

# Monitoring hepatitis C treatment uptake in Australia

Issue #11 July 2021<sup>1</sup>

## Initiations of chronic hepatitis C treatment from 2016 to 2020

**A total of 93,130 individuals have initiated direct acting antiviral (DAA) treatment for chronic hepatitis C virus (HCV) infection in Australia, including 88,790 individuals through Pharmaceutical Benefits Scheme (PBS) during 2016 to 2020, and an estimated 4,340 individuals through early DAA access avenues in 2014-15. It is estimated 49% of the people living with chronic HCV infection in Australia in 2015 have initiated DAA treatment (27-56% across jurisdictions).**

**Among individuals initiating DAA treatment during 2016 to 2020 (n=88,790), 68% were men, and median age was 48 years (quartiles 1-3: 39-57). Since August 2018 when both pan-genotypic regimens were available (i.e., sofosbuvir/velpatasvir and glecaprevir/pibrentasvir), 54% of individuals have been initiated on sofosbuvir/velpatasvir, 37% on glecaprevir/pibrentasvir, and 9% on other regimens.**

**Most individuals initiating DAA treatment received their prescriptions from general practitioners (GPs; 45%), followed by gastroenterologists (35%). Overall, 52% of individuals were initiated on treatment by specialists, and 47% by non-specialists (i.e., GPs and nurse practitioners). A total of 803 individuals were initiated on treatment by nurse practitioners, including 59 in 2017, 153 in 2018, 230 in 2019, and 361 in 2020.**

1. The Kirby Institute. Monitoring hepatitis C treatment uptake in Australia (Issue 11). The Kirby Institute, UNSW Sydney, NSW, Australia, July 2021 (available online at: <https://kirby.unsw.edu.au/report/monitoring-hepatitis-c-treatment-uptake-australia-issue-11-july-2021>). For more information, contact Dr Behzad Hajarizadeh ([bhajarizadeh@kirby.unsw.edu.au](mailto:bhajarizadeh@kirby.unsw.edu.au)) or Professor Greg Dore ([gdore@kirby.unsw.edu.au](mailto:gdore@kirby.unsw.edu.au)).

New treatments for chronic hepatitis C virus (HCV) infection, named direct acting antiviral (DAA) treatment, were listed on the Pharmaceutical Benefits Scheme (PBS):

- March 2016: Sofosbuvir/ledipasvir (Harvoni<sup>®</sup>), sofosbuvir+daclatasvir (Sovaldi<sup>®</sup>+Daklinza<sup>®</sup>), sofosbuvir+ribavirin (Sovaldi<sup>®</sup>+Ibavyr<sup>®</sup>), and sofosbuvir+pegylated interferon-alfa-2a+ribavirin (Sovaldi<sup>®</sup>+Pegasys<sup>®</sup>+ribavirin)
- May 2016: Paritaprevir/ritonavir/ombitasvir+dasabuvir (Viekira PAK<sup>®</sup>)
- January 2017: Elbasvir/grazoprevir (Zepatier<sup>®</sup>)
- August 2017: Sofosbuvir/velpatasvir (Epclusa<sup>®</sup>)
- August 2018: Glecaprevir/pibrentasvir (Mavyret<sup>™</sup>)
- April 2019: Sofosbuvir/velpatasvir/voxilaprevir (Vosevi I<sup>®</sup>)

Issue #11 newsletter provides data on uptake of DAA treatment through PBS-listing between March 2016 and December 2020 by jurisdiction, patients' gender and age, treatment regimen, and prescriber type.

## Methodology

The PBS data of DAA dispensation for all individuals who initiated treatment between March 2016 and December 2020 in Australia were used in the analysis. The data included the first DAA treatment course prescribed for each individual. The data of the second or further courses of treatment (for treatment failure or HCV reinfection) were not included. In instances where the first regimen prescribed was discontinued and the second regimen was initiated after less than four weeks, the second regimen was considered as the initiating treatment. Prescriber speciality was based on the prescriber derived major speciality codes recorded by PBS. In this coding system, medical trainees (i.e., registrars) are also considered as specialists. Jurisdictions are based on the patient residence at the time of treatment prescription.

Longitudinal data of DAA treatment uptake were provided for 2019 and 2020 to enable a better evaluation of the recent trends in treatment uptake, including during COVID 19 related restrictions.

## DAA treatment uptake

A total of 88,790 individuals initiated DAA treatment through the PBS between March 2016 and December 2020 in Australia. In 2014 and 2015, prior to DAA regimens being listed on PBS, an estimated 4,340 individuals received DAA treatment through early DAA access avenues, including clinical trials, pharmaceutical company compassionate access programs, and generic importation.<sup>2</sup> Considering this number, an overall number of 93,130 individuals received DAA treatment from 2014 to 2020.

In 2015, an estimated 188,690 individuals were living with chronic HCV infection in Australia.<sup>3</sup> Given the overall treatment initiation in 93,130 individuals, a maximum 49% of individuals living with chronic HCV infection in Australia, initiated DAA treatment until the end of 2020. This estimate does not encompass individuals with new infections from 2016, some of whom will have been treated.

At jurisdictional level, the number of individuals initiating DAA treatment through the PBS between March 2016 and December 2020 included 30,435 in New South Wales, 21,821 in Victoria, 18,939 in Queensland, 8,043 in Western Australia, 5,287 in South Australia, 2,140 in Tasmania, 1,288 in Australian Capital Territory, and 822 in Northern Territory.<sup>4</sup> The estimated proportion of individuals living with chronic HCV infection initiating DAA treatment in this period varied between 27% to 56% across jurisdictions (Figure 1).

2. Hajarizadeh B, Grebely J, Matthews GV, Martinello M, Dore GJ. Uptake of direct acting antiviral treatment for chronic hepatitis C in Australia. *Journal of Viral Hepatitis* 2018; 25(6): 640-8

3. The Kirby Institute. National update on HIV, viral hepatitis and sexually transmissible infections in Australia: 2009–2018. The Kirby Institute, UNSW Sydney, Sydney NSW 2052

4. For a small number of individuals (n=17), data of jurisdiction of residence were not available.

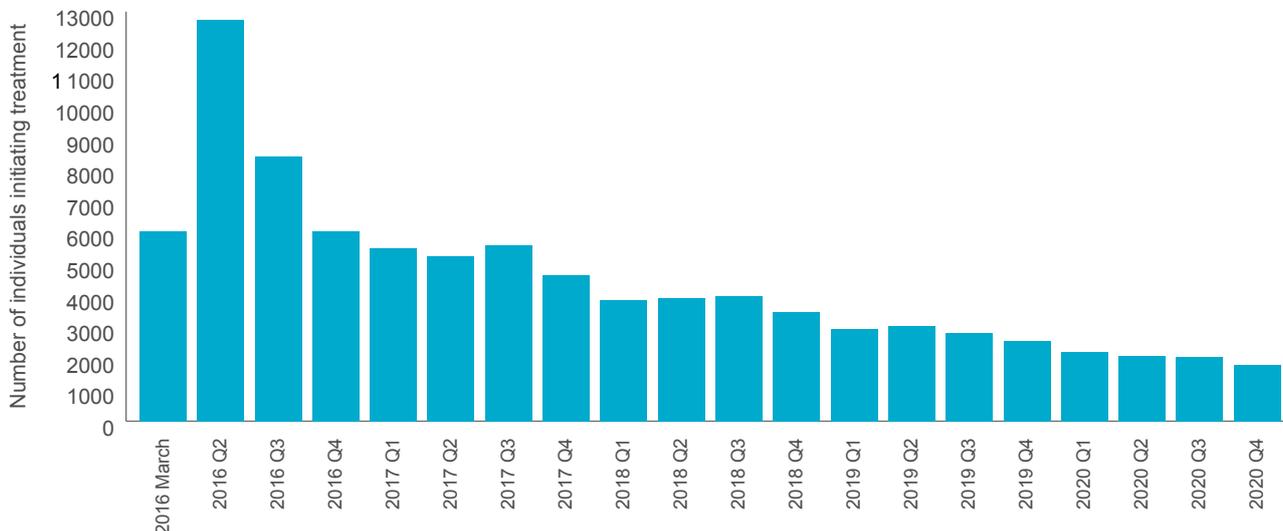
Figure 1: The estimated number of individuals initiating DAA treatment (bar charts) and the proportion of individuals living with chronic HCV infection who initiated DAA treatment (pie charts) between 2016 and 2020, by jurisdiction



The quarterly number of DAA treatment initiations in Australia is illustrated in Figure 2. The annual number of individuals initiating DAA treatment included

33,200 in 2016, 20,970 in 2017, 15,210 in 2018, 11,310 in 2019, and 8,100 in 2020.

Figure 2: Number of individuals initiating DAA treatment in each quarter during 2016 to 2020 in Australia

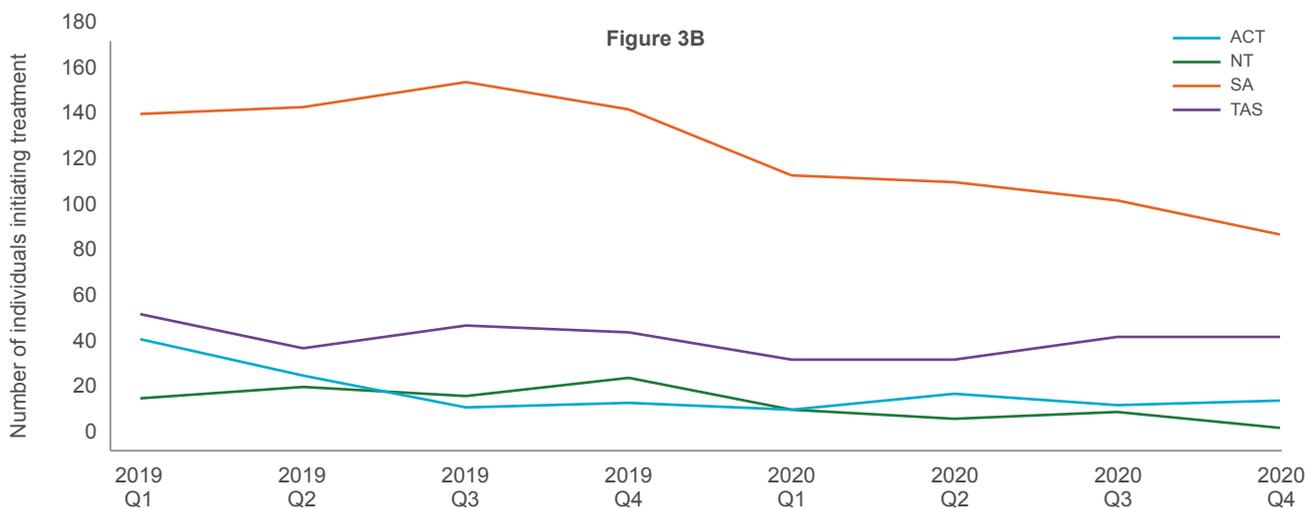
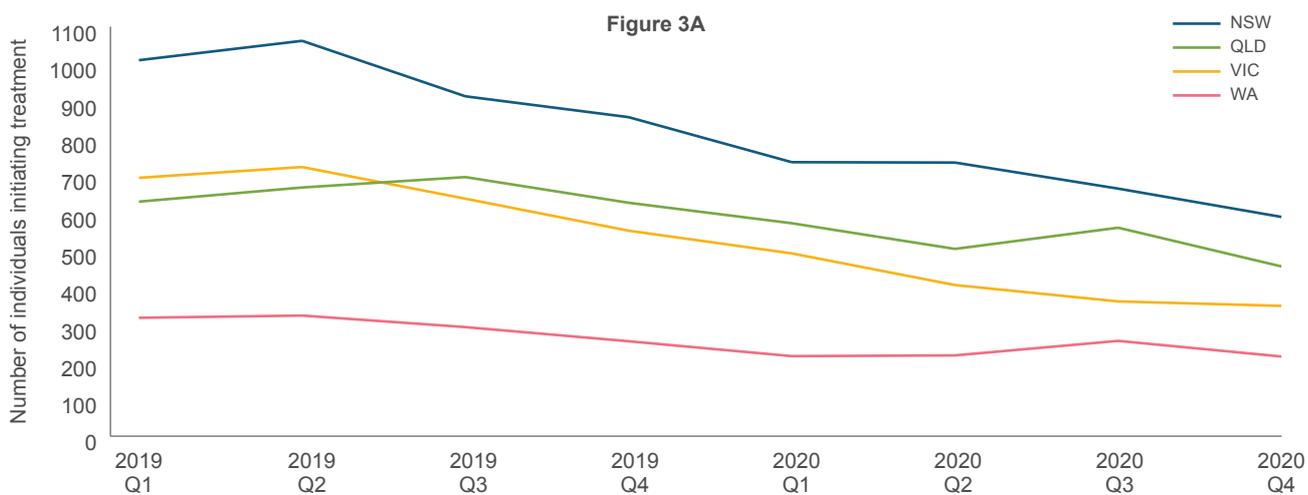


## DAA treatment uptake by jurisdictions

The trends of DAA treatment uptake during 2019-20 by jurisdiction are illustrated in Figure 3. In the four jurisdictions with the largest number of treatment

initiations, treatment uptake decreased between the first quarter of 2019 and the last quarter of 2020: 28% in Queensland, 33% in Western Australia, 42% in New South Wales, and 50% in Victoria (Figure 3A).

Figure 3: Quarterly number of individuals initiating DAA treatment during 2019 to 2020 in Australian jurisdictions



NSW: New South Wales; VIC: Victoria; QLD: Queensland; SA: South Australia; WA: Western Australia; ACT: Australian Capital Territory; TAS: Tasmania; NT: Northern Territory

## Gender and age distribution of individuals initiating DAA treatment

Of individuals initiating DAA treatment between 2016 and 2020, 68% were men and 32% were women. Median age was 48 years (quartiles 1-3: 39-57) with similar age distribution between men and women (Figure 4).

The trends of DAA treatment uptake during 2019-20 by age are illustrated in Figure 5. Between the first quarter of 2019 and the last quarter of 2020, treatment uptake decreased by 32% among people 30 years or younger, 34% among those older than 60, and 41-43% in other age groups.

Figure 4: Age distribution of individuals initiating DAA treatment during 2016 to 2020, by gender

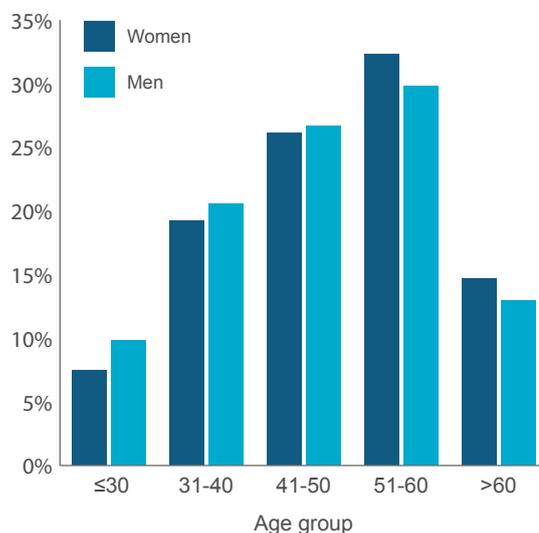
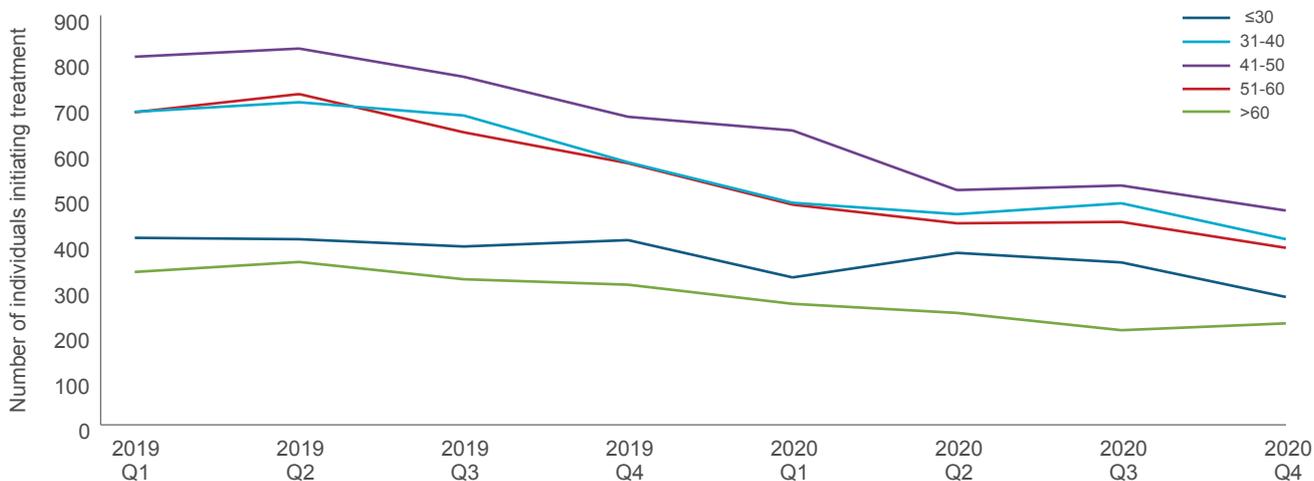


Figure 5: Quarterly age distribution of individuals initiating DAA treatment during 2019 to 2020

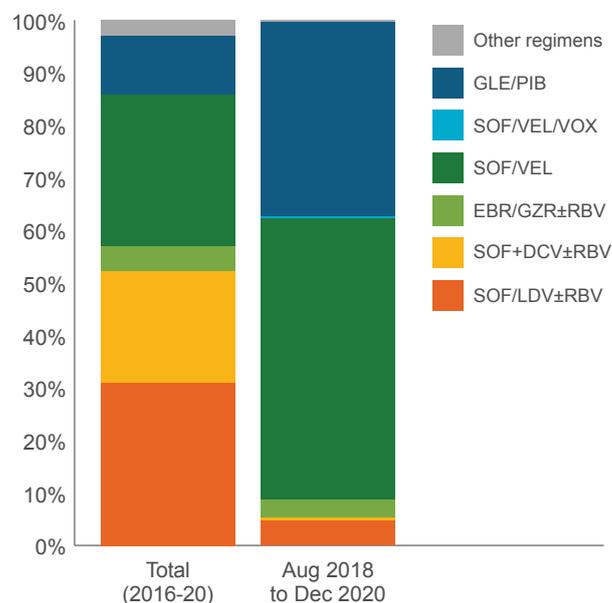


## Distribution of DAA regimens prescribed for individuals initiating treatment

Overall, the most commonly prescribed regimen was sofosbuvir/ledipasvir±ribavirin for 31%, followed by sofosbuvir/velpatasvir for 29%. Sofosbuvir/velpatasvir and glecaprevir/pibrentasvir were PBS listed in August 2017 and August 2018, respectively. Since August 2018 (when all regimens were available through PBS), 54% of individuals initiating DAA have been prescribed sofosbuvir/velpatasvir, and 37% have been prescribed glecaprevir/pibrentasvir (Figure 6).

The breakdown of treatment initiation numbers by treatment regimen and treatment course duration is shown in Figure 7. Of individuals initiated on sofosbuvir/ledipasvir±ribavirin (n=27,500), 19% were prescribed an 8-week course, 72% a 12-week course, and 9% a 24-week course. Of individuals initiated on sofosbuvir+daclatasvir±ribavirin (n=18,820), 70% were prescribed a 12-week course, and 30% a 24-week course. Of individuals initiated on elbasvir/grazoprevir±ribavirin (n=4,264), 94% were prescribed a 12-week course, and 4% a 16-week course. Of individuals initiated on glecaprevir/pibrentasvir (n=9,947), 90% were prescribed an 8-week course, 9% a 12-week course, and 1% a 16-week course.

Figure 6: Distribution of DAA regimens prescribed during 2016 to 2020 (overall), and August 2018 to December 2020 (all regimens where PBS-listed)



SOF: Sofosbuvir; LDV: Ledipasvir; DCV: Daclatasvir; EBR: Elbasvir; GZR: Grazoprevir; VEL: Velpatasvir; VOX: Voxilaprevir; GLE: Glecaprevir; PIB: Pibrentasvir RBV: Ribavirin

Figure 7: Absolute frequency (A) and relative frequency (B) of DAA regimens prescribed during 2016 to 2020, by treatment regimen and treatment course duration



SOF: Sofosbuvir; LDV: Ledipasvir; DCV: Daclatasvir; EBR: Elbasvir; GZR: Grazoprevir; VEL: Velpatasvir; GLE: Glecaprevir; PIB: Pibrentasvir RBV: Ribavirin

## Distribution of health care providers prescribing for individuals initiating DAA treatment

Among individuals initiating DAA treatment during 2016 to 2020, the majority received their prescriptions from general practitioners (GPs; 45%), followed by gastroenterologists (35%). Overall, 52% of individuals were initiated on treatment by specialists, and 47% by non-specialists (i.e., GPs and nurse practitioners).

Distribution of prescriber types varied across jurisdictions (Figure 8). The proportion of individuals initiated on DAA treatment by GPs was highest in Western Australia (60%), and Australian Capital Territory (58%). The proportion of individuals initiated on treatment by specialists was highest in Victoria (63%).

The quarterly number of treatment initiation by prescriber types is shown in Figure 9. During 2019-20, the number of individuals initiated on DAA treatment by nurse practitioners increased while treatment initiation by GPs and specialists decreased. Nurse practitioners have been authorised to prescribe DAA since June 2017. A total of 803 individuals were initiated on treatment by nurse practitioners, including 59 in 2017, 153 in 2018, 230 in 2019, and 361 in 2020. The proportion of treatment initiations by prescriber type during 2019-20 should be interpreted cautiously given increasing number of unidentified prescriber type in these years (Figure 9B).

Figure 8: Distribution of prescriber types for individuals initiating DAA treatment during 2016 to 2020, in Australia and by jurisdiction

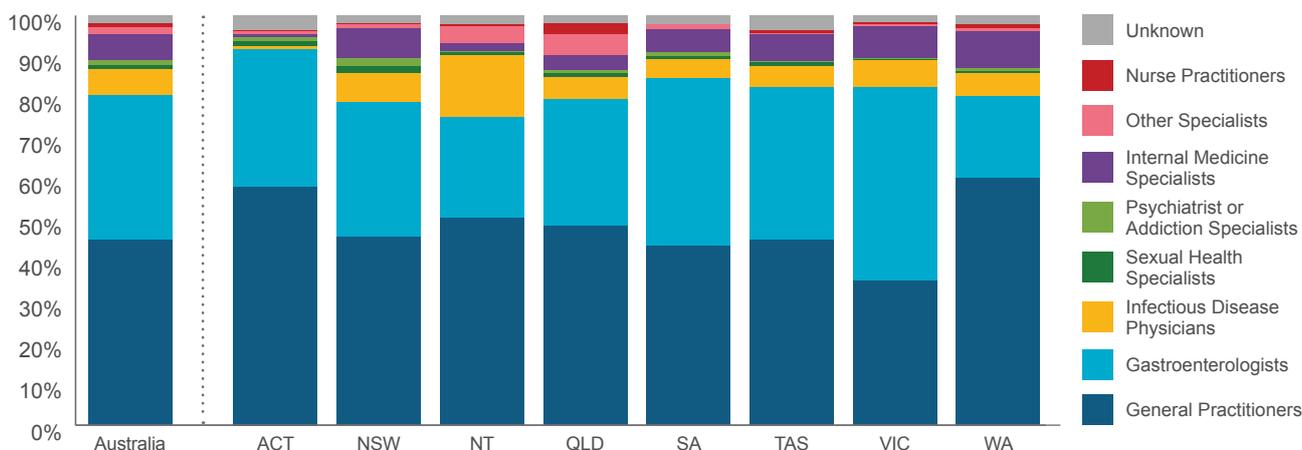


Figure 9: Quarterly distribution of prescriber types for individuals initiating DAA treatment during 2019 to 2020

Figure 9A

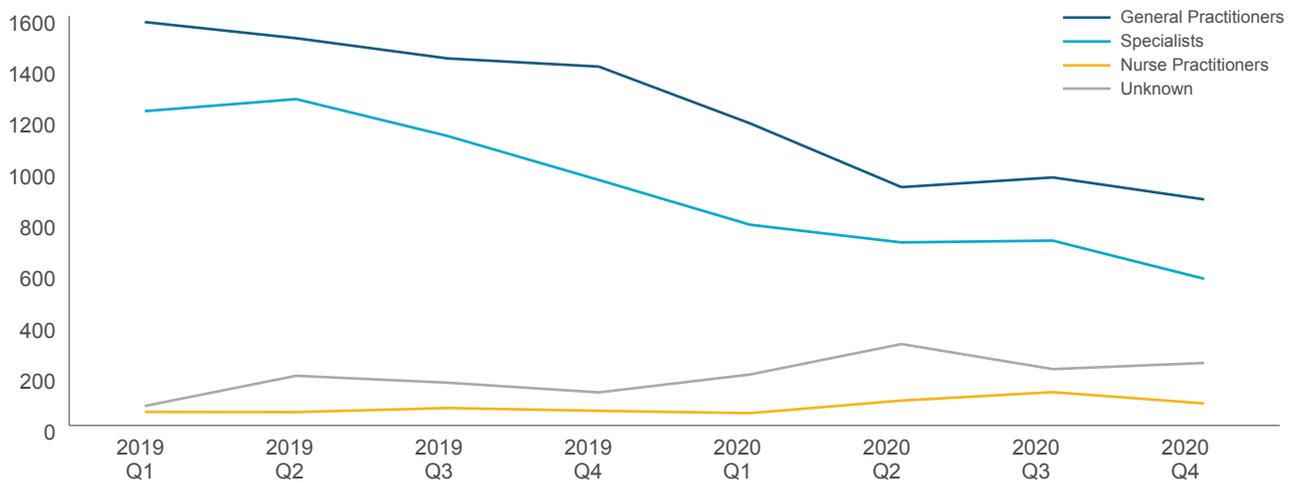


Figure 9B

