
Infectious disease: What is the burden on the hospital system?

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The burden of infectious disease fell dramatically during the twentieth century, largely due to immunisation and improvements in sanitation.¹ However, previous research suggests resurgence in infectious diseases in recent years. Baker et al.² found that acute overnight hospital admissions in New Zealand due to infectious disease increased from 20.5% to 26.6% between 1989–93 and 2004–08. Similarly, a previous StatBite³ found an increase in the contribution of infectious diseases to acute overnight separation rates in the Queensland public hospital system between 2004–05 and 2011–12 (16.3% to 18.2%).

This StatBite investigates the burden of infectious diseases on the Queensland health system. For this reason, it includes all hospital separations from Queensland hospitals, with the exception of boarders, organ procurement and unqualified newborns (newborns who have not been admitted to acute care). It analyses the length of stay of patients with infectious diseases, the distribution of infectious diseases between public and private hospitals, and the effect of the increase in infectious disease patient days on the hospital system.

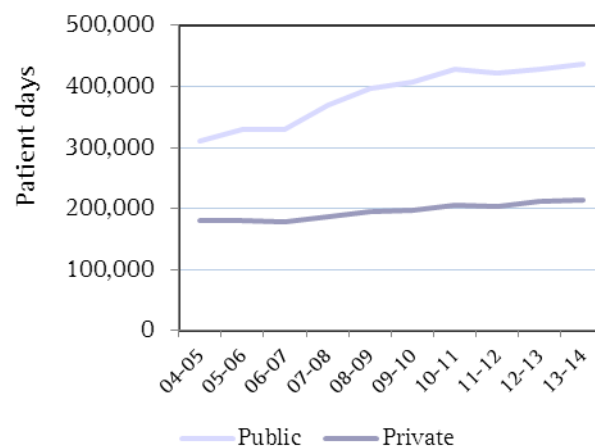
This analysis uses the definition of infectious diseases proposed by Baker et al.², which is wider than Chapter 1–Infectious Diseases (A00–B99) of the International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification (see [Technical Appendix](#) for further details). Baker et al.² found that only 16% of all infectious disease admissions between 2004 and 2008 were recorded in Chapter 1. This analysis is based on Principal Diagnosis, so does not include patients who only had an infectious disease recorded as an “Other Condition”.

Infectious disease patients tend to have shorter lengths of stay than other patients. In 2013–14, the average length of stay (excluding same day patients within the calculation) in all hospitals (public and private) for infectious disease patients was 4.7 days, compared to 5.3 for other patients. Lengths of stay have decreased over the study period, both for infectious disease patients (from 5.3 days in 2004–05) and other patients (from 6.3 days in 2004–05).

Figure 1 shows that infectious diseases have a greater burden on the public system than the private system. In addition, the share of this burden borne by the public system has increased over the trend period. During 2013–14, 67% of all infectious disease patient days were within the public sector compared to 63% in 2004–05.

There has been an increase in patient days attributable to infectious diseases within Queensland public hospitals, from 11.3% of all patient days in 2004–05 to 13.2% in 2013–14. In the private sector, while the number of patient days attributable to infectious diseases increased over the study

Figure 1. Patient days for infectious disease by hospital sector, Queensland, 2004–05 to 2013–14



Source: Queensland Hospital Admitted Patient Data Collection.

Excludes unqualified newborns, posthumous organ procurement and boarders.

period (Figure 1), their proportion of all patient days decreased from 9.9% in 2004–05 to 9.4% in 2013–14.

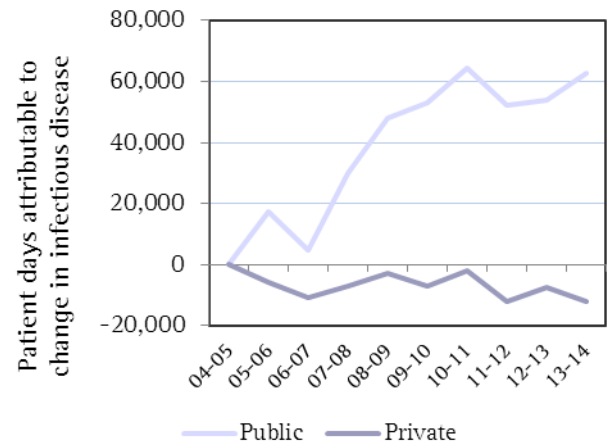
Figure 2 illustrates the excess patient days of admitted patients with infectious disease between 2004–05 and 2013–14; that is, the difference between actual patient days and patient days if the proportion of infectious disease patient days had remained the same as in 2004–05 (i.e. in public hospitals, 11.3% of total patient days). In 2013–14, there were 62,532 excess patient days for infectious diseases in public hospitals, the equivalent of 171 beds.

In summary, this StatBite shows that the Queensland public hospital system provides twice as many patient days for infectious disease patients as private hospitals. There has also been an overall increase in the number of public hospital patient days attributed to infectious disease patients. Further analysis looking at the type of patients being admitted to public hospitals may identify areas where preventative resources might be focused.

References

- 1 Australian Institute of Health and Welfare. (2000). Australia's Health 2000: The seventh biennial health report of the Australia Institute of Health and Welfare. Chapter 8: Changes in Australia's disease profile: a view of the twentieth century. <http://www.aihw.gov.au/WorkArea/DownloadAsset.aspx?id=6442453057>
- 2 Baker MG, Barnard LT, Kvalsvig A, Verrall A, Zhang J, Keall M, Wilson N, Wall T, Howden-Chapman P. Increasing incidence of serious infectious diseases and inequalities in New Zealand: a national epidemiology study. *Lancet* 2012; 379:1112-1119. *MJA* 2012;196(5):293-294
- 3 Webster R, Queensland Health. (2013). Trends in infectious disease admissions in Queensland public hospitals. Statbite #55. <http://www.health.qld.gov.au/hsu/pdf/statbite/statbite55.pdf>

Figure 2. Excess patient days for infectious disease by hospital sector, Queensland, 2004–05 to 2013–14



Source: Queensland Hospital Admitted Patient Data Collection.

Excludes unqualified newborns, posthumous organ procurement and boarders.