

Demand for HIV clinical services is increasing in Australia but supply is decreasing

Kylie-Ann Mallitt^A, James Jansson^A, Levinia Crooks^B, David McGuigan^B, Handan Wand^A and David P. Wilson^{A,C}

^AThe Kirby Institute, University of New South Wales, Sydney, NSW 2010, Australia.

^BThe Australasian Society of HIV Medicine, Sydney, NSW 2010, Australia.

^CCorresponding author. Email: dwilson@kirby.unsw.edu.au

Abstract. *Background:* HIV clinical service planning requires accurate estimates of the number of people living with HIV (PLHIV) and the capacity of existing clinical services, each by geographical location. The aim of this study was to quantify current HIV clinical service capacity in Australia. *Methods:* This study was a retrospective analysis of records of HIV clinical service capacity in Australia. Participants were general practitioners who completed an annual survey in 2007–2009. Information on the number of hospital departments, sexual health services, antiretroviral-prescribing general practitioners (ARV-GPs) and shared-care services providing expertise in HIV management from 2007 to 2010 were also available. *Results:* From 2007 to 2009, the proportion of ARV-GP survey respondents treating 2–9 patients with HIV per week increased from 36.5% to 49.1%, with a corresponding decrease in the average proportion who saw less than one patient with HIV per week. The estimated number of PLHIV has increased by 12.5% in metropolitan areas, and 16.5% in rural and remote areas over the period 2007–2010; however, the total number of services with at least one HIV ARV-GP has decreased over the same period. *Conclusions:* Current methods to estimate clinical service capacity reveal decreasing supply in the workforce in Australia despite increasing numbers of PLHIV. Further training of HIV clinicians and their placement in regions of greatest supply–demand deficits are required. Further studies are required to precisely quantify and locate the capacity of the HIV clinical workforce with expertise in HIV case-management to enable efficient service planning.

Additional keywords: case management, clinical expertise, service planning.

Received 17 April 2012, accepted 24 July 2012, published online 19 November 2012

Introduction

Adequate clinical service provision for people living with HIV (PLHIV) is essential for effective disease management. Timely access to quality services for diagnosis, drug prescription and the treatment of comorbidities affects long-term prognosis.¹ Critical factors that determine the effectiveness of existing clinical services include the level of training and expertise among the HIV clinical workforce, accessibility of service locations and the clinical capacity of services, given patient demand.^{2–5}

HIV clinical service planning requires accurate estimates of the number of PLHIV within the service catchment and the capacity of existing clinical services.⁵ Methods to estimate the number of PLHIV are generally based on cross-sectional prevalence surveys or case reporting.^{6,7} The size of the clinical workforce is generally estimated from the number of registered practitioners.⁸ Globally, the capacity of the clinical workforce with expertise in HIV management is undersupplied relative to the estimated number of PLHIV.⁹ This is particularly evident within developing countries, and also in rural and remote areas of developed countries.⁵

Here, we report estimates of the HIV clinical workforce capacity in Australia from 2007 to 2010, from a survey of practitioner activity and also from records of the number of registered practitioners with expertise in HIV management. These data are compared with estimates of the number of PLHIV during the same period from another study.¹⁰ The utility and limitations of these methods, as well as the implications of the results to inform effective HIV service planning in Australia, are discussed.

Methods

The Australasian Society for HIV Medicine (ASHM) conducts annual activity surveys of community (general practitioner) doctors who prescribe antiretroviral drugs to manage HIV (ARV-GPs) in Australia. Survey data were available from 2007–2009. The survey asked participants about the number of HIV patients treated and on antiretroviral therapy per week, the amount of time spent providing care to patients with HIV and geographical setting. It is likely that many participants

also more likely to have initiated fewer than 10 of their current patients on ART in 2007 ($P=0.005$). Differences in the amount of time spent providing care to patients with HIV did not differ between metropolitan and nonmetropolitan areas from 2007 to 2009 (2007: $P=0.122$, 2008: $P=0.170$, 2009: $P=0.101$).

Model-estimated numbers of PLHIV in Australia were compared with the numbers of HIV services that employed at least one ARV-GP during 2007–2010. In metropolitan areas of Australia, the estimated number of PLHIV increased by 12.5% from 14 555 in 2007 to 16 380 in 2010. During this same period, clinical services with at least one ARV-GP in metropolitan areas decreased from 60 to 55 (Fig. 1a). In rural and remote areas of Australia, the estimated number of PLHIV increased more substantially, by 16.5%, from 4310 in 2007 to 5021 in 2010. During this same period, the number of clinical services with at least one ARV-GP in rural and remote areas decreased from 31 to 25 (Fig. 1b).

Discussion

Demand for clinical services with expertise in HIV management is increasing in Australia, but supply is decreasing. The number of services with an ARV-GP has decreased, the number of PLHIV has increased and the number of practitioners with expertise in HIV case-management (ARV-GPs) has not increased. Therefore, the extra burden of patients on existing ARV-GPs reveals the need to increase the capacity of the HIV clinical sector. Methods to estimate the capacity of the HIV clinical workforce revealed that the proportion of participants

who treated more patients per week increased and that there was an increase in the amount of time spent treating PLHIV, over the period 2007–2009. Our findings indicate that the demand for HIV clinical services differed between metropolitan and nonmetropolitan locations in 2007–2009.

Differences in the practice activity of metropolitan versus rural or remote HIV clinicians are expected in the developed setting. The majority of PLHIV reside in inner metropolitan cities.¹¹ In this study, we found that ARV-GPs in rural and remote areas saw fewer patients with HIV and initiated fewer patients on ART than their metropolitan-based counterparts. However, the number of PLHIV is increasing in all areas. Model-based estimates suggest that the number of PLHIV has increased by 16.5% in rural and remote areas over the period 2007–2010, whereas the total number of services with at least one ARV-GP has decreased by ~19% over the same period.

It is problematic to identify the precise locations of gaps in HIV service provision. This study uses two approaches to estimate HIV workforce capacity: first, a survey of the practice activity of a sample of clinicians; second, a comparison of the number of registered services to the estimated number of PLHIV. These methods provide very broad information about service demand and capacity. The number of registered practitioners is geographically reported very coarsely.^{8,11} Any estimate of HIV service capacity obtained from the ratio of the number of PLHIV to the number of practitioners will be similarly coarse.

Both methods used in this study to estimate HIV clinical service capacity are limited, in that the availability of practitioners is poorly estimated. The number of practitioners registered does not correspond directly to the amount of time available to treat patients. The extent of available expertise in HIV management at any clinical location to treat PLHIV is difficult to estimate.

There is a decreasing supply of HIV clinical services relative to demand in Australia. Efficient HIV service planning to address the increasing burden and potential deficit requires detailed knowledge about existing services. This includes the geographical location of HIV services, the numbers of hours that clinicians are available to treat patients, and the capacity to take on additional patients based on existing funding and infrastructure. Further studies are required to precisely quantify the capacity of the HIV clinical workforce with expertise in HIV case management to identify the locations where efforts to increase service capacity should be directed. However, this study has demonstrated that there is a potential lack and decreasing degree of adequate clinical service capacity for treating the increasing number of PLHIV in Australia.

Conflicts of interest

None declared.

Acknowledgements and funding

We thank Sarah Weir from the Australasian Society for HIV Medicine for assistance with accessing survey data. The authors acknowledge funding from the Australian Government Department of Health and Ageing, and grant numbers FT0991990 and DP1093026 from the Australian Research Council. The views expressed in this publication do not necessarily represent

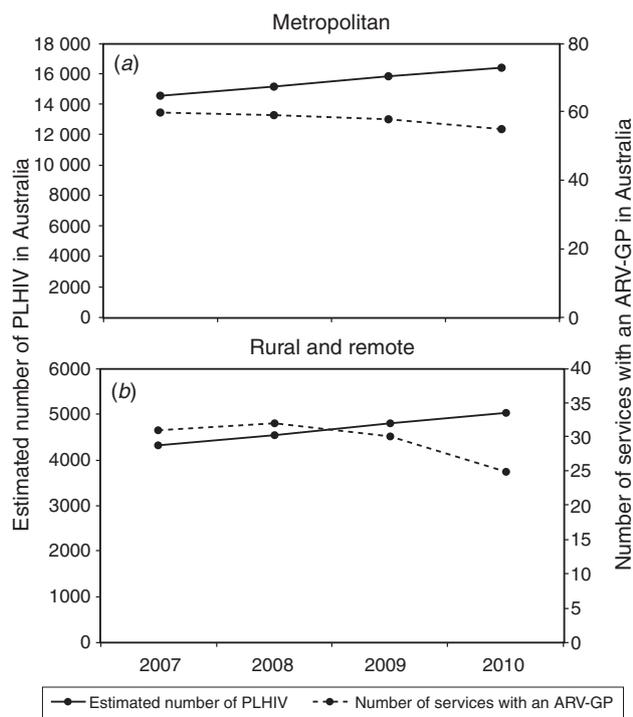


Fig. 1. Number of general practice services with at least one antiretroviral-prescribing general practitioner (ARV-GP) and the estimated number of people living with HIV for (a) metropolitan and (b) rural and remote areas in Australia (2007–2010).

the position of the Australian Government. The Kirby Institute is affiliated with the Faculty of Medicine, University of New South Wales.

References

- 1 Keiser O, Orrell C, Egger M, Wood R, Brinkhof MWG, Furrer H, *et al.* Public-health and individual approaches to antiretroviral therapy: township South Africa and Switzerland compared. *PLoS Med* 2008; 5(7): 1102–11. doi:10.1371/journal.pmed.0050148
- 2 McLean S, Savage J. Existing services for people living with HIV in Australia. Background paper for models of access and clinical service delivery project. Sydney: Australasian Society for HIV Medicine; 2009.
- 3 Markson LE, Houchens R, Fanning TR, Turner BJ. Repeated emergency department use by HIV-infected persons: effect of clinic accessibility and expertise in HIV care. *J Acquir Immune Defic Syndr* 1998; 17(1): 35–41. doi:10.1097/00042560-199801010-00005
- 4 Carman M, Grierson J, Pitts M, Hurley M, Power J. Trends in the location of the HIV-positive population in Australia: implications for access to healthcare services and delivery. *Sex Health* 2010; 7(2): 154–8. doi:10.1071/SH09063
- 5 Savage J, Crooks L, McLean S. Models of access and clinical service delivery for HIV positive people in Australia. Sydney: Australasian Society for HIV Medicine; 2009.
- 6 Lyerla R, Gouws E, García-Calleja JM, Zaniewski E. The 2005 workbook: an improved tool for estimating HIV prevalence in countries with low level and concentrated epidemics. *Sex Transm Infect* 2006; 82: iii41–4. doi:10.1136/sti.2006.020198
- 7 Working Group on the Estimation of HIV Prevalence in Europe. HIV in hiding: methods and data requirements for the estimation of the number of people living with undiagnosed HIV. *AIDS* 2011; 25: 1017–23.
- 8 Samb B, Celletti F, Holloway J, Van Damme W, De Cock KM, Dybul M. Rapid expansion of the health workforce in response to the HIV epidemic. *N Engl J Med* 2007; 357: 2510–4. doi:10.1056/NEJMs071889
- 9 World Health Organization (WHO). The world health report 2006: working together for health. Geneva: WHO; 2006.
- 10 Jansson J, Wilson DP. Projected demographic profile of people living with HIV in Australia: planning for an older generation. *PLoS ONE* 2012; in press.
- 11 The National Centre in HIV Epidemiology and Clinical Research (NCHECR). HIV/AIDS, viral hepatitis and sexually transmissible infections in Australia: annual surveillance report. Sydney: NCHECR; 2010.