

CEC eChartbook Portal Extract

Potentially Preventable Hospitalisations

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POTENTIALLY PREVENTABLE HOSPITALISATIONS

Why is this important? Potentially preventable hospitalisations (PPH) are defined as “Admission to hospital for a condition where the hospitalisation could have potentially been prevented through the provision of appropriate individualised preventative health interventions and early disease management usually delivered in primary care and community-based care settings”[1]. In 2013-14, 600,267 hospitalisations in Australian public and private hospitals were identified as potentially preventable. This accounts for 6 per cent of the total hospital admissions (9.7 million) in that year [2]. PPH has been used nationally and globally to indirectly identify problems with access to health care services and effective primary care [3].

A number of studies have shown that the availability of non-hospital care can explain substantial variations between geographic areas in hospitalisation rates for the specified conditions [4,5,6,7]. According to the 2015 national standard for PPH (defined above), PPH are classified into 3 groups which are vaccine-preventable, chronic and acute conditions. The ICD-10-AM (7th edition) for these conditions are shown in the “data definitions” section.

Findings: Between 2011-12 and 2014-15, the age standardised PPH rate of NSW slightly increased from 2,226 to 2,294 per 100,000 population (Chart PPH01). After classifying by disease category, the largest increase was observed for vaccine-preventable conditions (Chart PPH04). The PPH rates vary widely by rurality and socioeconomic disadvantage. The remote and very remote regions had significantly higher rates than those in major cities. People living in rural and remote areas had significantly higher PPH rates than those living in metropolitan areas.

Notes on increased rate of Vaccine-Preventable Conditions from Jul 2013 (Chart PPH04) [8].

Total Vaccine-Preventable Conditions (VPD) hospitalisations consist of both influenza and pneumonia and ‘other’ VPDs. Both have increased steeply in recent times as follows:

- a. Influenza and pneumonia: Part of the increase in total PPH VPDs is due to an increase in hospitalisations for influenza and pneumonia in 2014-15

- b. Other VPDs: The other reason for the increase in total PPH VPDs is due to a coding change in July 2013 regarding viral hepatitis showing an increase from 2013/14. A summary of the change is: the Australian Coding Standard for Viral Hepatitis was revised in July 2013 resulting in a major change affecting the coding of Viral Hepatitis as a principal diagnosis or an additional diagnosis (or comorbidity) in the hospital data. This change was responsible for the dramatic increase in the number and rate of hospitalisation for the different types of Viral Hepatitis.

Following are reasons for the changes in the Viral hepatitis (Australian Coding Standard (ACS) 0104) recorded in the ICD10-AM/ACHI/ACS Chronicle of Changes, Eight edition (from 1 July 2013): “A public submission (P118) was received regarding hepatitis C. Information provided in this standard was outdated due to advances in antiviral therapy. Once described as an incurable infection, current advances in antiviral therapy have improved outcomes for patients with hepatitis C significantly and the possibility of successfully treating (i.e. attaining SVR (sustained virological response)) Hepatitis C virus (HCV) infection is achievable. SVR is defined as the absence of the genetic material of the virus (HCV RNA) in serum 24 weeks after discontinuing therapy. Following comments received from ICD Technical Group (ITG) members and internally, National Casemix and Classification Centre (NCCC) acknowledged that clinical advice regarding hepatitis carrier status needed to be updated and reflected in ACS 0104 (Viral hepatitis). It was initially decided to incorporate changes regarding hepatitis C alone; however after further consideration it was deemed unwise to amend this section of the standard in isolation. Consequently, the entire standard was reviewed for currency and clinical appropriateness.”

Further amendments were made in the Ninth Edition (from 1 July 2015) for consistency with the inactivation of Z22.51-Z22.59; Z22.5 *Carrier of viral hepatitis* was added as a replacement for these codes within the text, and references to Z22.51-Z22.59 were removed from the *Classification* table.

Implications: Through the provision of stronger and more accessible primary care services and out-of-hospital specialist services, potentially preventable hospitalisations should be decreasing. This is the case in rural and remote areas and socially disadvantaged quintiles. High hospitalisation rates highlight the need for service models that support early in the intervention, particularly in primary care settings.

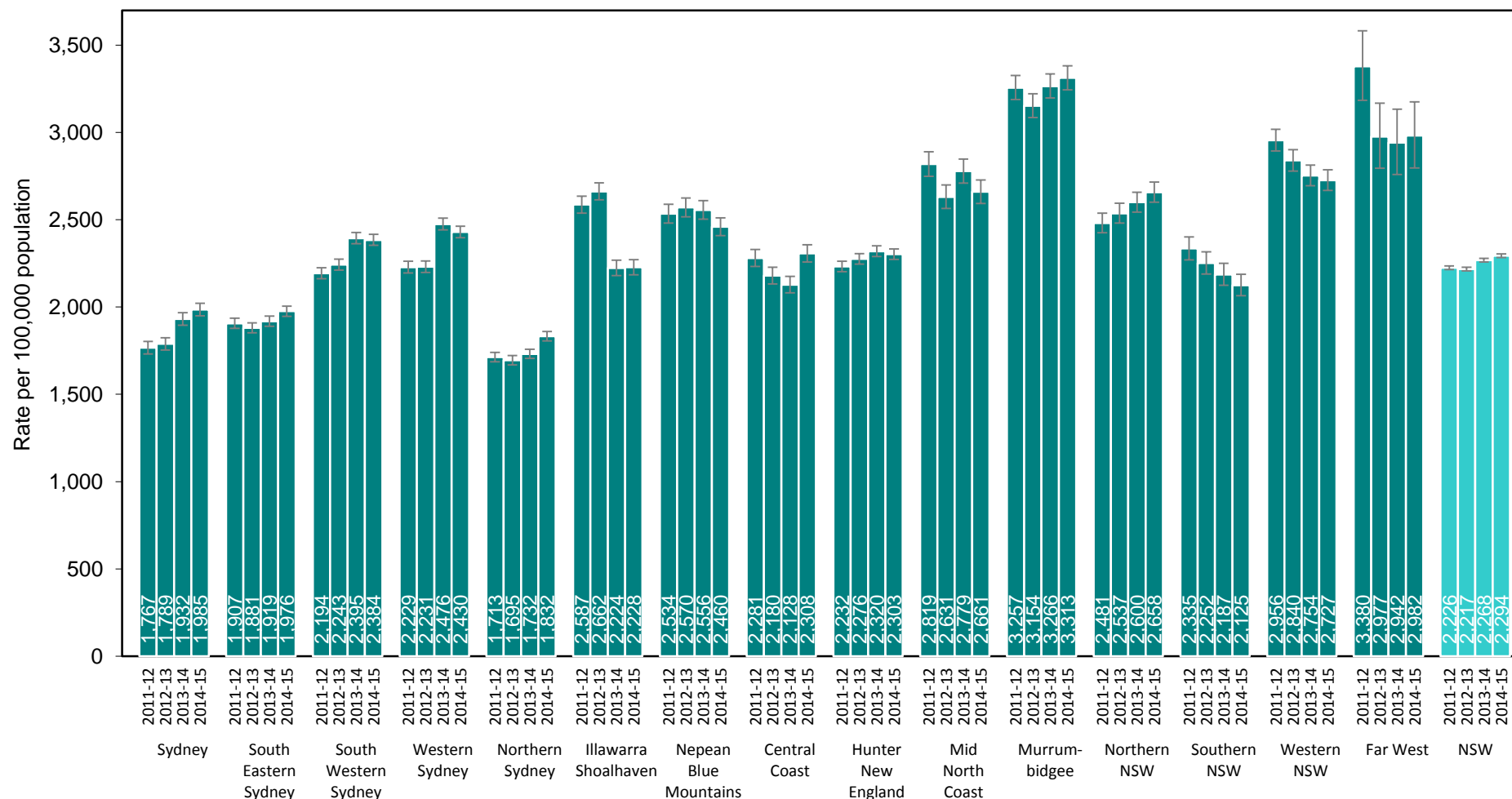
What we don't know: The relationship between PPH and aspects of Safety and Quality is not strait forward. Studies have shown that minority groups, and those of lower socioeconomic status are at greater risk of PPH [3].

- There are conflicting results in regards to the association of level of physician supply, rurality, and continuity of care and PPH rates.
- Environmental factors such as air pollution are associated with higher risk of PPH admissions for respiratory conditions.
- Findings from several studies suggest that age, gender, marital status, socioeconomic status and ethnicity are associated with increasing risk of PPH related to chronic conditions.
- Increasing age and increasing number of medications are strong predictors of PPH as a result of Adverse Drug Events

References:

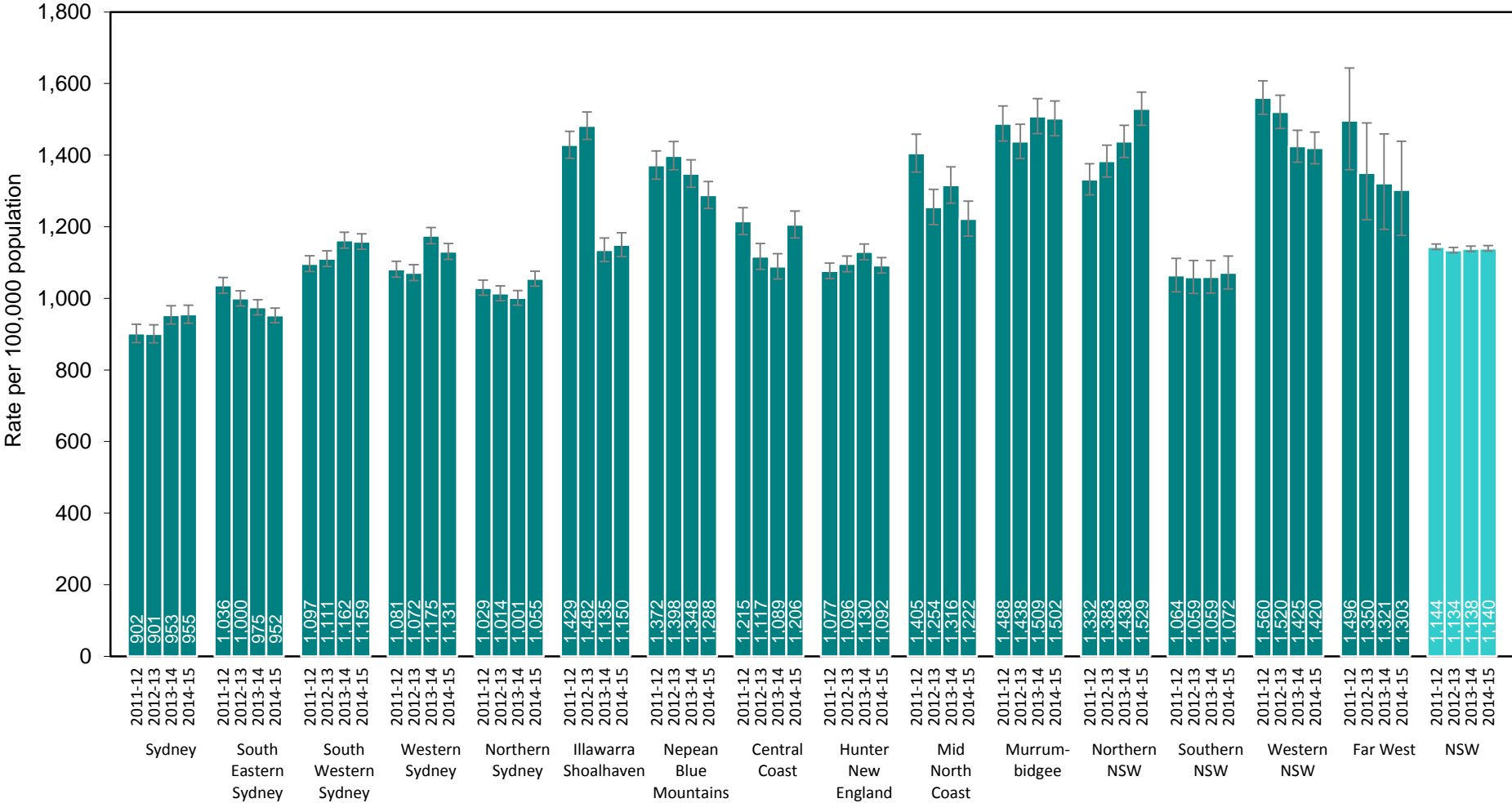
- [1] Australian Institute of Health and Welfare. METeOR (Metadata Online Registry). National Healthcare Agreement. PI 18 – Selected potentially preventable hospitalisations. Canberra: AIHW; 2015 Cited 09 Feb 2016. 13 p. Available from: <http://meteor.aihw.gov.au/content/index.phtml/itemId/559032>
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- [6] Bindman AB, Grumbach K, Osmond D, Komaromy M, Vranizan K, Lurie N, Billings J, et al. Preventable hospitalizations and access to health care. J Am Med Assoc. 1995;274(4):305–311.
- [7] UCSF–Stanford University Evidence-based Practice Center. Refinement of the HCUP Quality Indicators (Technical Review 4). AHRQ Publication No.01-0035. Rockville, MD: Agency for Healthcare Research and Quality, US Department of Health and Human Services; 2001.
- [8] Ms Moore in an email to the eChartbook team provided explanation for the increase in the trend for hospitalisations for vaccine preventable diseases in the potentially preventable hospitalisation indicator (H. Moore, personal communication, August 11, 2016).

Chart PPH01 – Potentially preventable hospitalisations (PPH) by LHD
 PPH rate per 100,000 persons, all categories, by LHD and NSW, 2011-2012 to 2014-2015



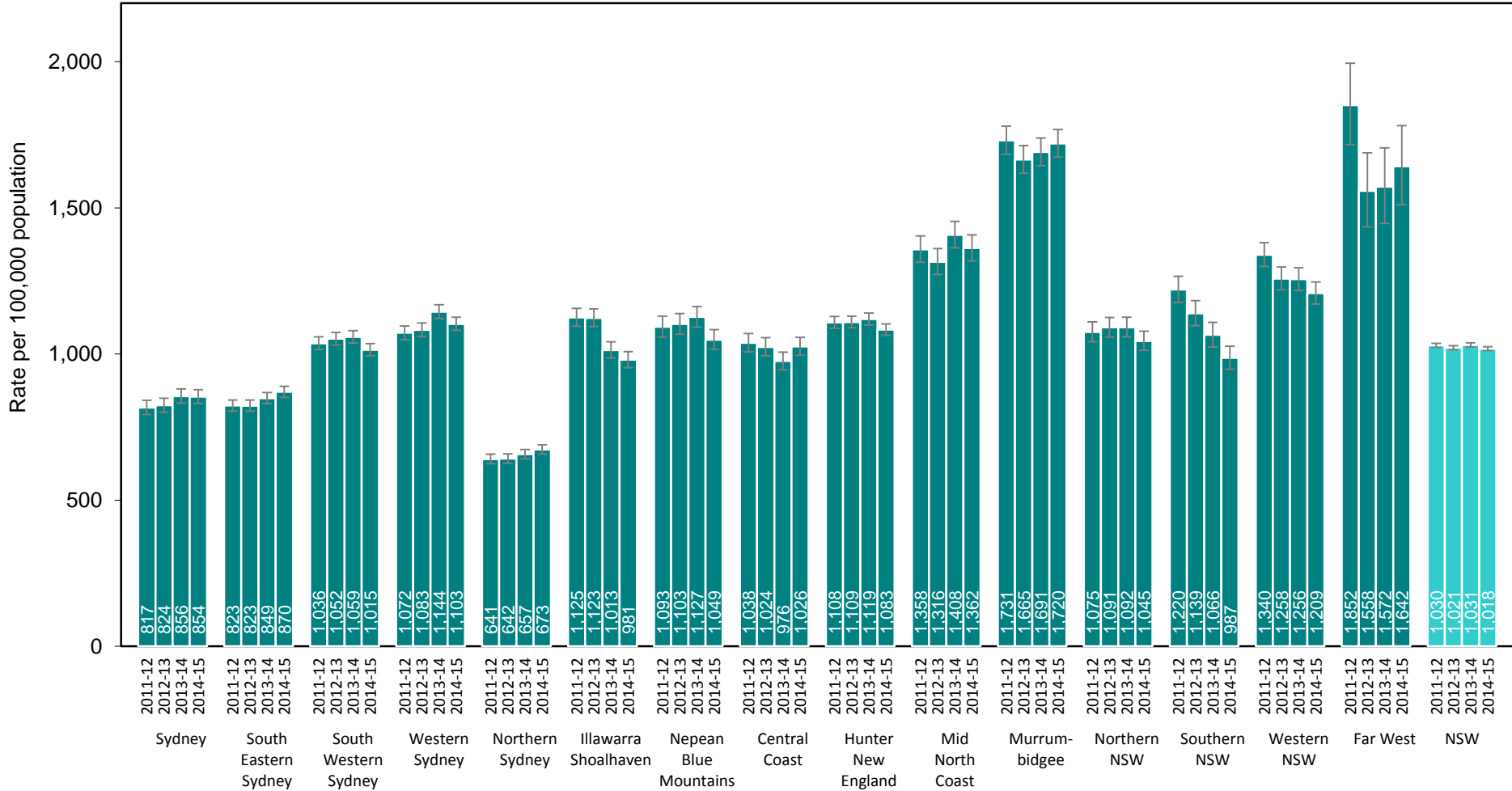
Source: Centre for Epidemiology and Evidence. Health Statistics New South Wales. Sydney: NSW Ministry of Health. Available at: www.healthstats.nsw.gov.au. Accessed (5 July 2016).

Chart PPH02 – Potentially preventable hospitalisations (PPH) by Category and LHD
 PPH rate per 100,000 population, Acute conditions, by LHD and NSW, 2011-2012 to 2014-2015



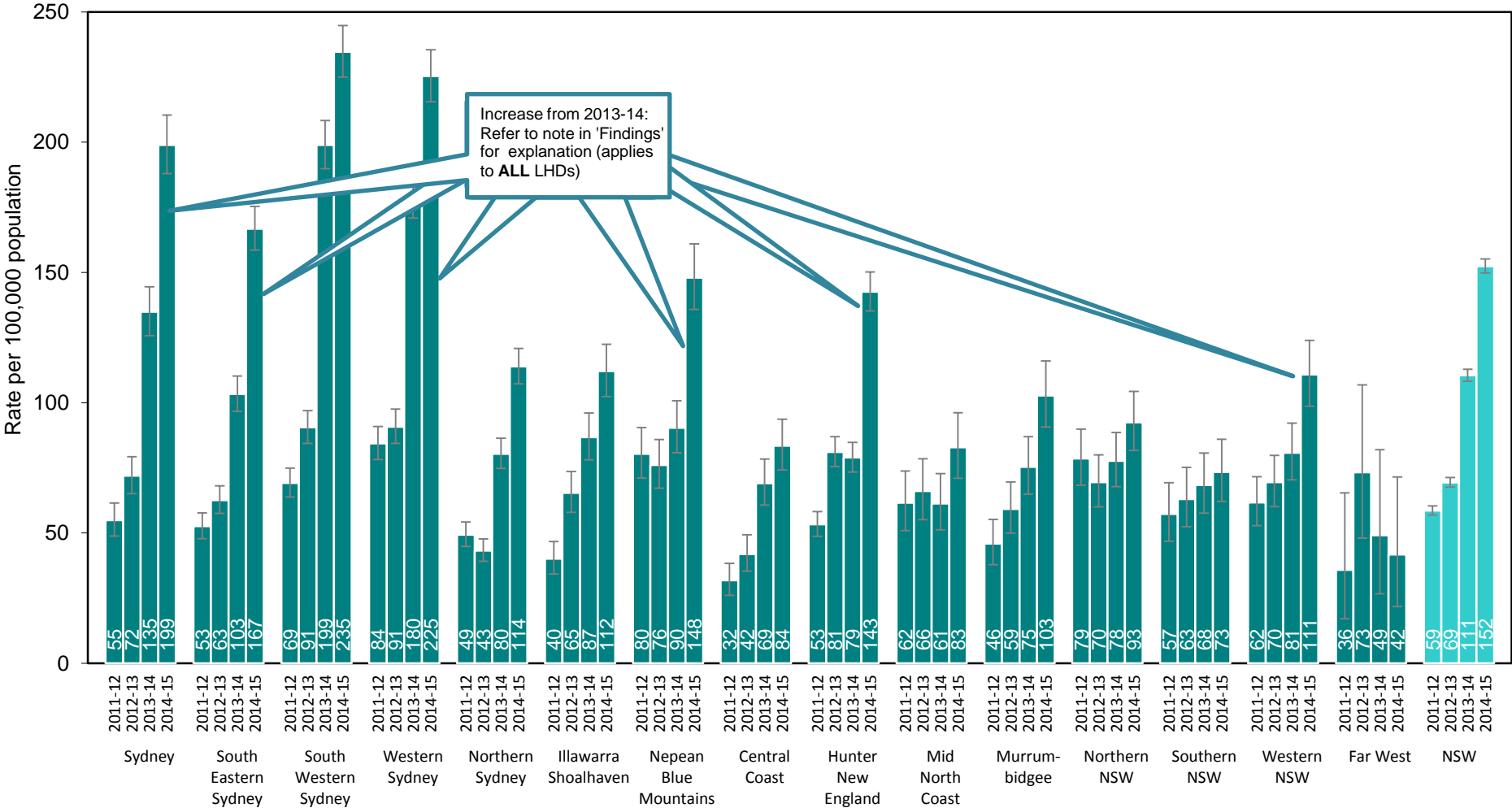
Source: Centre for Epidemiology and Evidence. Health Statistics New South Wales. Sydney: NSW Ministry of Health. Available at: www.healthstats.nsw.gov.au. Accessed - 5 July 2016.

Chart PPH03 – Potentially preventable hospitalisations (PPH) by Category and LHD
 PPH rate per 100,000 population, Chronic conditions, by LHD and NSW, 2011-2012 to 2014-2015



Source: Centre for Epidemiology and Evidence. Health Statistics New South Wales. Sydney: NSW Ministry of Health. Available at: www.healthstats.nsw.gov.au. Accessed - 5 July 2016.

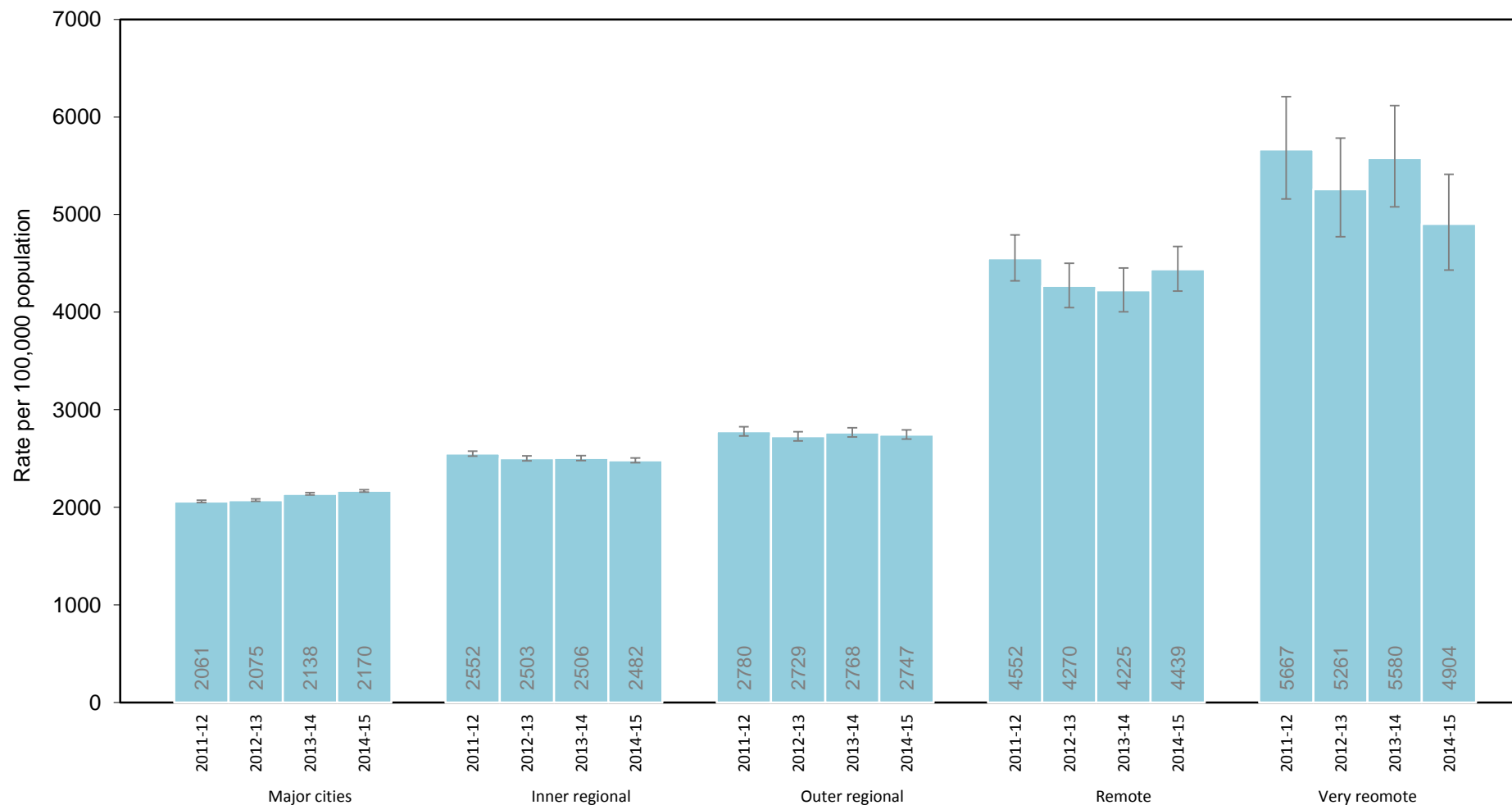
Chart PPH04 – Potentially preventable hospitalisations (PPH) by Category and LHD
 PPH rate per 100,000 population, Vaccine-preventable conditions, by LHD and NSW, 2011-2012 to 2014-2015



Source: Centre for Epidemiology and Evidence. Health Statistics New South Wales. Sydney: NSW Ministry of Health. Available at: www.healthstats.nsw.gov.au. Accessed - 5 July 2016.

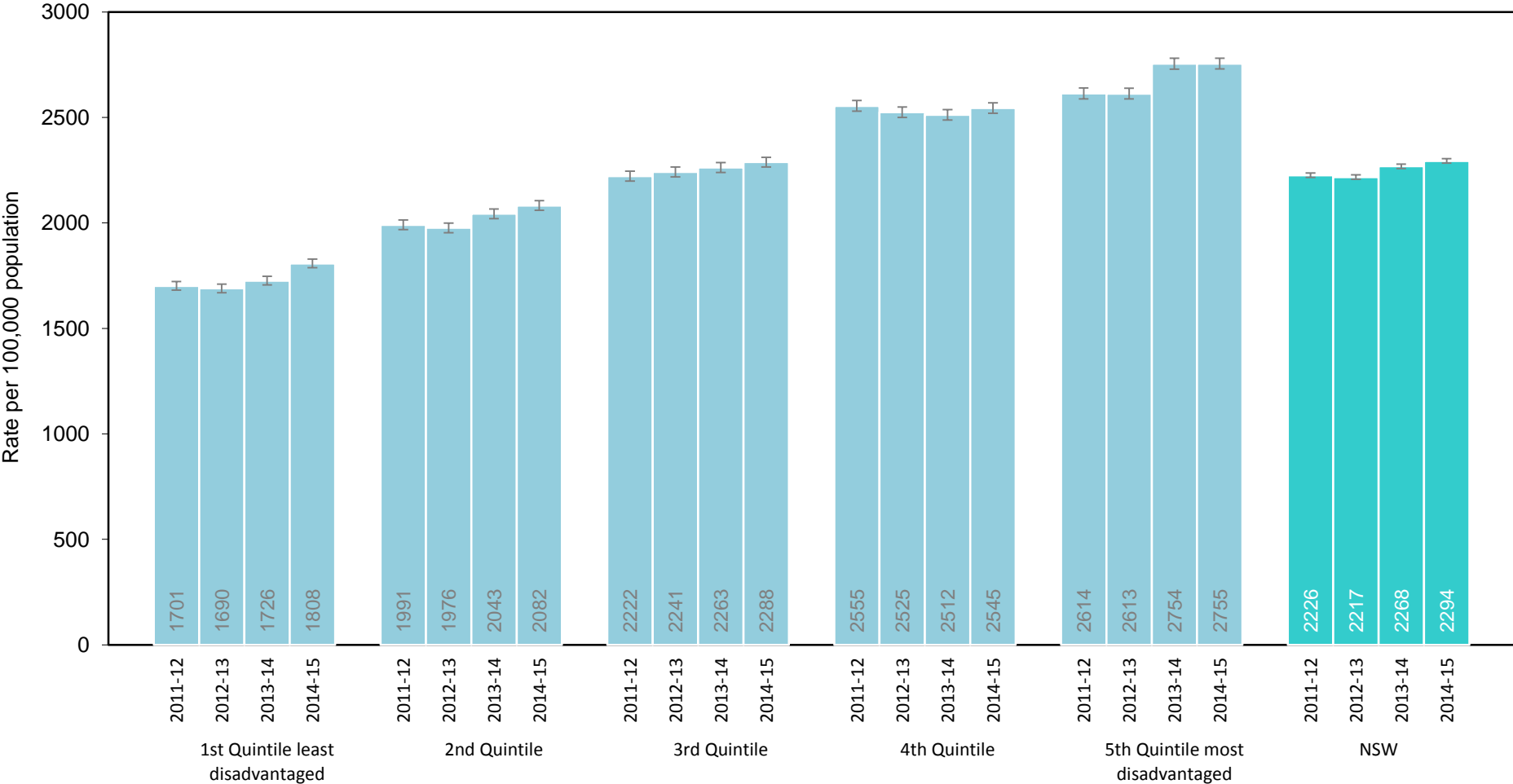
Chart PPH05 – Potentially preventable hospitalisations (PPH) by Remoteness (ARIA)

PPH rate per 100,000 population, all categories, by remoteness from service centres, 2011-2012 to 2014-2015



Source: Centre for Epidemiology and Evidence. Health Statistics New South Wales. Sydney: NSW Ministry of Health. Available at: www.healthstats.nsw.gov.au. Accessed - 5 July 2016.

Chart PPH06 – Potentially preventable hospitalisations (PPH) by Socioeconomic status
 PPH rate per 100,000 population by socioeconomic status (SEIFA), all categories, 2011-2012 to 2014-2015



Source: Centre for Epidemiology and Evidence. Health Statistics New South Wales. Sydney: NSW Ministry of Health. Available at: www.healthstats.nsw.gov.au. Accessed - 5 July 2016.

Data Definitions

Chart:	PPH01
Admin Status:	Data from 2011-12 to 2014-2015
Indicator Name:	Potentially preventable hospitalisations rate per 100,000 population, all categories, by local health district and NSW
Description:	Age-standardised potentially preventable hospitalisations rate per 100,000 population, all categories, by local health district of usual residence and NSW, 2011-12 to 2014-15
Dimension:	Appropriateness
Clinical Area:	Population Health and Primary Care
Data Inclusions:	Hospitalisations of NSW residents which are potentially preventable, all categories
Data Exclusions:	Hospitalisations of non-NSW residents. This chart is based on where a person resides, rather than where they are treated
Numerator:	Persons whose hospital admissions were potentially preventable
Denominator:	NSW estimated residential population for all persons
Standardisation:	Direct age standardisation to the 2001 Australian mid-year Estimated Resident Population (ERP)
Data Source:	Source: Centre for Epidemiology and Evidence. Health Statistics New South Wales. Sydney: NSW Ministry of Health. Available at: www.healthstats.nsw.gov.au Accessed - 5 July 2016.
Comments:	Potentially preventable hospitalisations' International Classification of Disease (ICD-10-AM, 7 th edition) codes are based on the National Healthcare Agreement: P1 18-Selected potentially preventable hospitalisation .

Chart:	PPH02 – PPH04
Admin Status:	Data from 2011-12 to 2014-2015
Indicator Name:	Potentially preventable hospitalisations rate per 100,000 population by category and local health district, NSW
Description:	Age-standardised potentially preventable hospitalisations rate per 100,000 population by category and local health district of usual residence, NSW, 2011-12 to 2014-15
Dimension:	Appropriateness
Clinical Area:	Population Health and Primary Care
Data Inclusions:	Hospitalisations of NSW residents which are potentially preventable by category
Data Exclusions:	Hospitalisations of non-NSW residents. This chart is based on where a person resides, rather than where they are treated
Numerator:	Persons whose hospital admissions were potentially preventable by category
Denominator:	NSW estimated residential population for all persons
Standardisation:	Direct age standardisation to the 2001 Australian mid-year Estimated Resident Population (ERP)
Data Source:	Source: Centre for Epidemiology and Evidence. Health Statistics New South Wales. Sydney: NSW Ministry of Health. Available at: www.healthstats.nsw.gov.au Accessed - 5 July 2016.
Comments:	Potentially preventable hospitalisations' International Classification of Disease (ICD-10-AM, 7 th edition) codes are based on the National Healthcare Agreement: P1 18-Selected potentially preventable hospitalisation . Definitions changed in July 2013: see notes in <i>Findings</i> for detail and impact on data.

Chart:	PPH05
Admin Status:	Data from 2011-12 to 2014-2015
Indicator Name:	Potentially preventable hospitalisations rate per 100,000 population by remoteness from service centres
Description:	Age-standardised potentially preventable hospitalisations rate per 100,000 population by remoteness from service centres, 2011-12 to 2014-15
Dimension:	Appropriateness
Clinical Area:	Population Health and Primary Care
Data Inclusions:	Hospitalisations of NSW residents which are potentially preventable by remoteness from service centres
Data Exclusions:	Hospitalisations of non-NSW residents. This chart is based on where a person resides, rather than where they are treated
Numerator:	Persons whose hospital admissions were potentially preventable by remoteness from service centres
Denominator:	NSW estimated residential population for all persons
Standardisation:	Direct age standardisation to the 2001 Australian mid-year Estimated Resident Population (ERP)
Data Source:	Source: Centre for Epidemiology and Evidence. Health Statistics New South Wales. Sydney: NSW Ministry of Health. Available at: www.healthstats.nsw.gov.au Accessed - 5 July 2016.
Comments:	Potentially preventable hospitalisations' International Classification of Disease (ICD-10-AM, 7 th edition) codes are based on the National Healthcare Agreement: P1 18-Selected potentially preventable hospitalisation .

Chart:	PPH06
Admin Status:	Data from 2011-12 to 2014-2015
Indicator Name:	Potentially preventable hospitalisations rate per 100,000 population by socioeconomic status
Description:	Age-standardised potentially preventable hospitalisations rate per 100,000 population by socioeconomic status, 2011-12 to 2014-15
Dimension:	Appropriateness
Clinical Area:	Population Health and Primary Care
Data Inclusions:	Hospitalisations of NSW residents which are potentially preventable by socioeconomic status
Data Exclusions:	Hospitalisations of non-NSW residents. This chart is based on where a person resides, rather than where they are treated
Numerator:	Persons whose hospital admissions were potentially preventable by socioeconomic status
Denominator:	NSW estimated residential population for all persons
Standardisation:	Direct age standardisation to the 2001 Australian mid-year Estimated Resident Population (ERP)
Data Source:	Source: Centre for Epidemiology and Evidence. Health Statistics New South Wales. Sydney: NSW Ministry of Health. Available at: www.healthstats.nsw.gov.au Accessed - 5 July 2016.
Comments:	Potentially preventable hospitalisations' International Classification of Disease (ICD-10-AM, 7 th edition) codes are based on the National Healthcare Agreement: P1 18-Selected potentially preventable hospitalisation .