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Australian Health Review

Chronic pain and cardiovascular disease prevention in primary care: a review of Australian primary health network needs assessments

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Supplementary Material S1 - PHN Needs Assessment Reports

Reports reviewed for chronic pain

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Issues and supporting data sources identified by PHNs

Table S1. Health issues identified by PHNs relating to pain, supporting data sources and references

Primary Data Source (number of PHNs reporting references that are derived from this primary data source)	References identified by PHNs
Prevalence (number of PHNs that identified this issue = 8)	
Prevalence of arthritis and other musculoskeletal conditions: National Health Survey (PHNs = 2)	<ul style="list-style-type: none"> • Public Health Information Development Unit (PHIDU) Social Health Atlas of Australia: Primary Health Networks (online). At: http://www.phidu.torrens.edu.au/social-healthatlases/data • Australian Institute of Health and Welfare 2016. Australia's health 2016. Australia's health series no. 15. Cat. no. AUS 199. Canberra: AIHW

		<ul style="list-style-type: none"> Arthritis and Osteoporosis Victoria. A problem worth solving. Arthritis and Osteoporosis Victoria, Elsternwick, Victoria. 2013
Prevalence of chronic musculoskeletal or neural pain: National general practice (BEACH) Data (PHNs = 2)		<ul style="list-style-type: none"> NSW Health (2012) NSW Pain Management Report: Report of the NSW Pain Management Taskforce, NSW Ministry of Health, North Sydney which references: <ul style="list-style-type: none"> Australian Institute of Health and Welfare (AIHW). 2003. SAND abstract No. 42 from the BEACH program: Prevalence and management of chronic pain. Sydney: GP Statistics and Classification Unit, University of Sydney Britt H, et al. (2016) A decade of Australian general practice activity 2006–07 to 2015–16. General practice series no. 41 Family Medicine Research Centre, University of Sydney (2015) SAND abstract No. 234 from the BEACH program: Chronic musculoskeletal/nerve pain in general practice patients
Prevalence of chronic pain	NSW Health Survey (PHNs = 2)	<ul style="list-style-type: none"> NSW Health (2012) NSW Pain Management Report: Report of the NSW Pain Management Taskforce, NSW Ministry of Health, North Sydney Blyth FM, March LM, Brnabic AJM, Jorm LR, Williamson M and Cousins MJ. 2001. Chronic pain in Australia: a prevalence study. Pain 89:127-134
	South Australian study using a whole of population random face-to-face survey method (PHNs = 1)	<ul style="list-style-type: none"> NSW Health (2012) NSW Pain Management Report: Report of the NSW Pain Management Taskforce, NSW Ministry of Health, North Sydney, which references: <ul style="list-style-type: none"> Currow D, Agar M, Plummer JL, Blyth FM and Abernethy AP, 2010. Chronic pain in South Australia: population levels that interfere extremely with activities of daily living. Aust NZ J Public Health 34(3):232-239
	Concord Health and Ageing in Men Project (CHAMP) (PHNs = 1)	<ul style="list-style-type: none"> NSW Health (2012) NSW Pain Management Report: Report of the NSW Pain Management Taskforce, NSW Ministry of Health, North Sydney, which references: <ul style="list-style-type: none"> Stanaway FF, Blyth FM, Cumming RG, Naganathan V, Handelsman DJ, Waite LM, Sambrook PN, Creasey HM, Seibel MJ and Le Couteur DG. 2011. Back pain in older male Italian-born immigrants in Australia: the importance of socioeconomic factors. Eur J Pain 15:70-76
	Stakeholder consultation (PHNs = 1)	<ul style="list-style-type: none"> With one key stakeholder from a consumer pain advocacy organisation who is also employed at a managerial level in a local health district
	No primary data source provided (PHNs = 4)	N/A
Burden of disease (number of PHNs that identified this issue = 6)		

Chronic pain, and arthritis and other musculoskeletal conditions: Deloitte Access Economics calculation using adjusted disability weights from the Australian Burden of Disease Study (PHNs = 1)		<ul style="list-style-type: none"> • MBF Foundation (2007) The high price of pain: the economic impact of persistent pain in Australia. Report conducted by Access Economics in collaboration with the Pain Management Research Institute - The University of Sydney/Royal North Shore Hospital • Arthritis and Osteoporosis Victoria. A problem worth solving. Arthritis and Osteoporosis Victoria, Elsternwick, Victoria. 2013
Impact of pain on ability to work: National Health Survey (PHNs = 1)		<ul style="list-style-type: none"> • ABS (2011), 4841.0 Facts at your fingertips: Health: Characteristics of bodily pain in Australia
Musculoskeletal diseases (osteoarthritis, rheumatoid arthritis, back pain, occupational overuse syndrome, slipped disc, other)	National Health Survey (PHNs = 2)	<ul style="list-style-type: none"> • Victorian Burden of Disease Study 2001 reported in Victorian Health Information Surveillance System 2016 • Queensland Health. 2017. Burden of disease and injury https://www.health.qld.gov.au/data/assets/pdf_file/0025/684214/burden-of-disease-report-2017.pdf
	2009 Survey of Disability, Ageing and Carers (PHNs = 1)	<ul style="list-style-type: none"> • 2009 Survey of Disability, Ageing and Carers https://www.ausstats.abs.gov.au/Ausstats/subscriber.nsf/0/9C2B94626F0FAC62CA2577FA0011C431/\$File/44300_2009.pdf
	No primary data source provided (PHNs = 2)	N/A
Hospitalisation rates (number of PHNs that identified this issue = 2)		
Hip and knee replacement procedure hospitalisation rates: NSW Admitted Patient Data Collection and ABS population estimates (SAPHaRI). Centre for Epidemiology and Evidence, NSW Ministry of Health (PHNs = 1)		<ul style="list-style-type: none"> • Epidemiological Profile of Local Government Area populations in NBMLHD 2017
Chronic pain associated with increased hospitalisations: No primary data source provided (PHNs = 1)		N/A
Opioid prescribing or perceived overuse of opioids (number of PHNs that identified this issue = 5)		
Pharmaceutical Benefits Scheme (PBS) data (PHNs = 3)		<ul style="list-style-type: none"> • Australian Commission on Safety and Quality in Healthcare (2015), The First Australian Atlas of Healthcare Variation, https://www.safetyandquality.gov.au/our-work/healthcare-variation/atlas-2015

	<ul style="list-style-type: none"> James K, Roe J, O'Mara B, Munro G, Bajurny L (2017) Prevention Research: Is there a pill for that? The increasing harms from opioid and benzodiazepine medication, Alcohol and Drug Foundation, Melbourne, https://www.drugsandalcohol.ie/31980/
Perceived overuse of opioids: Stakeholder consultation (PHNs = 1)	<ul style="list-style-type: none"> Voluntary online survey and face-to-face community representative (consumer) consultation groups to identify expressed needs and views on current health system and services (no date provided)
No primary data source provided (PHNs = 1)	N/A
Costs (number of PHNs that identified this issue = 2)	
Deloitte Access Economics estimate (PHNs = 2)	<ul style="list-style-type: none"> MBF Foundation (2007) The high price of pain: the economic impact of persistent pain in Australia. Report conducted by Access Economics in collaboration with the Pain Management Research Institute - The University of Sydney/Royal North Shore Hospital Pain Australia (2016). Prevalence and the Human and Social Cost of Pain, Pain Australia Fact Sheet 2 ABS (2011), 4841.0 Facts at your fingertips: Health: Characteristics of bodily pain in Australia

PHNs Primary Health Networks

Table 2. Service issues identified by PHNs relating to pain, supporting data sources and references

Primary Data Source (number of PHNs reporting references that are derived from this primary data source)	References identified by PHNs
Integration and coordination of care (number of PHNs that identified this issue = 7)	
Stakeholder consultation (PHNs = 6)	<ul style="list-style-type: none"> PHN Allied Health Survey Online engagement of health service providers through surveys to identify demographics, health priorities, expressed needs and views on current health system and services PHN Primary Care Opinion Survey PHN Primary Health Care Improvement Committee Direct liaison with practice staff PHN Community Advisory Council Clinical Council priority setting workshops
No primary data source provided (PHNs = 1)	N/A
Education and training for primary health care providers (number of PHNs that identified this issue = 6)	
Stakeholder consultation (PHNs = 5)	<ul style="list-style-type: none"> PHN Primary Care Opinion Survey PHN Primary Health Care Improvement Committee

	<ul style="list-style-type: none"> • Direct liaison with practice staff • PHN Community Advisory Council • With attendees at a pain management event for GPs and AHPs • Stakeholder/community consultations and online survey • PHN General Practice Workforce Census: Survey of GPs and practice managers in
No primary data source provided (PHNs = 1)	N/A
Access to GPs, pain management specialists, addiction specialists and mental health services (number of PHNs that identified this issue = 6)	
Stakeholder consultation (PHNs = 5)	<ul style="list-style-type: none"> • With service providers • PHN Clinical Council and stakeholder analysis • PHN community consultation • PHN Clinical Council
No primary data source provided (PHNs = 1)	N/A
Access to community-based pain programs or services to support patient self-management and appropriate medication use (number of PHNs that identified this issue = 4)	
Stakeholder consultation (PHNs = 3)	<ul style="list-style-type: none"> • Online engagement of health service providers through surveys to identify demographics, health priorities, expressed needs and views on current health system and services • PHN Primary Care Opinion Survey • PHN Primary Health Care Improvement Committee • Direct liaison with practice staff • PHN Community Advisory Council
No primary data source provided (PHNs = 1)	N/A
Knowledge of, use of, or access to referral pathways (number of PHNs that identified this issue = 3)	
Stakeholder consultation (PHNs = 3)	<ul style="list-style-type: none"> • PHN Primary Care Opinion Survey • PHN Primary Health Care Improvement Committee • Direct liaison with practice staff • PHN Community Advisory Council • With health service providers
The potential impact of codeine upscheduling on service demand and access (number of PHNs that identified this issue = 2)	
Stakeholder consultation (PHNs = 1)	<ul style="list-style-type: none"> • PHN Clinical Council
No primary data source provided (PHNs = 1)	N/A

Service Use Measures (number of PHNs that identified this issue = 2)	
GP consultation and resulting treatment rates (e.g. medication, imaging), management rates for chronic back pain and unspecified chronic pain: National general practice (BEACH) Data (PHNs = 2)	<ul style="list-style-type: none"> • Britt H, et al. (2016) A decade of Australian general practice activity 2006–07 to 2015–16. General practice series no. 41
Medical imaging for chronic back pain and surgical interventions for osteoarthritis: Medicare Benefits Scheme (MBS) data (PHNs = 1)	<ul style="list-style-type: none"> • Australian Commission on Safety and Quality in Healthcare (2015), The First Australian Atlas of Healthcare Variation, https://www.safetyandquality.gov.au/our-work/healthcare-variation/atlas-2015
Stakeholders broadly identifying pain as a condition not well managed (number of PHNs that identified this issue = 1)	
Stakeholder consultation (PHNs = 1)	<ul style="list-style-type: none"> • With one key stakeholder from a consumer pain advocacy organisation who is also employed at a managerial level in a local health district

PHNs Primary Health Networks

Table 3. Health issues identified by PHNs relating to CVD, supporting data sources and references

Primary Data Source (number of PHNs reporting references that are derived from this primary data source)	References identified by PHNs
Prevalence (number of PHNs that identified this issue = 20)	
Australian Health Survey and/or: <ul style="list-style-type: none"> - National Health Survey - Aboriginal and Torres Strait Islander Health Survey (PHNs = 13)	<ul style="list-style-type: none"> • Australian Bureau of Statistics, 2015. Australian Health Survey [Core component] 2011-12. Customised report. Canberra: ABS • Australian Bureau of Statistics. National Health Survey: First Results, 2014-15 Canberra; 2015 • Australian Institute of Health and Welfare 2016. Australia's health 2016. Australia's health series no. 15. Cat. No. AUS 199. Canberra: AIHW • Australian Institute of Health and Welfare 2015. Cardiovascular disease, diabetes and chronic kidney disease— Australian facts: Risk factors. Cardiovascular, diabetes and chronic kidney disease series no. 4. Cat. No. CDK 4. Canberra: AIHW • Australian Institute of Health and Welfare 2015. Cardiovascular disease, diabetes and chronic kidney disease— Australian facts: Aboriginal and Torres Strait Islander people. Canberra • Public Health Information Development Unit (PHIDU). Social Health Atlas of Australia: July 2018. (2018). Available at: http://phidu.torrens.edu.au/social-health-atlases/data • Public Health Information Development Unit (2018). Aboriginal and Torres Strait Islander Social health atlas of Australia: Data by Indigenous Area. August 2018

	<ul style="list-style-type: none"> Thomson N, MacRae A, Burns J, Catto M, Debuyst O, Krom I, ... & Urquhart B. (2010). Overview of Australian Indigenous health status April 2010. Perth, WA: Australian Indigenous HealthInfoNet Vos T, Barker B, Begg S, Stanley L & Lopez AD (2009). Burden of disease and injury in Aboriginal and Torres Strait Islander Peoples: the Indigenous health gap. International Journal of Epidemiology, 38(2), 470-477
South Australian Population Health Survey (in addition to the above national surveys) (PHNs = 1)	<ul style="list-style-type: none"> Health Performance Council of South Australia (HPCSA), 2016, State of Our Health Report, (based on ABS 2013, Australian Aboriginal and Torres Strait Islander health survey: 2012-13) Health Performance Council of South Australia (HPCSA), 2018, State of Our Health (online report), accessed Oct 2018
National general practice (BEACH) Data (PHNs = 1)	<ul style="list-style-type: none"> Britt H, Miller GC, Henderson J, Bayram C, Harrison C, Valenti L, Pan Y, Charles J, Pollack AJ, Wong C, Gordon J. General practice activity in Australia 2015–16. General practice series no. 40. Sydney: Sydney University Press, 2016
Local general practice data (PHNs = 2)	<ul style="list-style-type: none"> PATCAT data extracted by PHNs
Victorian Admitted Episodes Dataset (PHNs = 1)	<ul style="list-style-type: none"> Victorian Department of Health, Victorian Admitted Episode Dataset accessed with POLAR explorer tool
Victorian Population Health Survey (PHNs = 1)	<ul style="list-style-type: none"> DHHS, Victorian Population Health Survey 2014; https://www2.health.vic.gov.au/public-health/population-health-systems/health-status-of-victorians/survey-data-and-reports/victorian-population-health-survey/victorian-population-health-survey-2014
Australian National Survey of Psychotic Illness (PHNs = 1)	<ul style="list-style-type: none"> Commonwealth of Australia, 2011, People living with psychotic illness 2010, Canberra, http://www.health.gov.au/internet/main/publishing.nsf/content/717137a2f9b9fcc2ca257bf0001c118f/\$file/psych10.pdf
Primary data source could not be identified from reference (PHNs = 4)	<ul style="list-style-type: none"> Brooke M. Consumers and after hours health care in western Sydney: Summary of research insights. Outcomes Services;2016 Local Health District Multicultural Health Services Unit Chan YK, Chen L, Keates AK et al. The heart of inequality in heart disease investigations. October 2017. Mary MacKillop Institute for Health Research, Australian Catholic University National Mental Health Commission, Equally Well Consensus Statement: Improving the physical health and wellbeing of people living with mental illness in Australia, Sydney NMHC, 2016
No primary data source provided (PHNs= 3)	N/A
Physical and mental comorbidity prevalence (e.g. prevalence of people with CVD that also have another physical or mental health condition) (number of PHNs that identified this issue = 10)	
National Health Survey (PHNs = 6)	<ul style="list-style-type: none"> Public Health Information Development Unit. Social Health Atlas of Australia: Torrens University Australia; 2019 [Available from: http://phidu.torrens.edu.au/social-health-atlases/data

	<ul style="list-style-type: none"> • Australian Bureau of Statistics (ABS), 2015, National Health Survey: Mental Health and co-existing physical health conditions, Australia, 2014–15 • Australian Bureau of Statistics. National Health Survey: first results 2014 - 15. (2015) • Australian Institute of Health and Welfare 2016. Australia's health 2016. Australia's health series no. 15. Cat. no. AUS 199. Canberra: AIHW
National Survey of Mental Health and Wellbeing (PHNs = 1)	<ul style="list-style-type: none"> • Australian Institute of Health and Welfare 2012. Comorbidity of mental disorders and physical conditions 2007. Cat. no. PHE 155. Canberra: AIHW https://www.aihw.gov.au/getmedia/05a9c315-7576-4c3f-aa2a-9ccb14964c3e/10953.pdf.aspx?inline=true
Australian National Survey of Psychotic Illness (in addition to the above survey) (PHNs = 3)	<ul style="list-style-type: none"> • Commonwealth of Australia, 2011, People living with psychotic illness 2010, Canberra, http://www.health.gov.au/internet/main/publishing.nsf/content/717137a2f9b9fcc2ca257bf0001c118f/\$file/psych10.pdf • Fifth National Mental Health and Suicide Prevention Plan 2017
No primary data source provided (PHNs = 2)	N/A
Burden of disease (number of PHNs that identified this issue = 16)	
Australian Burden of Disease Study (PHNs = 10)	<ul style="list-style-type: none"> • 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. BOD 4. Canberra: AIHW • Australian Institute of Health and Welfare 2016. Australia's health 2016. Australia's health series no. 15. Cat. no. AUS 199. Canberra: AIHW • Australian Institute of Health and Welfare (2011) Impact of alcohol and illicit drug use on the burden of disease and injury in Australia • Australian Institute of Health and Welfare. Older Australia at a glance. Online: https://www.aihw.gov.au/reports/older-people/older-australia-at-a-glance/contents/health-and-functioning/burden-of-disease • Queensland Health. (2017). Burden of disease and injury in Queensland: Summary results for Queensland. Retrieved from Brisbane: https://www.health.qld.gov.au/data/assets/pdf_file/0025/684214/burden-of-disease-report-2017.pdf • Queensland Health (2016) The health of Queenslanders 2016. Report of the Chief Health Officer Queensland. Queensland Government. Brisbane
Australian Burden of Disease Study in Aboriginal and Torres Strait Islander peoples (National Aboriginal and Torres Strait Islander Survey) (PHNs = 7)	<ul style="list-style-type: none"> • Vos T, Barker B, Begg S, Stanley L & Lopez AD (2009). Burden of disease and injury in Aboriginal and Torres Strait Islander Peoples: the Indigenous health gap. international Journal of Epidemiology, 38(2), 470-477 • Australian Institute of Health and Welfare (AIHW) 2016, Australian Burden of Disease Study: Impact and causes of illness and death in Aboriginal and Torres Strait Islander people 2011, AIHW, Canberra • NSW Health. The Health of Aboriginal People of NSW: Report of the Chief Health Officer. Canberra: NSW Health; 2012

	<ul style="list-style-type: none"> Queensland Health. (2016). The burden of disease and injury in Queensland's Aboriginal and Torres Strait Islander people 2014, Brisbane Queensland Health. (2017). The burden of disease and injury in Queensland Aboriginal and Torres Strait Islander people 2017 (2011 reference year) Hospital and Health Services profile. Retrieved from Brisbane: https://www.health.qld.gov.au/data/assets/pdf_file/0031/660838/BoD-2016-HHS-FINAL.pdf
Death data (YLL) (no prevalence data) (PHNs = 1)	<ul style="list-style-type: none"> Zhao Y, Zhang X, Foley M, Guthridge S. Northern Territory burden of disease study: Fatal burden of disease and injury, 2004–2013. Darwin; 2016
Victorian Population Health Survey (PHNs = 1)	<ul style="list-style-type: none"> DHHS, Gippsland Health Online: www.health.vic.gov.au/regions/Gippsland/Gippslandhealthonline
No primary data source provided (PHNs = 2)	N/A
Mortality (i.e. deaths due to cardiovascular disease (all ages) (number of PHNs that identified this issue = 17)	
AIHW National Mortality Database (PHNs = 10) Cause of death data are sourced from the Registrars of Births, Deaths and Marriages in each state and territory, the National Coronial Information System and compiled and coded by the Australian Bureau of Statistics (ABS).	<ul style="list-style-type: none"> Australian Institute of Health and Welfare (2019). <i>Cardiovascular disease snapshot</i>. Australian Bureau of Statistics. Causes of death. Online: https://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/3303.0~2015~Main%20Features~Australia's%20leading%20causes%20of%20death,%202015~3 Australian Institute of Health and Welfare (2018). MORT books: Primary Health Network and State and territory, 2012-16. Canberra: AIHW Tasmanian Department of Health (2013). Health Indicators Tasmania 2013
Aboriginal and Torres Strait Islander data: AIHW National Mortality Database (PHNs = 4)	<ul style="list-style-type: none"> Australian Institute of Health and Welfare (2017). Aboriginal and Torres Strait Islander Health Performance Framework 2017 report: Western Australia
SAPHaRI, Centre for Epidemiology and Evidence, NSW Ministry of Health (PHNs = 2) Mortality estimates for years up to 2005 are based on Australian Bureau of Statistics death registration data. Data from 2006 onwards were provided by the Australian Coordinating Registry, Cause of Death Unit Record File; the data for the most 2 recent years are preliminary	<ul style="list-style-type: none"> NSW Ministry of Health. Health Statistics NSW online portal: Deaths by category of cause, NSW 2016 Available at: http://www.healthstats.nsw.gov.au NSW Ministry of Health. Health Statistics NSW online portal: Circulatory disease deaths by Primary Health Network, NSW 2015-16 Available at: http://www.healthstats.nsw.gov.au
No primary data sources provided (PHNs = 1)	N/A
Premature mortality (including potentially avoidable deaths) (i.e. deaths due to cardiovascular disease under the age of 75) (number of PHNs that identified this issue = 18)	

<p>AIHW National Mortality Database (PHNs = 14)</p>	<ul style="list-style-type: none"> • Public Health Information Development Unit (2018). Aboriginal and Torres Strait Islander Social health atlas of Australia: Data by Indigenous Area. August 2018 • Public Health Information Development Unit (PHIDU). Social Health Atlas of Australia: July 2018. (2018). Available at: http://phidu.torrens.edu.au/social-health-atlases/data • Australian Institute of Health and Welfare CVD Premature Mortality and Avoidable Mortality data 2011-2015 • Australian Institute of Health and Welfare. Healthy Communities: Avoidable deaths and life expectancies in 2009–2011 (online). At: https://www.myhealthycommunities.gov.au/our-reports/avoidable-deaths-and-life-expectancies/december-2013 • Australian Institute of Health and Welfare (2016). Deaths (online). At: https://www.aihw.gov.au/reports/life-expectancy-death/deaths-in-australia/contents/leading-causes-of-death • Australian Institute of Health and Welfare (AIHW) 2018, Mortality over regions and time (MORT) books 2012-2016, [Online], Available: https://www.aihw.gov.au/reports/life-expectancy-death/mort-books/contents/mort-books • Queensland Health, Indigenous health factsheet (Chief Health Officer’s Report 2016) 	
<p>Disability: The FutureAbility DataCube (PHNs = 1) Commissioned by SSI in 2015 to review and analyse the extent and prevalence of disability among CALD communities in NSW. It brings together data from the following sources:</p> <ul style="list-style-type: none"> • Australian Bureau of Statistics: Census 2011 • Survey of Disability Aging and Carers (2009, 2012) • Australian Census and Migrants Integrated Dataset (2011) • National Disability Administrators: Small Area Estimates (2009) • Family and Community Services NSW: CIS 2012-2015 • Department of Social Services: Payments Dec 2014 • Department of Social Services – Settlement Reporting 2000 to 2014 	<ul style="list-style-type: none"> • Settlement Services International. FutureAbility DataCube Sydney: SSI; 2019 Available from: https://www.ssi.org.au/services/futureability-datacube 	
<p>Mental illness</p>	<p>Linkage of Western Australian population data -</p>	<ul style="list-style-type: none"> • Lawrence D, Hancock KJ, Kisely S. The gap in life expectancy from preventable physical illness in psychiatric patients in Western Australia: retrospective analysis of population-based registers. British Medical Journal. 2013; 346: f2539 • Department of Health, The Fifth National Mental Health and Suicide Prevention Plan, October 2017

	mental health information system records and causes of death (ABS) (PHNs = 2)	
	International data (PHNs = 1)	<ul style="list-style-type: none"> De Hert et al 2011, Physical illness in patients with severe mental disorder. I. Prevalence, impact of medications and disparities in health care, World Psychiatry, vol. 10, pp. 52-77
Aboriginal data:	Primary data source could not be identified from reference (PHNs = 1)	<ul style="list-style-type: none"> South Eastern Sydney Local Health District. Population health plan for Aboriginal people living in Randwick and Botany areas 2017-2022. Sydney: SESLHD; 2017
	No primary data source provided (PHNs = 1)	N/A
Hospitalisation rates (number of PHNs that identified this issue = 15)		
	The National Hospital Morbidity Database (NHMD) (Admitted Patient Care Minimum Data Set). Data from the Australian Institute of Health and Welfare, supplied on behalf of State and Territory health departments (PHNs = 9)	<ul style="list-style-type: none"> Public Health Information Development Unit (PHIDU). Social Health Atlas of Australia: July 2018. (2018). Available at: http://phidu.torrens.edu.au/social-health-atlases/data Australian Institute of Health and Welfare. Admitted patient care 2016-17: Australian hospital statistics data tables Australian Institute of Health and Welfare. Cardiovascular disease snapshot. 2018 Australian Commission on Safety and Quality in Healthcare, Australian Atlas of Healthcare Variation 2015 and 2017 Australian Indigenous HealthInfoNet (2018) Online
	NSW Combined Admitted Patient Epidemiology Data and ABS population estimates (SAPHaRI). Centre for Epidemiology and Evidence, NSW Ministry of Health (PHNs = 4)	<ul style="list-style-type: none"> NSW Ministry of Health. Health Statistics NSW online portal: Circulatory disease hospitalisations by Primary Health Network, NSW 2016-17 NSW Ministry of Health. Health Statistics NSW online portal: Circulatory disease hospitalisations by Local Government Area, NSW 2001-03 to 2015-17 NSW Ministry of Health Centre for Epidemiology and Evidence, 2018. Health Statistics New South Wales: Coronary heart disease hospitalisations by age. [Online] Available at: http://www.healthstats.nsw.gov.au/Indicator/cvd_chdhos/cvd_chdhos_lgamap Centre for Epidemiology and Evidence, <i>NSW Population Health Survey (SAPHaRI)</i>. 2017: NSW Ministry of Health
	Queensland Hospital Admitted Patient Data Collection (PHNs = 2)	<ul style="list-style-type: none"> Queensland Health. (2016). The Health of Queenslanders 2014. Brisbane: Sixth Chief Health Officer Report Queensland Health (2018) Queensland Hospital Admitted Patient Data Collection 2016-17, Statistical Services Branch, Department of Health, Queensland
	Primary data source could not be identified from reference (PHNs = 1)	<ul style="list-style-type: none"> DHHS, Gippsland Health Online; www.health.vic.gov.au/regions/Gippsland/Gippslandhealthonline
	No primary data source provided (PHNs = 1)	N/A
Potentially Preventable Hospitalisations (number of PHNs that identified this issue = 21)		

<p>AIHW National Hospital Morbidity Database (PHNs = 16)</p>	<ul style="list-style-type: none"> • Australian Institute of Health and Welfare. Healthy Communities: Potentially preventable hospitalisations. Online: https://www.myhealthycommunities.gov.au/our-reports/potentially-preventable-hospitalisations • Australian Commission on Safety and Quality in Healthcare, Australian Atlas of Healthcare Variation 2015 and 2017 • Australian Institute of Health and Welfare, 2018b, <i>Potentially preventable hospitalisations in Australia by small geographic areas</i>, available at: https://www.aihw.gov.au/reports/primary-health-care/mhc-potentiallypreventable-hospitalisations/contents/overview • Australian Institute of Health and Welfare (AIHW) My Healthy Communities 2018, using AIHW National Hospital Morbidity Database 2016-17 • Australian Institute of Health and Welfare (AIHW) Aboriginal and Torres Strait Islander Health Performance Framework 2017 • KP Health. (2017). Review of Chronic Care Services in Northern Queensland. Retrieved from St Kilda Western Victoria: www.kphealth.com.au • Victorian Ambulatory Care Sensitive Conditions (ACSCs) reports, 2015-16, reported in Victorian Health Information Surveillance System, 2016 • Tasmanian Department of Health (2013) Health Indicators Tasmania • Public Health Information Development Unit (PHIDU). Social Health Atlas of Australia: July 2018. (2018). Available at: http://phidu.torrens.edu.au/social-health-atlases/data • Vohma V, Xiao A, Shao C & Somerford P. (2017) Potentially preventable hospitalisation hotspots in Western Australia. Department of Health Western Australia and WA Primary Health Alliance. Online: https://ww2.health.wa.gov.au/-/media/Files/Corporate/Reports-and-publications/Lessons-of-Location/Lessons-of-Location-2017.pdf
<p>NSW Combined Admitted Patient Epidemiology Data and ABS population estimates (SAPHaRI). Centre for Epidemiology and Evidence, NSW Ministry of Health (PHNs = 1)</p>	<ul style="list-style-type: none"> • NSW Health Online Statistics module 2018 – Potentially preventable hospitalisations by condition, Aboriginal, NSW 2016-17
<p>Primary data source could not be identified from reference (PHNs = 1)</p>	<ul style="list-style-type: none"> • South Eastern Sydney Local Health District. Population health plan for Aboriginal people living in Randwick and Botany areas 2017-2022. Sydney: SESLHD; 2017
<p>No primary data source provided (PHNs = 4)</p>	<p>N/A</p>
<p>Gap in life expectancy (number of PHNs that identified this issue = 4)</p>	
<p>Mental health information system (contacts with mental health services) and ABS death registrations (PHNs = 1)</p>	<ul style="list-style-type: none"> • Lawrence, 2013. The gap in life expectancy from preventable physical illness in psychiatric patients in Western Australia: retrospective analysis of population-based registers. <i>BMJ</i> 2013;346: f2539

<p>Australian Bureau of Statistics (ABS) Life Tables (PHNs = 1)</p>	<ul style="list-style-type: none"> • Australian Institute of Health and Welfare (2017) Aboriginal and Torres Strait Islander health performance framework 2017: supplementary online tables. Cat. no. WEB 170. Canberra: AIHW
<p>Primary data source could not be identified from reference (PHNs = 2)</p>	<ul style="list-style-type: none"> • Harris, B., Duggan, M., Batterham, P., Bartlem, K., Clinton-McHarg, T., Dunbar, J., Fehily, C., Lawrence, D., Morgan, M., & Rosenbaum, S. 2018, Australia's Mental and Physical Health Tracker: Background Paper, Australian Health Policy Collaboration issues paper no. 2018-02, Melbourne, AHPC • Commonwealth of Australia, 2011, People living with psychotic illness 2010, Canberra, http://www.health.gov.au/internet/main/publishing.nsf/content/717137a2f9b9fcc2ca257bf0001c118f/\$file/psych10.pdf
<p>Prevalence of risk factors (number of PHNs that identified this issue = 20)</p>	
<p>Australian Health Survey and/or:</p> <ul style="list-style-type: none"> - National Health Survey - Aboriginal and Torres Strait Islander Health Survey <p>(PHNs = 9)</p>	<ul style="list-style-type: none"> • Australian Bureau of Statistics (2015) National Health Survey 2014-15 • Queensland Government (Queensland Health) (2016) The health of Queenslanders 2016. Report of the Chief Health Officer Queensland, Brisbane • Queensland Health (2016). Chief Health Officer's Report 2016 Indigenous health factsheet • Australian Institute of Health and Welfare, My Healthy Communities, online: www.myhealthycommunities.gov.au/ • Queensland Health Queensland Survey Analytics System 2015-16 • Public Health Development Unit, 2016, Social Health Atlas of Australia by Population Health Area, available at: http://phidu.torrens.edu.au/ • Thomson N, MacRae A, Burns J, Catto M, Debuyst O, Krom I, ... & Urquhart B. (2010). Overview of Australian Indigenous health status April 2010. Perth, WA: Australian Indigenous HealthInfoNet. • Australian Institute of Health and Welfare (2012). Risk factors contributing to chronic disease. Cat. no. PHE 157. Canberra: Australian Institute of Health and Welfare. Retrieved from Risk factors contributing to chronic disease. Cat. no. PHE 157 • Australian Institute of Health and Welfare (2017). Risk factors to health, nutrition: https://www.aihw.gov.au/reports/biomedical-risk-factors/risk-factors-to-health/contents/overweight-and-obesity • Australian Institute of Health and Welfare (2017). Risk factors to health, insufficient physical activity: https://www.aihw.gov.au/reports/biomedical-risk-factors/risk-factors-to-health/contents/overweight-and-obesity • Australian Institute of Health and Welfare (2017). Risk factors to health, overweight and obesity web report: https://www.aihw.gov.au/reports/biomedical-risk-factors/risk-factors-to-health/contents/overweight-and-obesity
<p>National Drug Strategy Household Survey (PHNs = 5)</p>	<ul style="list-style-type: none"> • Australian Institute of Health and Welfare. Smoking. (2018) • Australian Institute of Health and Welfare (AIHW) 2017. National drug strategy household survey 2016: detailed findings. Drug statistics series no. 31. Cat. no. PHE 214. Canberra: AIHW • NHMRC. (2009). Australian Guidelines to reduce health risks from drinking alcohol. Canberra: National Health and Medical Research Council

National general practice (BEACH) Data (PHNs = 1)	<ul style="list-style-type: none"> • Britt H, Miller GC, Henderson J, Bayram C, Harrison C, Valenti L, Pan Y, Charles J, Pollack AJ, Wong C, Gordon J (2016) General practice activity in Australia 2015–16. General practice series no. 40. Sydney: Sydney University Press
Australian National Survey of Psychotic Illness (PHNs = 2)	<ul style="list-style-type: none"> • Mental Health Commission of NSW (2016) Physical health and mental wellbeing. Sydney https://nswmentalhealthcommission.com.au/sites/default/files/publication-documents/Physical%20health%20and%20wellbeing%20-%20final%208%20Apr%202016%20WEB.pdf • Mental Health Commission of NSW (2014) <i>Living well – A Strategic Plan for Mental Health in NSW 2014-2024</i>
Queensland Preventive Health Survey (PHNs = 4)	<ul style="list-style-type: none"> • Queensland Health (2016). <i>The health of Queenslanders 2016. Report of the Chief Health Officer Queensland</i> • Queensland Government’s Queensland survey analytics system (QSAS) 2015-16 reports • Queensland Health. (2016). <i>Preventative Health Survey regional results (adults and children) 2009-10 through 2015-16</i>. Retrieved February 2, 2018, from https://www.health.qld.gov.au/research-reports/populationhealth/preventive-health-surveys/results/regional • Queensland Health, 2015. Queensland survey analytics system (QSAS), Preventative Health telephone survey series. Online: https://data.qld.gov.au/dataset/self-reported-healthstatus-srhs-survey-series
NSW Population Health Survey (PHNs = 3)	<ul style="list-style-type: none"> • NSW Ministry of Health Centre for Epidemiology and Evidence (2018) Health Statistics New South Wales: Insufficient physical activity by Local Health District, NSW 2017. Online: http://www.healthstats.nsw.gov.au/Indicator/beh_phys_age/beh_phys_lhn_snap?&topic=Health-related%20behaviours&topic1=topic_beh&code=beh • Health Statistics NSW online portal: Overweight or obese adults by Primary Health Network, NSW 2017 • Health Statistics NSW online portal: Overweight and obesity in secondary school students aged 12-17 years, by Local Health District Group, NSW 2014 • NSW Ministry of Health Centre for Epidemiology and Evidence (2015) NSW Population Health Survey (SAPHaRI). NSW Ministry of Health: Sydney • NBMLHD Epidemiological Profile: Overweight and obesity in Nepean Blue Mountains Local Health District Population 2017 • South Western Sydney Local Health District and South Western Sydney PHN (2018) Draft South West Sydney Health in 2018: A in-depth study of the health of the population now and into the future
Victorian Population Health Survey (PHNs = 1)	<ul style="list-style-type: none"> • DHHS, Victorian Population Health Survey (2014) online: https://www2.health.vic.gov.au/public-health/population-health-systems/health-status-of-victorians/survey-data-and-reports/victorian-population-health-survey/victorian-population-health-survey-2014
VicHealth Indicators Survey (PHNs = 1)	<ul style="list-style-type: none"> • DHHS LGA Profiles (2015)
South Australian Population Health Survey (PHNs = 1)	<ul style="list-style-type: none"> • Health Performance Council of South Australia (2016) State of Our Health report (online) • Health Performance Council of South Australia (2018) State of Our Health report (online)

NSW Combined Admitted Patient Epidemiology Data and ABS population estimates (SAPHaRI). Centre for Epidemiology and Evidence, NSW Ministry of Health (PHNs = 1)	<ul style="list-style-type: none"> • South Western Sydney Local Health District and South Western Sydney PHN (2018) Draft South West Sydney Health in 2018: A in-depth study of the health of the population now and into the future • NSW Ministry of Health Centre for Epidemiology and Evidence (2018) NSW Combined Admitted Patient Epidemiology Data and ABS population estimates (SAPHaRI). NSW Ministry of Health
NSW School Students Health Behaviours Survey (PHNs = 1)	<ul style="list-style-type: none"> • NSW Ministry of Health Centre for Epidemiology and Evidence (2016) NSW School Students Health Behaviours Survey (SAPHaRI). NSW Ministry of Health
Primary data source could not be identified from reference (PHNs = 1)	<ul style="list-style-type: none"> • South Eastern Sydney Local Health District. Population health plan for Aboriginal people living in Randwick and Botany areas 2017-2022. Sydney: SESLHD; 2017
Stakeholder consultation (PHNs = 1)	<ul style="list-style-type: none"> • Norfolk Island Resident Survey
No primary data source provided (PHNs = 3)	N/A

PHNs Primary Health Networks; CVD cardiovascular disease

Table 4. Service issues identified by PHNs relating to CVD, supporting data sources and references

Primary Data Source (number of PHNs reporting references that are derived from this primary data source)	References identified by PHNs
Insufficient routine assessment and management of risk factors for CVD (number of PHNs that identified this issue = 3)	
Medicare Benefits Schedule (MBS) data (PHNs = 2)	<ul style="list-style-type: none"> • MBS data for use with the Indigenous Health Check item (715) • MBS-funded items claimed by GPs
Local General Practice Data (PHNs = 2)	<ul style="list-style-type: none"> • De-identified and aggregated data extracted from general practice using PEN Clinical Audit Tool • General practice data providing non-identifiable information for 518,200 active patients from 127 general practices using POLAR GP
Primary data source could not be identified from reference (PHNs = 1)	<ul style="list-style-type: none"> • NBMLHD Epidemiological profile 2014 • NBMLHD health services plan 2012/22 • PWC Review of community health and outpatient services 2014
Stakeholder consultation (PHNs = 2)	<ul style="list-style-type: none"> • Local Health District staff consultation • PHN Primary Care Opinion Survey • PHN Primary Health Care Improvement Committee • Direct liaison with practice staff • PHN Community Advisory Council

Service integration and coordination (number of PHNs that identified this issue = 6)	
Stakeholder consultation (PHNs = 3)	<ul style="list-style-type: none"> • Primary health provider consultation • PHN clinical and community councils
No primary data source provided (PHNs = 3)	N/A
Predicted increase in demand for, or poor access to specialists or other support services (number of PHNs that identified this issue = 5)	
Pharmaceutical Benefits Scheme (PBS) data (PHNs = 1)	<ul style="list-style-type: none"> • Australian Department of Health PBS Claims 2011-17
Medicare Benefits Schedule (MBS) data (PHNs = 1)	<ul style="list-style-type: none"> • Age-standardised specialist attendance rates https://www.aihw.gov.au/reports/health-welfare-expenditure/mbs-gp-and-specialist-attendances-2016-17/contents/summary
Acute, sub and non-acute patient care modelling based on hospitalisation data and projected population growth (PHNs = 1)	<ul style="list-style-type: none"> • South Western Sydney Local Health District, Strategic & Healthcare Services Plan Strategic Priorities in Health Care Delivery to 2021. 2013, Sydney: SWSLHD. https://www.swslhd.health.nsw.gov.au/pdfs/SWSLHD_Strategic_Priorities_to_2021.pdf
Stakeholder consultation (PHNs = 4)	<ul style="list-style-type: none"> • Primary health provider consultation • PHN community engagement • Community engagement using postcard surveys at events (n>700 in total)
Health professional training (number of PHNs that identified this issue = 3)	
Stakeholder consultation (PHNs = 3)	<ul style="list-style-type: none"> • Consultations with service providers in the chronic disease space • PHN clinical and community councils • Community Advisory Council • Clinical Council • General Practice Advisory Committee • Staff and other local stakeholders and subject matter experts
CVD broadly identified as a condition not well managed by stakeholders (number of PHNs that identified this issue = 1)	
Stakeholder consultation (PHNs = 1)	<ul style="list-style-type: none"> • Rural service provider and community consultations

PHNs Primary Health Networks; CVD cardiovascular disease