Covid-19 changes to maternity care: Experiences of Australian doctors

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Background: The COVID-19 pandemic meant rapid changes to Australian maternity services. All maternity services have undertaken significant changes in relation to policies, service delivery and practices and increased use of personal protective equipment.

Aims: The aim of this study was to explore and describe doctors’ experiences of providing maternity care during the COVID-19 pandemic in Australia.

Methods: A national online survey followed by semi-structured interviews with a cohort of participants was conducted during the first wave of the COVID-19 pandemic in Australia (May–June 2020). Participants were recruited through social media networks. Eighty-six doctors completed the survey, and eight were interviewed.

Results: Almost all doctors reported rapid development of new guidelines and major changes to health service delivery. Professional colleges were the main source of new information about COVID-19. Most (89%) doctors felt sufficiently informed to care for women with COVID-19. Less than half of doctors felt changes would be temporary. Doctors described workforce disruptions with associated personal and professional impacts. The ability to access and process up-to-date, evidence-based information was perceived as important. Doctors acknowledged that altered models of care had increased pregnant women’s anxiety and uncertainty. All doctors described silver linings from sector changes.

Conclusions: This study provides unique insights into doctors’ experiences of providing maternity care during the COVID-19 pandemic in Australia. Findings have immediate relevance to the maternity sector now and into the future. Lessons learnt provide an opportunity to reshape the maternity sector to better prepare for future public health crises.

Keywords: COVID-19, healthcare worker, maternity service, obstetric doctor
INTRODUCTION

The COVID-19 pandemic has significantly impacted all countries globally, even those with a proportionally small number of cases like Australia. Since the World Health Organization declared the pandemic on 11 March 2020\(^1\) there have been rapid and significant changes to maternity service delivery in Australia. This has meant that changes that are likely to have impacted all stakeholders of maternity services, including doctors, have been put in place.

Changes to maternity service provision have largely encompassed reducing face-to-face contact and increasing infection prevention and control in healthcare settings. Many health appointments have moved to being provided by telehealth or delivered in ways to limit face-to-face contact.\(^2\) The number of support people at clinic visits and during labour and birth has been limited, and siblings and other family members have been prohibited from visiting mothers in hospital. In some settings, access to waterbirth and use of nitrous oxide for pain management in labour have been altered.\(^3,4\) In addition, there has been increased and up-to-date use of personal protective equipment (PPE). There have also been changes in non-clinical activities, including reduced to no in-person meetings, training and teaching sessions and informal gatherings and face-to-face networking.\(^5\)

The aim of this study was to explore and describe medical practitioners’ experiences of providing maternity care at the beginning of the COVID-19 pandemic in Australia. This is one cohort of a wider national Australian study exploring the experiences of those providing and receiving maternity care during the COVID-19 pandemic.

MATERIALS AND METHODS

A national study of doctors involved in maternity care in Australia was conducted using an online survey followed by semi-structured interviews with a cohort of participants. The study was initiated during the first wave of the COVID-19 pandemic in Australia (May–June 2020). Participants were eligible to complete the survey if they were registered Australian medical practitioners who provided care across any part of the antenatal, labour and postnatal continuum to women since March 2020. Ethical approval was received from Curtin University (HRE2020-0210), Deakin University and The University of Melbourne.

Recruitment for the survey was conducted through social media (Facebook, Twitter, LinkedIn and Instagram). The researchers also advertised the study through professional networks and relevant organisations. The Royal Australian and New Zealand College of Obstetricians and Gynaecologists (RANZCOG) also included the study advertisement in their online newsletter.

Online survey

The novel, global nature and scale of the COVID-19 pandemic meant that no instrument existed to allow collection of data from the relevant stakeholders in these circumstances. Thus, a study-specific survey was developed. The survey was divided into three sections, collecting relevant demographics, cohort-specific descriptive data and information about experiences using Likert scales. The survey was kept intentionally succinct and was able to be completed within 15 min.

The online survey was hosted on the coordinating university’s Qualtrics account. All surveys were accessed via an anonymous generic link. The commencement of the survey was taken as implicit consent. At the conclusion of the online survey, participants were able to provide their name and email address to register their interest for participating in an interview. These contact details were removed before analysis.

The survey data were analysed using the software package SPSS and are reported as descriptive statistics.

Interviews

The research team contacted individuals by email who had indicated their willingness to be interviewed after the completion of the survey. The invitation email included an offer to participate in a one-on-one interview and a participant information form. If the individual replied and confirmed consent to be interviewed, a convenient date and time were arranged. Verbal consent was also obtained and recorded at the beginning of each interview.

Semi-structured interviews were conducted by a single interviewer with each participant. The interviews were audio-recorded with consent using the mobile app RecUp (Irradiated Software, LLC©2017) or Zoom. A professional transcription service transcribed the interviews verbatim for analysis.

Interview transcripts were analysed using a thematic analysis approach informed by Braun and Clarke.\(^6\) The lead researchers (R.A.S., A.N.W. and C.H.) read and coded the interview transcripts separately using an inductive, data-driven approach. They then compared results and agreed on final codes, categories and themes until saturation was reached. Further participants would have been invited to undertake an interview if saturation was not reached.

RESULTS

In total, 86 doctors responded to the survey. Most were based in the most populous states in Australia (New South Wales, Victoria and Queensland), almost all had English as a first language and three-quarters were Australian born. The majority of respondents were women (86%), aged 50 years or younger (84%), worked exclusively or mostly in the public sector (57%) and resided or worked in urban areas (67%). Most respondents were working...
in either specialist obstetrics or general practice obstetrics, and almost three-quarters (72%) had between 1 and 15 years of experience providing maternity care. Over 40% of respondents had been tested for COVID-19 at least once (Table 1).

A small proportion (5%) had resumed work in maternity care in response to the call for more healthcare workers due to COVID-19, although more than one-third (34%) had been asked to work outside of maternity care. One in five respondents reported that they were working more or longer shifts since the pandemic began, but most reported no changes in workload (Table 2).

The way care was provided had changed considerably (Table 2). Almost all (95%) reported that their respective health services had developed new guidelines, and more than two-thirds (68%) moved all or most consultations to telephone or video. Of those working in private or billable sectors, more than three-quarters (78%) had been impacted by changes to their billing processes (Table 2).

The most frequent means to obtain information about COVID-19 were professional colleges (36%), followed by the individual’s maternity service (17%). Two-thirds (66%) reported feeling knowledgeable and well informed to care for a woman with COVID-19. Regarding maternity care in the future, less than half (42%) felt that the change would be temporary and then clinical practice would revert to normal, but almost one-quarter (23%) were unsure (Table 2).

Ten survey respondents agreed to be interviewed. Two were subsequently unavailable. Interviews were analysed and recorded and ceased when no new themes were emerging. A total of eight participants were interviewed. The demographical characteristics of interviewees broadly reflected the overall survey sample (Fig. 1).

We present the responses here under themed and sub-themed headings, with example participant responses provided in Table 3. We found emerging patterns from all experts regardless of geographical location or years of experience.

Eight main themes were identified, and subthemes were also explored. While there was some overlap or interconnectedness between themes, each was quite distinct. The dominant themes were
TABLE 2  Clinician experiences during the COVID-19 pandemic period

| Variables                                                                 | Medical practitioners |
|--------------------------------------------------------------------------|-----------------------|
| **Variables**                                                            | **Medical practitioners** |
| **N = 86**                                                               | **n (%)**              |
| Resumed work in maternity in response to the call for more health workers due to COVID-19 | Yes 82 (95%)
|                                                                         | No 4 (5%)              |
| Asked to work outside of maternity care during COVID-19 era              | Yes 57 (66%)
|                                                                         | No 29 (34%)            |
| Status of work in maternity in COVID-19 period                           | Reduced frequency/shorter shifts 11 (13%)
|                                                                         | Stayed about the same 58 (67%)
| Changed process of consultations as a result of COVID-19                 | Moved to mostly telehealth or video calls 57 (66%)
|                                                                         | Moved to all telehealth or video calls 2 (2%)
| Consultation fees/billings changed as a result of COVID-19              | No real changes 27 (31%)
| Academic affects                                                        | Yes 39 (45%)
|                                                                         | No 11 (13%)
| My means to obtain most information and learning about COVID-19          | Not applicable 36 (42%)
| Professional college                                                    | 31 (36%)
| My maternity service                                                    | 15 (17%)
| Websites                                                                | 10 (12%)
| Journal articles                                                        | 9 (11%)
| Colleagues                                                              | 9 (11%)
| Social media                                                            | 7 (8%)
| Mainstream media                                                        | 5 (6%)
| My view on changes to maternity care in the future                      | Change temporarily and then revert to normal 36 (42%)
|                                                                         | Change permanently 14 (16%)
|                                                                         | Change for the worse 4 (5%)
|                                                                         | Change for the better 12 (14%)
|                                                                         | Not sure what changes will be seen 20 (23%)
| My health service developed new guidelines/policies especially for the care of women who had COVID-19 | Yes 82 (95%)
|                                                                         | No 3 (4%)
|                                                                         | I don't know 1 (1%)
| Women have been able to have a support person with them during their labour and birth in my health service | 32 (37%)
|                                                                         | 54 (63%)
| Women are able to have visitors during the postnatal stay in my health service | Yes 6 (7%)
|                                                                         | Yes but it has been limited due to COVID-19 63 (74%)
|                                                                         | No 16 (19%)
| Missing n = 1                                                           | Feel knowledgeable and well informed to care for a pregnant or labouring woman with COVID-19
|                                                                         | Strongly agree 19 (22%)
|                                                                         | Agree 38 (44%)
|                                                                         | Somewhat agree 20 (23%)
|                                                                         | Somewhat disagree 4 (5%)
|                                                                         | Disagree/strongly disagree 5 (6%)

As follows: (i) personal impacts; (ii) professional impacts; (iii) impacts on workforce; (iv) impact on women; (v) information; (vi) communication; (vii) system and model of care changes; and (viii) 'silver linings'.

The **personal impact** was felt by all interviewed, including issues that affected personal health and well-being; challenges with family and parenting; and mental health concerns, stress, finances and loss of income. This was universal regardless of personal circumstances, type of practice, years in practice or geographical area.

The **professional impact** was felt by all participants. The specifics depended on their personal career trajectory and were unique and separate to personal impacts. The professional impacts included decreased job satisfaction, disruptions to obstetric training and changes to the capacity to access continuing professional development. The impact on training was unsurprisingly felt most by trainees. All participants described the immediate impacts and the resultant uncertainty of this ongoing.

Interviewees spoke of impacts on the workforce that encompassed managing changes to the organisation of practices and finding ways of working while accommodating changes to rosters, and the limited availability of cover to replace staff due to illness or furloughing. This theme also included having to manage staff cohorting and, for many, concerns about access to, and usage of, PPE. This related to PPE being in short supply and physically demanding to wear.

The **impact on women** was also recognised, especially women's anxiety and uncertainty, their own personal isolation, their altered access to care, having to accommodate new models of care and having to source new ways of receiving antenatal education.
Interviewees described that there were considerable impacts on women’s partners and support people such as women needing to attend clinical visits and ultrasounds alone; the participants universally found this distressing.

The ability of healthcare providers to access and process information was significant. This included coping with rapidly changing information and guidance, the need for knowledge acquisition and the importance of having reliable and trustworthy sources. This theme focused on scientific knowledge required for clinical practice although overlapping was distinct to communication as the themes emerged.

Communication significantly interrelated with the theme of information and emerged as its own separate theme. New ways of communicating with staff mostly online; managing rapid and amallitude of communications from health services and government; and dealing with new ways of communication with women, partners and other clinicians were described. This also overlapped with system and model changes such that the three themes could form a Venn diagram. Communication also related to how clinicians communicated with each other in the workplace when wearing PPE, but this was not the focus.

System and model of care changes included addressing changes in antenatal, labour and postnatal care; altered links to the community, especially maternal and child health nurses who were not able to perform face-to-face visits in many areas; and changes between private and public services. Those who worked in multiple systems (ie more than one public hospital or both private and public hospitals) noted the changes were not necessarily consistent, which created further confusion. Changes were not always viewed negatively, resulting in several silver linings observed.

Silver linings were mentioned by all interviewees and in most but not all themes. Of note, personal, professional and workforce impacts had no silver linings outlined. Participants felt that the lack of visitors reduced foot traffic and disruptions for women in postnatal wards, which they felt many women valued. The rapid development of telehealth and online education meant increased access for many women and clinicians, although reliable access to phones, video and the internet was needed. Overall, maternity service responses to the pandemic showed that change was possible in a context where change was viewed as difficult in the past.

DISCUSSION

The COVID-19 pandemic has presented many challenges to healthcare services globally and in Australia. At the time of this study, there were no known treatments, and many vaccines were under development. Australia was largely spared the severe acute respiratory syndrome and Middle Eastern respiratory syndrome pandemics that impacted other geographical regions and has had no cases of Ebola virus disease.7 Thus, the COVID-19 pandemic is the first to significantly impact Australia since the influenza pandemic of 1918.7

To our knowledge this is the first study of its kind, offering a snapshot of doctors’ experiences of providing maternity care in Australia at the outset of the COVID-19 pandemic. It was further limited by being a small sample survey of 86 participants, and eight participants were interviewed. The novel, global nature and scale of the COVID-19 pandemic meant that no instrument existed to allow the collection of data from the relevant stakeholders in these circumstances. This makes it difficult to generalise and validate the survey findings. The second wave, predominantly in Victoria, may have since led to different experiences. The strengths are in its national reach with respondents from across all states and territories and a wide range of years of experience.
| Theme                        | Subtheme and categories                                                                 | Sample of coded text                                                                                                                                                                                                 |
|------------------------------|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Personal impact              | Well-being, family, parenting, health, mental health, stress, finances and income       | “It was awful and we hardly saw each other; it was really lonely. I literally went into work and saw my patients and came home again and wasn’t having any social interaction with anybody; yeah it was awful.”
|                              |                                                                                        | “On the home front, I just had a VCE boy who was pretty unimpressed with the whole thing and a university boy for whom it was quite a thing transitioning in his studies, but for him socially, his whole social world completely contracted and he found that very difficult.” |
| Professional impact          | Impact within work environment, job satisfaction, impact on training, impact on continuing professional development | “It was incredibly busy. I didn’t sleep very much and I felt like I was an intern again.” “In a roundabout way, it has been quite an exciting time to be a doctor in a sort of ‘call to arms’ kind of way.” |
| Workforce impact             | Changes to workforce, impact on rosters, cohorting of staff, availability of cover, impact within the workforce | “We saw this enormous panic throughout the whole department, and there was this huge surge of anxiety, huge panic, which was really challenging at the beginning and then what our service did was essentially froze all of our outpatient care for a week, so everything got cancelled and we spent a week or two planning COVID care.”
|                              |                                                                                        | “In our rooms we went into a split roster, so our reception staff split their week into two halves and we did as well in the rooms, so there were just literally two ships in the night, didn’t talk to each other, just kept to ourselves, so the idea was if one half went down, the other half could take over.” |
| Impact on women              | Uncertainty, access to care, model of care, isolation, education, partner and support people | “There was the anxiety for my patients …. What was interesting was that they wanted to see me, and they wanted a face to face and they wanted reassurance. For example, they wanted their partner at the delivery and that you know things weren’t going to change, and some of them also wanted to know they weren’t going to get COVID, which was a tricky one to answer of course.”
|                              |                                                                                        | “There was a lot of anxiety around COVID, and I guess pregnancy is a time when there’s a lot of anxiety anyway, because you are worrying about you know what might go wrong and all of those things and then throwing in COVID which was an unknown …. I was seeing a lot of people who were asking even before pregnancy, had wanted to have a pregnancy, but then they were anxious about trying because of COVID and what that might mean, so there was a lot of discussion about, ‘Is this the time to try and get pregnant or not?’” |
| Information                  | Information sharing, knowledge acquisition                                           | “RANZCOG were right on the front foot, providing us with information that was evidence based, and I was able to then circulate that to my patients by email, and a lot of them have commented on how useful that’s been.”
|                              |                                                                                        | “We got to this stage where we were having all of these meetings and calling meetings and just this enormous flood of emails.” |
| Communication                | Communication of health services with staff, communication of government, communication with patients | “I think it was confusing for the GPs, especially those who shared care with you know two or three hospitals. If you only ever worked with one hospital, I think it’s easier, because you took in their process and the thing is the rules kept changing as we learnt more and more and so it was about how they kept up to date and I think some of the GPs ....”
|                              |                                                                                       | “It was confusing, because there were different things and it changed so frequently, and that was the thing with me managing the COVID. You know the guidelines for COVID sometimes changed every day, so you were just having to constantly know update and that’s hard if you are in a busy general practice managing other things besides pregnancy care.” |
| System and model of care changes | Changes in antenatal, labour and postnatal care
Private versus public, large system versus agility of smaller systems
Links to community care, ie, maternal and child health nurse | “So much changed – you can have one support person in both, you can have your visit to postnatal which was the same person that was there at birth, so very significant changes really quickly into the ways that women accessed our care and the ways we provided it.”
|                              |                                                                                        | “It was much more spaced, so although we had fewer doctors in the clinic, the women were more spaced, so we were seeing them within 10–15 min of them arriving. They were having longer appointments, all of the issues that they had were being addressed because they were truly the women who needed medical care, not this whole volume of people who came in with a question that was really easy to answer.” |

(Continues)
Interestingly while this was a snapshot at the beginning of the first wave in Australia, over 40% of respondents had already been tested for COVID-19 at least once (Table 1). Reassuringly, two-thirds (66%) of survey respondents reported feeling knowledgeable and well informed to care for a woman with COVID-19 despite the early phase in the pandemic. Access to reliable and timely information was valued, with RANZCOG guidelines being mentioned by many.

A global study of more than 700 maternity care providers in high-, middle- and low-income countries showed additional challenges with knowledge acquisition and communication, especially around the care of women with and without COVID-19. This was similar in our study as respondents found the amount of information regarding COVID-19 challenging to deal with. A key finding for future pandemics or disasters may be the need for centralised, evidence-based information with streamlined and consistent communication. Further research, particularly in Victoria, would be beneficial to add to this snapshot.

Only a small proportion of survey respondents (5%) had resumed work in maternity care in response to the call for more healthcare workers, and just over one-third (34%) had been asked to work outside of maternity care. None of the participants interviewed fit into either of these categories, so this could not be further explored in interviews. This and the impact on training would be worthwhile exploring in future research as the pandemic evolves given the survey data and experiences elsewhere including the USA and UK. A qualitative study from Wuhan, China, showed that the intensive work during the pandemic drained healthcare workers physically and emotionally. This study highlighted healthcare workers’ resilience despite personal and professional challenges and showed the need for ongoing support. A study of almost 3000 healthcare workers from 60 countries found that over half reported burnout during COVID-19. Many other countries have faced high numbers of COVID-19 cases, including Spain, Italy, the USA, India, Brazil and Russia. While the situation in Australia has largely differed, our findings demonstrate similar personal and professional challenges for doctors providing maternity care.

Many services around the world have made dramatic changes to how maternity care is delivered. Changes to service provision, such as telehealth for antenatal appointments, were implemented quickly in Australia, and comprehensive evaluations are yet to be published. This snapshot also identified impacts of change across several areas for doctors providing maternity care. Early global data show that telehealth has been viewed favourably by providers in the USA and UK, where telehealth was also rapidly implemented. A New York study found that telehealth was feasible and appropriate in terms of reducing potential exposure to COVID-19 but should be tailored especially for women with high-risk needs. Another U.S.-based study recognised that this model of care may not be ideal for all women but could be developed into a longer-term antenatal model of care for some. More research with a maternity population in Australia is needed to assess both patient and clinician access, satisfaction and feasibility.

The COVID-19 pandemic is not the first and evidently will not be the last public health crisis that the Australian maternity care sector needs to respond to. Several maternity units were impacted by the bushfires across New South Wales and Victoria in early 2020 as this pandemic was evolving. Having a preparedness plan for a pandemic for maternity hospitals may have provided much-needed guidance. While disaster preparedness has not traditionally been taught to maternity care providers in Australia, it may now be time to include this in curricula.

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TABLE 3 (Continued)

| Theme          | Subtheme and categories | Sample of coded text                                                                 |
|----------------|-------------------------|--------------------------------------------------------------------------------------|
| Silver linings | Benefits for personal, professional, workforce, women, models of care and system | “I think there’s been some significant improvements, and I’m hoping some of those will stay. One thing I would say is shutting down the postnatal ward and only having the partners; midwives have got more time to spend with the women. Women quite like it; they don’t have to think about, ‘Oh gosh, I can’t put the baby on the breast now, because ‘Uncle Harry’ is coming to visit’ so it’s really been a positive there.” “I think lots of the changes will prove to be better in the end, but the other thing we noticed, the midwives here noticed is that when we didn’t have people traipsing through our wards into our four-bedded rooms, women are finding it easier to feed babies, because the person opposite’s ‘uncle Trevor’ is not sitting in the room, so I strongly suspect that with the more opening up, we probably won’t open up our postnatal ward quite as much as it was previously.” |

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This snapshot has shown inconsistent and constantly changing information contributing to uncertainty and is an important improvement area for future; and silver linings were observed; these are useful to know and amplify. We need to be aware of lessons learned and continue to be prepared across all of healthcare, including maternity services.

The impacts of COVID-19 are significant and go well beyond the clinical impacts on individuals. Additional research building on this work may provide an opportunity to further explore and amplify the silver linings identified for maternity care and better prepare for future COVID-19 waves, pandemics and other potential future public health challenges.

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