TABLE 22 OCCUPATION GROUPS BY SECTOR

Category	Occupation	FTE Health	FTE NGO	Total
A	Psychiatrists	20.8	0.5	**21.3**
	Psychologist	20.7	25.6	**46.3**
	Nurse	230.2	1.0	**231.2**
B	Occupational Therapist	15.4		**15.4**
	Social Worker	28.0	17.8	**45.8**
	Diversional Therapist	2.0		**2.0**
	Exercise Physiologist	0.5	0.2	**0.7**
	Pharmacist	0.5		**0.5**
	Dietician	0.5		**0.5**
	Educator		2.6	**2.6**
	Art Therapist		0.8	**0.8**
	Play Therapist		4.5	**4.5**
	Music Therapist		0.5	**0.5**
	Case Coordinator		2.4	**2.4**
C	Mental Health Worker		1.8	**1.8**
	Support Worker		11.0	**11.0**
	Youth Worker		5.0	**5.0**
	Counsellor		10.0	**10.0**
D	Peer Worker	7.6		**7.6**
	Volunteer		1.6	**1.6**
Other		7.6	9.4	**17.0**
TOTAL		**341.4**	**104.1**	**445.5**

When disciplines are broadly grouped into categories, over 80% of the health sector workforce is category 1 with no category 3 occupations identified in the SNPHN catchment (Figure 42). In the NGO sector, the distribution across occupation categories is more evenly distributed with the exception of category 4 occupations.

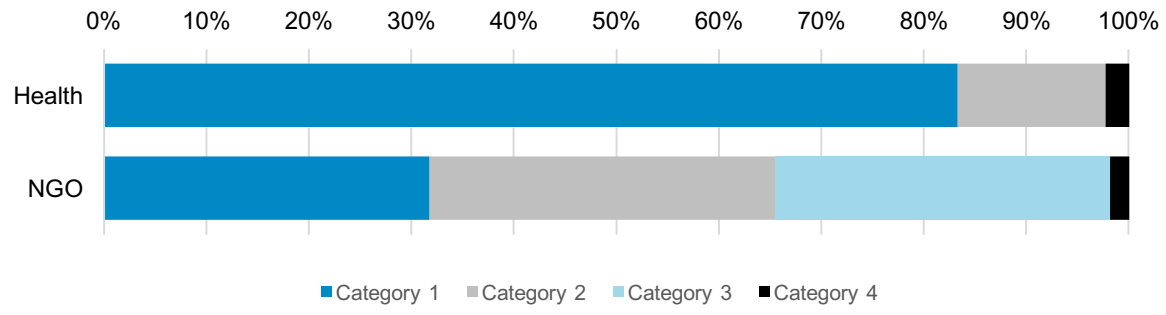


FIGURE 42 WORKFORCE OCCUPATIONS BY SECTOR

6. Patterns of Mental Health Care SNPHN

To understand the balance between the different types of care offered in an area, a radar tool is utilised to visually depict the mix of service types (pattern of care) in a particular area. Each of the 21 points on the radius of the spider diagram represents the number of MTC for a particular type of care per 100,000 adults.

Consistent with other areas mapped across Australia, the pattern of care for adult mental health services in the SNPHN region shows relatively more Outpatient Care than any other type of care (Figure 43). This Outpatient Care is predominantly provided by non-acute non-mobile teams (n=31) from the NGO sector (n=18) (such as Relationships Australia). However, almost 80% of the teams (n=14) have the “v” qualifier assigned indicating that funding is not stable for these services.

In the SNPHN catchment acute Outpatient Care is provided by Manly and Royal North Shore Hospitals with very few services evident in the pattern of care.

In terms of Day Care across the SNPHN region there appears to be lower rates compared to other areas mapped across Australia, indicating a potential gap in this area.

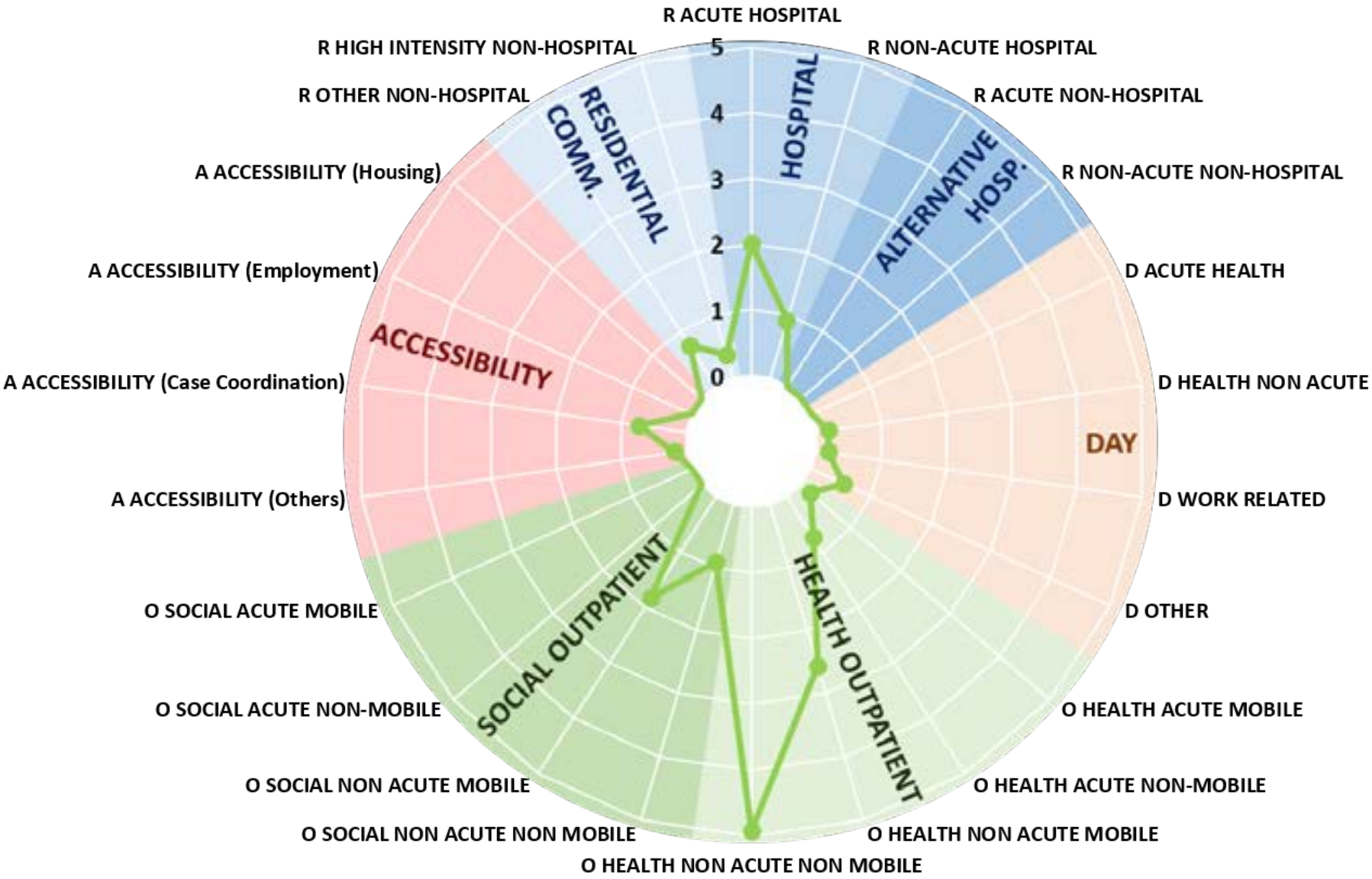


FIGURE 43 PATTERN OF CARE FOR ADULTS IN SNPHN (MTC PER 100,000)

6.1 National and International Comparisons

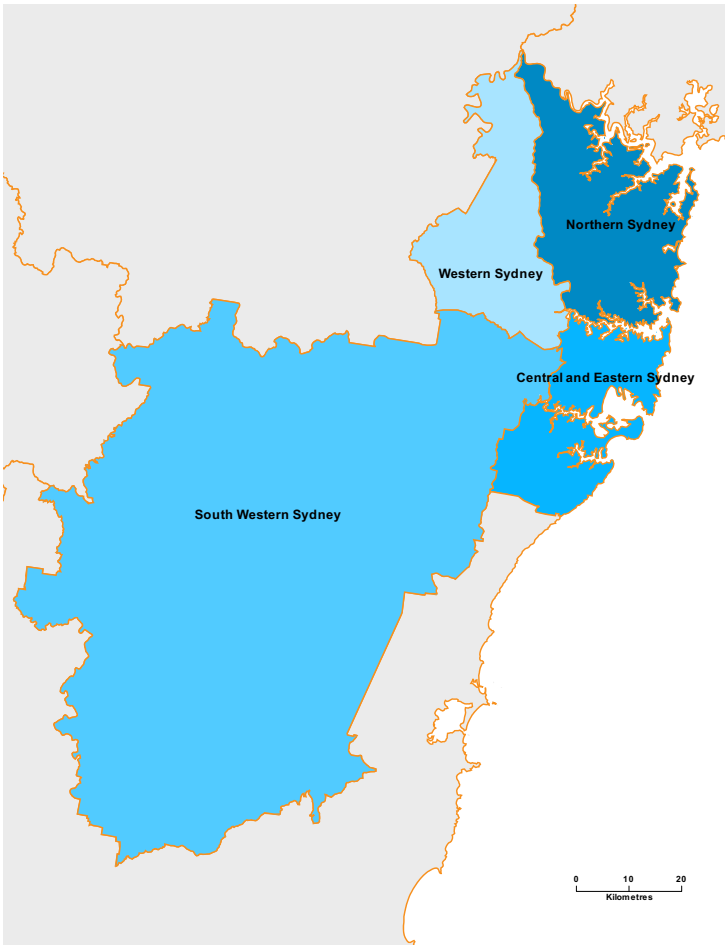
One of the strengths of using the DESD methodology is that it allows for comparisons with other areas that have been mapped both nationally and internationally using this methodology.

The standardised classification methodology allows for comparisons of the patterns of care between different regions considering the differences and consistencies between them. There is no 'right' pattern of care and there is an expectation that differences in patterns with occur. There is an increasing move toward regionalised service planning that is designed to best meet specific regional needs, however comparisons, both international and national, provide a catalyst for conversations in relation to service planning and commissioning discussions.

National Comparisons

DESDE has now been utilised in some parts of the world for more than 20 years and more recently within Australia it has been applied to create the following Atlases in the following regions:

- Central and Eastern Sydney
- Western Sydney
- Far West
- South Western Sydney
- Brisbane North
- Country Western Australia
- Perth North
- Perth South
- South Eastern Melbourne
- Australian Capital Territory
- Western NSW



For this Atlas, data collected in 2015 for South Western Sydney (SWS), Western Sydney (WS) and Central and Eastern Sydney (CES) has been used to compare the pattern of care for adult mental health services. These PHN regions are clustered around the SNPHN catchment and incorporate the greater Sydney region (Figure 44).

These PHNs are comparable across a number of indicators with both WS and CES having a similar sized geographical footprint. The ERP of both SWS and WS is similar to that of SNPHN however SNPHN has the lowest proportion of the population born overseas (**Error! Reference source not found.**).

All of the regions have overall low levels of disadvantage and have age standardised suicide rates which are below both the state and national rates (9.4 and 11.2 per 100,000, respectively).

FIGURE 44 GREATER SYDNEY PHNS

TABLE 23 COMPARISON BETWEEN PHNS OF THE GREATER SYDNEY REGION

Area	Area* (km^2)	Total Population†	Overseas Born (%)*	IRSD Score*	Suicide (ASR per 100,000) ‡
SWSPHN	6,186	939,710	35.8	939	7.5
WSPHN	766	926,887	42.5	994	6.8
CESPHN	632	1,518,399	37.2	1028	8.3
SNPHN	**890**	**907,415**	**34.3**	**1089**	**7.6**
NSW	809,444	7.62 million	25.7	996	9.4
Australia	7.7 million	23.78 million	24.6	1000	11.2

Sourced from: * ABS, 2011 Census; † ERP 2015 (PHIDU, 2017); ‡ 2014-2015 (PHIDU, 2017)

In comparison, SNPHN consistently has higher rates of MTCs per 100,000 adults for non-acute non-mobile Outpatient Care when compared to the three other PHNS within the greater Sydney area. However, there are some similarities in the patterns of care observed across the regions.

Western Sydney

In addition to the higher rates of non-acute non-mobile outpatient services, the rate of acute hospital services is higher in SNPHN compared to WS as to is the Accessibility Care (i.e. Case Coordination) (Figure 45).

South Western Sydney

The number of acute residential services in SNPHN is higher than in SWS along with the rate of health related non-acute non-mobile services (Figure 46). However, SWS has a much higher rate of social non-acute mobile services as well as social accessibility services that were not identified in SNPHN.

Central and Eastern Sydney

Of all the comparative regions, CES has a pattern of adult mental health care which is the most similar to SNPHN (Figure 47).

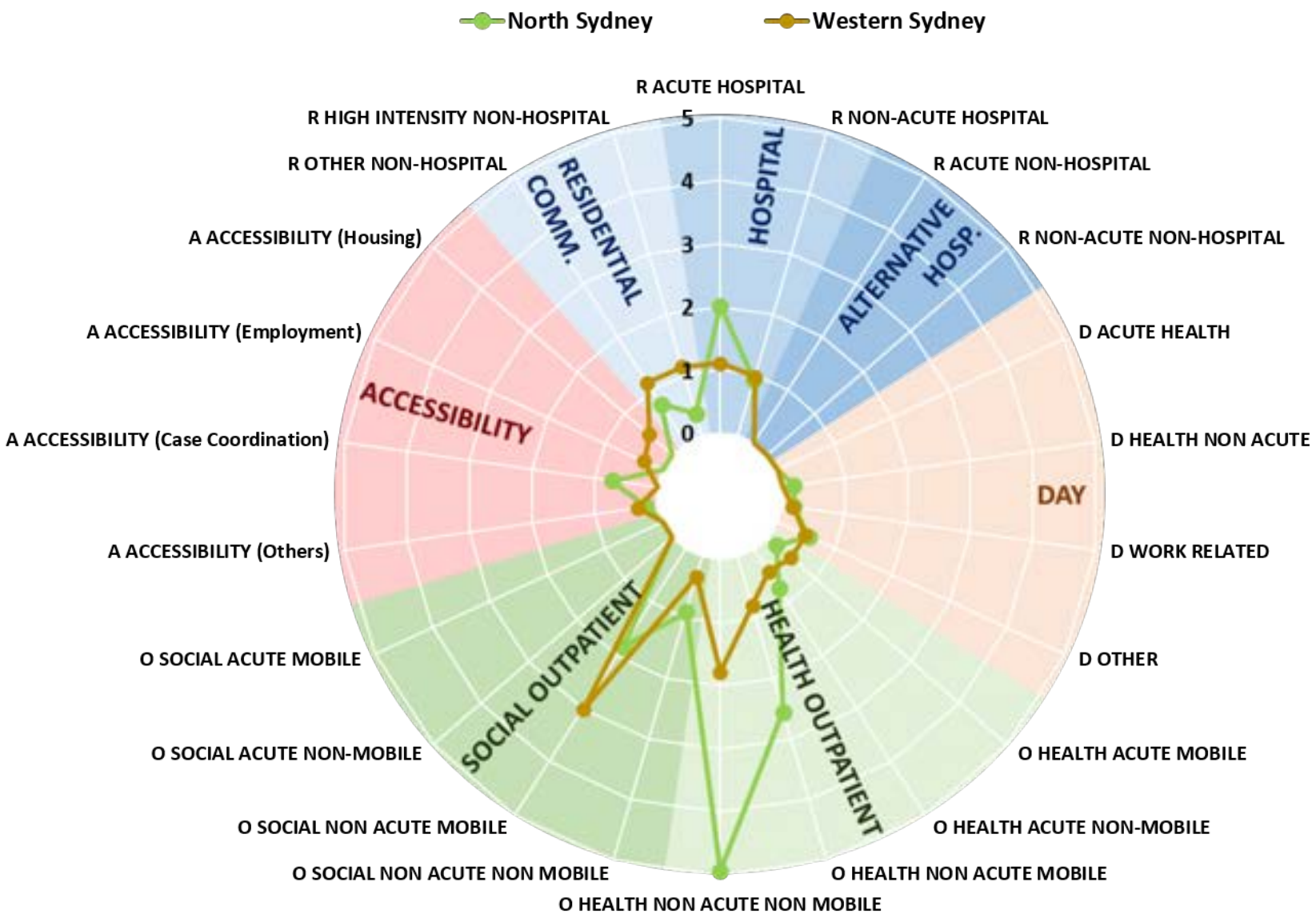


FIGURE 45 PATTERN OF CARE FOR ADULTS IN SNPHN AND WSLHD (MTC PER 100,000)

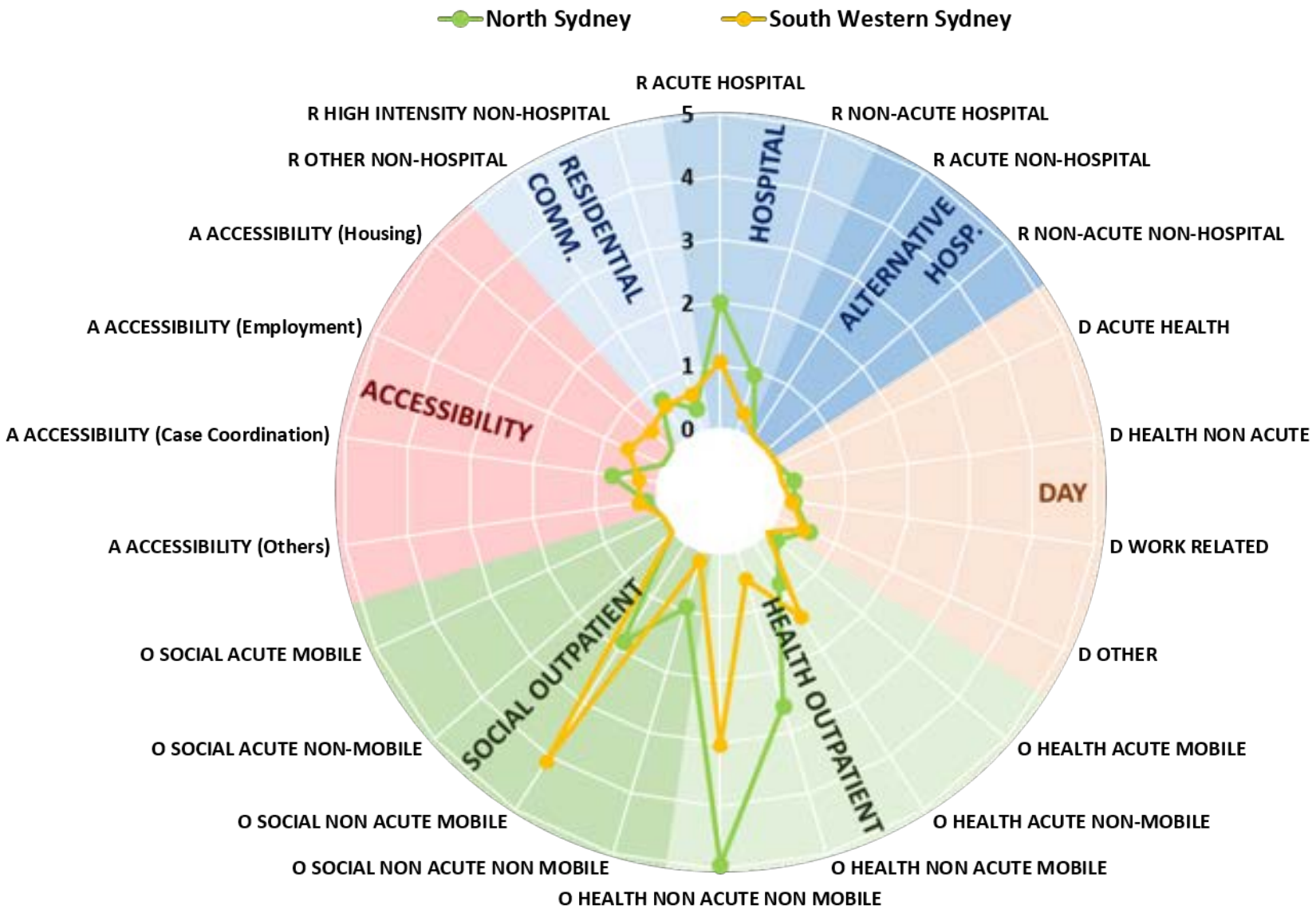


FIGURE 46 PATTERN OF CARE FOR ADULTS IN SNPHN AND SWSLHD (MTC PER 100,000)

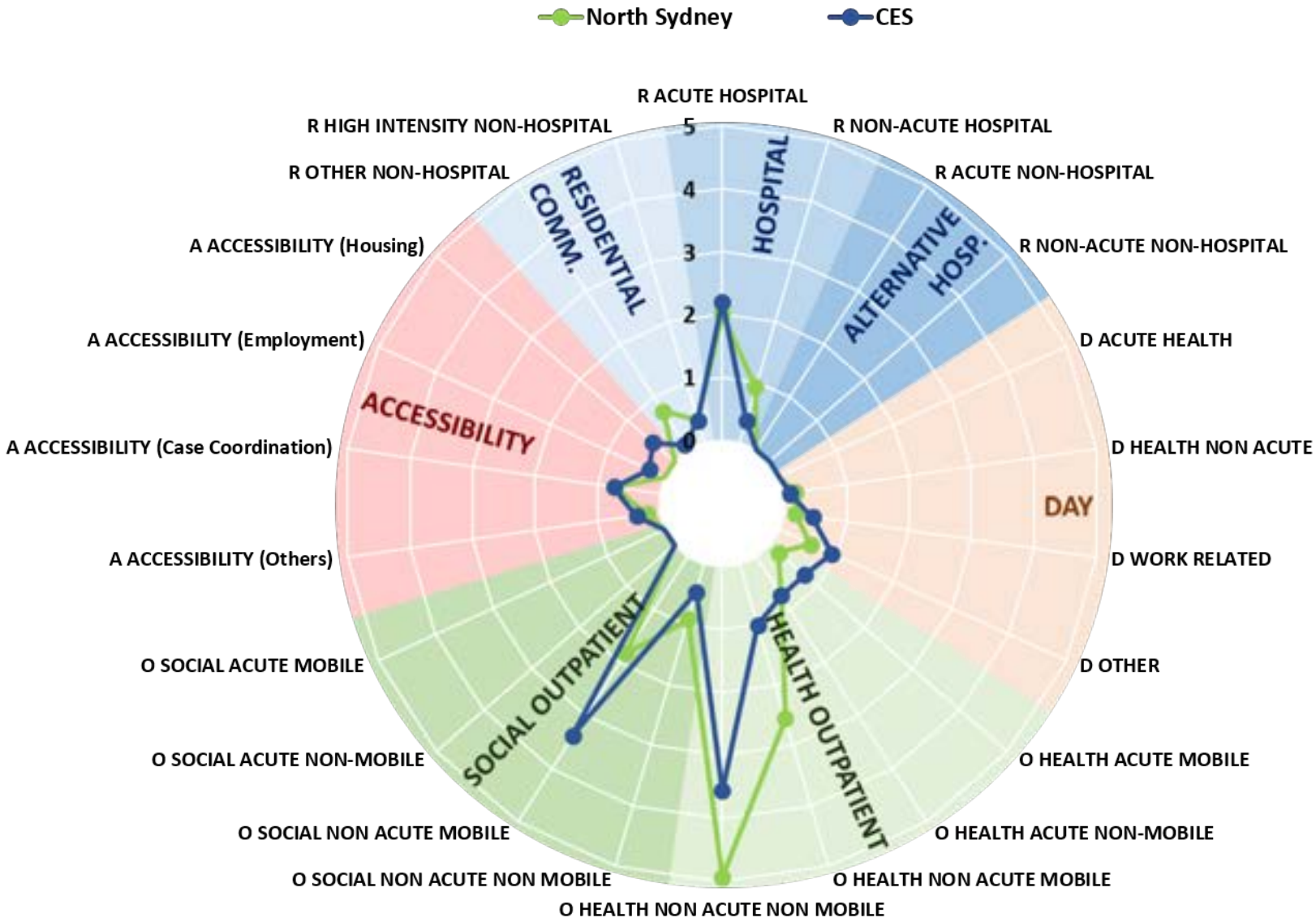


FIGURE 47 PATTERN OF CARE FOR ADULTS IN SNPHN AND CESPHN (MTC PER 100,000)

Placement Capacity

The rate of acute inpatient beds per 100,000 population at 23.2 is higher than both SWS (18.5) and WS (20.6), however this is lower than the rate of bed for CES (28.8) (Figure 48.

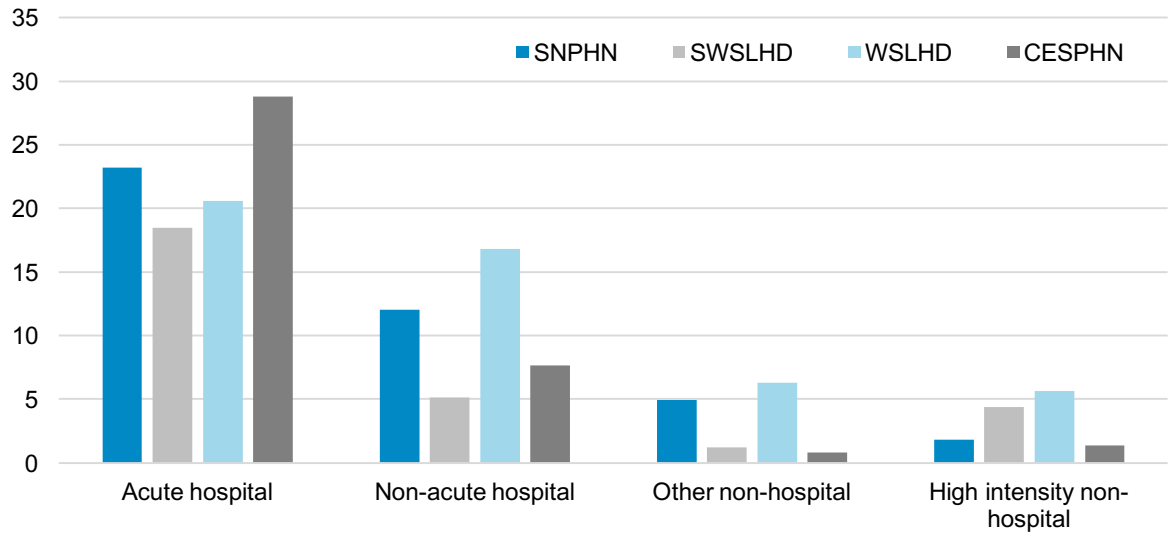


FIGURE 48 NUMBER OF BEDS PER 100,000 ADULTS

International Comparisons

In the absence of a gold standard for planning the provision of mental health services, international comparisons are useful for problematizing things that are often taken for granted and identifying policy learnings and borrowings (Cacace et al., 2013). In order to conduct meaningful comparisons, it is important to use a standardised tool that goes beyond terminological variability.

There are several European areas that have been mapped using the DESDE-LTC. The use of a common language facilitates comparisons between the SNPHN region and the different community care models in Europe. Comparisons need to be taken with caution as all regions have their own unique characteristics and there is often significant variability both across and within areas of Australia.

Northern Europe

The provision of mental health services in Norway is organised within Health Authorities (HA), each one including several institutions/hospitals. Norway has a high per capita spending on health and there is a high availability of different types of mental health care. The area in Norway (Sør-Trøndelag) covers 25 municipalities and it is the catchment area of the St Olavs Hospital HA. The municipalities are obliged to offer primary health care and long-term care to all people in need of municipal services regardless of diagnosis. The GP is responsible for planning and coordinating preventive work, evaluation, and treatment and provides an important link between primary health care and the specialised health services. With regard to social and economic characteristics, Sør-Trøndelag has a low population density (15.60/km^2) and a very low unemployment index.

The main differences in the pattern of mental health care between Norway and the SNPHN catchment are related to the higher availability of Mobile (health related) teams in the Norwegian System (Figure 49). There were also less Day Care services identified in the SNPHN catchment as compared with Norway. However, the availability of Acute Residential Care is higher in the SNPHN region.

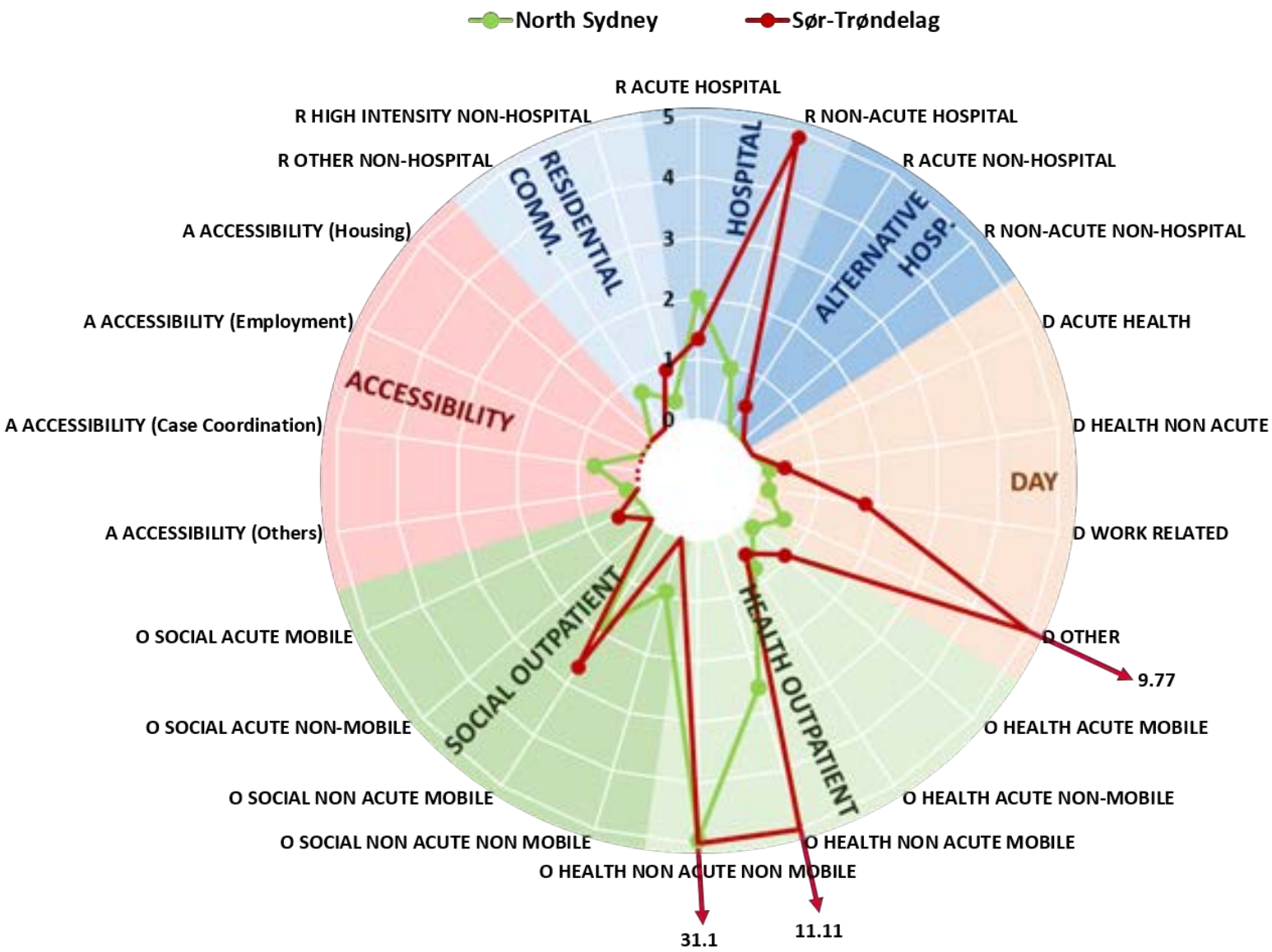


FIGURE 49 PATTERN OF CARE FOR ADULTS IN SNPHN AND SØR-TRØNDELAG (NORWAY) (MTC PER 100,000)

The Finnish area (Helsinki and Uusimaa Hospital District) is owned and governed by 26 municipalities each free to provide public services or to purchase them from an external provider. Primary care is organised by the municipalities and represents the main access point for people with mental health problems wilst specialised care is organised by the hospital districts. More than 40% of the households of the area of Helsinki and Uusimaa are occupied by just one person.

When comparing SNPHN and the Finnish area the main contrast is the high intensity non-hospital residential services and non-acute hospital services in Finland (Figure 49).

Southern Europe

Mental Health in Southern Europe is characterised by a strong emphasis on community care, and low availability of psychiatric hospitals. As in the case of Northern Europe, the public health sector is funded from general taxes.

In Italy, the Local Health Authorities, which are the local branches of the Regional National Health System, are the purchases of health care services. They also finance social care services together with the municipalities. There are 21 Local Health Authorities in the Veneto region and each is assigned a Mental Health Department which is in charge of the planning and management of all medical and social resources relation to prevention treatment and rehabilitation.

The main difference between SNPHN and Verona (Italy) is the higher rate of other non-hospital residential care within Italy (Figure 51).

In Spain, most of the mental health services are funded by the Regional Health Authorities and social services are paid for by the social and employment authority. In the area of Girona, the mental health system is organised according to two different levels, hospitalisations and community care. Community mental health care is organised in seven areas that include an adult Mental Health Centre and other specific services. Mental health patients enter the system through primary care, which fulfils a gatekeeping function.

When compared with Girona, the SNPHN region has a greater number of, and more varied services, especially Outpatient psychosocial services but also both acute and non-acute hospital care (Figure 52).

England

England raises funds mainly from general taxes and there is one purchaser organisation for most health care services. Local health authorities are involved in funding social care services in addition to local authorities and the state. A local Mental Health Trust is often the single organisation contracted to provide the majority of the mental health services in a given locality, however the trusts also may subcontract to other providers.

The pattern of care in Hampshire is very similar to that of SNPHN with the exception of the almost non-existent health related non-acute non-mobile outpatient services in Hampshire (Figure 53).

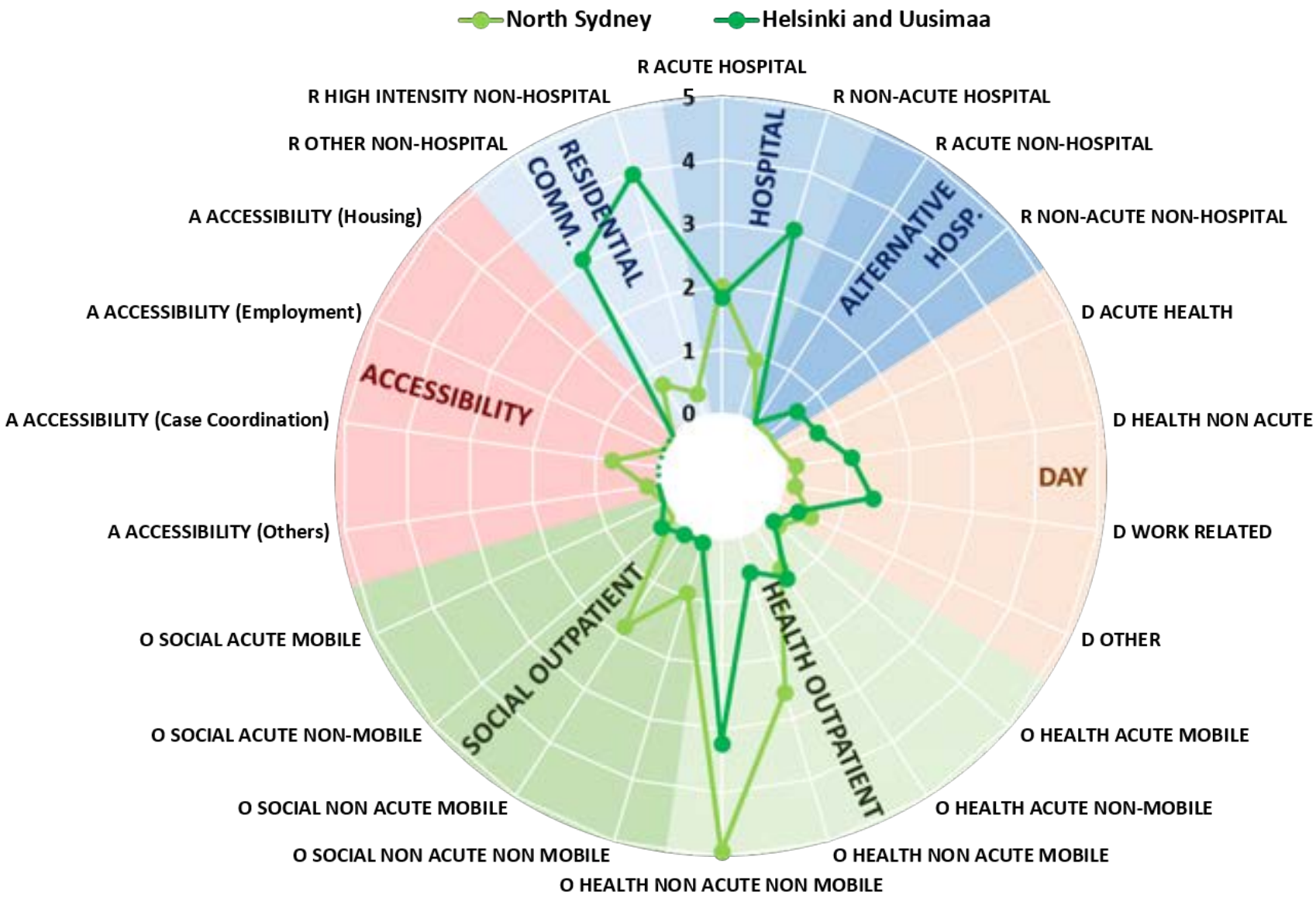


FIGURE 50 PATTERN OF CARE FOR ADULTS IN SNPHN AND HELSINKI AND UUSIMAA (FINLAND) (MTC PER 100,000)

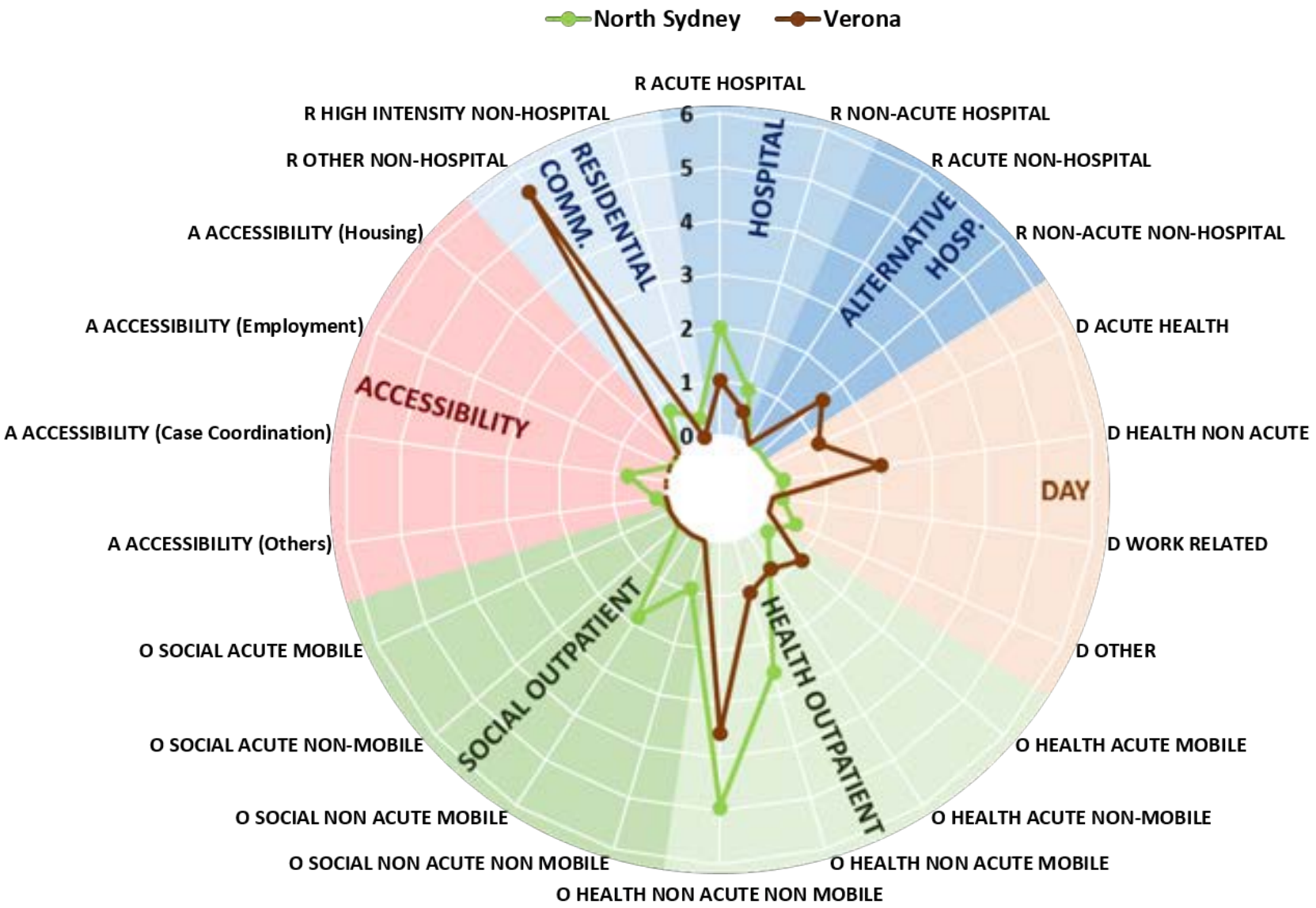


FIGURE 51 PATTERN OF CARE FOR ADULTS IN SNPHN AND VERONA (ITALY) (MTC PER 100,000)

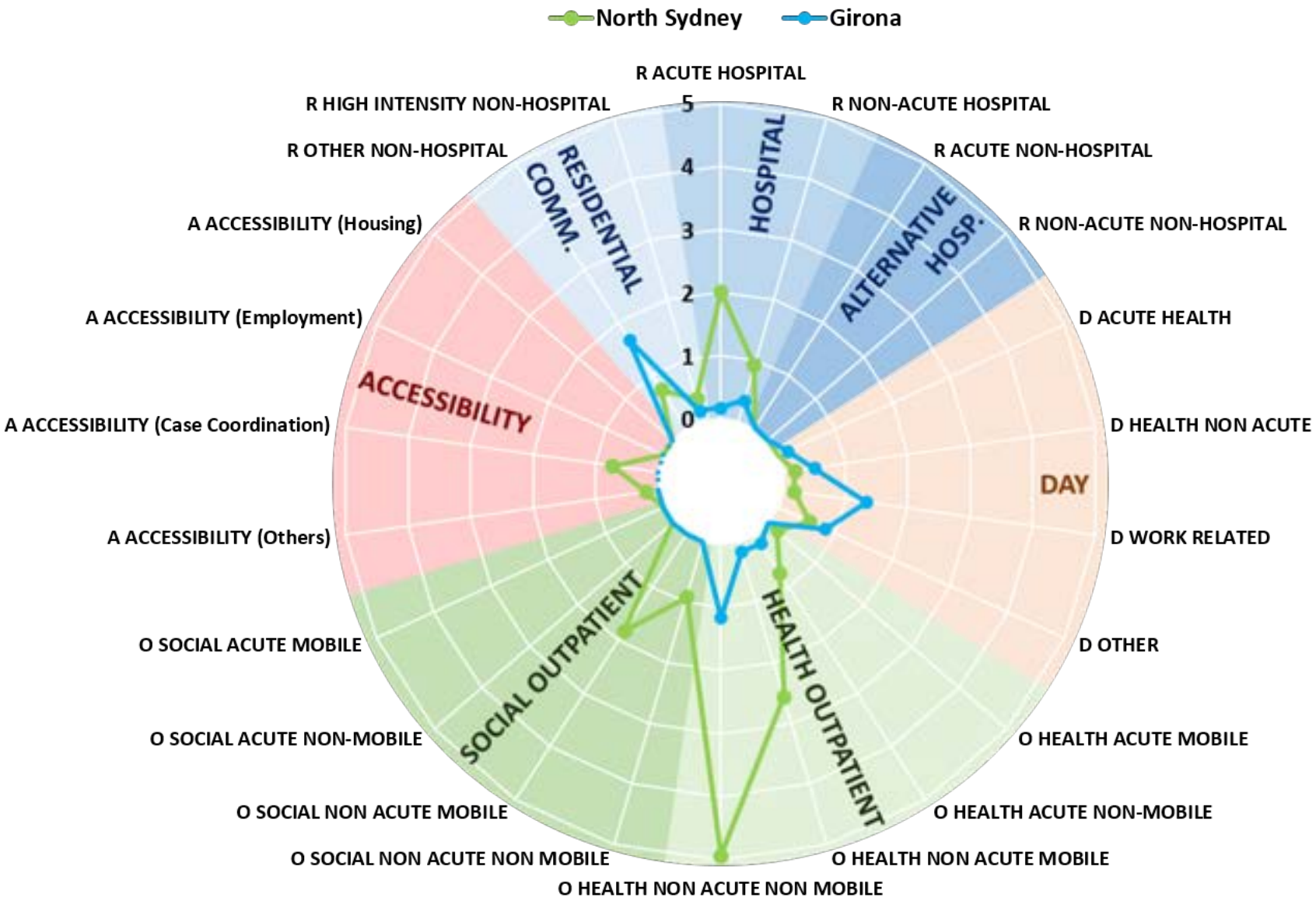


FIGURE 52 PATTERN OF CARE FOR ADULTS IN SNPHN AND GIRONA (SPAIN) (MTC PER 100,000)

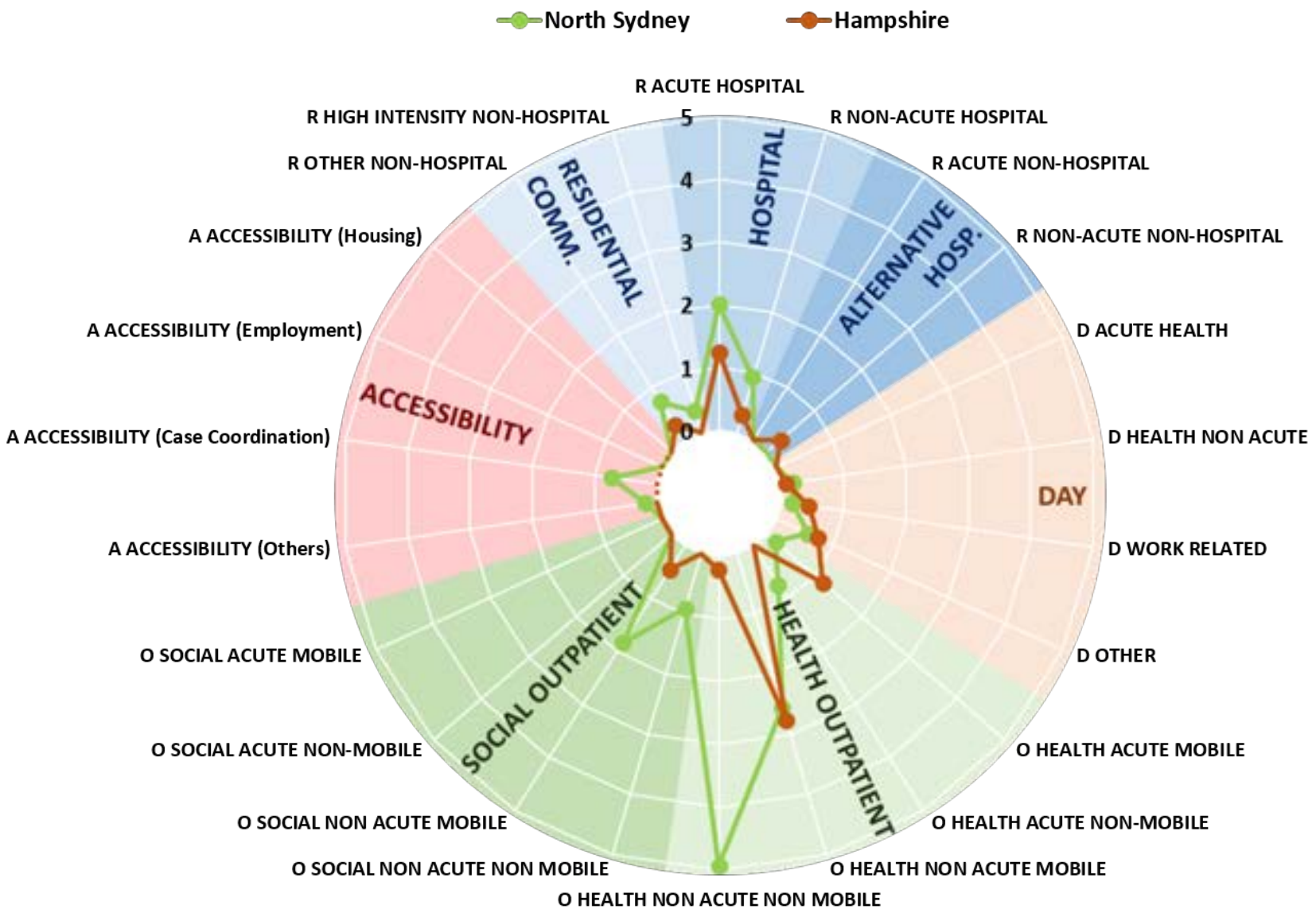


FIGURE 53 PATTERN OF CARE FOR ADULTS IN SNPHN AND HAMPSHIRE (ENGLAND) (MTC PER 100,000)

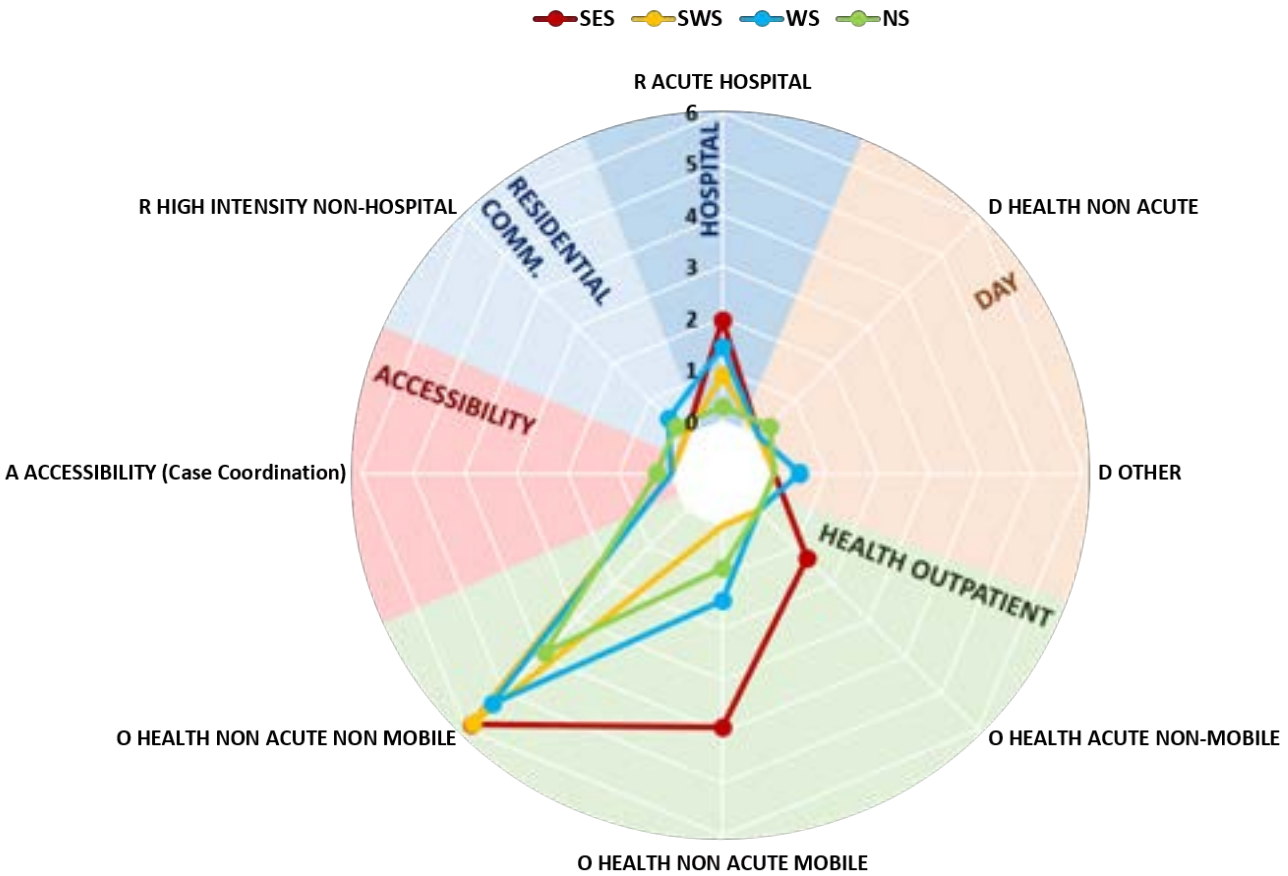


FIGURE 54 PATTERN OF CARE FOR CHILD AND ADOLESCENT IN SNPHN, SESPHN, SWSLHD AND WSLHD (MTC PER 100,000)

7. Discussion

Appendix A

DESDE-LTC Quick Reference Guide

DESDE-LTC Quick Reference Guide

Target Population

Children and Adolescents (including young adults)
CX Child & Adolescents (0-17 years)
CC Only children (0-11 years)
CA Only adolescent (12-17 years)
CY Adolescents and young adults (12-25 years)

Adults (including services with no age specification)
AX Adults (18-65 years)
AY Young adults (18-25 years)
AO Older adults (50-65 years)

Older Adults
OX Older than 65
TC Transition from child to adolescent (8-13 years)
TA Transition from adolescent to adult (16-25 years)
TO Transition from adult to older adult (55-70 years)

GX All age groups
NX None/undetermined

M Males F Females IN Indigenous

Diagnostic Group

F00-F99 All types of mental disorders
F20-F29 Schizophrenia, schizotypal, delusional, and other non-mood psychotic disorders
F30-49 Mood [affective] disorders
F53 Mental and behavioural disorders associated with the puerperium, not elsewhere classified
O90.6 Postpartum Mood Disturbance
T14.91 Suicide attempt
V00-Y99 External causes of morbidity
Z55-65 Persons with potential health hazards related to socioeconomic and psychosocial circumstances
Z57 Occupational exposure to risk factors
Z63 Other problems related to primary support group, including family circumstances
Z69 Encounter for mental health services for victim and perpetrator of abuse
ICD-T Used where there is not a specific diagnostic group for this service

Qualifier

a - Acute care (complimentary) – Used where acute care is provided within a non-acute, non-residential setting
b - Bundled care – Episode-related care, usually for non-acute patients within a time limited plan (eg., three months)
c - Closed care – Secluded MTC with a high level of security (e.g. locked doors)
d - Domiciliary care – Provided wholly at the home of the service user
e - eCare – Telephone, modern information and communication technologies (ICTs)
f - Far-away – Teams available for a population too distant to be accessed on a routine basis
g - Group – Outpatient services that provide predominantly group activities
h - Hospital – Non-residential care provided within a hospital setting
i - Institutional care – Residential facilities characterised by indefinite stay for a defined population group, usually with over 100 beds
j - Justice care – Provide care to individuals in contact with crime and justice services
l - Liaison care – Providing specific consultation for a subgroup of clients from another area within a facility
m - Management – Core function is management, planning, coordination or navigation of care
n - Novel – Residential care does not fulfil criteria for typical hospitals (e.g. hospital clusters or campuses or community centres)
o - 'On call' Physician – Physician is not formally on duty at the centre part of the day, usually at night
p - Primary Care – Specialised ambulatory care provided at the "primary care centre" by a qualified specialist
q - Quite – The main attribute of the MTC is significantly higher/greater than for other care teams coded in the same MTC
r - Reference – Operates as the main intake or referral point for the local area
s - Specialised care – For a specific subgroup within the target population of the catchment area (e.g. eating disorders service)
t - Tributory – A satellite team dependant on another main care team
u - Unitary – Consists of only one team member
v - Variable – Subject to strong limitations of capacity or fluctuations in demand
w - Whole – Only provides the extreme level of the activity described by MTC

ConNetica
CREATING BETTER FUTURES

PSI-COST
ASOCIACIÓN CIENTÍFICA

Appendix B

Non Government Organisations

ELIGIBLE/INCLUDED (n=17)

Action Foundation for Mental Health Inc.	Mission Australia
Be Centre Foundation	New Horizons Enterprises Limited
ccnb: community care + wellbeing advisers	One Door **Mental Health**
The Cottage Counselling Centre *	Phoenix House **Foundation**
Gidget Foundation	Primary & Community Care Services
headspace National Youth Mental Health Foundation	Recovery Station*
KYDS Youth Development Service Inc.*	Relationships Australia **NSW**
LifeLine Harbour to Hawkesbury	**Uniting** Recovery
The MindSpot Clinic	

INELIGIBLE/NOT INCLUDED (n=6)

Centre for Disability Studies	Peer Support Australia
Kedesh Rehabilitation Services*	Streetwork*
Link Housing	Sydney Drug Education and Counselling Centre

* Services not available for data collection. Eligibility and DESDE coding based on website

information ONLY.

Appendix C

Northern Sydney Local Health District

Interview (n=6)	Service Areas
Director Child and Youth Mental Health Services	CYMHS Community Teams Coral Tree Family Service OSCA Brolga Unit
Northern Beaches Mental Health Service	Manly Hospital (Inpatient, PEC, EHT, CNCs) Community Teams AOT BEIC
North Shore Ryde Mental Health Services	Royal North Shore Hospital (PEC, ED, CLP) Community Teams Early Intervention Teams Consumer/Peer Workers CREATE
Specialist Mental Health Services for Older Persons	Community Teams Manly Hospital Riverglen Lavender House BAMS Pathways to Community Living
Adult Mental Health Services	Perinatal and Infant Mental Health
Hornsby Kuringai Mental Health Hospital	Community Team CPS, EPIS, AORS, MHIU, PEC, AMHU Rehabilitation Services
Survey (n=2)	**Service Areas**
Northern Beaches Mental Health Service	Mona Vale Community Mental Health Team
Macquarie Hospital	Family and Carer Mental Health Program

References

Aslanyan, G., Benoit, F., Bourgeault, I., Edwards, N., Hancock, T., King, A., Salamo, P., Timmings, C. (2010). The inevitable health system(s) reform: An opportune time to reflect on systems thinking in public health in Canada. *Canadian Journal of Public Health, 101*(6), 499.

Australian Bureau of Statistics (ABS). (2011). Census of Population and Housing. Retrieved from http://www.abs.gov.au/census

Australian Institute of Health and Welfare (AIHW). (2013). *Mental Health Services – in brief 2013*. AIHW: Canberra.

Australian Institute of Health and Welfare (AIHW). (2016). Australian Burden of Disease Study: impact and causes of illness and death in Australia 2011. Australian Burden of Disease Study series no. 3. Cat. no. BOD 4. Canberra: AIHW.

Australian Institute of Health and Welfare (AIHW). (2017). Medicare-subsidised mental health-related services. Retrieved from: https://mhsa.aihw.gov.au/services/medicare/

Bell, R., Donkin, A., & Marmot, M. (2013). Tackling structural and social issues to reduce inequities in children's outcomes in low to middle-income countries, Office of Research Discussion Paper No.2013-02, *UNICEF Office of Research*, Florence.

Cacace, M., Ettelt, S., Mays, N., & Nolte, E. (2013). Assessing quality in cross-country comparisons of health systems and policies: Towards a set of generic quality criteria. *Health Policy*. 112:156-162.

ConNetica Consulting. (2015). Resilient minds for life: Facilitator training theory and evidence paper. ConNetica Consulting. Caloundra, Qld.

Department of Health (DoH). (2015). Mental Health Nurse Incentive Program (MHNIP) tables – Public Release Series V2a. Retrieved from: http://www.health.gov.au/internet/main/publishing.nsf/Content/PHN-Mental_Health_Data

Department of Health (DoH). (2016). ATAPS tables – Public Release Series V2a. Retrieved from: http://www.health.gov.au/internet/main/publishing.nsf/Content/PHN-Mental_Health_Data

De Savigny, D., & Adam, T. (2009). *Systems thinking for health systems strengthening*: World Health Organization.

Diminic, S., Harris, M., Sinclair, D., Carstensen, G., & Degenhardt, L. (2013). Estimating the community prevalence and treatment rates for mental and substance use disorders in Queensland: Report to the Queensland Mental Health Commission.

Commonwealth Department of Employment (CDE). (2017). *Small area labour markets publication – March quarter*. Retrieved from Australian Government: Canberra

Goodwin, N. (2016). Understanding integrated care. *International Journal of Integrated Care,* 16(4): 6, 1–4.

Jorm, A., Patten, S., Brugha, T., & Mojtabai, R. (2017). Has increased provision of treatment reduced the prevalence of common mental disorders? Review of the evidence from four countries. *World Psychiatry*, 16(1), 90-99.

Joung, I., Mackenback, J., Looman, C., & Simon J. (2002) "Self-assessed health and mortality: could psychosocial factors explain the association?" *International Journal of Epidemiology*, 31(6), 1162-1168.

Lawrence, D., Johnson, S., Hafekost, J., de Haan, K., Sawyer, M., Ainley, J., & Zubrick, S. R. (2015). The Mental Health of Children and Adolescents. Report on the second Australian Child and Adolescent Survey of Mental Health and Wellbeing. Department of Health, Canberra.

Light, E., Kerridge, I., Ryan, C., & Robertson, M. (2012). Community treatment orders in Australia: Rates and patterns of use. *Australasian Psychiatry, 20*(6), 478-482.

Lund, C., De Silva, M., Plagerson, S., Cooper, S., Chisholm, D., Das, J., Knapp, M., & Patel, V. (2011). Poverty and mental disorders: Breaking the cycle in low-income and middle-income countries. *The Lancet*, 378(9801), 1502-1514. doi: http://dx.doi.org/10.1016/S0140-6736(11)60754-X

Marmot, M., & Allen, J. (2014). Social determinants of health equity. *American Journal of Public Health,* 104(S4), S517-S519. doi: 10.2105/AJPH.2014.302200

Mendoza, J., Elson, A., Gilbert, Y., Bresnan, A., Rosenberg, S., Long, P., Wilson, K., & Hopkins, J. (2013). Obsessive hope disorder: Reflections on 30 years of mental health reform in Australia and visions for the future, technical report. Caloundra, Queensland.

National Mental Health Commission. (2014). The national review of mental health programmes and services. NMHC: Sydney.

NSW Mental Health Commission. (2014). *Living well: A Strategic Plan for Mental Health in NSW 2104-2024*. NSW Mental Health Commission: Sydney.

Oliver, K., Innvar, S., Lorenc, T., Woodman, J., & Thomas, J. (2014). A systematic review of barriers to and facilitators of the use of evidence by policymakers. *BMC Health Services Research, 14*(1), 2. doi: 10.1186/1472-6963-14-2

Oxman, A., Lewin, S., Lavis, J., & Fretheim, A. (2009). SUPPORT tools for evidence-informed health policymaking (STP) 15: Engaging the public in evidence-informed policymaking. *Health Research Policy and Systems, 7*(1), S15. doi: 10.1186/1478-4505-7-S1-S15

Public Health Information Development Unit (PHIDU). (2017). Social Health Atlas of Australia: Primary Health Networks. Retrieved from: http://www.phidu.torrens.edu.au/social-health-atlases/data

Salom, C., Williams, G., Najman, J., & Alati, R. (2014). Does early socio-economic disadvantage predict comorbid alcohol and mental health disorders? *Drug and Alcohol Dependence, 142*, 146-153.

Salvador-Carulla, L., Alvarez-Galvez, J., Romero, C., Gutiérrez-Colosía, M. R., Weber, G., McDaid, D., . . . Tibaldi, G. (2013). Evaluation of an integrated system for classification, assessment and comparison of services for long-term care in Europe: The eDESDE-LTC study. *BMC Health Services Research, 13*(1), 218.

Salvador-Carulla, L., Fernandez, A., Feng, X., Astell-Burt, T., Mass, C. (2015a). The integrated mental health atlas of South Western Sydney. Mental Health Policy Unit, Brain and Mind Research Institute. South Western Sydney Partners in Recovery, Sydney.

Salvador-Carulla, L., Fernandez, A., Feng, X., Astell-Burt, T., Mass, C., Smith-Merry, J., Gillespie, J. (2015b). The integrated mental health atlas of Western Sydney. Mental Health Policy Unit, Brain and Mind Research Institute. Western Sydney Partners in Recovery, Sydney.

Salvador-Carulla, L., Romero, C., Weber, G., Dimitrov, H., Sprah, L., Venner, B., & McDaid, D. (2011). Classification, assessment and comparison of European LTC services. *Ageing and Long-Term Care, 17*(2-3), 27-29.

Schalinski, I., Teicher, M., Nischk, D., Hinderer, E., Müller, O., & Rockstroh, B. (2016). Type and timing of adverse childhood experiences differentially affect severity of PTSD, dissociative and depressive symptoms in adult inpatients. *BMC Psychiatry*, 16:295. doi: 10.1186/s12888-016-1004-5

Statistics Solutions (2016), “Kessler Psychological Distress Scale (K10)”, viewed 13 January 2017, < http://www.statisticssolutions.com/kessler-psychological-distress-scale-k10/ >.

The Refinement Project Research Consortium. (2013). The Refinement Project. European Commission under the Seventh Framework Programme (7FP). Retrieved from http://www.refinementproject.eu/

Thornicroft, G., & Tansella, M. (2013). The balanced care model for global mental health. *Psychological Medicine*, 43(4), 849-863. doi:10.1017/S0033291712001420

Vázquez-Bourgon, J., Salvador-Carulla, L., & Vázquez-Barquero, J. L. (2012). Community alternatives to acute inpatient care for severe psychiatric patients. *Actas Esp Psiquiatr, 40*(5), 323-332.

World Health Organization. (2008). mhGAP: Mental Health Gap action Programme: Scaling up care for mental, neurological and substance use disorders. Geneva: World Health Organization; 2008. Available from: https://www.ncbi.nlm.nih.gov/books/NBK310851/

World Health Organization and Calouste Gulbenkian Foundation. (2014). *Social determinants of mental health*. World Health Organization: Geneva

Zhang, J., Harvey, C., & Andrew, C. (2011). Factors associated with length of stay and the risk of readmission in an acute psychiatric inpatient facility: A retrospective study. *Australian and New Zealand Journal of Psychiatry, 45*(7), 578-585.