

Enhanced Maternal and Child Health (EMCH) nurses' use of telehealth during the pandemic: feasibility of a virtual model of care in regional Victoria

EMCH evaluation: Student research project

November 2020



Enhanced Maternal and Child Health nurses' use of telehealth during the pandemic: feasibility of a virtual model of care in regional Victoria

November 2020

Suggested citation

Ghazarian, A. (2020). Enhanced Maternal and Child Health nurses' use of telehealth during the pandemic: feasibility of a virtual model of care in regional Victoria. Centre for Community Child Health, Murdoch Children's Research Institute, Parkville

Acknowledgements

I would like to acknowledge the valuable project contributions made by my supervision team:

Associate Professor Louise Keogh and Professor Richard Chenhall, School of Population and Global Health, The University of Melbourne.

Rachel Robinson, Centre for Community Child Health, Murdoch Children's Research Institute.

I would particularly like to thank the EMCH staff who participated in the data collection activities. I would also like to thank my colleagues at CCCH, DHHS and MAV for making it possible to conduct this student research project.

The work presented in this report was undertaken to partially fulfil the requirements of the degree of Master of Public Health at The University of Melbourne. The views expressed herein are those of the author(s) and may not reflect the views of The University of Melbourne and/or the Melbourne School of Population and Global Health and/or the Murdoch Children's Research Institute.

This work is copyright. To request permission to reproduce any part of this material or communication of, please contact the Centre for Community Child Health.

The Centre for Community Child Health is a research group of the Murdoch Children's Research Institute and a department of The Royal Children's Hospital, Melbourne.

The Murdoch Children's Research Institute acknowledges the Traditional Custodians of the land upon which we are located. We pay our respect to their Elders past, present and emerging.

Centre for Community Child Health

The Royal Children's Hospital Melbourne 50 Flemington Road, Parkville Victoria 3052 Australia Telephone +61 9345 6150 Email <u>enquiries.ccch@rch.org.au</u> www.rch.org.au/ccch

Abstract

Background

Health service access barriers in rural Australia strongly contribute to the health disparities between rural and urban communities. International literature demonstrates that telehealth can improve access to services, yet implementation in Australian rural communities is limited. There are research gaps on the barriers and enablers to delivering telehealth in the regional family health setting, particularly for vulnerable families. The changes enacted in the Enhanced Maternal and Child Health (EMCH) service due to the COVID-19 pandemic presented an opportunity to explore this.

Methods

Data on the implementation of telehealth during the pandemic were collected through interviews with EMCH nurses (n=7) in four regional areas in Victoria: Hindmarsh, West Wimmera, Wodonga and Mildura. An interview guide was developed to elicit family and service level barriers and enablers to telehealth. Data were analysed thematically using *Nvivo*.

Findings

The barriers and enablers encompassed three key domains consistent with the existing literature: access to and use of technology, technology skills, and attitudes towards using telehealth. There was a distinction between barriers and enablers, and benefits and drawbacks of telehealth. The former being somewhat modifiable, and the latter being fundamental conditions. The benefits to delivering telehealth included: savings to time and money, and easy coordination with multiple stakeholders (EMCH nurse, other health professionals, family). The most significant drawback was the increased likelihood of missing environmental cues and warning signs via telehealth. This was pertinent to the vulnerable cohort of families who engage with EMCH.

Conclusions

The benefits and drawbacks to telehealth suggest that a hybrid model of virtual and face-to-face care is feasible in the EMCH setting. Barriers to delivering virtual care can be overcome by providing: adequate IT support, access to telehealth infrastructure, and training/support in working with families remotely. Adopting a learning mindset and nurse flexibility are also important factors.

Centre for Community Child Health

Contents

Abstractii
Backgroundii
Methodsii
Findingsii
Conclusionsii
List of figuresv
List of tablesv
Glossaryvi
Introduction1
Background1
About the Enhanced Maternal and Child Health program1
Student research embedded in an existing EMCH evaluation1
Literature review
Methods of identifying and locating research2
Method of review of research
Literature review findings3
Summary and research objectives6
Research methods7
Study design7
Ethics7
Sample selection and recruitment7
Data collection
Data analysis
Rationale for approaches used8
Data analysis methods9
Findings
Demographics
What are the barriers and enablers to telehealth use experienced by EMCH nurses in regional Victoria?10
What are the benefits and drawbacks to a virtual model of care for EMCH in regional Victoria?
Discussion 19

A hybrid model of care in EMCH	19
Suggestions for alleviating barriers	21
Strengths and limitations	22
Conclusion	24
Reference list	25
Appendices	28
Appendix A: Literature review synthesis tables	28
Appendix B: Interview guide	31
Appendix C: Participant information and consent form	33
Appendix D: Coding framework	40
Appendix E: Demographic data	42

List of figures

Figure 1 - Location of study participants	10
Figure 2 - Benefits and drawbacks of the virtual Model of Care in EMCH	15
Figure 3 - Hybrid Model of Care in EMCH	20
Figure 4 - Barriers and enablers to delivering EMCH via telehealth	21
Figure 5 - Age range of Maternal and Child Health (MCH) nurses across regional Victoria, compared to stud sample	у 42
Figure 6 - Qualification of Maternal and Child Health (MCH) nurses across regional Victoria, compared to study sample	42
Figure 7 - Years of experience of EMCH nurses across regional Victoria, compared to study sample	43

List of tables

Table 1 - Key ethical considerations	7
Table 2 - Barriers to implementing telehealth in rural Australia and related settings	28
Table 3 - Enablers and benefits of telehealth in rural Australia and related settings	30

Glossary

Abbreviation /term	Description
CALD	Culturally and Linguistically Diverse
СССН	Centre for Community Child Health
DHHS	Victorian Government Department of Health and Human Services
ЕМСН	Enhanced Maternal and Child Health
LGA	Local Government Area
MAV	Municipal Association of Victoria
МСН	Maternal and Child Health
MCRI	Murdoch Children's Research Institute
PICF	Participant Information and Consent Form
Telehealth	Use of telecommunication platforms (such as phone or videoconference) to deliver health services remotely.

Introduction

The health disparities that exist between rural and regional Australian communities and their urban counterparts are widely known [1, 2]. There is clear evidence on the importance of supporting families and children in the early years in order to establish better health trajectories and reduce some of these health inequalities [3, 4]. Victoria's Enhanced Maternal and Child Health (EMCH) program plays a key role in this, providing targeted support to families experiencing vulnerability. Despite the existence of such services, rural Australian communities remain underserved due to access barriers including; distance, a limited health workforce and fewer local health clinics [2, 5, 6]. International literature demonstrates that delivering health services via telecommunication platforms, better known as 'telehealth', can alleviate some of the service access barriers that exist in rural areas [7-9], yet implementation in Australian rural communities has been limited [10, 11].

The COVID-19 pandemic presented a unique context, where many services traditionally delivered face-toface were required to rapidly pivot their service delivery modes, resulting in a sharp uptake of telehealth [12]. Since March 2020, the directive for the EMCH program has been to limit face-to-face consultations to 15 minutes for essential visits only, supplementing with telehealth where possible [13]. As such, an opportunity existed to explore how this shift had been experienced by EMCH nurses in regional Victoria. Analysis of the existing literature on the barriers and enablers to delivering child and family services via telehealth highlighted a research gap in the regional setting, particularly for vulnerable families. Therefore, this student research project explored: *What barriers and enablers have regional EMCH nurses experienced in implementing telehealth during the pandemic?* These findings will contribute to our understanding of which program elements should be replicated or adjusted to support telehealth use in EMCH beyond the height of the pandemic.

Background

About the Enhanced Maternal and Child Health program

The EMCH program is currently supported by the Municipal Association of Victoria (MAV) and the Department of Health and Human Services (DHHS) [14]. It is one component of Victoria's Maternal and Child Health (MCH) Service, alongside the Universal MCH program and MCH telephone support line [14]. As an outreach service, the EMCH program provides targeted support to families experiencing vulnerability and is delivered primarily by nurses across all 79 Local Government Areas (LGAs) in Victoria [14].

Families can be referred into the EMCH program via the Universal MCH program or other community services if they present with two or more 'risk factors' [14]. These can relate to challenges with family health, wellbeing and safety, child learning and development, parenting capacity, and environmental factors [14].

Student research embedded in an existing EMCH evaluation

In 2018, DHHS commissioned the Centre for Community Child Health (CCCH) to undertake a three-year evaluation of the EMCH program. In 2020, as restrictions were imposed upon the conduct of many services

due to the COVID-19 pandemic, DHHS in turn enacted changes to EMCH service delivery. The CCCH evaluation was pivoted to explore these changes in practice by shifting the methodology from a process and outcomes evaluation to a developmental evaluation. The developmental evaluation involved multiple rapid cycles of data collection, analysis and reporting to inform DHHS and MAV decision making. This presented an excellent opportunity to carve out a small qualitative research project from the broader evaluation. This research project explored regional EMCH nurses' use of telehealth and the associated barriers and enablers to service delivery during the pandemic. It is important to note that the author has a professional role on the broader EMCH evaluation. However, this research was conducted entirely in the student role, independently of the broader evaluation.

Literature review

Methods of identifying and locating research

The search strategy was defined using a framework inspired by elements of PICO (Participants, Intervention, Context, Outcomes). Truncation (*) and Boolean (OR, AND) searching techniques were applied to the framework as follows:

- *What is the service:* Nurse* OR nurse practitioner* OR community health OR Child Health Services OR Maternal Health Services; AND
- *How is it being accessed:* Remote consultation OR telephone OR videoconferencing OR Telemedicine; AND
- Who is accessing it: Matern* OR mother* OR parent OR child*
- *What do we want to know*: Barriers OR obstacles OR challenges OR enablers OR facilitators OR perceptions OR experience

All searches were limited to results written in English in the last 10 years to only include findings about more recent telehealth technology. Using the database Ovid (Medline) returned 86 results, of which 23 were relevant. Repeating the search in CINAHL (Ebsco) returned 152 results, however, most were irrelevant, with the search only yielding two novel articles of significance. Keywords were also used in Google Scholar (e.g. telehealth, nurse, barriers, enablers, pandemic) which yielded five novel articles of relevance. After reviewing these 30 articles in more detail, 17 were deemed suitable for inclusion in the review. This was determined based on their application to the research setting of interest, and included the following criteria:

- Delivery of structured programs via telehealth, as opposed to generalist telephone support lines
- Experiences at the service provider level, as opposed to the broader policy setting
- Programs conducted in Western, developed countries (i.e. United Kingdom, Nordics, Canada, and the United States of America)

Method of review of research

The aim of this review was to understand what is known about the barriers and enablers to delivering child and family services via telehealth, and to examine any gaps in the literature. As the findings in this research project may be used to inform policy decisions within EMCH, elements of rapid realist review methodology were applied [15]. The literature was reviewed with a utilisation-focussed mindset, searching for key mechanisms and contexts that support or undermine successful telehealth implementation [15]. Findings were then analysed and synthesized according to key barrier and enabler themes. This approach helped construct the research paradigm and informed the development of the qualitative analysis framework used in this report (see <u>Data analysis</u>) [16].

Literature review findings

Effectiveness of telehealth

A number of systematic reviews revealed promising evidence to support the use of telehealth across maternal and child health, both in Australia [17] and internationally [9, 18-20]. Reviews focusing on maternal and child health globally, although highlighting many positive telehealth outcomes, were largely inconclusive [9, 18]. Nevertheless, these reviews demonstrated that in some settings, similar or better maternal and child health outcomes can be achieved via telehealth, such as: improved attendance rates; increased service satisfaction; positive perinatal behaviour change; increased referrals to other community services; reduced delays in patients seeking access to medical care; and more accurate data collection and management [9, 18].

Reviews conducted in specific contexts generated more conclusive findings. A systematic review focusing on maternal mental health in developed countries strongly concluded that interventions delivered via telehealth were effective in improving maternal depression and anxiety [19]. Furthermore, two systematic reviews – one focussing specifically on gestational diabetes [20] and another focussing on rural allied health in developed countries [21] – surmised that telehealth was not an inferior alternative to face-to-face care. When it came to the Australian context, systematic reviews were limited to findings across multiple health disciplines, but again concluded that telehealth outcomes were comparable to face-to-face care, with added benefits for rural communities such as improved access and decreased associated travel costs [17, 22]. Encouragingly, these findings were echoed in a highly relevant and rigorous randomised controlled trial conducted in the South Australian maternal and child health nursing context [23]. It is important to note that this trial examined the effectiveness of a hybrid model of clinic-based and internet-based support compared with home-based support [23]. This suggests that implementation of an entirely virtual model may not be feasible for the EMCH program either. This is because EMCH families represent a significantly more vulnerable demographic than the cohort in the South Australian study [14, 23] and the benefits of nurse home visiting models for highly vulnerable families are widely known [4, 24]. However, in the regional setting with the added complexity of COVID-19 restrictions, home visiting is not always possible. Thus, a hybrid model of home visiting and virtual-based care may be most appropriate for the EMCH program.

Barriers and enablers to delivering telehealth

Despite evidence of its effectiveness and the benefits of using telehealth in rural communities, the limited implementation in Australia [10, 11] signifies a need to better understand what hinders or facilitates uptake. Of course, within the maternal and child health context, some aspects of telehealth have been widely used for decades with the existence of phone support services such as the Victorian MCH Line, Parentline, the National Perinatal Anxiety and Depression Helpline, and the Australian Breastfeeding Foundation Helpline [25]. However, these helplines only offer generalist advice [25] which does not present the same challenges as delivering structured programs such as EMCH via telehealth.

Analysis of the existing literature on structured telehealth programs being delivered in Western, developed counties revealed barriers and enablers related to six key themes: infrastructure, management, service design, regulation, knowledge and skills, and practitioner attitudes. For a complete synthesis of the literature, see <u>Appendix A</u>. Key findings are summarised below.

Infrastructure

Availability of equipment and technical support was a key barrier for allied health professionals working in rural and regional locations both in Australia and in other developed Western countries [10, 26-28]. A challenge of particular relevance to the Australian context was inferior internet connection in rural and regional settings in terms of affordability, speed and download limits [10]. Due to the political nature of this issue in Australia [10], internet connection barriers may be more arduous to overcome than other infrastructure barriers. In fact, findings from other studies indicated that appropriate provision of technical support and equipment meant that infrastructure could also be perceived as an enabler for telehealth [17, 29].

Management

Management approaches were key to the success or failure of telehealth adoption in many developed Western countries, particularly for nurses in both rural and urban regions. Where a lack of guidance and purpose existed, telehealth failed [28]. Where institutional support was evident through setting clear goals for telehealth and local clinical champions promoting its use, unsurprisingly, it succeeded [17, 26, 29, 30].

Service design

Similarly, appropriate service design was a clear enabler for telehealth use, whereas poor service design created barriers. In rural and urban settings across the Western world, paediatricians and nurses reported not being able to conduct certain assessments via telehealth, such as vulnerability screening and child development checks [26, 28, 31]. Nurses also raised issues with uncertainty about patient suitability for telehealth, particularly for those with severely high-level needs [28, 29, 31]. However, other examples showed that with flexible service design, telehealth could be adapted for individual clients, including those with high needs [17, 28, 29, 32]. Furthermore, implementation of simple and standard referral process and

guidelines to determine suitability for telehealth was particularly important for successful telehealth nursing practices in all settings [28, 29, 32]. Another enabler of critical importance in the rural Australian setting, was designing telehealth services to be provided by locals with an understanding of the community and its culture [10].

Regulation

Regulation, or lack thereof, was perceived as a barrier to delivering telehealth services across the Western world. For example, many nurses raised concerns about the privacy issues presented by using telephone and videoconferencing platforms to discuss sensitive health matters [28]. In Australia, lack of laws governing professional standards for providing care via telehealth was an issue for all allied health professionals [10].

Knowledge and skills

Reservations about personal technology skills repeatedly appeared as an issue in all settings [10, 26, 28, 29]. In rural Australia, workforce shortages and high turnover introduced further barriers for all allied health professionals, leaving limited time to upskill [10]. Conversely, practitioners with extensive computer experience or access to practice-based training felt confidence in their technological skills, naturally enabling their use of telehealth [28, 29]. It should be noted that the literature was unclear as to whether this applied in rural or urban settings.

Practitioner attitudes

Upon reflection, it was evident that barriers and enablers across the above themes were inter-related and could influence practitioner attitudes depending on individual reflexiveness. For example, some practitioners felt that adapting to new technology was overwhelming, which linked to doubts about the effectiveness of telehealth compared to traditional methods [10, 27-29]. However, others felt that telehealth provided an opportunity to learn and experiment [28, 29]. It is possible the attitudes and behaviours being modelled by management had an impact on this. In addition, some practitioners perceived an increased workload due to telehealth, which contributed to their reluctance to use it [10, 28, 29]. This was associated with additional telehealth training requirements and an expectation to increase caseload [10, 28, 29]. Interestingly, other allied health practitioners in rural and urban settings noted that telehealth led to more efficient management of caseload [17, 28, 29, 31]. It is possible that these perceptions could depend on the service design, discussed in an earlier section. In rural settings across the Western world, some practitioners felt that telehealth was detrimental to their patient relationships due to poor communication channels and lack of physical contact [10, 26, 28]. Conversely, some nurses in urban and rural regions felt that telehealth enhanced communication and led to better patient relationships [28, 32]. This was linked to a sense that telehealth allowed patients to feel more comfortable communicating sensitive topics [28, 32]. Finally, telehealth was perceived by some to have potential to create a redundancy for the nursing role [27-29]. However, others felt that telehealth created a stronger impetus for their role due to the associated patient benefits such as improved access, convenience, and reduced healthcare costs [26, 28-31].

Summary and research objectives

Telehealth can be an effective way to provide access to maternal and child healthcare in remote Australia. Analysis of the existing literature on the barriers and enablers to delivering child and family services via telehealth revealed that most findings relate broadly to allied health practitioners across rural Australia. There is existing research specifically related to nurses in other developed, Western countries. However, there are limited studies merging both maternal and child health nursing and rural Australia.

The literature presented more barriers than enablers, most of which were inverse to each other. This suggests they are context-dependent and can be easily influenced by practitioner attitudes. This emphasises the importance of understanding the underlying drivers for success that play out in specific settings. With the ongoing threat of the COVID-19 pandemic, and continued uncertainty around physical distancing requirements, there is an even greater need to understand what makes telehealth work well. As such, there is a need to conduct further research in the regional Victorian EMCH context. This research project explored the question: *What barriers and enablers have EMCH nurses experienced in implementing a virtual model of care during the pandemic?* These findings will contribute to our understanding of which program elements should be replicated or adjusted to support the *feasibility of a virtual model* beyond the height of the pandemic.

Research methods

Study design

This research project sat within an existing evaluation of the EMCH service being conducted by the CCCH (see <u>About the evaluation</u> for more detail). It explored EMCH nurses' use of telehealth and the associated barriers and enablers to service delivery, with a focus on regional locations in Victoria.

Ethics

As this research project involved collecting data from participants via interview, ethical approval was required. The broader CCCH evaluation had ethics approval from the Royal Children's Hospital Human Research Ethics Committee (protocol number 38328, approved on 31/01/2019). This application was varied to add this student project, and approval was received on 15/07/2020. The ethics submission address key ethical considerations, which have been summarised in the table below.

Ethical consideration	How it was addressed
Working with professionals who	Designed the interview schedule to avoid topics directly related to
work with vulnerable populations	detailed and personal client issues.
and children	
Working sensitively with	Recruitment of nurse participants leveraged existing relationships
community stakeholders	with CCCH evaluation staff.
Working with professionals with	The interview schedule was designed so that interview times did
existing busy schedules	not exceed 60 minutes. The interviewer organised interviews at
	flexible times that suited the participants.
Informed consent and	Informed consent was obtained from participants prior to
confidentiality	conducting interviews.

Table 1 - Key ethical considerations

Sample selection and recruitment

The study population is EMCH nurses working in regional locations in Victoria. Four LGAs were selected for participant sampling: Hindmarsh, West Wimmera, Wodonga and Mildura. These LGAs were selected based on their regionality and their involvement in the existing CCCH evaluation. Hindmarsh and West Wimmera were specifically chosen due to their involvement in the By Five Specialist Paediatric Support Partnership telehealth project [33], making them valuable informants on the broader implications of telehealth for their community. Wodonga and Mildura were selected as they represent larger sites with a higher proportion of people from Aboriginal and Torres Strait Islander background and Culturally and Linguistically Diverse backgrounds [34].

Nurses were initially contacted via email to explain the study and scope interest. Nurses were then sent a follow up email with the participant information and consent form (PICF) (see <u>Appendix C</u>), and were

invited to call the researcher if they had any queries or concerns. Once the nurses had read and understood the study information and had provided consent, further emails were exchanged to arrange an interview or focus group at a time convenient for the nurse. All six nurses who were contacted agreed to participate.

Data collection

An interview schedule was designed to elicit personal, service-level and family-level barriers and enablers to the use of telehealth in EMCH program delivery (see <u>Appendix B</u>). Interview questions were structured around various stages of the model of care as described in the EMCH program guidelines (program entry, clinical management, transition of care) [14].

All data was collected via phone or videoconference. Three interviews were conducted via phone (n=1, Wodonga, Hindmarsh and West Wimmera) and one focus group was held via Microsoft Teams (n=3, Mildura). With participant consent, interviews and focus groups were recorded and then transcribed using third-party transcription companies (Rev.com and Transcriber Online) for which non-disclosure agreements exist.

Some data from the broader CCCH evaluation was also used. This included EMCH workforce demographic data and additional interview data from a separate phone interview with the same nurse in West Wimmera and a focus group with two nurses in Wodonga (the same nurse interviewed above and her colleague), bringing the total number of participants to seven. This data was collected with a different interview schedule, however, parts of the data related to this research and were included opportunistically. The same PICF was used during for these interviews/focus groups (see <u>Appendix C</u>), meaning that inclusion of this data was ethically sound.

Data analysis

Rationale for approaches used

The findings from the literature review highlighted the importance of acknowledging research participants' unique interpretations of what they consider has facilitated or hindered telehealth implementation in their area. Therefore, it was valuable to adopt a constructivist paradigm in this research, whereby these interpretations were explored in an open-ended way [35]. Whilst the literature review uncovered high-level themes that were used to underpin the qualitative analysis framework used in this research project, in line with the constructivist paradigm, it was important to allow unique sub-themes to emerge from the data [16]. This was achieved by employing an inductive approach to thematic analysis [36]. This method was selected because it is flexible, relatively quick and easy, and effectively summarises complex sets of data [36].

Data analysis methods

Interviews and focus groups generated a large amount of data. As such, data was stored and managed using *NVivo* software and analysed using inductive thematic analysis [36]. The analysis methods used were developed based on approaches described in the SAGE Handbook of Qualitative Data Analysis [37].

Step 1: Building a coding framework

The first step in this process involved data familiarisation and creating a unique coding framework (see <u>Appendix D</u>). This entailed forming main categories and sub-categories. The formation of these categories included concept-driven approaches based on knowledge from the literature review and data-driven approaches such as adding new concepts that emerged from the data. These categories were then discussed with the supervision team and revised accordingly.

Step 2: Testing and modifying the coding framework

The next steps were to first code data to main categories, then code to sub-categories. This involved an iterative approach of data immersion, coding and modifying or creating new categories as they emerged.

Step 3: Validating the coding framework

Next, the coding framework was validated by revisiting the full dataset with the revised framework to confirm that saturation of themes was achieved.

Step 4: Main analysis and write-up

The final step involved reviewing the data under each code in order to formulate a meaningful interpretation of the data. These interpretations are summarised in the next section.

Findings

Demographics

The study population was EMCH nurses working in regional locations in Victoria. The study sample of seven nurses were from Wodonga, West Wimmera, Hindmarsh and Mildura (see Figure 1). To maintain participant confidentiality, demographic data was collected anonymously and aggregated for reporting. Pseudonyms have also been used throughout this report.

The nurses participating in this research were all females aged 50 and above and almost all had been working in Maternal and Child Health (MCH) for over 10 years. Their qualifications were Graduate Diploma in Nursing or higher. These characteristics represent the most common characteristics of the general population of regional Victorian MCH nurses (see <u>Appendix E</u> for full dataset).



Figure 1 - Location of study participants

Source: Google Maps

What are the barriers and enablers to telehealth use experienced by EMCH nurses in regional Victoria?

Nurses at four select sites were interviewed about the barriers and enablers they experienced in their use of telehealth during the pandemic. As these nurses work closely with families, nurse perceptions of barriers and enablers to families' use of telehealth were also relevant and have been included in this section. It is important to note that the data highlighted a clear distinction between barriers and enablers, and the benefits and drawbacks of telehealth. The former appeared to be somewhat modifiable, whereas the latter were related to fundamental conditions which are difficult to change. As such, these have been reported on separately. The barriers and enablers encompassed three key domains: access to and use of technology, technology skills and attitudes towards using telehealth.

Access to and use of technology

Internet connectivity

Based on the literature review findings, it was unsurprising that poor internet connectivity presented a significant barrier to telehealth use across all four participating sites. Internet was described as slow and unstable for both nurses and families, or entirely lacking in some particularly remote areas. In these situations, telehealth was simply not feasible, and nurses had to visit families face-to-face.

"I've got one client where Telstra doesn't reach her. So, the other day I had to take the satellite phone with me when I did a home visit... a video call would not be feasible for her at all. But then, that's some distance away." - Karen

Data and phone credit

Families' lack of access to phone credit or sufficient data plans was another key barrier for telehealth use. This barrier was of particular importance in this setting, as many families who engage with the EMCH service experience high levels of financial vulnerability [14]. Multiple nurses described situations where families could not pay bills for credit or data.

"Some of them don't have data on their phone and ... some of them don't have enough money for credit"

- Michelle

Applications

Nurses had access to a wide range of telehealth applications, which enabled them to contact families remotely, as well as facilitate links between families and other health agencies. For some, council-level barriers existed when accessing Zoom (due to privacy concerns) and Microsoft Teams or Healthdirect (due to delays in acquiring licences).

When contacting families remotely, nurses were flexible in their approaches and adapted to whatever technology the family had available to them. Video call via phone (e.g. FaceTime), audio call via phone, and text message were primarily used. Nurses described these methods as the most accessible for families as they did not require families to download new applications. All but one nurse had access to Healthdirect through their council, however due to nurses only recently acquiring access, this platform was not being widely used for EMCH consultations. Those who had used Healthdirect for EMCH consultations found it better than other applications in terms of usability and clarity of connection.

When facilitating links between families and other health agencies, a huge variety of platforms were mentioned. These included: Healthdirect, Microsoft Teams, Skype, StarLeaf, Zoom, Jitsi and WhatsApp.

Interestingly, the sheer variety of platforms available was a barrier to their use – a situation that may be unique to the pandemic context due to the unprecedented and widespread incline in use of teleconferencing technology. Nurses described how switching between platforms often caused confusion, both for themselves and with families. Despite most nurses being able to access these platforms (through their council license or via an invitation from another agency), some families were unable to access these platforms due to not having the application downloaded on their device. In these situations, nurses arranged to visit families face-to-face, bringing their own devices to enable these links with other agencies.

"The other day I actually did it with a family, so we did the consult with the speechie, because mum didn't have MS Teams, but I did. I've got it. I said to her, 'Look, I'll come, I'll do the [key developmental] check, and then we can do the speech appointment,' rather than miss out completely. Because the child would have missed out because the parents didn't have the technology." — Julie

Equipment and devices

Depending on their access to equipment, nurses' use of telehealth was either facilitated or hindered. Nurses at two sites said they had access to everything they needed, whereas nurses at the other two sites experienced issues. One explained not being able to use the internet on her laptop due to not having the correct cable, and another explained that until recently, she did not have a phone that supported the use of the various applications described above. In terms of families' access to devices suitable for telehealth, one nurse commented that access to a phone was much more feasible for families than access to a computer, particularly in the regional EMCH setting.

Technology skills

Technology literacy

With the pandemic, the requirement to rapidly acquire skills in using new technology imposed an initial challenge for some nurses. However, this was not an ongoing barrier to telehealth use. This group of nurses appeared to have a learning or trial-and-error mindset which enabled them to overcome this barrier with time. This is described in detail in a <u>later section</u>.

Most nurses explained that a subset of families face similar challenges due to their lack of proficiency with technology. Logging on to telehealth applications was particularly challenging for those with lower-level English language skills, one nurse described. However, nurses at two sites described how they assisted families to overcome this barrier by demonstrating how to use the applications in-person.

"I think with some of the families who struggle with their reading and writing, they have felt overwhelmed... but once you actually sit with them and show them what to do, that is a lot better." — Deborah

Support for nurses

Nurses experienced varying degrees of support from their IT department, colleagues and formal training. This mainly related to the initial setup and ongoing use of telehealth applications. Support from IT enabled nurses at two sites to utilise the applications available to them. Conversely, nurses at the other two sites had trouble accessing IT support due to the service being outsourced and only provided during limited hours. Naturally, this lack of support introduced another barrier for these nurses' use of telehealth.

In terms of building confidence and skills in use of telehealth applications, nurses at two sites had access to formal training in Healthdirect – notably, these were the same two sites who had adequate IT support. Two nurses said this training empowered them to use the telehealth applications, whereas one nurse felt she required further training. Another nurse who had not received any training commented that having access to this would be very helpful. In the meantime, this nurse was supporting her own learning, for example, logging into videoconference meetings early to allow enough time to set up correctly.

Nurses at some sites were also supported by opportunities to learn applications with their colleagues and with EMCH families. Interestingly, one nurse reflected that this resulted in better connections with families due to creating mutual ground which supported genuine connections.

"And I think sometimes better connections with parents because we're all learning. And they're great they point stuff out to me, and I think if you can have a laugh at yourself, while you're learning, they really appreciate that" — Julie

Attitudes

Learning or trial-and-error mindset

Anxiety about change or use of new technology, although present, did not appear to be a barrier for the nurses interviewed. Two nurses expressed that these adaptations were accompanied by an initial apprehension, however, this was unsustained. In fact, most nurses spoke of their success in improving their technology capabilities when they embraced the learning mindset and demonstrated courage in trying new things.

"I'd never heard of [telehealth application] before. I was all anxious, 'Am I going to [be able to] get on?' and all that stuff. But it was easy - I just got on straight away." — Michelle

"I'm really proud of myself. Coming from the world of BC, before computers, and having to be self-taught in so many areas...So I can't put together an Excel sheet, but there's plenty of other things I can do in this sphere. I think a lot of it has been flying by the seat of our pants and making it up as we go along." — Maria

Face-to-face interaction is superior

A key barrier revealed in the literature review and mirrored by nurses across all participating sites, was practitioner doubts about the effectiveness of telehealth compared to traditional face-to-face methods. Nurses at all four sites commented that it was much harder to build rapport and trust via telehealth, particularly for new clients. Interview data suggests this may have even greater significance in the EMCH setting, where families experience multiple adversities and often depend on home visiting services. Nurses explained that managing family violence or mental health concerns cannot be effectively managed remotely due to missing environmental warning signs, the challenges of building rapport remotely and safety issues with asking sensitive questions remotely. The pandemic created an additional layer of complexity, due to many families experiencing higher degrees of social isolation during this time.

"The thing is with Zoom and MS [Teams], you're still doing a bit of observation and stuff but I would probably, depending on the family, if you're looking in the enhanced environment, I think I'd do a face-toface. Because it's that engagement, it's really important, that social contact with a lot of these families, because they feel isolated enough as it is." – Narelle

What are the benefits and drawbacks to a virtual model of care for EMCH in regional Victoria?

It appeared that telehealth had some major drawbacks specific to the vulnerable cohort of families who engage with EMCH. Nevertheless, telehealth also had some clear benefits. These benefits and drawbacks were applicable at different stages of the model of care, indicating which parts of the model may be best suited to virtual modes of delivery, and which are best suited to face-to-face. These are depicted in Figure 2 below.



Figure 2 - Benefits and drawbacks of the virtual Model of Care in EMCH

Program entry

Nurses at all sites reported that use of teleconferencing technology had enabled better connections with their EMCH team and other health professionals. These connections facilitated quick response times when following up with other health professionals regarding a client referral into EMCH, and for team intake meetings. However, nurses at two sites raised drawbacks of other services using an entirely virtual model, sometimes resulting in inappropriate referrals and an increased demand on EMCH nurses to accept clients – but this is likely to be unique to the pandemic.

Clinical management

Consultations

Nurses noted that although delivering EMCH consultations via telehealth had benefits such as saving time on travel and providing a unique opportunity for nurses and families to learn new skills together, this part of the virtual model of care was mostly associated with drawbacks. The most significant issue raised by nurses was the increased likelihood of missing environmental cues and warning signs via telehealth. As mentioned earlier, all nurses described challenges such as not being able to see how the household was functioning, and not being able to ask sensitive questions due to the challenges of building rapport and trust via telehealth. This interfered with nurses' ability to apply accurate clinical judgement to a situation and raised concerns for family safety.

"Because of the current situation [we] had been doing phone calls. We hadn't actually met [the mother] or been to the home or met the husband. So, a few weeks ago, before she birthed, we thought we have to go and meet her face-to-face and go to the home. And honestly, it was just shocking. There was no way that house was liveable. There was no way they could take the child there. And then we further discovered that the partner had a massive family violence record... we could have picked that up a lot earlier." — Deborah

"[The client is] going to sit at their kitchen table with the video, and all you'll see is what's behind them... You're not going to see the cascading washing come down the hallway. You're not going to see all the other rubbish that's accumulated. You're not going to see the sink overflowing with dishes and baby bottles. You're not going to see that unless you're there." — Maria

These factors led nurses to conclude that an entirely virtual model would not be feasible in EMCH, but that it may be beneficial to deliver parts of the model virtually.

"It would be good to keep that I think, a combination of home visits as well as contact by other means." — Deborah

"Look, if they'd had a couple of face-to-faces and built a relationship and a trust and a rapport, and then you had to do every fourth one by video, it could work." — Maria

When nurses were asked how they identify families who require a home visit versus those who could be seen virtually, a few key criteria were raised. There was a sense amongst most participants that gaining knowledge of household functionality and establishing rapport with families face-to-face were foundational to the continued provision of care. This in combination with other information such as client histories, and information gathered in between home visits (e.g. via text, phone or opportune meetings in a small country-town) informed the decision-making process to see the client face-to-face or virtually each time. Family preferences were also an important factor in the decision-making process. One nurse explained that including families in this process was key to providing them with a powerful sense of autonomy.

"You're also asking the family, 'Would you like another visit? Or would a phone call be preferable?' So you're actually giving ownership to the family, the ownership of support. Because they can determine the type of support that's needed." – Narelle

Co-consultations

Nurses at all four sites noted that telehealth had been extremely beneficial in bringing multiple health professionals together simultaneously, including specialist practitioners who would otherwise be very difficult for regional families to access due to distance.

"I'm actually finding with our Out of Home Care families that we're all communicating better on Zoom. The other day...we had everybody on there. We had the mother, the foster parents, we had all the other agencies involved, and I think that worked really well for that family because they live out of town as well, but we were able to all be together and all discuss what's going on." — Michelle

It is important to note that in the EMCH setting, co-consultations most commonly relate to coordination of simple functions rather than management of complex medical conditions. For example, a joint consultation with the nurse, the mother, the foster parents, and Family Services can enable collaboration on the family's care plan, and provide an opportunity for the practitioners to ensure the family understands the plan and how to implement it.

Transition of care

Nurses at three sites noted that families preferred face-to-face contact, particularly during increased social isolation during the pandemic. EMCH nurses, being one of the few services during the pandemic who were permitted to provide short face-to-face appointments where necessary, were finding it challenging to make referrals out of EMCH due to other services providing limited, if any, face-to-face care during the pandemic.

"Most of the time we're not even bothering with referrals to speech, physio, all those other things, because we know perfectly well they're not going to see a human, so [the families] just say, 'I'm not even going to bother.'" — Maria

Nevertheless, a clear benefit to using telehealth during the transition of care phase was noted by one nurse. Prior to the pandemic, transitions out of EMCH were rarely done in conjunction with the EMCH nurse, the family and the third-party professional due to the challenges of physically bringing together three people in different locations. However, use of telehealth enabled an easy opportunity for a joint transition meeting between the family, the EMCH nurse and the Universal MCH nurse.

"I just referred someone back to the universal service the other day, but before I did that, I had a [telehealth platform] meeting with the Universal nurse, to hand over...But the mum was also aware that I was going to do that, and I invited her as well. So, that's probably been an upside because normally that wouldn't happen...but we did our closure as three people in a meeting the other day." – Julie

Discussion

This research highlighted many benefits to delivering family health services remotely in regional Victoria, but also revealed some important challenges. Systematic reviews across multiple health disciplines have concluded that telehealth outcomes are comparable to face-to-face care [17, 22], and can reduce health inequities in regional communities by improving their access to healthcare [7-9]. Interview data reiterated that telehealth improves families' access to coordinated and specialist care in regional Victoria and contributed to our understanding of how to better support vulnerable families. This research revealed that telehealth does not only improve families' access to individual practitioners, but to entire teams of practitioners simultaneously. This has the potential to shift family health services towards a more holistic, client-centred response. This 'wraparound' approach is known to be an effective way of supporting families experiencing high levels of adversity [38-40], and is supported by DHHS [41]. Despite the benefits of telehealth, this research emphasised that telehealth is not appropriate under all circumstances. Since the literature review was conducted, there has been an increasing body of evidence on the use of telehealth during and beyond the pandemic. Telehealth is currently being widely used across health services, with the consensus that there are parts of care that cannot be done virtually [42-45]. Published findings related to practical challenges, such as physical examinations and procedures [42-45], which differs to the elements explored in this research project. This research contributed novel findings related to the more intuitive aspects of care, such as picking up on environmental cues and warning signs. It also generated important findings about telehealth being better suited to specific phases of care when working with vulnerable families - a detail lacking in the current body of literature.

A hybrid model of care in EMCH

Telehealth enabled easy coordination of multiple stakeholders in multiple locations, improving families' access to healthcare. These benefits were linked to parts of the model of care such as intake, referrals and co-consultation. Nurses noted that telehealth use in the consultation phase had benefits such as savings on travel and providing a unique opportunity for nurses and families to learn new skills together. However, there were also critical drawbacks. The most significant being the increased likelihood of missing environmental cues and warning signs via telehealth, due to the limitations of being unable to see the whole environment in which a family is functioning. This emphasises that despite the benefits of telehealth, there are equally important benefits of nurse home visiting models for highly vulnerable families [4, 24]. As such, a hybrid model of virtual and face-to-face care may be most feasible in the EMCH setting - a view validated by participants.

Whilst there is the opportunity, it is important to codify the parts of this system that worked well and the parts that did not [46]. Embedding the innovative and beneficial parts beyond the pandemic is an important step in the continued growth and improvement of the service [47]. As such, based on the interview data, a depiction of the potential hybrid model of care in EMCH has been provided in Figure 3.



Hybrid Model of Care in EMCH



Figure 3 - Hybrid Model of Care in EMCH

In the hybrid model, a family could be referred in using phone or email. Then, the EMCH team conduct a videoconference for their intake meeting to allocate the family to a nurse. A home visit is required somewhere at the beginning of the clinical management phase to allow the nurse to assess the household environment. The nurse then uses a combination of clinical judgement, knowledge of client history and information picked up during or in between consultations to decide on the mode for future consultations. At this point, family preferences are also discussed, providing families with a powerful sense of autonomy. Co-consultations with other allied health professionals and referrals back to the Universal MCH Service are best managed virtually, as this allows for easy coordination of multiple stakeholders in multiple spread out locations. This is pertinent to the regional Victorian setting and the service access barriers previously mentioned. Clearly, pursuing this hybrid model beyond the pandemic could have a great impact on the health inequities experienced by regional families. However, there are still important barriers to overcome before it is possible to optimise the virtual care component.

Suggestions for alleviating barriers

The key barriers to delivering telehealth are shown in Figure 4. This figure also includes potential ways to overcome these barriers, which have been suggested based on interview findings and knowledge from the literature review.



Figure 4 - Barriers and enablers to delivering EMCH via telehealth

Notably, the internet connectivity barrier underlies the utility of all virtual methods of care. Unfortunately, due to the political nature of this issue in Australia [10], internet connection barriers may be more arduous to overcome than others. This raises concern, as the 'digital divide' between high and low socioeconomic groups may in fact contribute to health disparities with the uptake of telehealth, rather than minimise them [48]. As such, it is important to advocate for digital equity in terms of access to high-speed broadband [48, 49]. Nevertheless, increasing IT support and building a work culture conducive to the learning mindset may assist with overcoming issues associated with technology skills and the associated anxiety about change. This aligns with findings from the literature review indicating that building a positive culture around telehealth use, driven by strong management approaches, was key to the success of telehealth [17, 26, 29, 30, 48].

A key barrier was the attitude that face-to-face care is superior to virtual care. There were parallel views in the literature, with practitioners noting that telehealth may not be suitable for patients with high-level needs [28, 29, 31]. Importantly, there is also literature to suggest that telehealth could be adapted for individual clients, including those who are highly vulnerable [17, 28, 29, 32]. As such, this barrier could be alleviated by providing nurses with training in how to work with vulnerable clients remotely [50]. However, it is important to acknowledge the challenges with training engagement in rural Australia, due to workforce shortages and high staff turnover, leaving limited time to upskill [10]. Therefore, this suggestion would require active support from governing bodies such as DHHS and MAV, through investments in training and making arrangements to protect practitioners' time for upskilling amongst busy workloads. DHHS and MAV may also wish to consider sourcing clinical supervisors with expertise in working with families remotely. These clinical supervisors could then facilitate nurses to undergo reflective practice in this area, leading to workforce upskilling.

Another key barrier highlighted by this research was the confusion caused by the multitude of telehealth applications being used across the family services sector. A way forward may be to promote cohesion across the sector to use a limited number of platforms - enough to allow for flexibility and family preferences, but few enough to alleviate this as a barrier. Serendipitously, it may also help alleviate other barriers such as a lack of access to applications, experienced by both families and nurses.

Strengths and limitations

Conducting this research during the pandemic was a key strength as it created the opportunity to codify innovative practice. This piece of qualitative research provided an in-depth exploration of nurses' use of telehealth with highly vulnerable families in regional Victoria, filling a research gap. It contributed valuable findings about current practices within EMCH and the associated implications for EMCH moving forwards. This has applications to other family services in regional Victoria.

There are some generalisability limitations due to the small sample size, which was all nurses. This study sample was demographically representative of the broader regional MCH workforce, however the workforce also sometimes consists of other allied health professionals, such as social workers, who may have differing views. Furthermore, this research does not directly capture the views of families, who are the

primary users of the EMCH service. Although, as these nurses work so closely with families, their sense of the family perspective is fairly accurate. In addition, it is encouraging that the findings from this research echo those seen in the broader literature.

Finally, it is important to acknowledge the author's dual role – as both a student on a discrete research project, and a professional in the broader CCCH evaluation. This brought a strength due to the researcher's deep knowledge and understanding of the EMCH context. There were also existing relationships with participants and EMCH policymakers at DHHS and MAV, increasing the utility of these findings. However, this may have also resulted in a degree of bias in the interpretation of findings.

Conclusion

This research showed that retaining parts of the virtual model beyond the pandemic could have great benefits, such as improving families' access to coordinated and specialist care. Virtual methods are best suited to parts of the model of care such as intake, referrals and co-consultation, but it is critical for the nurse to physically see the home environment at some point when working with vulnerable families. Thus, there is strong evidence to support the feasibility of a hybrid model of virtual and face-to-face care in EMCH beyond the pandemic. However, there are still important barriers to overcome before it is possible to optimise the virtual care component. Some of these barriers can be overcome by providing: adequate IT support; access to telehealth applications, equipment and devices; and training/support in working with vulnerable families remotely. This requires support and commitment from management at local council, DHHS and MAV.

The COVID-19 pandemic disrupted the maternal and child health service, challenging its constituents to work in many new and exciting ways. The use of telehealth in EMCH impacted the overall functioning of the service system, forcing a new system to emerge. Whilst there is the opportunity, it is important to embed the parts of this system that worked well and discard the parts that did not. This is a key step in the continued growth and improvement of the service beyond the pandemic. These findings may also be useful for other family services working with vulnerable families in regional Victoria. Hybrid models of care have the potential to alleviate the service access barriers experienced by regional communities, minimising the health inequalities they face.

Reference list

Australian Institute of Health and Welfare. Australia's health 2020: data insights. Canberra: AIHW;
 2020.

2. Australian Institute of Health and Welfare. Rural and remote health Cat No PHE 255 Canberra2019 [cited 2020 29 October]. Available from: <u>https://www.aihw.gov.au/reports/ruralremote-australians/rural-remote-health/contents/summary</u>.

3. Middleton C, Hardy J. Vulnerability and the 'toxic trio': the role of health visiting: this article explores the association between domestic violence, maternal mental health and alcohol substance misuse, and how when they are combined, the risk of significant harm is made more probable. Community Practitioner. 2014;87(12):38-45.

4. Fox S, Southwell A, Stafford N, Goodhue R, Jackson D, Smith C. Better Chances: A Review of Research and Practice for Prevention and Early Intervention. Canberra: Australian Research Alliance for Children and Youth (ARACY). 2015.

5. National Rural Health Alliance. Nurses in rural, regional and remote Australia. 2019.

6. Arefadib N, Moore TG. Reporting the Health and Development of Children in Rural and Remote Australia. Parkville, Victoria.; 2017.

7. Marcin JP, Ellis J, Mawis R, Nagrampa E, Nesbitt TS, Dimand RJ. Using telemedicine to provide pediatric subspecialty care to children with special health care needs in an underserved rural community. Pediatrics. 2004;113(1):1-6.

8. Marcin JP, Shaikh U, Steinhorn RH. Addressing health disparities in rural communities using telehealth. Pediatric Research. 2016;79(1):169-76.

Tamrat T, Kachnowski S. Special delivery: an analysis of mHealth in maternal and newborn health programs and their outcomes around the world. Maternal and Child Health Journal. 2012;16(5):1092-101.
 Jang-Jaccard J, Nepal S, Alem L, Li J. Barriers for delivering telehealth in rural Australia: a review based on Australian trials and studies. Telemedicine and e-Health. 2014;20(5):496-504.

11. Wade V, Soar J, Gray L. Uptake of telehealth services funded by Medicare in Australia. Australian Health Review. 2014;38(5):528-32.

12. Duckett S, Mackey W, Stobart A, Swerissen H, Parsonage H. Coming out of COVID lockdown the next steps for Australian health care. Grattan Institute Report No 2020-09, June 2020. 2020.

13. Department of Health and Human Services. Maternal and Child Health service providers in regional and rural Local Government Areas (LGAs), including Mitchell Shire 2020 [cited 2020 August 21]. Available from: https://www2.health.vic.gov.au/primary-and-community-health/maternal-child-health.

14. Department of Health and Human Services. Enhanced Maternal and Child Health program guidelines. Victorian Government, 1 Treasury Place, Melbourne; 2019.

15. Saul JE, Willis CD, Bitz J, Best A. A time-responsive tool for informing policy making: rapid realist review. Implementation Science. 2013;8(1):103.

16. Malterud K. Theory and interpretation in qualitative studies from general practice: why and how? Scandinavian Journal of Public Health. 2016;44(2):120-9.

17. Bradford N, Caffery L, Smith A. Telehealth services in rural and remote Australia: a systematic review of models of care and factors influencing success and sustainability. International Electronic Journal of Rural and Remote Health Research, Education, Practice and Policy. 2016.

18. Chen H, Chai Y, Dong L, Niu W, Zhang P. Effectiveness and appropriateness of mHealth interventions for maternal and child health: systematic review. JMIR mHealth and uHealth. 2018;6(1):e7.

19. Nair U, Armfield NR, Chatfield MD, Edirippulige S. The effectiveness of telemedicine interventions to address maternal depression: a systematic review and meta-analysis. Journal of telemedicine and telecare. 2018;24(10):639-50.

20. Rasekaba TM, Furler J, Blackberry I, Tacey M, Gray K, Lim K. Telemedicine interventions for gestational diabetes mellitus: a systematic review and meta-analysis. Diabetes research and clinical practice. 2015;110(1):1-9.

21. Speyer R, Denman D, Wilkes-Gillan S, Chen Y-W, Bogaardt H, Kim J-H, et al. Effects of telehealth by allied health professionals and nurses in rural and remote areas: a systematic review and meta-analysis. Journal of rehabilitation medicine. 2018;50(3):225-35.

22. Iacono T, Stagg K, Pearce N, Chambers AH. A scoping review of Australian allied health research in ehealth. BMC health services research. 2016;16(1):1-8.

23. Sawyer MG, Reece CE, Bowering K, Jeffs D, Sawyer AC, Mittinty M, et al. Nurse-moderated internetbased support for new mothers: non-inferiority, randomized controlled trial. Journal of medical Internet research. 2017;19(7):e258.

24. Pavalko EK, Caputo J. Social inequality and health across the life course. American Behavioral Scientist. 2013;57(8):1040-56.

25. Department of Health and Human Services. Telephone services for parents 2018 [cited 2020 August 26]. Available from: <u>https://www.education.vic.gov.au/parents/services-for-parents/Pages/telephone-services.aspx</u>.

26. Campbell J, Theodoros D, Russell T, Gillespie N, Hartley N. Client, provider and community referrer perceptions of telehealth for the delivery of rural paediatric allied health services. Australian Journal of Rural Health. 2019;27(5):419-26.

27. Madden N, Emeruwa UN, Friedman AM, Aubey JJ, Aziz A, Baptiste CD, et al. Telehealth uptake into prenatal care and provider attitudes during the COVID-19 pandemic in New York City: a quantitative and qualitative analysis. American Journal of Perinatology. 2020;37(10):1005.

28. Koivunen M, Saranto K. Nursing professionals' experiences of the facilitators and barriers to the use of telehealth applications: a systematic review of qualitative studies. Scandinavian journal of caring sciences. 2018;32(1):24-44.

29. Taylor J, Coates E, Brewster L, Mountain G, Wessels B, Hawley MS. Examining the use of telehealth in community nursing: identifying the factors affecting frontline staff acceptance and telehealth adoption. Journal of Advanced Nursing. 2015;71(2):326-37.

30. Moehr JR, Schaafsma J, Anglin C, Pantazi SV, Grimm NA, Anglin S. Success factors for telehealth—a case study. International Journal of Medical Informatics. 2006;75(10-11):755-63.

31. Department of Health and Human Services. [Unpublished] Rapid Review: Telehealth during pregnancy and after birth. July. 2020.

32. Adams C, Ridgway L, Hooker L. Maternal, child and family nursing in the time of COVID-19: The Victorian Maternal and Child Health Service experience. Australian Journal of Child and Family Health Nursing. 2020;17(1):12.

33. Regional Development Victoria. Our Projects: The WSM Early Years Project: Giving kids in our region the best start 2020 [cited 2020 September 3]. Available from: <u>https://www.rdv.vic.gov.au/regional-partnerships/wimmera-southern-mallee/projects#the-WSM-early-years-project</u>.

34. Australian Bureau of Statistics. 2016 Census: QuickStats by Local Government Area [updated 12 January 2017]; cited 2017 19 October]. Available from:

http://www.censusdata.abs.gov.au/census_services/getproduct/census/2016/quickstat/IQS2GMEL.

Broom A, Willis E. Competing Paradigms and Health Research. In: Sacs M, Allsop J, editors.
 Researching Health: Qualitative, Quantitative and Mixed Methods. London: SAGE Publications; 2007. p. 422.
 Braun V, Clarke V. Using thematic analysis in psychology. Qualitative Research in Psychology.
 2006;3(2):77-101.

37. Flick U. The SAGE handbook of qualitative data analysis: Sage; 2013.

38. Coldiron JS, Bruns EJ, Quick H. A comprehensive review of wraparound care coordination research, 1986–2014. Journal of Child and Family Studies. 2017;26(5):1245-65.

Philp J, Mendes P, Baidawi S, Inder B. Evaluation of the Berry Street Stand by Me Program:
 Wraparound support during the transition from out-of-home care. Berry Street Childhood Institute. 2017.

40. Yohannan J, Carlson JS, Shepherd M, Batsche-McKenzie K. Exploring attrition, fidelity, and effectiveness of wraparound services among low-income youth of different racial backgrounds. Families, Systems, & Health. 2017;35(4):430.

41. Department of Health and Human Services. Children, youth and family services new funding model 2019 [Available from: <u>https://providers.dhhs.vic.gov.au/child-and-family-funding-reform</u>.

42. Antall P. Telehealth and the Future of Hybrid Care Amwell: Oliver Wyman; 2020 [cited 2020 October 29]. Available from: <u>https://health.oliverwyman.com/2020/10/the-future-of-hybrid-care.html</u>.

43. Aziz A, Zork N, Aubey JJ, Baptiste CD, D'alton ME, Emeruwa UN, et al. Telehealth for high-risk pregnancies in the setting of the COVID-19 pandemic. American Journal of Perinatology. 2020;37(8):800.

44. Wosik J, Fudim M, Cameron B, Gellad ZF, Cho A, Phinney D, et al. Telehealth Transformation: COVID-19 and the rise of Virtual Care. Journal of the American Medical Informatics Association. 2020;27(6):957-62.

45. Woodke J, Vicchrilli S. The New Normal: Nuances of the Hybrid Telehealth/In-Person Exam. EyeNet Magazine, American Academy of Opthamology. 2020;July.

46. Blandford A, Wesson J, Amalberti R, AlHazme R, Allwihan R. Opportunities and challenges for telehealth within, and beyond, a pandemic. The Lancet Global Health. 2020.

47. Wade V. How to Make Telehealth Work: Defining telehealth processes & procedures. 2013.

48. Bakhtiar M, Elbuluk N, Lipoff JB. The digital divide: how Covid-19's telemedicine expansion could exacerbate disparities. Journal of the American Academy of Dermatology. 2020.

49. Shelly Smith, Raskin SE. COVID-19's impact on telehealth. The Nurse Practitioner.45(8).

50. Schlottmann H, Broome M, Herbst R, Burkhardt MC, Mescher A. Nurse-Led Telephone Follow-Up to Improve Parent Promotion of Healthy Behaviors in Young Children With Motivational Interviewing Techniques. Journal of Pediatric Health Care. 2019;33(5):545-54.

Appendices

Appendix A: Literature review synthesis tables

Table 2 - Barriers to implementing telehealth in rural Australia and related settings (e.g. USA, UK, Canada, Nordic countries)

Theme	Findings	Remoteness	Geography	Health setting	Reference
Infrastructure	 Insufficient availability/ funding for equipment and technical and practical support Inferior internet connection - price, speed and download limits 	Rural and remote	Australia-specific and other Western, developed counties	Allied health, paediatrics, obstetrics, all general nursing	[10, 26-28]
Practitioner attitudes	 Adapting to new technology is overwhelming Reservations about effectiveness of telehealth compared to traditional methods 	Rural and urban	Australia-specific and other Western, developed counties	Allied health, obstetrics, all general nursing	[10, 27-29]
	Staff perception of increased workload due to training and increased caseload	Rural and urban	Australia-specific and other Western, developed counties	Allied health, all general nursing	[10, 28, 29]
	• Uncertainty about impact of telehealth on nursing role (i.e. redundancy)	Not clear	Australia-specific and other Western, developed counties	All general nursing	[27-29]
	• Sense that telehealth was detrimental to their patient relationships due to inferior communication and lack of physical contact	Rural	Australia-specific and other Western, developed counties	Allied health, paediatrics, all general nursing	[10, 26, 28]
Knowledge and skills	 Reservations about own skill level when it comes to using technology 	Rural and urban	Australia-specific and other Western, developed counties	Allied health, paediatrics, all general nursing	[10, 26, 28, 29]
	 Workforce shortages and high turnover resulting in busy schedules with no time to upgrade skills 	Rural	Australia	Allied health	[10]
Service design	 Lack of clarity about duration Concern about patients becoming reliant on remote monitoring, making it harder to discharge 	Not clear	UK	Community/district nursing	[29]

Theme	Findings	Remoteness	Geography	Health setting	Reference
	• Difficulty obtaining accurate, timely and relevant data about patients				
	 Uncertainty about patient suitability for telehealth (i.e. not suitable for severely high-level needs) 	Rural and urban	Australia-and Victoria- specific and other Western, developed counties	Maternity services, all general nursing	[28, 29, 31]
	 Not able to conduct certain assessments via telehealth (e.g. vulnerability screening, child development) 	Rural and urban	Australia-and Victoria- specific and other Western, developed counties	Paediatrics, maternity services, all general nursing	[26, 28, 31]
	Use of interpreter service is cumbersome	Urban	USA	Obstetrics	[27]
Regulatory	 Lack of laws governing professional standards of providing care via telehealth 	Rural	Australia	Allied health	[10]
	Privacy issues	Not clear	Western developed counties	All general nursing	[28]
Management	Lack of guidance and purpose	Not clear	Western developed counties	All general nursing	[28]

Theme	Findings	Remoteness	Geography	Health setting	Reference
Infrastructure	Technical support	Rural and urban	UK, Australia	Community nursing, allied	[17, 29]
	Availability of equipment			health	
Practitioner	More efficient management of caseload	Rural and urban	Australia-and Victoria-	Allied health, maternity	[17, 28, 29,
attitudes			specific and other	services, all general nursing	31]
			Western, developed		
	• Willingnoos to experiment and learn	Not cloar	Counties	All gonoral pursing	[20 20]
	Wittingness to experiment and team		All	All general nursing	[20, 29]
	• Seeing patient benefits (e.g. improved access,	Rural and urban	Australia-and Victoria-	Maternity services, maternal	[26, 28-31]
	convenience, cost) creates a strong impetus for		specific and other	and child health, all general	
	continued used		western, developed	nursing, paediatrics	
		Dural and urban	Vistoria anasifia and ather	Maternal and shild health all	[20.22]
	Facilitates and ennanced communication/	Rufat and urban	Western developed	maternal and critic health, all	[28, 32]
	relationship between client and nurse		counties	general nursing	
	Allows to communicate sensitive topics		counties		
Management	Local clinical champions who promote telehealth	Rural and urban	UK, Australia, Canada	Maternal and child health,	[17, 26, 29,
	 Institutional support with clear purpose and 			community nursing, allied	30]
	goals for telehealth use			health, paediatrics	
Skills and	Practice-based training	Not clear	Western developed	Community/district nursing,	[28, 29]
knowledge	Extensive computer experience		counties	allied health	
Service design	Simple and standard referral process and	Rural and urban	Victoria-specific and other	Maternal and child health, all	[28, 29, 32]
	guidelines to determine suitability for telehealth		Western, developed	general nursing	
			counties		
	 Adaptability for individual client needs 	Rural and urban	Australia-specific and	Maternal and child health, all	[17, 28, 29,
			other Western, developed	general nursing, allied health	32]
			counties		
	 Telehealth provided by locals who have 	Rural	Australia	Allied health	[10]
	understanding of community setting and culture				

Table 3 - Enablers and benefits of telehealth in rural Australia and related settings (e.g. USA, UK, Canada, Nordic countries)

Appendix B: Interview guide

Practitioner interview/focus group schedule

We are interested in hearing about your experiences within the EMCH program since the pandemic related restrictions came into effect (25 March 2020). In particular, I am interested in hearing about the challenges and opportunities you've experienced using telehealth to deliver the service. For the purposes of this interview, telepractice refers to any form of virtual contact you've had with EMCH families – this may be via phone or videoconference technology.

Below is the full interview schedule for the EMCH evaluation. Masters interview questions are in bold.

- 1. How has your ability to reach and engage families changed during the pandemic?
 - a. Did you notice any differences between trying to reach and engage new families compared to existing families? *[If yes, prompt them to describe]*
 - i. Have you noticed that families with specific needs are engaging/not engaging during the pandemic? [If yes, clarify what groups of families they are referring to]
 - b. What has helped reach and engage these families?
 - i. Has discussion during clinical supervision or debriefing with your manager or colleagues helped you in to reach and engage families? Why/why not?
 - c. What have the challenges been?
 - i. Do families have adequate access to technology e.g. smart phones, telepractice platforms, internet data?
- 2. What have been the main changes to your practice for you/your team since the pandemic restrictions were implemented?

[Prompts include: reduction in face to face time, increase in the use of telepractice options, impact on group delivery]

a. What telepractice platforms have you been using?

[Prompts include: phone/video call (Facetime/Whats App), MS Teams, HealthDirect, Telehealth, Zoom, Skype.]

- b. What has been your experience of these changes?
 - i. What is working well?
 - Generally speaking, what has helped your use of telepractice?

[Prompts include: IT support, funding for technology, training]

- ii. What has been challenging?
 - What has hindered your use of telepractice?
 [Prompts include: family/own resistance to using new technology, additional administrative time, connectivity or phone credit issues, access to technology (family and nurse).]
 - *[If not covered above]* In your experience have referral agencies been able to respond to referrals during the pandemic? Were they able to provide electronic and/or face to face service delivery?
- 3. I'd now like to ask you about the various stages of the Model of Care and explore the key differences between virtual and face-to-face delivery.

- a. Thinking about <u>program entry</u>, what key differences have stood out for you in the virtual model? *[Prompts include: quality, format and frequency of referrals in, booking process]*
- b. Thinking about <u>clinical management</u>, what key differences have stood out for you in the virtual model? [Prompts include: engagement/rapport building, client disclosure of sensitive issues, prioritising highly vulnerable families requiring a face-to-face visit, lack of seeing home environment, groups]
- c. Thinking about <u>transition of care</u>, what key differences have stood out for you in the virtual model? *[Prompts include: co-consultation, referrals out]*
- d. Overall, what are they main benefits and drawbacks to this virtual Model of Care?
- 4. As EMCH practitioners who have continued to work through the pandemic, what types of support would benefit EMCH workers?
 - a. Are these supports currently in place, either in your workplace or via DHHS/MAV?
- 5. [If time] When thinking about the way you have been working in the EMCH program during the pandemic, what changes have been made that you think should be kept when 'business as usual' returns?a. Why should these changes be sustained?
- 6. [If time] Thinking about the challenges you've raised in relation to telepractice, what could help overcome these?

Thank you for taking the time to participate in this interview!

Appendix C: Participant information and consent form

Practitioner/coordinator interview/focus group consent form

HREC Project Number:	38328		
Full Name of Project:	Evaluation of the e	expanded Enhanced Mate	ernal and Child Health program
Principal Researcher:	Ms Claire Jennings, Senior Project Officer		
Version Number:	2.1	Version Date:	14.07.2020

Thank you for taking the time to read this **Participant Information Statement and Consent Form**. We would like to invite you to take part in a research project that is explained in this form. We are inviting you to take part in this evaluation project because you have been identified as someone who works in a professional capacity within or alongside the EMCH program.

This form is 6 pages long. Please make sure you have all the pages.

What is an Information Statement and Consent Form?

An Information and Consent Form tells you about the research project. It explains exactly what the research project will involve. This information is to help you decide whether or not you would like to take part in the research. Please read it carefully.

Before you decide if you want to take part or not, you can ask us any questions you have about the project. You may want to talk about the project with your colleagues or manager.

Taking part in the research project is up to you

It is your choice whether or not you take part in the research project. You do not have to agree if you do not want to. If you decide you do not want to take part, it will not affect your employment in the Maternal and Child Health (MCH) Service or any other organisation in any way.

Signing the form

If you want to take part in the research, please sign the consent form at the end of this document. By signing the form you are telling us that you:

- understand what you have read
- had a chance to ask questions and received satisfactory answers
- consent to taking part in the project

We will email you a scanned copy of this form to keep.

What is the research project about?

We are inviting you to take part in a research project evaluating the expansion of the Enhanced Maternal and Child Health (EMCH) program. We would like you to take part in a one-on-one interview or focus group with other professionals who are involved with the EMCH program. An interview will take around 30-45 minutes, whereas a focus group will take between 45-60 minutes. For participants partaking in Alice Ghazarian's Master's project, this will take an additional 20 minutes.

As you know, the EMCH program enables the Victorian Maternal and Child Health (MCH) service to provide targeted support to families experiencing vulnerability. The EMCH program was expanded in 2018 (staggered roll out from July 2018). This project is evaluating the expanded EMCH program. By conducting the evaluation, we hope to understand how the expanded EMCH program has been implemented and what it has achieved.

<u>Please be aware that the impact of the coronavirus pandemic has meant that we have changed our approach</u> <u>to the evaluation during 2020.</u> Due to the nature and scale of changes to the MCH Service during the pandemic, we have introduced a developmental evaluation component to the project. Developmental evaluation is well suited to situations that involve program modification, and there is an emphasis on the provision of timely feedback to help ongoing decision making related to the program. The developmental evaluation will focus on two primary questions of interest:

- 1. What are the needs of EMCH families during the COVID-19 crisis and how have they changed since prior to the pandemic?
- 2. How is EMCH program delivery and practice adapting in response to the COVID-19 pandemic?

Who is running the project?

This project is being conducted by evaluators at the Centre for Community Child Health (CCCH) at the Murdoch Children's Research Institute, based at The Royal Children's Hospital in Melbourne. This project is funded by the Victorian Department of Health and Human Services.

Why am I being asked to take part?

We are inviting you to participate because you have been identified as someone who works in a professional capacity within the EMCH program, or you are someone who has oversight of the EMCH program (for example, MCH Coordinator). We would like to speak to you to understand more about how the expanded EMCH program has been implemented in your area during the pandemic. Your feedback will also help us to understand the needs of the EMCH workforce during this unprecedented time, and whether the needs of families have changed. Due to the way in which developmental evaluation works, you are likely to be approached to participate in another focus group, interview or to complete a survey again in 2020, or as part of the final stage of this evaluation (2021); in this circumstance, the project team will seek your approval to participate again at that time. If you do not want to be contacted by us again, please tick the relevant box on the last page of this form.

What do I need to do in this research project?

If you decide to take part in the evaluation, we will ask you to take part in an interview or focus group. We will give you an overview of what the interview/focus group involves by phone or email. An interview will take around 30-45 minutes and will be conducted via phone or videocall. We will ensure that any web-based video conferencing tools are endorsed by MCRI Legal prior to their use.

Focus groups will take between 45-60 minutes and will be conducted by videocall while pandemic restrictions are in place. For participants partaking in Alice Ghazarian's Master's project, this will take an additional 20 minutes.

It is up to you to decide if you want to take part in this interview/focus group. In your interview/focus group, we will ask you to share your experiences with the delivery of the expanded EMCH program during the pandemic.

Specifically, we will ask you about:

- reaching and engaging families during the pandemic restrictions,
- types of changes to EMCH program delivery and practice, and
- the types of support and resources that would benefit EMCH practitioners at this time.

We will make a digital audio-recording of the interview/focus group so we can concentrate on listening to what you have to say rather than distract ourselves by taking notes.

After the interview/focus group we will transcribe the recording. This means we will make a full written copy of the recording. The evaluators may choose to use a professional transcription service to create transcripts arising from the evaluation. If this is done, audio files will only be provided following the creation of a non-disclosure agreement. If you are concerned about your data being provided to the transcription service, please tell us and we can discuss this process and other options.

Can I withdraw from the project?

You can stop taking part in the interview/focus group at any time. You just need to tell us. You do not need to tell us the reason why. If you leave the interview/focus group we will use any information already collected unless you tell us not to. If you want to, you can review the transcript of the interview/focus group you participated in. You can then tell us if you identify any statements you made that you do not want us to use.

What are the possible benefits for me and other people in the future?

There is no direct benefit to you if you take part in this interview/focus group. However, you may find professional satisfaction in contributing to our understanding of how best to engage and assist vulnerable families within the Maternal and Child Health Service. You may also find it useful to debrief about any frustrations that you had with the Enhanced MCH program. We will use this information to make

improvements to the program. We expect the main benefits of this study to be for families using the EMCH program and EMCH staff.

What are the possible risks, side-effects, discomforts and/or inconveniences?

We have been careful to make sure the questions we plan to ask do not cause any distress. However, if you are worried by any of the questions you do not need to answer them. Your participation (or non-participation) in the interview/focus group will not affect your employment in the MCH Service or other organisation in any way. Inconveniences linked to this project may be the time spent away from your usual work activities to take part in the interview/focus group. The interview/focus group will take part during business hours.

What will be done to make sure my information is confidential?

In this study we will collect and use the information you provide about your experiences implementing the EMCH program. Any information we collect that can identify you will be treated as confidential. It will be used only in this evaluation, unless otherwise specified. Relevant data from this evaluation may be used for Alice Ghazarian's Master's project. We can disclose the information only with your permission, except as required by law, including mandatory reporting. All information will be stored securely in the Centre for Community Child Health at the Murdoch Children's Research Institute. Electronic files will be password protected and hard copy materials (e.g. notes from interviews) will be kept in locked storage.

During the pandemic, interview/focus group audio-recordings will either be made using a handheld recording device or via researcher's personal device. All devices used are password protected and do not link to unsecure external servers. Following the focus group (or interview) researchers will ensure that recordings are transferred to the secure Royal Children's Hospital server and deleted from the device as soon as possible. All other electronic files will continue to be uploaded to the secure Royal Children's Hospital server via remote access. Any hard copy materials (such as interview notes) will be kept secured in a locked place within the researchers' homes, and transferred to the Centre for Community Child Health when we return to working in the office.

The following people may access information collected as part of this evaluation project:

- the research team involved with this project
- an external transcription service, if the evaluators opt to use such a service for the purpose of creating interview transcripts
- The Royal Children's Hospital Human Research Ethics Committee.

The stored information will be re-identifiable. This means that we will remove identifying information such as your name and give the information a special code number. Only the evaluation team can match your name to their code number, if it is necessary to do so. It is important to note that your data may be identifiable. In particular, for participants that work in areas with small staffing numbers, or in sites participating in the case studies. While individuals will not be named, the name of the site and the participant's role may be included in the findings. We will take all possible steps to minimise this risk, but you should know that we cannot guarantee your anonymity.

As the participants in this project are over 18 years old, information will be kept for at least 7 years. The evaluation information may be destroyed or kept indefinitely in secure storage after this time. Any raw data provided to an external transcription service will be destroyed by the transcription service following the creation of a transcript.

In accordance with relevant Australian and/or Victorian privacy and other relevant laws, you have the right to access and correct the information we collect and store about you. Please contact us if you would like to access this information.

At the end of the study, results will be summarised in a final report for the funding body (Victorian Department of Health and Human Services). During the conduct of the developmental evaluation, we will create monthly insight reports for DHHS, which will also include a summary of results after each round of data collection. The project results may also be presented at conferences. Relevant findings will also be included in Alice Ghazarian's Master's thesis, for which there may be associated research publications. Any reports or presentations arising from the project will be done in such a way to minimise the possibility that you can be identified. If, due to the small sample size, there is potential that a quote may identify you, we will contact you and ask your permission to include this quote prior to publication.

Will I be informed of the results when the research project is finished?

We will send you a short summary of the overall project results via email. This document will describe the whole group of evaluation study participants, not your individual results. During the developmental evaluation, site representatives will be invited to take part in two EMCH insights sessions in 2020. These insight sessions, which will be held remotely via videoconferencing, will enable us to share emerging findings with sites directly.

Who should I contact for more information?

If you would like more information about the project, please contact:

Name:	Claire Jennings
-------	-----------------

Contact telephone: 8341 6481

Email: claire.jennings@mcri.edu.au

You can contact the Director of Research Ethics & Governance at The Royal Children's Hospital Melbourne if you:

- have any concerns or complaints about the project
- are worried about your rights as a research participant
- would like to speak to someone independent of the project.

The Director can be contacted by telephone on (03) 9345 5044.

CONSENT FORM

HREC Project Number:	38328		
Short Name of Project:	Evaluation of th	ne Expanded Maternal and	Child Health Program
Version Number:	2.1	Version Date:	14.07.2020

- I have read this information statement and I understand its contents
- I understand what I have to do to be involved in this project
- I understand the risks I could face because of my involvement in this project
- I voluntarily consent to take part in this research project
- I have had an opportunity to ask questions about the project and I am satisfied with the answers I have received
- I understand that this project has been approved by The Royal Children's Hospital Melbourne Human Research Ethics Committee. I understand that the project and any updates will be carried out in line with the National Statement on Ethical Conduct in Human Research (2007).
- I understand I will receive a copy of this Information Statement and Consent Form

Particin	ant	Name
1 articip	ant	name

Participant Signature

Declaration by researcher: I have explained the project to the participant who has signed above. I believe that they understand the purpose, extent and possible risks of their involvement in this project.

Research Team Member Name

Research Team Member Signature

Date

Date

Note: All parties signing the Consent Form must date their own signature.

If you do not wish to be contacted by the evaluation team again about participating in later stages of the project (2020-2021), please indicate this by ticking the box below:

□ I do not wish to be contacted about participating again in later stages of this evaluation.

Appendix D: Coding framework

Main category	Sub-category	Description
Access to	Equipment/devices	Range of devices that nurses and families' have
technology		access to, or what they do not have access to
	Applications/software	Range of applications that nurses and families' have
		access to, or what they do not have access to <i>(does</i>
		not include preference for use, this is coded under
		methods of contact) – break down into type of
		connection.
	Connectivity/reception	Description of the quality of connection/reception
		available to nurses and families
	Data/phone plan (families)	Description of families' access to computers,
		internet data and phone credit
Support for nurses	IT support	Description of nurses' access to and usage of IT
using technology		support, includes description of their satisfaction
	Training	Description of nurses' engagement with training
		tools (e.g. workshops, written resources)
Technology skills	Technology literacy	Description of nurses' and families' ability to use
		technology. Includes examples of nurses and
		families learning to use technology together. <i>N.B:</i>
		does not include comfort levels with using
		technology, this is coded under attitudes
	Support for nurses	Includes further sub-categories such as IT
		department, formal training and resources
	Learning together	Examples of nurses and families learning the
		technology together
Attitudes	Importance of face-to-face	Examples of nurses commenting on the importance
	care	of face-to-face care, including their and families'
		preference for it
	Learning mindset	Examples of nurses who approach change with a
		trial-and-error or learning mindset
	Anxious about change	Examples of nurses expressing anxiety about
		change or new technology
Model of Care –	Clear guidelines	Any reference to service delivery guidelines related
design and practice		to nurse practice during the pandemic
	Referrals in	Description of client information nurses have
		received from other agencies and the methods by
		which this has been obtained (e.g. phone, email)
	Deciding on mode of	Description of how nurses decide whether to visit a
	delivery	family in person or connect remotely

	Consultation	Methods used to deliver EMCH consultations or
		general advice to families, and the reasons why.
		Includes further sub-categories: face-to-face and
		remote.
	In-between consultations	Methods used to provide advice or keep in touch
		with families in between consultations
	Co-consultations	Description of co-consultations with other agencies,
		including the methods used
	Referrals out	Methods for making referrals to other agencies
Benefits of	Coordination with other	Examples where telehealth has brought multiple
telehealth	agencies	other agencies/stakeholders together rapidly
	Connections with	Nurses describing better connections with their
	colleagues	colleagues who live far away from each other
	Time saved on travel	Examples of telehealth resulting in reduced travel
		time for nurse or for family
	Parent group sessions	Ability of telehealth to connect parent groups
		during the pandemic
	Other	Other benefits that don't fit into the categories
		above
Drawbacks of	Discussing sensitive issues	Examples of nurses describing their inability to do
telehealth		this remotely
	Building rapport	Examples of nurses describing their inability to do
		this remotely
	Easy for clients to 'no	Examples of clients ignoring phone calls or booked
	show'	telehealth consultations
	Explaining concepts	Examples of nurses describing their inability to do
	remotely	this remotely
	Missing environmental	Examples of nurses describing their inability to do
	cues or red flags	this remotely

Appendix E: Demographic data



Figure 5 - Age range of Maternal and Child Health (MCH) nurses across regional Victoria, compared to study sample Source: Department of Health and Human Services annual workforce data (regional areas only), 2019-20 financial year survey (n = 373); and student project survey, October 2020 (n=7)



Figure 6 - Qualification of Maternal and Child Health (MCH) nurses across regional Victoria, compared to study sample Source: Department of Health and Human Services, annual workforce data (regional areas only), 2019-20 financial year survey (n = 373); and student project survey, October 2020 (n=7)



Figure 7 - Years of experience of EMCH nurses across regional Victoria, compared to study sample Source: EMCH Evaluation Statewide survey (regional EMCH only), July 2019 (n = 73); and study survey, October 2020 (n=7)

Centre for Community Child Health

The Royal Children's Hospital Melbourne 50 Flemington Road Parkville Victoria 3052 Australia www.rch.org.au/ccch

The Centre for Community Child Health is a department of The Royal Chidren's Hospital and a research group of Murdoch Children's Research Institute