






## SHORT COMMUNICATION

# Business as usual during the COVID-19 pandemic? Reflections on state-wide trends in maternity telehealth consultations during lockdown in Victoria and New South Wales

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## Abstract

COVID-19 has resulted in unprecedented changes to maternity care across Australia. This study aims to analyse trends in maternity consultations and the uptake of telehealth in Victoria and New South Wales (NSW) since the first restrictions to reduce COVID-19 transmission were implemented. From March 2020 to April 2021, a higher proportion of antenatal care consultations was delivered via telehealth in Victoria compared to NSW (13.8% vs 7.4%,  $P < 0.0001$ ). Uptake of telehealth and a shift from in-person care has been a major contributor to maintaining pregnancy care during pandemic restrictions. However, further research is required to understand women's perspectives and health outcomes.

## KEYWORDS

COVID-19, antenatal, obstetrics, maternity, telemedicine

## INTRODUCTION

The COVID-19 pandemic has resulted in a series of rapid changes to the delivery of health care across Australia. The Medicare Benefits Schedule (MBS) commenced temporary funding for telehealth items on 13 March 2020 to limit in-person consultations and thus,

reduce potential infectious exposures for patients and healthcare providers.<sup>1</sup> In Australia, 95% of doctors reported their health service developed new guidelines for COVID-19, and 68% reported all or most consultations had moved to telephone or video.<sup>2</sup> By April 2020, more than 4.3 million consultations were delivered through telehealth item numbers introduced for the COVID-19 pandemic.<sup>3</sup>

In May 2020, the Royal Australian and New Zealand College of Obstetricians and Gynaecologists (RANZCOG) released a communication suggesting increasing the interval between antenatal visits and using telehealth consultations as a replacement, or in addition to routine visits, to accommodate lockdown restrictions and social distancing requirements.<sup>4</sup> The World Health Organization recommends a minimum of eight antenatal contacts to reduce perinatal mortality and improve maternal satisfaction.<sup>5</sup> Telehealth serves to ensure these recommendations are met, while limiting in-person contacts.

Globally, the COVID-19 pandemic and resultant lockdowns have had a range of effects on maternal and perinatal outcomes, including poorer maternal mental health,<sup>6</sup> and higher rates of family violence.<sup>7</sup> In the United Kingdom, the incidence of stillbirth has been significantly higher during the pandemic. It is suggested this may be an indirect result of changes in obstetric services including staff shortages, reduced antenatal visits, ultrasounds or screening, or a delay in diagnosis of complications.<sup>8</sup>

Victoria faced the strictest and longest lockdown measures in Australia,<sup>9</sup> with Stage 3 lockdown commencing in Victoria on 31 March 2020, allowing people to leave the house for essential reasons only. This lockdown continued until 12 May 2020. A return to Stage 3 restrictions occurred on 8 July with an escalation to Stage 4 restrictions from 2 August to 26 October, with restrictions lifted by 20 November. In contrast, the restrictions in New South Wales (NSW) from 18 March 2020 to 15 May 2020 were less stringent and involved limitations on indoor gatherings and non-essential travel. The maximum stringency of COVID-19 containment measures during this period was 92.6 in Victoria and 39.8 in NSW.<sup>10</sup>

It is unclear how the difference in restrictions between the two states affected the delivery of antenatal care.

This study aims to analyse trends in maternity care consultations and uptake of telehealth in Victoria and NSW since the onset of COVID-19 restrictions.

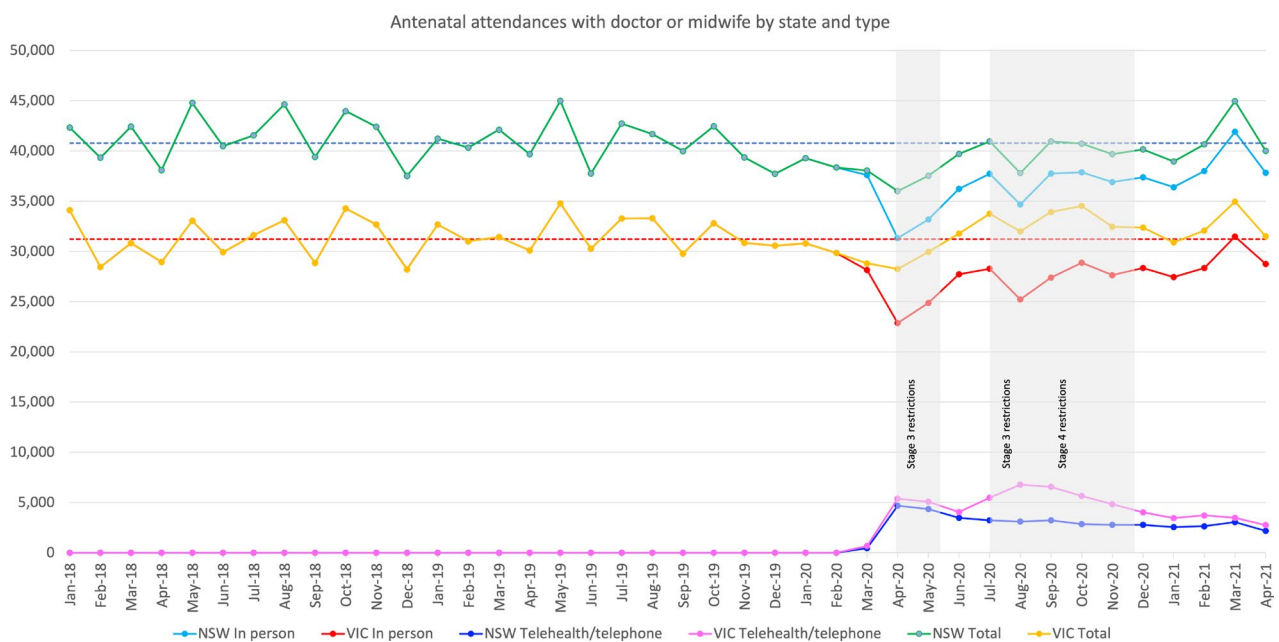
## MATERIALS AND METHODS

Episodes of outpatient maternity care consultations from 1 January 2018 to 30 April 2021 were obtained using Australian Government Medicare Statistics data from NSW and Victoria.<sup>11</sup> Included were MBS item numbers for COVID-19 telephone and telehealth (91850, 91855, 91853, 91858), and pre-existing in-person (16400, 16500) consultations. These item numbers describe antenatal attendances provided by a doctor, midwife, nurse or an Aboriginal and Torres Strait Island health practitioner.

Run charts using a pre-pandemic median from January 2019 to December 2019 were generated. Run charts are designed for the early detection of signals of improvement or degradation in a process over time. The interpretation includes two probability-based rules for non-random patterns of data (alpha error of <0.05). A shift was defined as six or more consecutive points either all above or all below the pre-pandemic median.<sup>12</sup>

The percentage of telehealth consultations as a proportion of total consultations were compared between Victoria and NSW using  $\chi^2$  test for proportions.

Data were collected as part of the Collaborative Maternity and Newborn Dashboard (CoMaND) for the pandemic. Ethics approval was granted by Austin Health (HREC/64722/Austin-2020).



**FIGURE 1** Antenatal attendances with doctor or midwife by state and type. The dashed lines represent the pre-pandemic median. [Colour figure can be viewed at [wileyonlinelibrary.com](http://wileyonlinelibrary.com)]

## RESULTS

The total number of antenatal attendances from January 2018 to April 2021 for NSW and Victoria were 1 620 426 and 1 262 540 respectively. The pre-pandemic monthly medians were 40 769 and 31 613 for NSW and Victoria, respectively.

The median monthly COVID telehealth and telephone attendances from April 2020 to April 2021 were 3048 for NSW and 4710 for Victoria. Victoria experienced a significant shift above the pre-pandemic median for total antenatal attendances (in-person and telehealth/telephone) from June 2020 onward. From March 2020 to April 2021, a higher proportion of antenatal care was delivered via telehealth/telephone in Victoria compared to NSW (61 925/447 179 = 13.8% vs 41 369/556 037 = 7.4%, respectively,  $P < 0.0001$ ) (Fig. 1). The median number of telehealth consultations from January to March of 2021 were 2601.5 for NSW and 3474.5 for Victoria.

## DISCUSSION

Uptake of COVID-19 telehealth and telephone visits has been a major contributor to maintaining total maternity consultations during Victorian pandemic restrictions. Despite a reduction in mean monthly in-person antenatal consultations, there was an overall increase in total number of antenatal visits in Victoria that was not observed in NSW. Since the introduction of the telehealth/telephone MBS item numbers, one in seven antenatal visits was provided in this manner in Victoria. Telehealth consultations have remained consistent during the first quarter of 2021, with Victoria continuing to utilise this service more than NSW.

It remains unclear why Victoria experienced an increase in the overall number of antenatal appointments during the pandemic. We suggest that clinicians may have increased the number of visits beyond the routine schedule of care to compensate for fewer in-person interactions. It is also possible that the increased number of attendances may reflect the start of the anticipated 2021 'COVID baby boom',<sup>13</sup> with a rise in antenatal booking visits during this period.

A survey of global maternity healthcare providers utilising telemedicine during the pandemic demonstrated a concern regarding the lower quality of care and increasing pre-existing healthcare inequalities.<sup>14</sup> Challenges identified by healthcare professionals to introducing telemedicine included a lack of infrastructure and technological literacy, as well as financial and language barriers.<sup>14</sup>

A survey of Australian doctors has revealed that 42% believe changes to maternity care from COVID-19 were temporary, with only 14% believing the changes were for the better.<sup>2</sup> Furthermore, a systematic review identified numerous issues, including poor digital literacy and cost of technology which require addressing before the implementation of effective digital health.<sup>15</sup>

It is suggested telehealth will become a permanent component of post-pandemic healthcare.<sup>16</sup> Reassuringly, a recent Australian study demonstrated telehealth did not result in a difference in key outcomes, including fetal growth restriction, stillbirth or pre-eclampsia.<sup>17</sup> However, it is important to recognise women and their partners across Australia have reported significantly less satisfaction with healthcare changes during the pandemic than midwifery and medical staff.<sup>18</sup> This highlights the urgent need for more research on women's perspectives of telehealth for maternity care, particularly for socially vulnerable women and those requiring interpreter or mental health services.

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## REFERENCES

1. MBS Fact Sheets. [Accessed 18 April 2021.] Available from URL: <http://www.mbsonline.gov.au/internet/mbsonline/publishing.nsf/Content/Factsheet-TempBB>
2. Szabo RA, Wilson AN, Homer C, *et al.* Covid-19 changes to maternity care: Experiences of Australian doctors. *Aust N Z J Obstet Gynaecol* 2021; **61**(3): 408–415. <https://doi.org/10.1111/ajo.13307>.
3. Minister for Health and Aged Care media release, Australians embrace telehealth to save lives during COVID-19. [Accessed 6 June 2021.] Available from URL: <https://www.health.gov.au/ministers/the-hon-greg-hunt-mp/media/australians-embrace-telehealth-to-save-lives-during-covid-19>
4. RANZCOG Statements and Guidelines. [Accessed 12 May 2020.] Available from URL: <https://ranzocg.edu.au/statements-guidelines/covid-19-statement/information-for-pregnant-women>
5. World Health Organisation Guidelines WHO recommendations on antenatal care for a positive pregnancy experience. 2016. <http://www.who.int>
6. Chmielewska B, Barratt I, Townsend R, *et al.* Effects of the COVID-19 pandemic on maternal and perinatal outcomes: a systematic review and meta-analysis. *The Lancet Global Health*, 2021; **9**(6): e759–e772.
7. Rmandic S, Walker S, Bright S & Millsteed M. Police recorded crime trends in Victoria during the COVID-19 pandemic. Victorian Government Crime Statistics Agency. [Accessed 26 June 2021.] Available from URL: <https://www.crimestatistics.vic.gov.au/research-and-evaluation/publications/police-recorded-crime-trends-in-victoria-during-the-covid-19>
8. Khalil A, von Dadelszen P, Draycott T, *et al.* Change in the incidence of stillbirth and preterm delivery during the COVID-19 pandemic. *JAMA* 2020; **324**(7): 705–706. <https://doi.org/10.1001/jama.2020.12746>.
9. Our World in Data. COVID-19: Stringency Index. [Accessed 6 June 2021.] Available from URL: <https://ourworldindata.org/grapher/covid-stringency-index?time=2021-06-05>
10. Australian Bureau Of Statistics. State Economies and the stringency of COVID-19 containment measures. [Accessed 26 June 2021.] Available from URL: <https://www.abs.gov.au/articles/state-economies-and-stringency-covid-19-containment-measures>

11. Medicare Benefits Schedule Item Reports. [Accessed 6 June 2021.] Available from URL: [http://medicarestatistics.humanservices.gov.au/statistics/mbs\\_item.jsp](http://medicarestatistics.humanservices.gov.au/statistics/mbs_item.jsp)
12. Perla RJ, Provost LP, Murray SK. The run chart: a simple analytical tool for learning from variation in healthcare processes. *BMJ Qual Saf* 2011; **20**(1): 46–51. <http://dx.doi.org/10.1136/bmjqs.2009.037895>
13. Moaven L, Brown J. COVID-19 “baby boom”. *Med J Aust* 2021; **214**: 386.e1. <https://doi.org/10.5694/mja2.51010>.
14. Galle A, Semaan A, Huysmans E, *et al.* A double-edged sword—telemedicine for maternal care during COVID-19: findings from a global mixed-methods study of healthcare providers. *BMJ Global Health* 2021; **6**: e004575.
15. O'Connor S, Hanlon P, O'Donnell CA, *et al.* Understanding factors affecting patient and public engagement and recruitment to digital health interventions: a systematic review of qualitative studies. *BMC Med Inform Decis Mak* 2016; **16**: 120. <https://doi.org/10.1186/s12911-016-0359-3>.
16. Prime Minister of Australia media release 14 March 2021. Over \$1.1 billion to extend Australia's COVID-19 health response. [Accessed 6 June 2021.] Available from URL: <https://www.pm.gov.au/media/over-11-billion-extend-australias-covid-19-health-response>
17. Palmer KR, Tanner M, Davies-Tuck M. Widespread implementation of a low-cost telehealth service in the delivery of antenatal care during the COVID-19 pandemic: an interrupted time-series analysis. *Lancet* 2021; **398**(10294): 41–52.
18. Bradfield Z, Wynter K, Hauck Y, *et al.* Experiences of receiving and providing maternity care during the COVID-19 pandemic in Australia: A five-cohort cross-sectional comparison. *PLoS One* 2021; **16**(3): e0248488. <https://doi.org/10.1371/journal.pone.0248488>. PMID: 33760851; PMCID: PMC7990294.