

The path towards hepatitis C elimination in Australia following broad access to direct-acting antiviral therapy

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BACKGROUND

- In Australia, a Government-funded interferon-free direct acting antiviral (DAA) treatment program for chronic hepatitis C virus (HCV) infection has been available since March 2016.
- DAAs are available for all Australians with chronic HCV over the age of 18, with no liver disease stage, drug and alcohol use, or prescriber restrictions. Non-specialist prescribers need to contact a specialist before prescribing.
- In 2014 and 2015, patients accessed DAAs through clinical trials, pharmaceutical company compassionate access programs, and generic supply.
- This study assessed:
 - Annual uptake of HCV treatment, including interferon-based and interferon-free treatment from 1997 to 2016
 - Number of individuals with cirrhosis initiating DAA treatment between 2014 and 2016
 - Uptake of DAA treatment in 2016, by jurisdiction, patients' gender and age, treatment regimen, and prescriber type

METHODS

The following data sources were used for analysis:

- The PBS receives the administrative records of dispensed prescriptions from pharmacies across Australia and has reported the aggregated data since 1992. These data were used to estimate the number of individuals initiating HCV treatments from 1997 to 2012. The details of the methods for the estimations were previously described.¹
- The data of a longitudinal cohort of individuals, representing a 10% random sample of the PBS database were used to estimate the number of individuals initiating interferon-based treatments from 2013 to 2016, and those initiating interferon-free DAA treatments in 2016.
- The data from DAA clinical trials and compassionate access programs were collected from pharmaceutical companies.
- The estimated number of individuals receiving generic DAA was based on the data of FixHepC (<http://fixhepc.com/>), a web-based platform which facilitates generic DAA personal importation.
- The estimated numbers of individuals living with chronic HCV infection and cirrhosis in Australia in 2015 were extracted from a modelling study.²

The number of individuals with cirrhosis initiating DAA treatment was estimated using the following assumptions:

- Among individuals initiating DAA treatment in 2014 and 2015, it was assumed that 25% of those in clinical trials, 95% of those in compassionate access programs, and 30% of those receiving generic DAA had cirrhosis.³
- Among individuals initiating DAA treatment in 2016 through PBS-listing, the proportion of those initiating a 24-week sofosbuvir+daclatasvir to the total sofosbuvir+daclatasvir initiations was extrapolated to the total DAA initiations to estimate the DAA treatment uptake among individuals with cirrhosis in 2016.

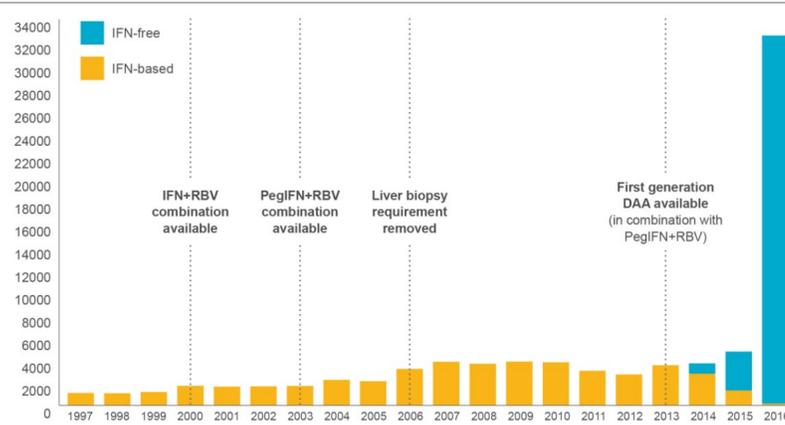
References:

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RESULTS

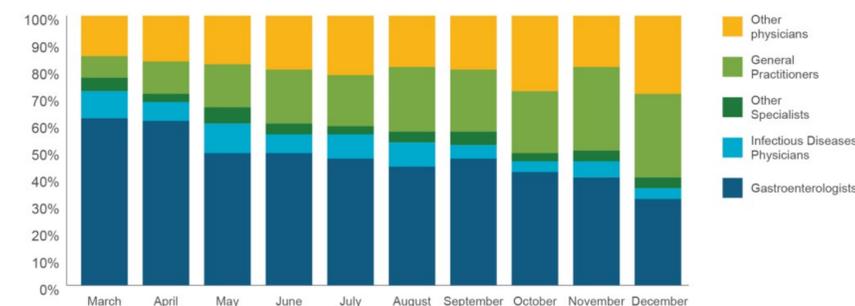


IFN: interferon; PegIFN: pegylated interferon; RBV: ribavirin; DAA: Direct acting antiviral
Figure 1: Estimated annual number of individuals with chronic HCV infection initiating HCV treatment from 1997 to 2016 in Australia

An estimated 32,400 individuals initiated DAA treatment in 2016, equating to 14% of the total number of people living with chronic HCV infection in Australia.



Figure 3: The estimated number of individuals initiating DAA treatment in each month during March 2016 to March 2017



Other physicians included supervised medical officers (e.g., interns, resident medical officers, and registrars), public health physicians, temporary resident doctors, and non-vocationally registered doctors.
Figure 5: Distribution of prescriber types in each month for individuals initiating DAA treatment in 2016 in Australia

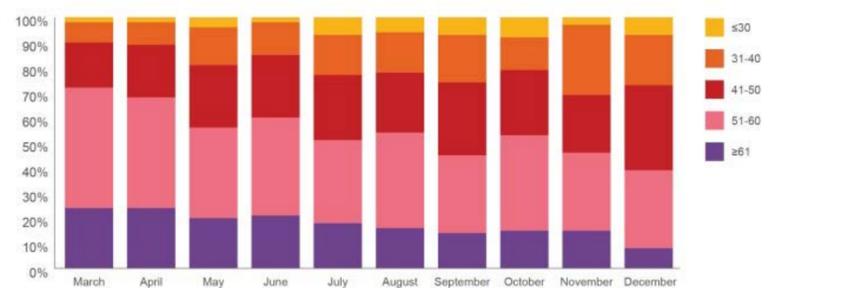


Figure 7: Age distribution of individuals initiating DAA treatment in 2016, by month of treatment initiation

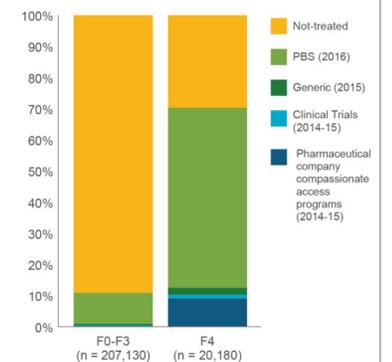
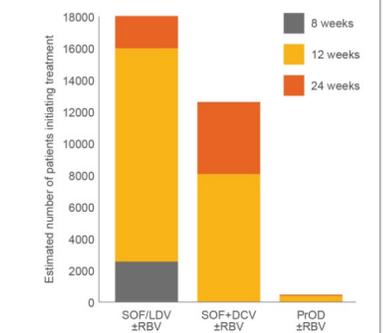
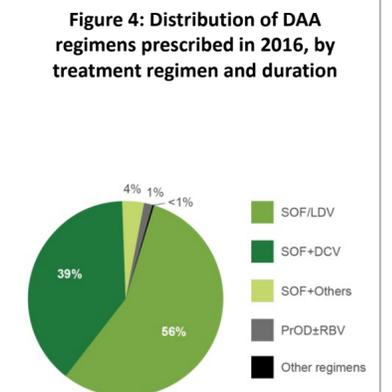


Figure 2: The estimated proportion of individuals living with chronic HCV infection in Australia who initiated DAA treatment between 2014 and 2016, by liver fibrosis stage



SOF: Sofosbuvir; LDV: Ledipasvir; DCV: Daclatasvir; PrOD: Parataprevir/ritonavir/Ombitasvir/Dasabuvir; RBV: Ribavirin
Figure 4: Distribution of DAA regimens prescribed in 2016, by treatment regimen and duration



SOF: Sofosbuvir; LDV: Ledipasvir; DCV: Daclatasvir; PrOD: Parataprevir/ritonavir/Ombitasvir/Dasabuvir; RBV: Ribavirin
Figure 6: Distribution of DAA regimens prescribed in 2016

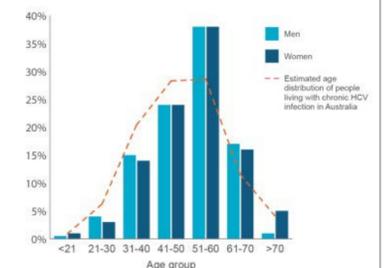


Figure 8: Age distribution of individuals initiating DAA treatment in 2016, by gender

CONCLUSIONS

- Rapid treatment scale-up was observed following unrestricted DAA access in Australia.
- Universal access to DAA treatment coupled with a high proportion diagnosed has set the country on the road to achieving the WHO HCV elimination targets.
- The proportion of prescriptions by GPs increased over time, important for broadened access.
- A trend towards younger age treatment suggested the broadening of DAA treated population, potentially including individuals at higher risk of HCV transmission.

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