



## Introduction of reporting of 'Queensland Health selected potentially preventable hospitalisations'

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### Key findings

This report outlines why potentially preventable hospitalisations (PPHs) in Queensland when reported at the sub-state level will now be defined by the Health Statistics Centre as 'Queensland Health selected potentially preventable hospitalisations'. The key findings are as follows:

- Rates of chronic PPHs vary widely across Health Service Districts in Queensland.
- Variations in chronic PPH rates are largely due to inconsistencies in the coding of diabetes as an additional diagnosis for renal dialysis same-day episodes.
- Chronic PPH rates are more consistent across Queensland when admissions with a principal diagnosis of renal dialysis are excluded.

In conjunction with the changes to reporting of PPH in Queensland, supplementary material on the burden of renal dialysis, and renal dialysis attributable to diabetes, will be made available on the Queensland Health website.

### 1.0 Background and purpose of the report

Potentially preventable hospitalisations (PPHs) have been defined by the Australian Institute of Health and Welfare (AIHW) as 'conditions where hospitalisation is thought to be avoidable if timely and adequate non-hospital care had been provided'<sup>1</sup>. PPH data are used for policy and planning initiatives related to primary care provision.

There are three broad groups of PPHs: chronic, acute, and vaccine-preventable. Specific conditions within these groups are defined by ICD-10-AM codes. The ICD-10-AM codes used to define conditions are available in the AIHW Australian Hospital Statistics 2007/08 report<sup>1</sup>.

Diabetes and its associated complications are included in the chronic PPH classification. This group is comprised of all episodes with either a principal diagnosis of diabetes (i.e. ICD-10-AM codes E10x – E14x) or an additional diagnosis of diabetes where the principal diagnosis is one of the conditions listed in Table 1.1. Diabetes and its complications are the most common cause of total PPHs in Queensland<sup>2</sup>.

Coding standards and conventions have varied significantly over the years since the institution of ICD-10-AM. Coding of diabetes has varied from "always coding

diabetes when documented” to “only coding diabetes when it fulfils the requirements of Australian Coding Standard (ACS) 0002 (Additional Diagnoses)”. The (often changing) requirements of the coding of diabetes means that useful inference regarding diabetes prevalence is not able to be made on the basis of hospital admitted patient data.

In particular, the coding of diabetes as an additional diagnosis for same-day renal dialysis episodes is not practised uniformly across Queensland hospitals. Recent advice from the National Centre for Classification in Health (NCCH) has indicated that the coding of additional diagnoses in renal dialysis same-day episodes is only necessary where the co-morbidities meet the requirements of ACS 0002 (Additional Diagnoses).

ACS 0002 instructs coders to only code additional diagnoses when the condition affects patient management in terms of requiring any of the following:

- commencement, alteration or adjustment of therapeutic treatment
- diagnostic procedures
- increased clinical care and/or monitoring<sup>3</sup>.

The actual application of this advice is difficult as most same-day dialysis episodes are “auto-coded” and the actual medical record is not sighted at the time of coding. Previous to this advice, a variety of practices regarding the coding of additional diagnoses occurred, resulting in very different counts for the coding of diabetes as a comorbidity. These issues are discussed further in a separate technical report<sup>4</sup>.

**Table 1.1 Principal diagnoses counted as diabetes complications when an additional diagnosis of diabetes is present.**

Condition	ICD-10-AM Code
Hyperosmolarity	E87.0
Acidosis	E87.2
Transient ischaemic attack	G45
Nerve disorders and neuropathies	G50–G64
Cataracts and lens disorder	H25–H28
Retinal disorders	H30–H36
Glaucoma	H40–H42
Myocardial infarction	I21–I22
Other coronary heart diseases	I20, I23–I25
Heart failure	I50
Stroke and sequelae	I60–I64, I69.0–I69.4
Peripheral vascular disease	I70–I74
Gingivitis and periodontal disease	K05
Kidney diseases (including end-stage renal disease)	N00–N29
Renal dialysis	Z49

Source: Table A1.6, Australian Hospital Statistics 2007/08, AIHW, 2009

The effects of differences in the aforementioned coding standards and conventions (particularly for diabetes) have resulted in a decision to exclude admissions with a principal diagnosis of renal dialysis from future reporting of PPHs in Queensland. Due to this variation, future reporting of PPHs at the sub-state level in Queensland will use the terminology 'Queensland Health selected potentially preventable hospitalisations'. It is intended that each year supplementary material on the Queensland rates of renal dialysis and renal dialysis purportedly attributable to diabetes will be made available on the Queensland Health website. This report provides information on the differences in rates of PPHs (as defined by AIHW) that occur in Queensland and outlines the reasoning underlying the reporting change.

## **2.0 Methodology**

Analysis was conducted by the Health Statistics Centre, Queensland Health on all acute hospital episodes for Queensland residents in the Queensland Hospital Admitted Patient Data Collection (QHAPDC) with a diagnosis or procedure considered to be potentially preventable as defined by AIHW<sup>1</sup>. Age-standardised rates (ASRs) of chronic PPHs by Indigenous status and Health Service District (HSD) were calculated for the years 2006/07 and 2007/08.

Episodes were assigned to HSDs using the district identifier in QHAPDC, which is aligned to 2008 district boundary lines on the basis of locality of usual residence. The Queensland Estimated Resident Populations for 2006 and 2007 by statistical local area and Indigenous status were used to calculate ASRs. Rates were standardised by 5 year age-groups (from 0-65+ years) to the Australian 2001 population.

## **3.0 Results**

### **3.1 Inconsistencies in reporting of chronic PPHs in Queensland**

The ASRs for chronic PPHs in the Indigenous population varied dramatically across HSDs (Figure 3.1). The ASR of chronic PPHs within the Darling Downs-West Moreton HSD (26,656 per 100,000 persons) was more than double that in the next highest HSD, South West (11,899 per 100,000 persons) and over triple the Queensland average (8,135 per 100,000 persons).

The size of the ASR for Darling Downs-West Moreton relative to the other HSDs and to Queensland as a whole caused concern, particularly as current knowledge of health status in Queensland does not support this result.

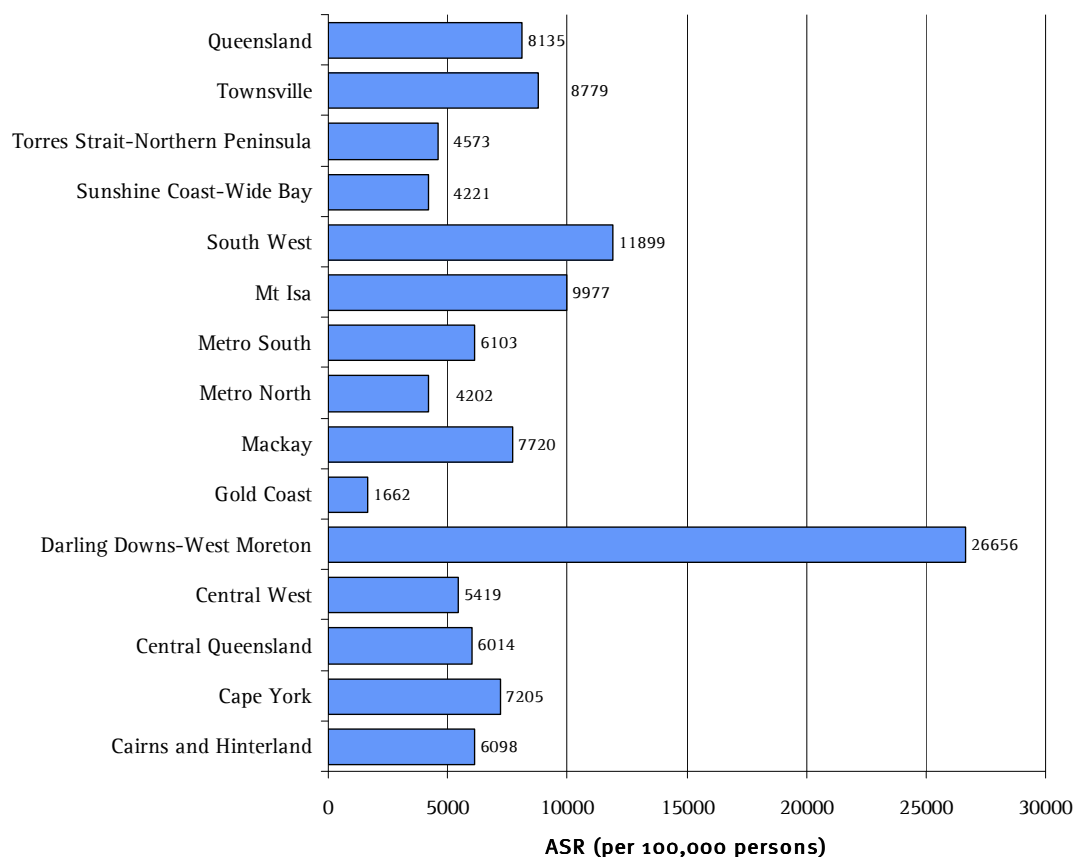
### **3.2 Investigation and findings**

The Health Statistics Centre investigated the variance in rates of chronic PPHs across HSDs. The investigations revealed that the primary reason for the variance was the different coding practices across HSDs in the allocation of diabetes as a comorbidity in renal dialysis same-day episodes. For example, it was identified that Darling

Downs-West Moreton HSD contained many records where the principal diagnosis was renal dialysis with an additional diagnosis (comorbidity) of diabetes. In contrast, some HSDs did not always code comorbidities such as diabetes, and other HSDs did not code comorbidities at all for same-day renal dialysis episodes. Reasons for these variations include the practices of copy coding and auto coding, where the medical record is not sighted at the time of coding. The impact of this inconsistency when coupled with a condition requiring repeated admissions such as renal dialysis is highlighted by the finding that 78% of the hospital episodes for diabetes complications in the Indigenous population of Darling Downs-West Moreton were accounted for by just 11 individuals who contributed a total of 1,959 hospital episodes.

The inconsistency of coding diabetes between HSDs was present across both Indigenous and non-Indigenous populations (not shown). PPH rates also vary across Australian jurisdictions<sup>1</sup>, indicating mixed practices between states and territories within Australia. Western Australia (WA) has very high rates (34.3 per 1,000) of PPHs and informal discussions with WA representatives have shown that in WA, diabetes (where it exists) is always coded as a comorbidity for same-day renal dialysis episodes.

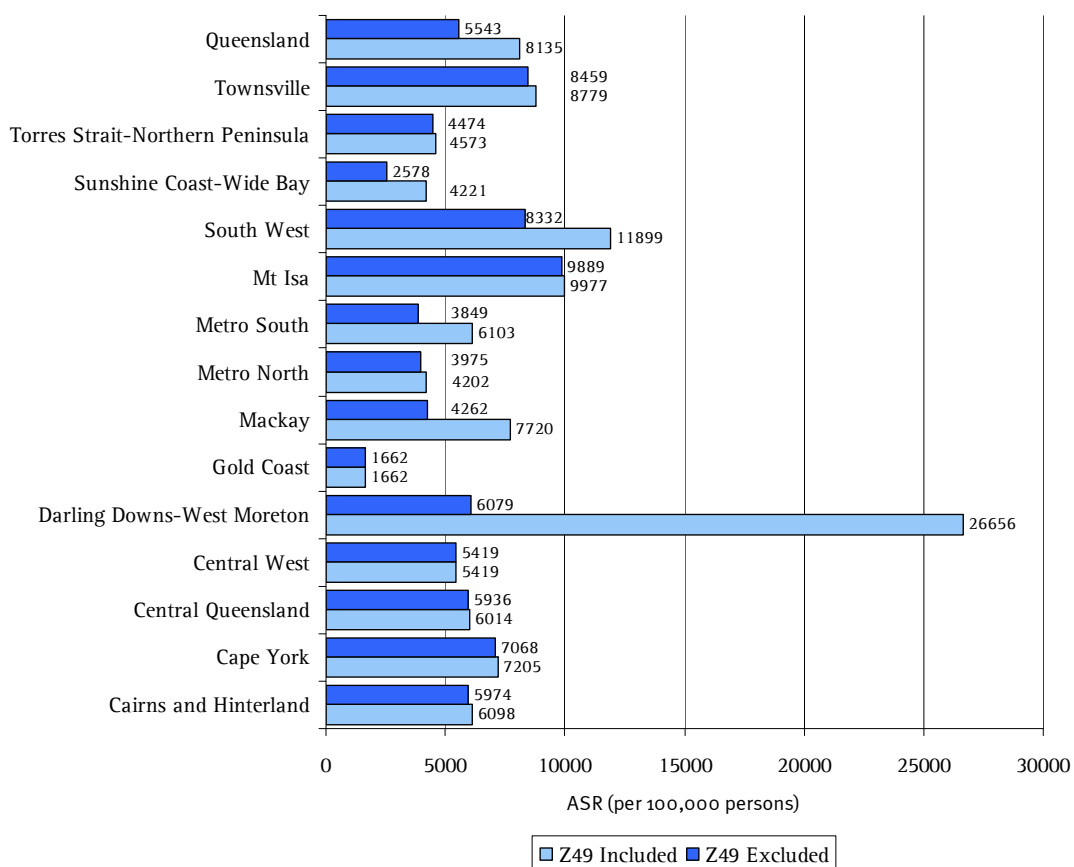
**Figure 3.1. Age-standardised rate of chronic PPHs for the Queensland Indigenous population by Health Service District of usual residence, 2006/07 to 2007/08**



### 3.3 Chronic PPH rates in Queensland excluding admissions for renal dialysis

As a result of the variation in the coding of diabetes as a comorbidity in same-day renal dialysis episodes, the PPH analysis was repeated excluding all hospital episodes where renal dialysis was the principal diagnosis. The effect of this exclusion varied across districts according to the coding practice in place, but notably the excess of PPHs in Darling Downs-West Moreton was reduced, creating more consistency in rates across HSDs (see Figure 3.2).

**Figure 3.2. ASR of chronic PPHs including and excluding renal dialysis (Z49) for the Queensland Indigenous population by Health Service District of usual residence, 2006/07 to 2007/08.**



### 4.0 Discussion

Potentially preventable hospitalisation (PPH) data for Queensland are supplied by the Health Statistics Centre, Queensland Health to inform policy and planning initiatives related to primary care provision in Queensland. There is a need for this data to be accurate and to be reported in a consistent manner across the state.

In order for data to be reported consistently across Queensland, diagnoses and procedures for hospital admissions need to be recorded in a consistent manner at the point of data collection; that is, they should be coded consistently across hospitals. However, there is a large degree of inconsistency in the coding of diabetes as a comorbidity in same-day renal dialysis episodes across Health Service Districts in

Queensland. As diabetes complications are by far the most common PPH diagnoses in Queensland<sup>2</sup>, these inconsistencies in coding have a dramatic impact on the number of chronic PPHs recorded in various districts of Queensland.

In light of these considerations, the Health Statistics Centre will present future reports of preventable hospitalisations in Queensland at the sub-state level as 'Queensland Health selected potentially preventable hospitalisations'. That is, hospital episodes with a principal diagnosis of renal dialysis (ICD-10-AM codes: Z49.x) will be excluded from PPH reporting at the sub-state level. As a result of this change the reported ASRs of chronic and overall PPHs in most reporting areas will be reduced but will create consistency in reporting across the various Health Service Districts. The size of the reduction in rates will be largely dependent on the coding practice in use at individual hospitals within districts. Supplementary information on the burden of renal dialysis and renal dialysis attributable to diabetes in Queensland will be made available on the Queensland Health website. Efforts will be made to achieve consistency in coding practices through providing coders with coding education and advice. In conjunction with these efforts, future reviews of coding practices will be conducted to determine whether it is necessary to continue the reporting of PPHs in this way. In order to maintain consistency with AIHW reports, PPHs for the whole of Queensland will be calculated as per the AIHW definition (i.e. including episodes with a principal diagnosis of renal dialysis) unless otherwise stated.

## 5.0 References

1. Australian Institute of Health and Welfare. Australian hospital statistics 2007-08. *AIHW health services series no. 31*. Canberra, 2009.
2. Houweling H. Selected potentially preventable hospitalisations. *Statbite*. 10 ed: Queensland Health, 2008.
3. National Centre for Classification in Health (NCCH). Australian Coding Standards Sixth Edition - 1 July 2008.
4. Wills R, Martin C. Impact of changes to Australian Coding Standards on coding of diabetes and renal dialysis in Queensland. *Technical Report (In press)*: Queensland Health, 2009.