





# Increase in telemental health services on the Medicare Benefits Schedule after the start of the coronavirus pandemic: data from 2019 to 2021

Centaine L. Snoswell<sup>A,B,\*</sup>  (PhD, MPH, BPharm, Research Fellow Health Economics), Urska Arnautovska<sup>C</sup>  (PhD, MA(ClinPsych), BA(Psych), Research Fellow), Helen M. Haydon<sup>A,B</sup>  (PhD, BPsych, Research Fellow), Dan Siskind<sup>C,D</sup>  (MBBS, MPH, PhD, FRANZCP, Professor) and Anthony C. Smith<sup>A,B,E</sup>  (PhD, MEd, BNurs, Director)

For full list of author affiliations and declarations see end of paper

## \*Correspondence to:

Centaine L. Snoswell  
Centre for Online Health, The University  
of Queensland, Brisbane, Princess  
Alexandra Hospital, Ground Floor Building  
33, Woolloongabba, Qld 4102, Australia  
Email: [c.snoswell@uq.edu.au](mailto:c.snoswell@uq.edu.au)

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## ABSTRACT

**Objective.** To describe the change in telemental health service volume that resulted from the introduction of the Medicare Benefits Schedule (MBS) item numbers in 2020 for services provided by psychologists and psychiatrists in Australia for a 3-year period, from January 2019 to December 2021. **Methods.** Quarterly MBS activity and cost data for mental health services provided by consultant psychiatrists, clinical psychologists, and psychologists between January 2019 and December 2021 were extracted from the MBS statistics website. Data were grouped by profession and delivery mode (in-person, telephone or videoconference) and reported using activity counts. Descriptive analysis and interrupted time-series regression analysis were conducted. Specific descriptive explorations were also conducted for psychiatrists, including: new client consultations, review or general consultations, and group consultations. **Results.** The delivery of mental health services by telehealth (telemental health) during the pandemic has increased ( $P < 0.0001$ ). When the pandemic started in March 2020, telemental health services provided by psychiatrists and psychologists increased from a combined 1–2% per quarter to 29% videoconference and 20% telephone in quarter two 2020. After the onset of the pandemic, videoconference remained the primary form of telehealth for these professions. However, the telephone accounted for approximately a third of the telehealth activity after the new item numbers were introduced. **Conclusion.** Telemental health services are more likely to be conducted by videoconference than by telephone. The observed increase in telehealth service activity confirms how crucial appropriate funding models are to the sustainability of telehealth services in Australia. The growth in telehealth was used to support people with mental health conditions in Australia.

**Keywords:** Australia, psychiatry, psychology, telehealth, telemedicine, telephone, videoconference.

## Introduction

Australian mental health professionals have used telehealth to provide services to their patients for more than two decades.<sup>1,2</sup> These services, often referred to as telemental health, include all mental health services provided from a distance using technology to treat or assess mental health conditions.<sup>1</sup> Originally, telehealth enabled easier access to specialist services for people living in rural and remote areas throughout Australia.<sup>1–3</sup> Psychologists and psychiatrists were among some of the earliest adopters. They were assigned some of the first telehealth item numbers, introduced through the Australian national health fund, the Medicare Benefits Schedule (MBS).<sup>1–3</sup> This meant that psychologist and psychiatrist telehealth consultations were reimbursed by the MBS. However, since then the types of clinicians who can provide telemental health services in Australia has been expanded to include psychiatrists, psychologists, general practitioners, and a range of other allied health clinicians.<sup>3</sup> Despite this early adoption, an evaluation of

telehealth uptake using 2017 MBS data demonstrated that non-psychiatrist mental health services were being delivered almost exclusively in-person, with only 0.7% conducted by videoconference.<sup>3</sup>

Mental health services are an essential element of the health system, and they demonstrate value for the overall well-being of the population. These services became even more necessary during the coronavirus pandemic as the population in Australia and internationally faced a changing landscape of work, travel, and health, which impacted on mental health.<sup>4,5</sup> In response to the coronavirus pandemic, in March 2020, hundreds of new item numbers were added to the MBS in Australia to allow clinicians to provide telehealth services by telephone or videoconference. Then in October 2020, the number of psychologist consultations that could be claimed through the MBS also increased from 10 to 20 per patient. This aimed to minimise barriers for people needing general and mental health services during the changing landscape of pandemic-related lockdowns, isolation, and quarantine.<sup>5</sup> The recommendations were that the telephone was to be used only when videoconferencing was not feasible.<sup>6</sup> Due to the necessity of telehealth services during the pandemic and the widespread use of the newly introduced item numbers, most item numbers were made permanent in December 2021.

Previous studies examining the MBS item numbers for mental health services have reported an increase in telehealth service delivery over time.<sup>2,7–9</sup> However, these studies focused on a small collection of MBS item numbers, limiting the generalisability of findings. Here we perform a 3-year holistic review of the changes in telehealth use before and during the coronavirus pandemic. This study aimed to describe the change in telehealth service volume that resulted from the introduction of the MBS item numbers in 2020 for mental health services provided by psychologists and psychiatrists in Australia for a 3-year period, from January 2019 to December 2021.

## Method

We retrospectively examined publicly available activity data from the MBS. Ethics approval exemption was received from The University of Queensland's Human Research Ethics Committee (2021/HE002258).

## Background

On 12 March 2020, at the onset of the coronavirus pandemic, new MBS item numbers were added to increase patient access to health professionals through telephone and videoconferencing. These item numbers were added to the already available item numbers for psychiatrists and psychologists, many of whom were already using videoconferencing for consultations with eligible patients. Prior to the pandemic, patients were only eligible for videoconference consultations

if they resided in a rural or remote area, limiting the number of individuals who could access telehealth services. At the onset of the pandemic, this restriction was removed. All pre-existing codes ceased post-December 2021 when the temporary pandemic item numbers were made permanent. Another major change during this period was an increase in the number of annual psychologist consultations that could be claimed on the MBS, which was increased from 10 to 20 consultations per patient in October 2020. It should also be noted that psychologists could only use telehealth when they had consulted with the patient in the preceding 6 months, meaning that many new or returning patients would need their initial appointment to be in-person. With regard to consultation reimbursement, pre-existing telehealth item numbers (pre-2020) were reimbursed at 150% of the cost of an in-person consultation so the proportion of the overall cost for services is generally higher than the activity. The new codes introduced as a result of the pandemic in March 2020 were reimbursed at parity with the in-person reimbursement, so the proportional cost for telehealth is expected to be reduced compared to equivalent activity.

## Data source and collection

MBS activity and cost data for mental health services provided by consultant psychiatrists, clinical psychologists, and psychologists between January 2019 and December 2021 were extracted.<sup>10</sup> A total of 94 item codes were used (Supplementary File, Table S1), including 29 telephone items and 34 videoconference items.<sup>3,6</sup> The videoconference items included those that existed pre-coronavirus and those that were added between March and April 2020 in response to coronavirus disease 2019 (COVID-19). All telephone items were added in 2020 as a part of the COVID-19 response.<sup>3,6</sup> The item codes were selected based on the treating clinician, and only items with a direct in-person comparator code for each videoconference or telephone item were included.

## Data analysis

Data were exported to Microsoft Excel (2018, Microsoft Corp., Redmond, WA, USA). General and clinical psychologist item numbers, activity, and cost data were grouped together. Item number 288 for psychiatrists is always claimed with specific in-person item numbers. Therefore, the psychiatrist consultations activity and cost data needed to be corrected to prevent double counting of consult events for item 288 and the matching in-person item number. Data were grouped by profession and delivery mode (in-person, telephone or videoconference) and reported using activity counts. Descriptive analysis and graphical representations were created. Specific descriptive explorations were also conducted for psychiatrists: new client consultations by psychiatrists, review or general consultations, and group consultations. Data were not available to perform these explorations for psychologists.

An interrupted time-series regression analysis was conducted in Stata v16 to examine whether the changes in volume and rate were statistically significant. For psychiatry, the periods before and after March 2020 were examined (breaking between Q1 and Q2 2020). Whereas for psychologists, three time periods were examined: the period up until March 2020, the period from Q2 2020, and the period from October 2020 (Q4) when the number of allowable annual consultations increased from 10 to 20 per calendar year. Trends were examined by comparing the changes in telehealth activity with previous time periods and both coefficients and graphical representation of the analysis were derived. The Cumby-Huizinga general test was used to assess autocorrelation, while  $P$ -values of  $<0.05$  and 95% confidence intervals determined statistical significance.

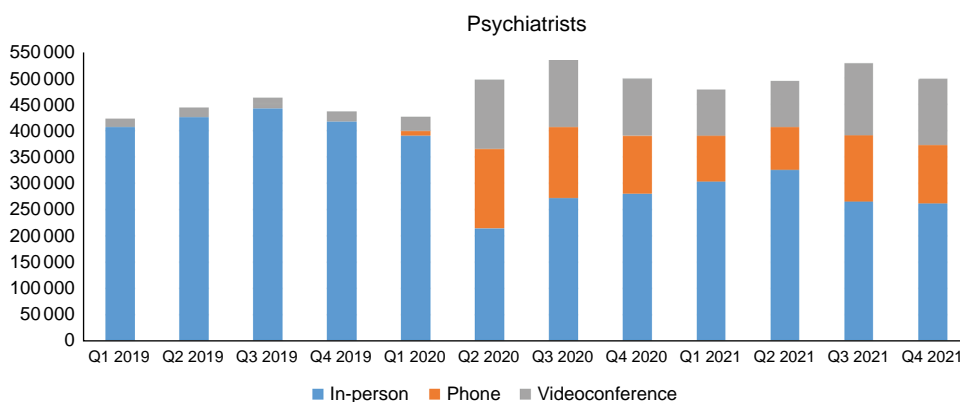
## Results

In 2019, before the COVID-19 MBS item numbers were introduced, psychiatrists performed about 4–4.5% of their consultations by videoconference and psychologists around 0.2% of all their consultations each quarter (Supplementary Table S2). When the pandemic started in March 2020, telehealth services provided by psychiatrists and psychologists increased from a combined total of 1–2% per quarter (from Q1 2019 to Q1 2020) to 29% videoconference and 20% telephone in Q2 2020. The proportion of telehealth gradually decreased each quarter to between 15 and 20% videoconference and 9–15% telephone. After the onset of the pandemic, from Q2 2020, videoconference remained the primary form of telehealth for these professions. However, the telephone accounted for approximately a third of the telehealth activity after the new MBS item numbers were introduced.

### Breakdown by profession

#### Psychiatry

Prior to the pandemic, psychiatrists averaged 439 000 consultations each quarter (range 423 000–463 000).



**Fig. 1.** Psychiatrist quarterly telehealth use from Q1 2019 to Q4 2021.

This increased to a quarterly average of 505 000 (479 000–536 000) after the onset of the pandemic and the introduction of the new telehealth item numbers. In 2019, approximately 4–4.5% of consultations were conducted by videoconference, which increased significantly ( $P < 0.0001$ ) in Q2 2020 when nearly half of all consultations were being conducted by telehealth (Fig. 1, Supplementary Table S2 in Supplementary File 2). An annual pattern can be seen across the 3 years where the first quarter has the lowest number of consultations recorded and the third quarter has the highest.

The time-series analysis demonstrated a large immediate increase in telephone ( $n = 125\,146$  increase) and videoconference calls ( $n = 90\,984$  increase) in Q2 2020 after the introduction of the new codes, which coincided with a decrease in in-person consultations ( $n = 139\,611$  decrease) (Supplementary Table S6). All changes were statistically significant to  $P < 0.0001$ . After the immediate increase in telehealth, the quarterly average for telephone and videoconference consultations began reducing slowly as in-person consultations increased again, but these rate changes (reductions/increases) were not statistically significantly different from the period before the new numbers were added (Supplementary Figs S1–S3 in Supplementary File 2).

#### Psychology

Telehealth services for general and clinical psychologists followed similar trends and have been combined for ease of reporting. Overall, psychologists also performed more videoconference consultations than telephone consultations each quarter (Fig. 2). Videoconference started as a small percentage, approximately 0.2% prior to the introduction of the new item numbers (Q1 2019–Q1 2020), and then increased to between 15 and 30% after the introduction of new codes in Q2 2020 that expanded eligibility for patients in urban and regional areas (i.e. not restricted to rural areas). Telephone consultations varied between 5% and 17% after the telephone items were introduced in March 2020. Both telephone and videoconference use peaked during Q2 2020, with videoconferencing accounting for 30% of all consultations with telephone accounting for 17%. The annual

restriction on the number of claimable psychologist consultations (10 per year prior to October 2020, 20 per year afterwards) produces an annual pattern where consult numbers are highest during Q2–Q3 each year and the lowest in Q4.

Similar to psychiatrists, the time-series analysis demonstrated an immediate increase in telephone ( $n = 233\,166$  increase) and videoconference ( $n = 424\,712$  increase) in Q2 2020 after the introduction of the new codes, with a simultaneous decrease in in-person consultations ( $n = 479\,493$  decrease) (Supplementary Table S7). All changes were statistically significant to  $P < 0.0001$ . After this telehealth increase, in-person consultations began to rise as telehealth reduced. However, after the number of annual consultations that could be claimed increased from 10 to 20 at the start of Q4 2020, videoconference consultations numbers rose slightly (Supplementary Figs S4–S6 in Supplementary File 2).

### Psychiatrist: new and review, group consultations

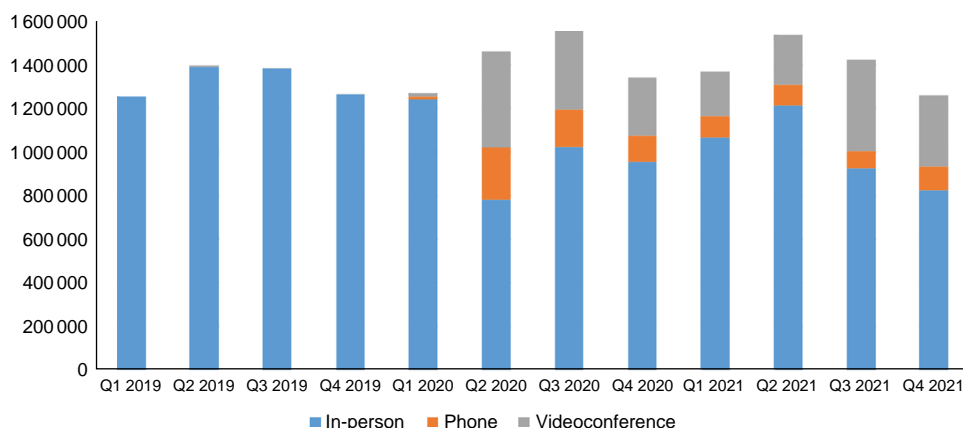
There was an average of 41 000 (36 925–48 425) new psychiatrist consultations each quarter, representing approximately 10% (7.2–10.1%) of all consultations provided by psychiatrists. After the new codes were introduced in March 2020, it was possible to differentiate between modalities for new and review consultations. From this point, videoconferencing varied between 8% and 16% of all new consultations

while the telephone was used at approximately half the rate of videoconferencing (3–9%). Review consultations which averaged 359 000 (353 850–382 891) per quarter, demonstrated the reverse pattern, with very few review consultations conducted over video ( $< 0.1\%$ ) and the telephone accounting for between 42% (Q2 2020) and 21% (Q2 2021), see Supplementary Table S3.

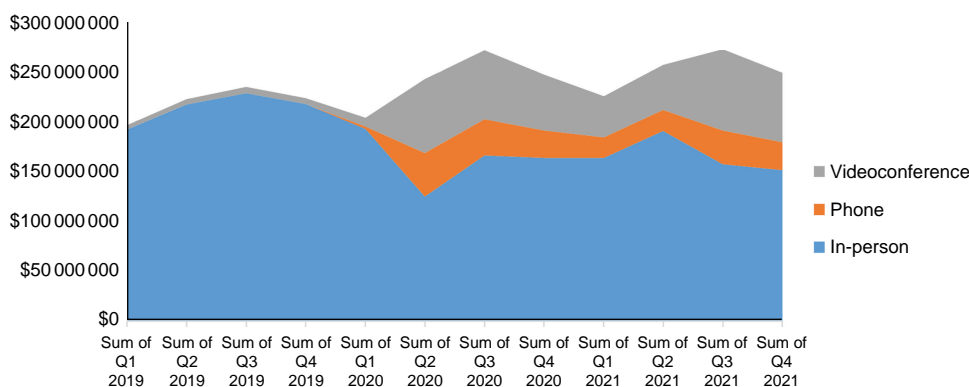
Psychiatrists provided an average of 7800 (6480–11 759) group consultations each quarter. From Q2 2020, when telehealth was made available for group consultations, the proportion of group consultations conducted by telehealth increased each quarter. The majority of telehealth consultations were by videoconference (17% average, range 8–24%), with only a small proportion of the total conducted by telephone (2% average, range 1.5–4%), see Supplementary Table S4.

### Medicare reimbursement costs

As the total costs only relate to MBS reimbursement, trends and changes in costs mirror the claims data reported above. Services cost an average of A\$218 million per quarter in 2019, when videoconference accounted for approximately 7% of service costs (Supplementary Table S5, Fig. 3). Overall, however, activity rose in 2020 and 2021, which resulted in an increased average quarterly cost of A\$241 million in 2020 and A\$250 million in 2021.



**Fig. 2.** Psychologist (general and clinical) quarterly telehealth use from Q1 2019 to Q4 2021.



**Fig. 3.** Cost of psychiatrist and psychologist services 2019–2021 by modality.

## Discussion

Following the onset of the pandemic, there was an increase in mental health service provision for both psychologists and psychiatrists. This increase in service provision was associated with a transition away from in-person appointments to telephone and videoconference based service provision, a trend sustained throughout 2021. This trend of increased service provision is in keeping with research suggesting a greater mental health burden resulting from the pandemic.<sup>4,5,11</sup> The sustained nature of telehealth use suggests an ongoing need for and acceptability of mental health services delivered by this modality, beyond the mental health needs of people living in rural and remote regions (as were the intentions of pre-2020 item numbers). The new item numbers and increase in allowable annual psychologist consultations that were introduced in response to the pandemic represent funding reforms for mental health services that will increase the sustainability of telehealth services and benefit Australian patients.<sup>12</sup> To further improve the long-term sustainability of telehealth services, we need to focus on clinician training to develop skills to deliver telehealth, consumer empowerment to choose their preferred modality, and improved workflows to conceptualise new models of routine care, which include telehealth.<sup>12–14</sup>

Many other professional groups in Australia, including general practitioners and specialist consultants, have demonstrated higher telephone than videoconference use since March 2020.<sup>15,16</sup> For specialist consultations, videoconferencing accounted for 4% of all consultations provided during the COVID-19 pandemic.<sup>15</sup> General practitioners used even less videoconferencing, with 0–1% of all consultations provided by videoconference.<sup>16</sup> This trend has been qualitatively explored where it was reported that clinicians found the telephone easier to initiate than videoconferencing.<sup>13,17</sup> A study exploring the effect in outpatient pharmacist clinics during the pandemic found that even when videoconference consultations were reimbursed at a higher rate for the organisation, clinician willingness played a major role in modality choice with telephone staying predominant.<sup>13</sup> However, psychiatrists and psychologists used a higher proportion of videoconference than the telephone, with the exception of psychiatrist review consultations. This demonstrates an encouraging level of clinician willingness to use videoconference telehealth within the mental health community.

Recently published scoping and systematic reviews of telehealth give further justification for the use of telehealth to provide clinical care in a range of different settings. From a clinical effectiveness perspective, evidence is emerging that telehealth is just as effective (if not more effective) when compared to conventional methods of providing care. However, the evidence does correspond with specific applications.<sup>18,19</sup> From a safety perspective, telehealth is unlikely to contribute to inferior or unsafe care.<sup>18,19</sup> Discipline specific practice guidelines exist to ensure that

telehealth is used appropriately and in accordance with patient circumstances and clinical judgement.<sup>20,21</sup> From an economic perspective, telehealth has been shown to increase access to care, resulting in productivity gains due to reduced travel costs for service providers and consumers.<sup>22</sup>

## Limitations and opportunities

Given the data available for this analysis, it is impossible to disentangle the impacts of the pandemic on population mental health needs from the impacts of the new telehealth item numbers. The increased service volume observed during 2020 and 2021 is likely a product of both effects. The pandemic resulted in unique and urgent needs for mental health support for many people, while the new telehealth items enabled greater access to services. Additionally, this dataset does not account for services that are privately funded by patients, health insurance, workplaces, or those conducted by hospitals or under the National Disability Insurance Scheme, and so does not give a comprehensive picture of all psychiatry and psychology services provided during 2019–2021. Additionally, the MBS data does not provide an indication of service quality which could be another area for future research to examine, especially given the potential differences in quality between the telephone and videoconferencing. Future research could examine longer time periods to explore the long-term impact of the pandemic and the telehealth item numbers and explore accessing novel private datasets (such as the hospital datasets explored by Looi *et al.*<sup>23</sup>) to better characterise privately offered services. Longer periods of observation would also allow the adjustment period following the pandemic onset and the related psychological response of the Australian population to the crisis to be contextualised.

The aggregate national nature of the data reduces the generalisability of the findings to local areas and specific populations. Additionally, it was not possible to determine the patient's location relative to their clinician, the number of consults a patient had in a year, or any demographic profile for the patients using either modality. Reported costs also do not account for the broader societal costs associated with accessing clinical services, such as patient productivity losses from travel and waiting and out-of-pocket expenses for appointments or health insurance. The strength of this analysis is the national nature of the information.

## Conclusion

The delivery of mental health services by telehealth during the pandemic has increased. Psychologist and psychiatrist telemental health services are more likely to be done by videoconference compared to other professions (such as GP consultations, allied health, specialist consultations, etc.). The observed increase in telehealth service activity confirms how crucially appropriate funding models are to the



sustainability of telehealth services in Australia. Improving clinician telehealth training, change management, consumer engagement, and innovative communications systems to help support telehealth will further improve service sustainability. The growth in telehealth use to support people with mental health conditions in Australia is encouraging.

## Supplementary material

Supplementary material is available [online](#).

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**Data availability.** The data that support this study cannot be publicly shared due to ethical or privacy reasons and may be shared upon reasonable request to the corresponding author if appropriate.

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### Author affiliations

<sup>A</sup>Centre for Online Health, The University of Queensland, Brisbane, Princess Alexandra Hospital, Ground Floor Building 33, Woolloongabba, Qld 4102, Australia.

<sup>B</sup>Centre for Health Services Research, The University of Queensland, Brisbane, Qld, Australia.

<sup>C</sup>Faculty of Medicine, The University of Queensland, Brisbane, Qld, Australia.

<sup>D</sup>Metro South Addiction and Mental Health Service, Brisbane, Qld, Australia.

<sup>E</sup>Centre for Innovative Medical Technology, University of Southern Denmark, Odense, Denmark.