

# Chronic hepatitis C burden and care cascade in Australia in the era of interferon-based treatment

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## Introduction

- Hepatitis C virus (HCV) infection is a major health problem in Australia, associated with increasing morbidity, mortality and health-related costs
- An estimated 1-2% of individuals with HCV infection receive treatment annually, substantially fewer than the number of new infections.
- Interferon-free direct-acting antiviral (DAA) regimens for HCV infection is available in Australia from March 2016 which heralds a new era in clinical and public health management of HCV infection.
- Estimates of HCV disease burden and treatment uptake in Australia in the interferon-based treatments era are required to provide a foundation for the evaluation of the impact of the approaching interferon-free HCV therapeutic era.

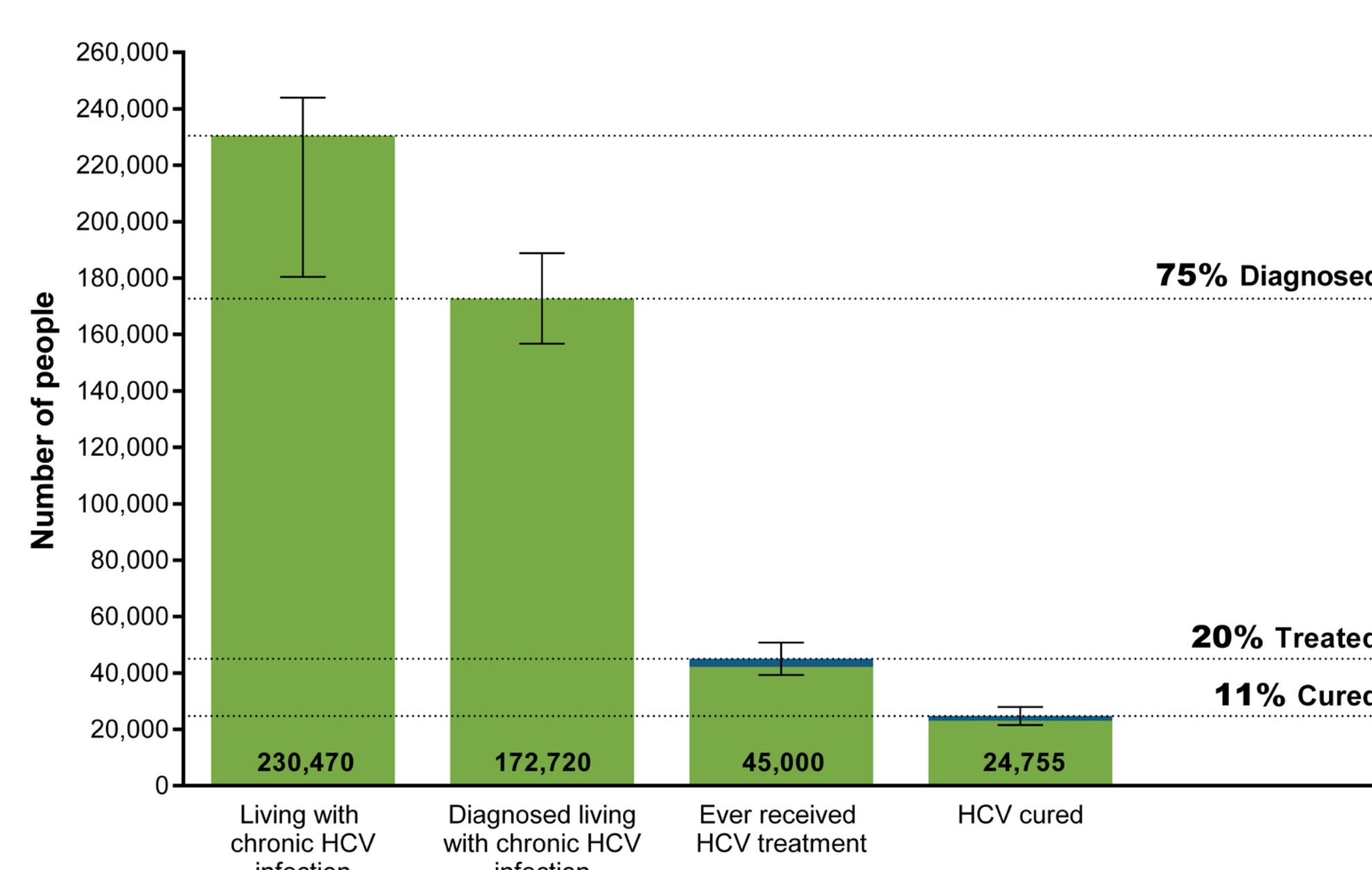
## Aim

To characterise the burden of HCV-related liver disease and HCV treatment uptake in 2014 and to develop the first HCV care cascade in Australia.

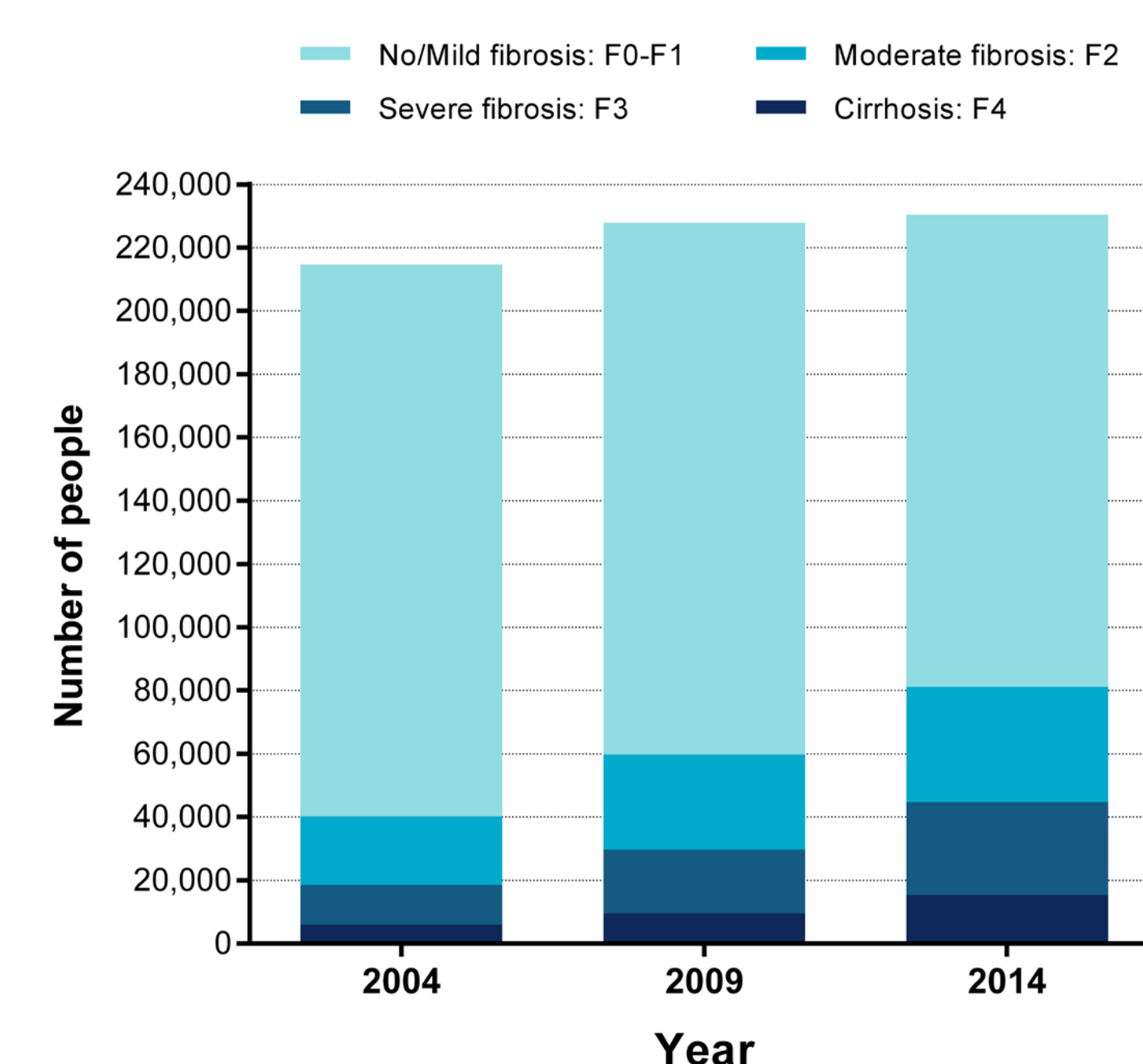
## Method

- A modelling approach was applied to estimate the number of individuals living with chronic HCV infection and proportion of individuals with various liver fibrosis stages. Data from a national HCV notification surveillance (National Notifiable Diseases Surveillance System, NNDSS), the Australia and New Zealand Liver Transplant Registry (ANZLRT), literature review and expert consensus informed the model parameters.
- HCV notification surveillance data were used to estimate the number of individuals diagnosed with chronic HCV infection, adjusted for spontaneous clearance, mortality and cure.
- Data from the Pharmaceutical Benefits Scheme (PBS) were used to estimate the number of individuals receiving HCV treatment between 1997 and 2012. Data for a longitudinal cohort of individuals representing a 10% random sample of the PBS database were used to estimate the number of individuals initiating HCV treatments in 2013 and 2014.
- Number of HCV cured individuals was estimated based on published data.

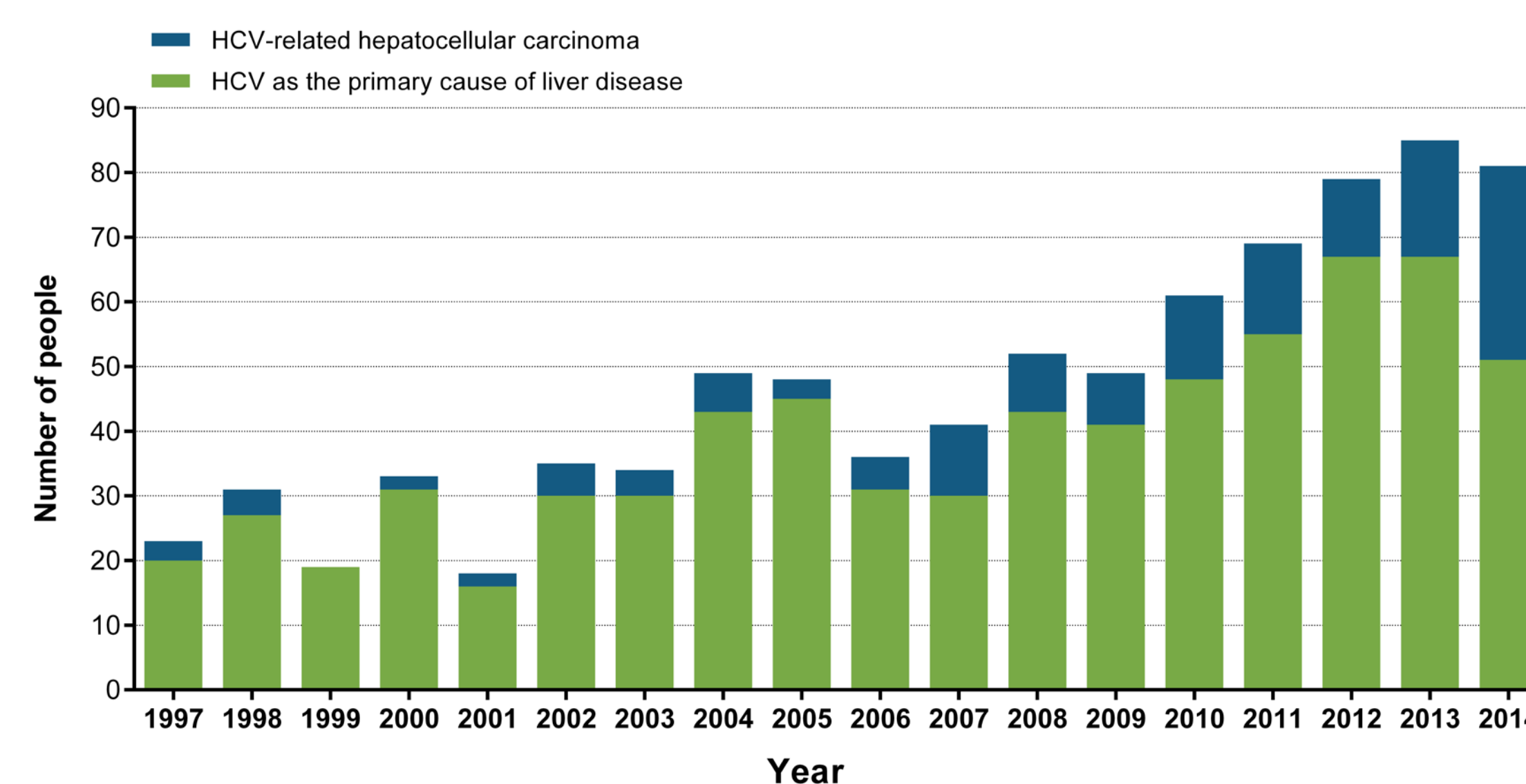
## Results



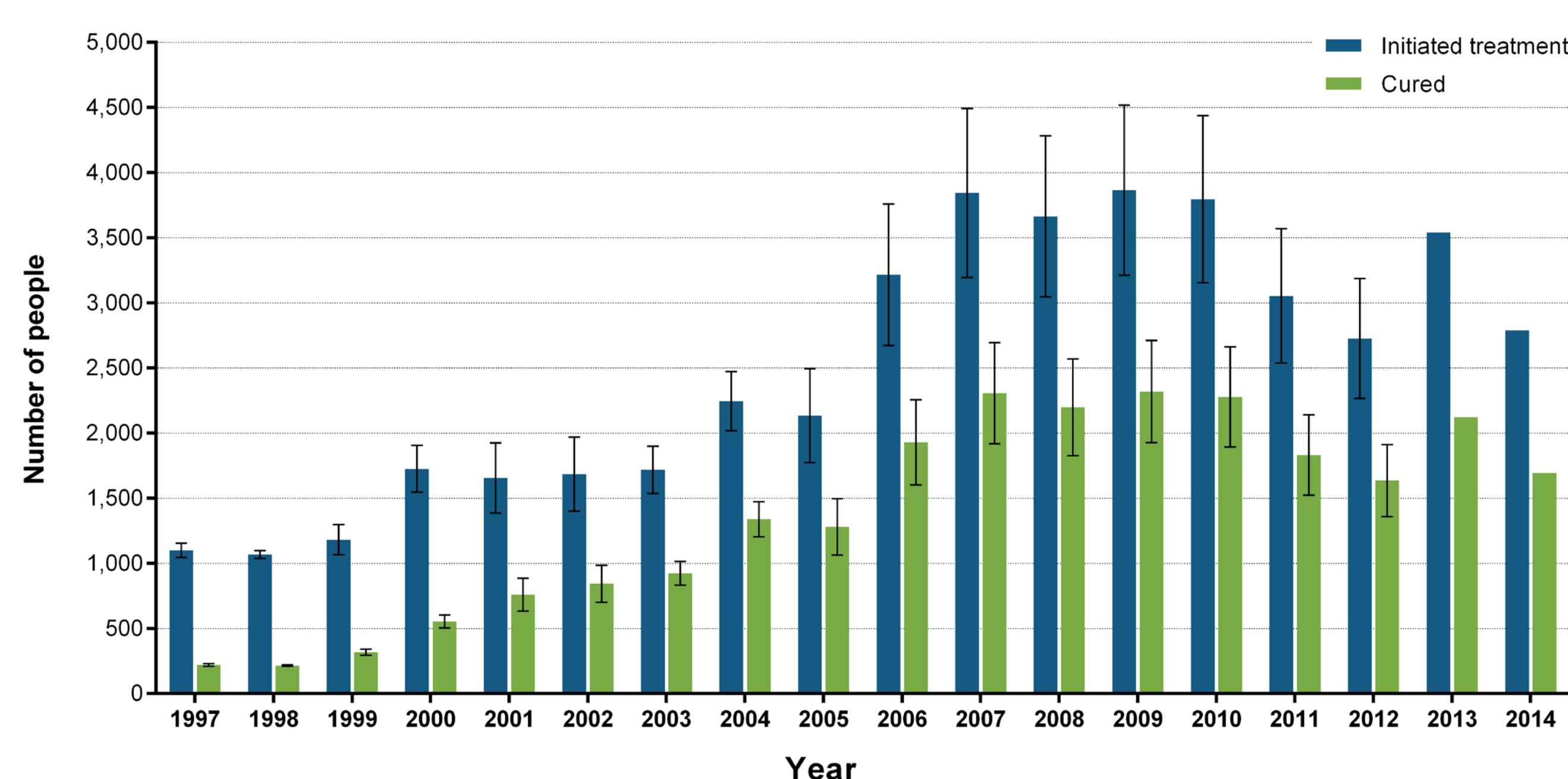
**Figure 1. Estimates of the HCV care cascade in Australia in 2014**  
Error bars represent the maximum and minimum estimates. The blue parts in *Ever received HCV treatment* and *HCV cured* represent the 2014 single-year estimates. Percentages represent the proportion of individuals living with chronic HCV infection.



**Figure 2: Estimated distribution of liver disease stage among individuals living with chronic HCV infection in Australia in 2004, 2009 and 2014**



**Figure 3: Annual number of HCV-related liver transplantations between 1997 and 2014 in Australia**



**Figure 4: Estimated annual number of individuals with chronic HCV infection who initiated treatment and were cured between 1997 and 2014 in Australia**  
Error bars represent the maximum and minimum estimates. 2013 and 2014 estimates have no error bars given the different methodology used for estimations in these two years.

## Conclusion

The burden of HCV-related liver disease has increased markedly in Australia. Among individuals with HCV infection, the proportion with hepatic fibrosis stage  $\geq$ F3 doubled during the last decade, increasing from 9% in 2004 to 19% in 2014.

The high proportion with HCV diagnosis in Australia (75%) indicates successful HCV screening programs in high-risk populations.

HCV treatment uptake in Australia is low (20%). The annual number of treatment initiation has not increased since 2007.

These data of HCV burden prior to HCV treatment scale-up provide a platform from which the future impact can be assessed. Updating the current HCV care cascade in the next years can assist the public health system in monitoring each step of HCV management in the population level over time.

For more information about this study, please contact **Dr Behzad Hajarizadeh**: [bhajarizadeh@kirby.unsw.edu.au](mailto:bhajarizadeh@kirby.unsw.edu.au)

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