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Perinatal experiences during the COVID-19 pandemic in Scotland: exploring the impact of changes in maternity services on women and staff

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Study aim

To identify how NHS maternity care in Scotland should evolve during and following the COVID-19 pandemic based upon how women and staff have thought and felt about changes to maternity care provision and the support received during the COVID-19 pandemic.

Introduction

At the onset of the COVID-19 pandemic, pregnant women in the UK were classed as a vulnerable group. This, alongside national guidance on social distancing, resulted in marked changes to maternity service provision. This altered the experiences of women and staff accessing and providing maternity care in Scotland. It also raised concerns about whether inequalities in healthcare could increase further. Disadvantaged women were recognised to be at greater risk of economic hardship due to the pandemic, but also to be vulnerable to digital exclusion due to increased reliance on technology in delivery of care.

Key pandemic-related changes across the maternity services of several NHS Scotland Health Boards included:

- increased provision of remote consultations using telephone and video technology
- introduction of an online antenatal education package
- increased outpatient induction of labour procedures
- restrictions on partner and visitor attendance in hospitals.

Further changes affecting staff in particular included redeployment to different roles, working from home in both clinical and non-clinical roles and a dramatic increase in

virtual meetings. For both staff and women there was the continuing fear of contracting COVID-19 in hospital or health centres.

The impact of such pandemic-related changes in NHS Scotland maternity services on women and staff was not well understood. This study set out to address this knowledge gap using surveys and interviews to explore women and staff experiences to inform future care provision.

Structure of the report

This report is divided into three sections. The first provides a summary of the approach to the study – who took part and the key findings during the three phases of maternity care: antenatal, labour and birth, and postnatal. The second section provides full details of the methods used to conduct the study and the main findings. The third section, the appendix, contains detailed tables that underpin the graphs and text in the main findings of the report.

Language used in this report: the terms ‘women’ and ‘woman’ are used throughout this report to refer to women and birthing people using maternity services.

Approach to the study

Women who received maternity care and staff delivering maternity services in Scotland from June 2020 to July 2021 were sent email and social media invites to complete questionnaires in June and July 2021. A purposive sample of women and staff were also interviewed. The survey and interview data were used together to provide an understanding of how maternity care was experienced by both women and staff. As staff had also experienced NHS Scotland maternity services before the pandemic, views were sought from staff on what maternity service changes they felt should be maintained or reversed in the future.

Who took part?

- 2,588 women submitted a survey response: 305 were pregnant, 2,281 had given birth.
  - For more than half (57%) of all women, this was their first birth.
  - 15% of women were from low-income households.
  - 8% were aged under 25 years.
  - 3% were from minority ethnic backgrounds.
- 445 maternity staff submitted a survey response from eight professional groups.
- 38 participants took part in qualitative interviews, including 23 women and 15 maternity staff.

Findings

In this section of the report, women who used maternity services and staff's experiences are presented together as far as possible to allow the reader to contrast perceptions of maternity care. The context in which maternity care was provided during the pandemic was defined by a changing landscape of service delivery and a range of key issues experienced by both women and staff.

The reader should be mindful that the women's experiences reported may or may not have resulted from changes in maternity services made during the COVID-19 pandemic. In addition, some women will have experienced maternity services prior to the pandemic, and some will not have. Virtually all staff would have experienced providing care pre-pandemic, even if this had been as a student.

General findings

Women described how important their need to connect with maternity services, and to receive more personal support, was during that time. COVID-related rules and restrictions for maternity services were perceived as poorly communicated and inconsistent across different services/centres in the maternity pathway (e.g. across local health centres, GPs, hospitals and Health Boards). One rule in particular was highlighted as a major source of anxiety – women not being allowed to have a partner attend maternity services with them. The prospect of having to attend

services alone (antenatal appointments, scans, labour/birth services and postnatal wards) caused anxiety for many across all maternity pathways, and among those who had to attend services alone, many described a lasting impact on their mental health. Women's sense of isolation was clear, but its implications varied based on their personal circumstances and was not always perceived as negative overall. However, for some this meant increased anxiety and more need for mental health and emotional support. For example, of the 323 women to whom the survey question was relevant, 70% found it difficult to be seen by a mental health specialist as part of their maternity care. This in turn may have affected how they experienced maternity services during that time, for example, the proportion of women who rated each area of care as excellent was lower among those who experienced domestic abuse or had mental health conditions than those who did not.

Maternity staff described how they navigated a highly stressful everyday environment while working during the pandemic, balancing the various sources of anxiety and concern arising from both their own personal lives and work. For 64% of staff responding to the survey, work-life balance was worse during the pandemic than beforehand. Increased workload was a major theme arising from both interviews and survey responses. Changes in workload were evident in that more than half of staff experienced increased virtual delivery of antenatal and postnatal care including feeding support, online antenatal care provision and women choosing homebirth. Staff's resilience and ability to cope with stress, as well as to support stressed colleagues, was a defining feature of how they worked through everyday challenges across all levels and professional groups. Against this backdrop, staff addressed safety concerns for themselves and women, and navigated ongoing changes in service organisation as well as in their usual roles. These included temporal changes in their remit. For example, a quarter of staff who responded to the survey reported working in a different role at some point during the pandemic, of whom 53% felt able to deliver the role expected of them, while 33% did not feel able to do this. Staff reported that changes in roles and service organisation were not in keeping with usual organisational culture in the NHS, with decisions and communication perceived as more 'vertical' than usual. For example, less than half of staff who responded to the survey agreed that maternity service changes were well communicated to them. These changes caused stress to staff. However, staff

also described the benefits of having gone through a significant learning curve to embed new ways of working and tools such as digital platforms in their everyday work practices. Many staff survey respondents reported a hope that virtual training, meetings and networking will remain in the long term and some interviewees reported innovative ways of delivering care.

Antenatal care

During the pandemic, the way in which antenatal appointments was provided varied. Most women (>85%) had experienced at least one antenatal appointment in a hospital or healthcare setting and about a third (32%) had an antenatal appointment at home. Remote appointments were also provided, with 75% of women having at least one antenatal appointment by telephone and 15% by video.

Experiences of antenatal care were shaped by four core issues:

The ability to attend key appointments, such as scans, with a trusted other

The prospect of having to attend appointments alone, particularly key appointments such as scans, was a major issue for women during the pandemic. Many women described this as a source of anxiety – in most cases described as adding to the underlying anxiety associated with the possibility of finding out about problems during the early stages of pregnancy and receiving bad news on their own.

> ‘So my husband couldn’t come along to the scan, and that for me was probably the most difficult bit, particularly because the lady in front of me who was waiting, and she’d obviously got bad news during the scan, so they were trying to comfort her and she was coming out and they were obviously trying to find her husband who was out in the car park, but it was just before I was going into my first scan, and I sort of had this sort of five minutes of complete panic, thinking, “Oh god, what if that happens to me?”’ (P02)

This was particularly problematic for those with previous experiences of miscarriage, which compounded their anxiety, particularly the possibility of having to receive bad news and manage this situation on their own.

Among women responding to the survey, most (89%) reported attending antenatal appointments alone, with 67% reporting feeling uncomfortable with this.

Meeting mental health and emotional needs

Half (50%) of women responding to the survey who experienced a routine antenatal hospital appointment felt their mental or emotional needs were not met at these appointments. Many women noted how any pre-existing or emerging anxieties and concerns, as well as the need for connection and reassurance, were amplified during the pandemic, and some women felt that such issues had not been identified and addressed as part of the antenatal care they received. Among staff, three in four survey respondents felt that video and telephone appointments meant they had less opportunity to assess women's mental health status/emotional wellbeing as well as assess for signs of abuse.

However, in those instances where mental health and emotional needs could be identified and addressed, even if current limitations meant they could not be fully met, this was greatly valued by women and was associated with positive maternity care experiences:

> 'I did speak to the midwife about it and she did refer me on to mental health so, I did have a mental health nurse come to help me … She'd come and visit me so, I did get that support there. … She was good. She gave me a lot of information. She gave me, you know, worksheets, a lot of information, leaflets. She was actually really good in terms of providing a lot of information and emotionally as well so, no. Actually, it's been positive for me.' (P26)

The survey findings suggest that women with mental health conditions were less likely to agree that any aspect of care needs during antenatal appointments were met across all appointment types. This included physical health needs, mental or

emotional needs, understanding what was talked about, being able to ask all the questions they wanted to ask or feeling included in planning their care.

Women highlighted how restricted access to antenatal education and their associated peer support networks added to their sense of isolation and the feeling of missing out on the expected 'normal experience' of being pregnant and on maternity leave:

> 'this is like what we've missed from not having kind of any of the NCT [National Childbirth Trust] or like the usual prenatal groups people just don't have any connections.' (P11)

Our survey findings suggest that just over one quarter (28%) of first-time mothers received antenatal education (75% online, 12% in-person group, 12% other), of whom 41% were able to enjoy interacting with other pregnant women at the same time. A third (33%) of these women felt the education/classes helped them feel ready to have their baby and become a new parent.

Building a supportive relationship

Women noted how important it was for them that, despite the restrictions and changes in service delivery, they could still build a good, supportive relationship with their midwife. For many this was an aspect highlighted as particularly positive in the antenatal care they received. The ability to have direct contact/access to their named midwife and have the same midwife all the way through until birth were key drivers of a positive experience that could make up for the restricted interaction imposed by the pandemic.

> 'I think having the phone number of my midwife is just, feels really comfortable. Like since I have a phone number I probably texted her once only in about two or three months. But just the fact that I have it, and if I have any questions I know I can text and she would answer any time, feels like that I am supported any time for anything. (…) just knowing that

> you have a number in case anything is wrong, and you really have an urgent question feels really more secure. This is really good.' (P10)

For some, however, the various technologies used in remote appointments got in the way of developing the supportive relationship they would have expected. For example, our survey findings found that 40% of women who experienced telephone appointments felt that using the telephone stopped them from building a good relationship with their midwife/doctor; almost half (49%) felt that their physical health needs were met at these appointments; and 38% of women who experienced routine antenatal appointments by video did not ask all the questions they wanted to ask.

For maternity care staff, the virtual delivery of care led to reduced job satisfaction for more than half of staff who responded to the survey. However, most staff who delivered service user-facing care remotely felt this should remain as an option in the future:

> 'if somebody didn't need a face to face appointment and wasn't already attending the hospital for a scan or some other reason that they actually needed to be here in person. Then we did move to doing some of our consultations virtually, which probably was good for a lot of women and we still, I think we probably will still keep some of that in place. Because we have quite a geographically diverse population so, it's quite nice if people don't have to travel an hour to get to hospital for those women who live far away. Obviously, there are issues sometimes with internet access and hospital Wi-Fi isn't always 100% but mostly it does work so, that has been good.' (P34)

Flexibility, access and work-life balance

Experiences of appointments at home were more positive than all other appointment types, with physical health needs met for 81% of women, mental or emotional health needs met for 70%, 89% having enough privacy and 75% feeling included in planning their care. Fewer women with a low household income agreed that they had

enough privacy at these appointments compared to those with higher household income.

The positive experiences of home appointments combined the benefits of care delivered face-to-face with the flexibility of home working for many during the pandemic:

> ‘I was really sick, so being in my own house, working from home, having my own bathroom, being able to lie down on the sofa for five minutes in-between meetings, all of those things actually meant there was more flexibility.’ (P09)

Overall, this meant that care provided at home was perceived as more convenient, better tailored and involving fewer disruptions associated with having to take time off work to attend and travel to appointments.

> ‘My midwife came to my home for my appointments, in fact it was even easier than meeting in the surgery. (…) The first time was in the doctor’s surgery and the rest of the time she came to my home so as I say so even easier because I didn’t have to go out to the doctor’s surgery and think it would be maybe easier for me [as] I was working at the time, working from home. So, yeah, that was I guess, a positive, there was less disruption.’ (P08)

The survey found that women with low household income and those aged under 25 were more likely to miss hospital appointments and were more likely to attend by taxi or bus. A quarter (25%) felt quite concerned about using a taxi or bus. Some women (7%) experienced money problems due to costs of attending appointments, with 15% of these women missing appointments as a result. These costs were most commonly travel and childcare related.

In addition, our survey found that women from low-income households, those aged under 25 and women with mental health conditions were less likely than other women to feel involved in their care planning at all appointment types.

Labour and birth care

Questions on birth experience were answered by 1,658 women, of whom just over half had previously given birth.

Being admitted with a partner or trusted other

Just over three quarters (78%) of women who responded to the survey had the birth partner they wanted with them during labour and/or birth.

During the pandemic, some women could only have their partner or trusted other accompany them during active labour and birth, not during early labour. Many women noted the anxiety associated with the prospect of having to be admitted and be on their own during labour:

> ‘my midwife had said to me, your partner can only come in when you are on the labour suite; and then actually when I had my [previous] daughter I was on the other suite, the pre-labour ward, for about five or six hours before I went into the labour ward. So that did make me quite anxious because I thought “am I going to be on my own for, you know, five or six hours in the hospital, in labour?” It’s not like a very nice thought. (…) It was kind of an anxious feeling that you might be on your own, apart from your midwife, for like five or so hours without your birth partner. To me that was probably the main thing that sticks in my head as being a bit anxious and then also we were told when you arrive at the hospital you had to come in by yourself.’ (P08)

Some women highlighted how confusing and stressful it was for them to make sense of the rules in place for being admitted with a partner or trusted other in the labour ward. Some felt that such rules had not been well communicated to them, with known inconsistencies across different areas and at different points of the pandemic contributing to a feeling of arbitrariness about such rules. For some women, the anxiety associated with the prospect of not being able to be admitted with a partner or trusted other straight away meant that they chose to stay at home for longer to

avoid having to be admitted on their own. Our survey finding suggests that, of those women who laboured spontaneously, 29% felt they stayed at home for longer than they should have in early labour due to those restrictions.

However, our study also found that when such restrictions were well communicated and properly explained to women prior to going into labour, such anxiety was mitigated by a known expectation and appropriate planning to manage the situation:

> ‘No [it wasn’t so stressful] because we expected it. We expected it because we knew from the communication that I’d had with my community midwife and everything going out on social media was that that was standard procedure at that point that, do you know, if we presented at maternity unit in labour, your birth partner would be asked to stay outside while you were assessed. And then if you were in active labour they’d be able to join you.’ (P12)

Good quality of care during labour and birth

Care during labour and after the birth (in labour ward/midwifery unit/at home) was well received by the vast majority of women responding to the survey – 86% rated their care during labour as excellent or good and 76% rated their care after birth as excellent or good.

> ‘once I got to the labour suite, it was a completely different story. Like, I felt so well looked after, I felt like nobody had ever given birth before, you know, they made me feel really safe.’ (P32)

Our survey found that, among women who laboured spontaneously, 53% were able to follow their birth plan when labour was confirmed. For those who were not able to follow their birth plan for COVID-related reasons, there still was an overall sense that women had generally been well supported to manage the uncertainty and consider the alternatives with enough anticipation:

> ‘we’d spoken about the birth plan and she [my midwife] said that the [midwife-led] unit was going to be closed – was closed – because they were keeping it for COVID patients, so (…) I wouldn’t be going to that unit in the hospital, I would be going to the labour ward instead. (…) I just accepted you know that that was the way it was going to be, obviously with lockdown that was a way for them to kind of manage that situation (…) I had like a couple of weeks before the baby came to be able to get used to that.’ (P15)

Of 836 women who were offered induction of labour, 15% were given the chance to undergo this at home. Four out of five (80%) staff who witnessed an increase in outpatient induction of labour would like to see this remain in the longer-term – this change was linked to increased job satisfaction for 45% of staff.

Postnatal care

The majority (64%) of women who responded to the survey rated their overall care while in the postnatal ward as excellent or good.

Having a partner or trusted other in the postnatal ward and visitor restrictions

Most women (73%) felt they should have been able to have their partner/a supportive person with them more often in the postnatal ward. This aspect emerged as one of the main issues driving negative experiences in the postnatal ward. Many women noted that restrictions around partners’ attendance at this stage had felt excessively restrictive and described how the rationale for those rules had not been well communicated and was difficult to understand in light of the wider COVID guidance and their need for emotional and practical support at that time.

> ‘We were both in hospital for about five days after that. And we had no visitors. We weren’t allowed any visitors at all. So that was quite difficult to be honest because – well, it was my first baby and I think being in the ward when there was mums coming in and out – And every time you would hear people getting upset about the fact that we can’t get any

visitors at all. And not knowing when you were going to get home and all that kind of thing. So it was quite difficult at that point.' (P04)

Conversely, only 18% of women reported feeling the same about family/friends visiting. In this case, the rules and restrictions were generally well understood and for many women and staff this had represented an unexpected positive feature of postnatal care under COVID:

'from chatting to other friends they found when they were in hospital when they had their baby a couple of years ago that the whole hospital experience was very loud. There was [sic] people coming and going all the time, like visitors, whereas I didn't find that. It was quiet.' (P02)

Similarly, staff voiced a strong opinion that restricting postnatal ward visiting to partners was beneficial, and that doing so in the future (in addition to allowing older children to visit) would benefit maternal wellbeing, rest, bonding, breastfeeding and increase peer support from other women in hospital. A benefit that some staff felt was also noticeable following discharge due to further visitor restrictions imposed by the wider national COVID guidance was an improvement in breastfeeding rates:

'I think that our breastfeeding rates have actually improved because they're not having visitors round to the house (…) and actually what we're finding is we're not getting those big weight losses, so we're not having people interfere too soon, so it's actually improving our [breastfeeding] rates, but I do think that women not having loads of visitors round to the house has made a huge difference on the success of breastfeeding as well, because they're not having to pass the baby round to all the family members and missing out on feeding cues.' (P05)

Receiving postnatal care at home

Almost all (98%) women received postnatal care in-person in their home after the birth, with 70% receiving three or more visits. Almost a quarter of women also

received care by telephone. Overall, women's experiences of home-based postnatal care were very positive and perceived as very comprehensive and of a high standard:

> 'Certainly, my aftercare, the midwives and health visitor were excellent, and always asked, "How are you feeling emotionally? And are you coping well?" And stuff like that. And there was an acknowledgement that it was a difficult situation, so I felt that – it was my first pregnancy, so I'm not sure whether those are routine questions or not, but I did always feel like when they came round they acknowledged that it was a difficult situation and they were concerned certainly about emotional well-being of not just myself but the family, was husband okay and baby, and all that kind of stuff.' (P03)

Receiving postnatal care centred more around the home than the hospital was highlighted as positive by families with older children and those with added postnatal care needs such as recovery from a caesarean section, or additional infant care needs such as those linked to jaundice, which overall resulted in positive care experiences from women and their families:

> 'our postnatal care was actually really good as well. Our midwife came round to our house. She was very good, it felt comfortable her being in our house that was … she was good, she gave us information about what to expect. We got more midwife visits than we've ever had with our first [child] – Oh, and the other thing was, it was good, this little guy was really jaundiced and instead of the usual, well, go up to [the hospital] and get it sorted and it taking hours and going [to the hospital] and what do you do with a three year old, they came to our house and did a blood test and was really – So we got really good community care, really good community care, probably better than before the pandemic (…) I would say if you take into account the phone calls and then the community visits my care was probably more centred around my home than the hospital (…) [this] definitely worked for us, definitely, yes. Especially after a

> section, Jesus, trying to get around after that, you don't want to go up to [the hospital] two weeks after a section, sit and wait for four hours, that's awful.' (P19)

Feeding support

The vast majority (88%) of women felt their feeding choices were respected by staff always or most of the time. However, women described how their early breastfeeding experiences were affected by short hospital stays and COVID restrictions:

> 'So I just stayed overnight, out the following morning. But I suppose that was the only thing on hindsight … if my husband was allowed in to visit in normal circumstances, I possibly would have stayed in an extra day just to get more support around breastfeeding. But I think with the whole pandemic thing, I just wanted to get home.' (P12)

When they opted to go home early due to partner visiting restrictions this meant less opportunity to receive help with breastfeeding. Women also explained that staff were less able to assist them due to their efforts to socially distance. These views were echoed by staff experiences:

> 'when the women came in, in labour and they stayed until six hours after delivery, and then we asked them to leave, which was completely foreign to us, and we all struggled with that significantly, and the patients struggled with that. So the knock-on effect of that was that a lot of women would go home on the six hour discharge, whereas before, they would stay with us for two or three days and you know, establish their breastfeeding and just get their energy back after delivery.' (P35)

In contrast, where available, the provision of home-based breastfeeding support was greatly valued by women as part of their positive experiences of home-based postnatal care:

‘We had the midwife out to the house the day after we got home. So that was really lovely. I think especially as I say, after not getting ... [enough support in the ward]. But I had a lot of questions at that point. Like for example, so I was, or am, breastfeeding. And it was only at that point that she showed me how to unlatch. (…) So that wasn’t something that had happened at all in the hospital. So when she came she was like, “Oh you can, you know, if it’s not comfortable you should stop him. And you know try again.” And for three days I had no idea.’ (P09)

Key areas for consideration in policy, practice and future research

Training and resources should ensure virtual consultations are high quality when in-person antenatal care is not appropriate or possible. Virtual consultations should be predominantly conducted via video rather than telephone, and continuity of carer should be prioritised. This could mitigate against some of the disadvantages of virtual appointments for pregnant women, including addressing the barriers to building good, supportive relationships between women and midwives.

The psychological and practical benefits of women being able to involve their partners at all stages of maternity care should be considered as a matter of urgency, with a view to easing restrictions where these remain in place. In order to minimise inequalities in antenatal care provision, routine assessment of women’s financial status at booking and whether it may affect their ability to attend antenatal appointments should prompt early intervention to ensure financial support.

Technology used to support care delivery should only be utilised when preferred by both women and staff and when it is judged not to impact on both physical and mental health needs assessment. The benefits of in-person consultations for younger and financially disadvantaged women, and those with mental health conditions, should be taken into account when planning delivery of care. Consideration should be given to establishing criteria for when virtual consultations are indicated, and/or delivered alongside in-person care. Staff resources and support

should be developed to ensure that continuity of carer and personalised care can be provided to all pregnant women, including direct access to a named midwife.

Recognising the high value women place on meeting other pregnant women during pregnancy, antenatal education should be delivered in a manner that also promotes peer-to-peer interaction.

Outpatient induction of labour should be considered as a routine option in all units where safe to do so.

The benefits to women and babies of restricting postnatal visiting to partners/siblings should be considered in future family-friendly visiting policies and in future research. The benefits of in-person postnatal visits, in particular to support breastfeeding, should be evaluated as a means of mitigating against the risks of early discharge from hospital.

Virtual staff training/meeting attendance options should remain long-term as this is expected to increase staff morale, inclusion and skill development.

Full study report

Study aim

To identify how maternity care in Scotland should evolve during and following the COVID-19 pandemic based upon how women and maternity care staff have thought and felt about changes to care provision and support received during the pandemic.

Research question

How have women and staff experienced Scottish maternity services in relation to engagement, care and service provision during the COVID-19 pandemic?

Objectives

1. To explore how women think and feel about the changes to maternity care provision during the COVID-19 pandemic, with a focus on identifying how these impact on specific groups within society. This will include exploring their emotional and wellbeing needs.

2. To explore how maternity staff think and feel about the pandemic-related changes to maternity care provision, with a focus on how different staff groups are affected by the changes. This will include exploring how they are meeting women's emotional and wellbeing needs.

3. To identify which pandemic-related changes to maternity care should be maintained or reversed, with a focus on how key groups of women or staff may benefit or be challenged by the changes.

4. To identify non-NHS sources of physical or emotional healthcare support valued by pregnant and postnatal women in Scotland during the COVID-19 pandemic.

5. To explore how women's health behaviours relating to maternity service use were impacted during the COVID-19 pandemic

Setting

Scotland: all NHS Health Boards.

Population

Pregnant and postnatal women (eligible from 36 weeks of pregnancy up to 12 months postnatal).

NHS Scotland staff working in maternity services including midwives in all areas and models of maternity care, maternity health care support workers, obstetricians, obstetric anaesthetists, maternity hospital administration staff, student midwives and physiotherapists.

Study design

The project took a concurrent mixed-methods approach involving two interrelated sub-studies (one involving two surveys and one involving interviews) with triangulation of data at sequential time points.

Survey-based data collection from pregnant and postnatal women and maternity care staff

Addressing the elements of objectives 1–5, two surveys mapped how aspects of pandemic-related changes to NHS maternity care and support provided to women in pregnancy and in the postnatal period were perceived by women (survey 1) and staff (survey 2). The focus was on maternity care received/provided up to the point of transition to health visitor care (usually 10 days postnatal).

Survey recruitment

Women as service users

Multiple recruitment methods were employed. These included electronic notifications to eligible women's electronic devices (details below) and via social media and charity newsletters/websites.

Electronic notifications

Pregnant and postnatal women from all 14 NHS Scotland territorial Health Boards (HBs) were invited to take part. Those in 10 of the 14 HBs received a link to the survey via a smart phone/device application from Clevermed®. BadgerNet software (Clevermed®) hosts all electronic maternity records (EMR) for women in 12 HBs. The BadgerNet patient-facing portal allows women to access the EMR and pregnancy-related information via a smartphone in 11 HBs. Pregnant and postnatal women who were using the portal in June and July 2021 and in whom relevant HBs had completed all relevant research governance procedures (n=10) received a link to the survey via this route. In nine of these 10 HBs a single push notification was sent to women's mobile devices to make them aware of the survey information and link in the reading materials section of their Badgernet application. In the 10th HB (where permission to send push notifications was not granted) staff and social media were utilised to make women aware of the link in their portal.

Online study adverts

Pregnant women in the four HBs not using Badgernet or the Badgernet portal were invited to complete the survey via social media routes, charities and/or their midwives. In three HBs email addresses or mobile phone numbers were used to send a survey link directly to women by their midwife, with a strategic approach to recruitment to support inclusion of women in under-served groups. This included women receiving the survey link via specialist midwives caring for vulnerable groups. The NHS was not involved in recruitment in one HB (NHS Borders) as no permissions were granted within the study timeframe.

Social media and charities were utilised to help reach women from minority and under-served groups in particular. This included contacting 140 organisations

including those supporting women in Scotland from ethnic minority groups, those who gave birth before the age of 20 years, those on low-income and single parents. Each organisation was provided with a brief study description, a copy of text to share with the women they support and a link to the survey.

The survey was translated into the four most commonly spoken non-English languages among families in Scotland with school-aged children (Arabic, Urdu, Punjabi and Polish) to maximise inclusion from non-English speaking women. These versions were made available within Badgernet (alongside the English version) via social media and were sent directly to relevant charities to share more widely. Pregnant women who expected to give birth between 1 July and 30 August 2021 and women who gave birth in the 12 months prior to June/July 2021 were asked to complete the survey to capture perspectives on pregnancy and postnatal care and support.

Staff survey recruitment

Maternity healthcare staff received an email invitation to complete the online survey using existing maternity networks in Scotland, and/or by email invitations sent via Heads of Midwifery and Clinical Directors in Health Boards, and via social media professional networks. Midwives, obstetricians, maternity care support workers, anaesthetists, and maternity hospital administrative staff were sent the survey link via these internal email networks with a covering email from the co-chief investigator Dr Mairead Black. The email included a link to an online participant information leaflet.

Consent

Consent was explicit by completion of a survey item that confirmed understanding of GDPR-compliant study information (a link was also provided to the participant information leaflet within the survey itself). All versions of the survey included an invitation to participate in qualitative interviews and, if willing, asked participants to provide contact details (email address or telephone numbers).

Ethics and research governance approvals

The study was approved by the Brighton and Sussex Research Ethics Committee and the NHS Tayside Research and Development service. Plans were approved to

store data on secure password-protected university servers and to store and analyse survey data in a secure data safe-haven. All anonymised study data will be shared securely with Public Health Scotland.

Sample size and population

An initial target of 6,000 service-user responses was set, based upon the eligible population size and response rate in previous national maternity surveys in Scotland.[i] On review of the final survey length, which was longer than originally anticipated, the target response number was reviewed down to 2,000. This was felt to be more realistic yet still expected to capture a broad range of experiences and support representativeness.

After consideration of what perspectives were to be sought from each Health Board and the number of staff working in maternity services, a minimum target of 375 maternity care staff was set, including:

- 250 midwives (minimum 10 per HB; minimum one continuity of care midwife per HB; approximate ratio of hospital: community-based 50:50; both urban and rural-based)
- 30 maternity health care support workers (minimum one per HB)
- 50 obstetricians (minimum two per HB)
- 30 sonographers (minimum two per HB)
- 15 anaesthetists (minimum one per HB)
- 15 maternity theatre staff (minimum one per HB)
- 15 maternity hospital admin staff (minimum one per HB).

[i] Scottish Government. Maternity Care Survey 2018: National results ISBN: 9781787816398 Published 26th March 2019, Maternity care survey 2018: national results (**www.gov.scot**).

Data collection

Survey items were developed specifically to meet the study brief. Substantial input from Public Health Scotland and Scottish Government staff was obtained at the survey development stage. This was intended to ensure that the data collected would be of relevance to future policy and practice development and that it would reflect areas of care that are fundamental to the Best Start Maternity policy in NHS Scotland.

The survey items related to documented changes in maternity care in Scotland and evidence to date of the impact of pandemic-related changes on healthcare staff and service users in general. The original plan to utilise key informant interviews to influence survey item development was changed due to delays in obtaining governance approvals during study set-up. Instead, all survey items were developed as described above.

Service changes addressed included ease of access to services, delivery format of appointments (e.g. face-to-face, telephone, video), birthplace options available, outpatient induction of labour, planned caesarean birth options, partner attendance/visitor policies, attendance of partners/a supportive person at appointments and during labour, birth and the postnatal period, and postnatal care at home. Sources of anxiety relating to maternity service changes, unmet care needs and alternative sources of support (out-with the NHS) were also explored.

While the original intention was to combine survey responses from service users with demographic detail in electronic records, this was not possible due to the unforeseen delays in gaining governance approvals during study set-up. The survey was therefore developed in a manner that ensured all relevant demographic and baseline pregnancy data was collected via the survey itself.

Survey items in the service user survey were assessed for content validity with five women who had recently given birth in Aberdeen Maternity Hospital and an additional five women who had given birth elsewhere in Scotland. Items which lacked clarity were reworded to ensure these captured the required data.

Data storage

All survey data was stored, anonymised and analysed in the **Grampian Data Safehaven**. The anonymised dataset will be held on password-protected University of Aberdeen, University of Dundee and Public Health Scotland servers for five years before being destroyed. Contact details provided in the survey for the interview study were destroyed at the end of the data collection period.

Survey data analysis

The quantitative data was descriptively analysed (frequencies and percentages) with pre-planned subgroup analyses based upon: 1) background sociodemographic and mental health status of women; and 2) professional background of staff. Free-text comments were analysed using an inductive thematic approach. Findings were utilised to explain quantitative findings and were also compared and contrasted with the qualitative interview dataset.

Qualitative interviews with pregnant and postnatal women and maternity care staff

Addressing elements of objectives 1–5 in depth, online qualitative interviews explored how women and staff experienced pandemic-related changes in services, with a focus on how their care seeking and care provision behaviours respectively changed and the impact this had on their wellbeing. The qualitative component of this project relied upon multiple-case study rationale where the unit of analysis was the women's journey with reference to service provision from early pregnancy through to 12 months postnatally.

Sampling

We used purposive, maximum variation sampling of pregnant/postnatal women and maternity care staff across four Scottish regions (North, South, East and West). We recruited participants through local collaborators based in maternity services across all NHS Scotland Health Boards and using open adverts disseminated via social media.

Consent

Written consent was obtained from all participants in advance of the agreed interview date. Consent was also confirmed verbally prior to commencing the interviews by the researchers.

Data collection

In-depth semi-structured video interviews were used to maximise the diversity and depth of responses collected and the recruitment of women and staff. Topic guides were developed drawing on existing evidence and relevant conceptual frameworks, including the Quality Maternal and Newborn Care (QMNC) Framework.

Qualitative data analysis

Audio-recorded data were transcribed verbatim, anonymised then subjected to thematic analysis. Data collection and data analysis took place concurrently to enhance rigour and trustworthiness of findings. Initial findings were mapped against the survey domains to inform survey data interpretation and provide a timely report. A range of techniques to enhance trustworthiness were put in place, including independent coding triangulation and group-based data analysis critique sessions with the rest of the research team. The qualitative analysis was aided by QSR NVivo 12 software.

Qualitative and quantitative data were integrated at various points to allow for both sub-studies to inform each other and enable an overall mixed-methods data interpretation approach to inform the interim report and the final research report.

Study results

Technical notes

All survey items were optional except the consent and confirmation of eligibility items. For survey findings, all available responses for each item were used to calculate

results in this report. Some items allowed women or staff to choose more than one response, hence in some cases the total number of responses may exceed the number that responded.

To aid the readability of the report, the number of respondents to each survey question (i.e. the denominator) is reported in the tables only (included in the appendix). For questions where the number of respondents is less than 100, whole numbers of respondents and proportions providing each response are reported in the text in order to provide context. Where a woman selected the 'not applicable' option, these responses were removed from the item denominator unless specified otherwise. Where a breakdown of responses to an item could disclose values less than five (or allow these to be calculated) these values have been removed and replaced with '–' in the tables and excluded from the figures. Avoiding disclosure of small numbers was also achieved by providing a range of percentages in the text where necessary (particularly for survey results relating to video consultations). Small numbers were particularly prevalent in responses to survey items by categories including ethnic group or difficulty understanding English.

The findings sections are presented in the sequence in which the survey questions were asked. As baby loss was a filter question early in the survey, questions on bereavement care were asked at the beginning.

Findings relating to women's experiences

Women survey respondents

In total 2,588 women submitted a survey response. This included: 2,274 who had given birth in the past 12 months (2% in the past 10 days, 5% in the past 11–28 days, 20% in the past 1–3 months, 23% in the past 4–6 months, 50% in the past 7–12 months) – see Figure 1. A total of 307 women were still pregnant (47% at 36 weeks, 46% at 37–39 weeks and 7% at 40–41 weeks gestation) – see Figure 2.

Figure 1: Age of baby at time of survey completion

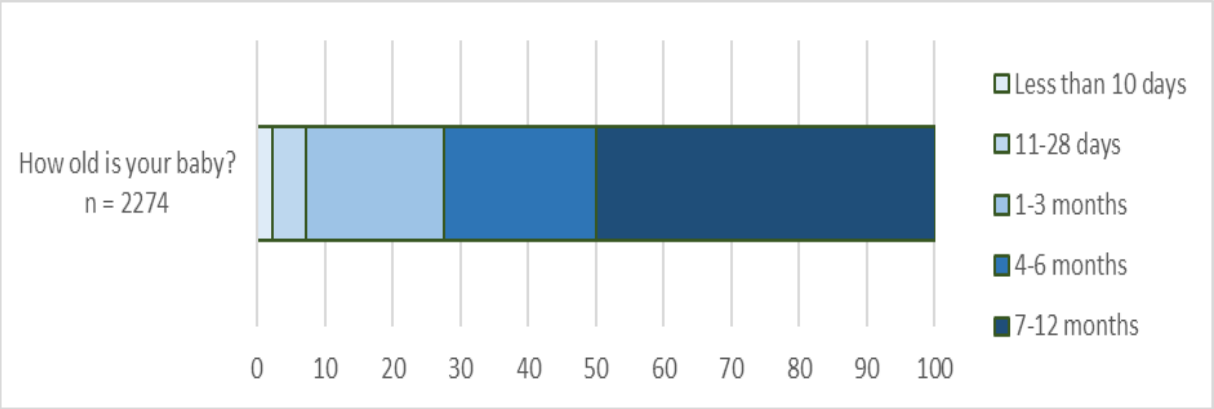
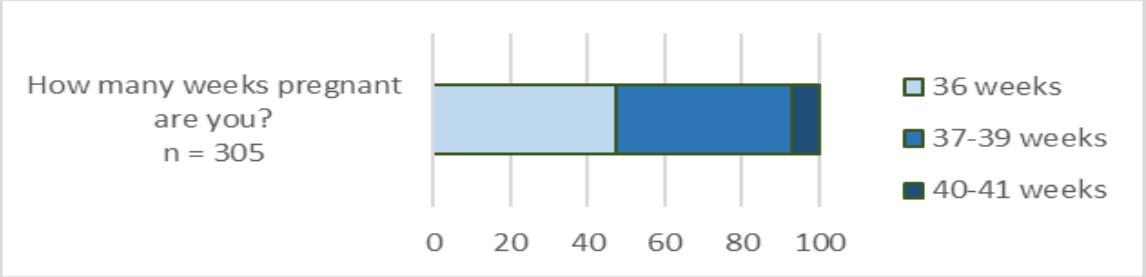


Figure 2: Number of weeks pregnant at time of survey completion



Just under half of women (1,119 – 43%) had given birth previously and/or had other children to look after during pregnancy (1,161 – 45%). In total, 39 women (2%) had a disability that could affect how they access maternity care. The age ranged from 20 women (<1%) aged <20 years, 179 (7%) aged 20–24 years, 614 (24%) aged 25–29 years, 1,047 (41%) aged 30–34 years, 651 (25%) aged 35–40 years and 70 (3%) aged >40 years.

The majority of women responding to the survey were of white ethnicity (2,505 – 97%). In total 36 (1%) were of mixed/multiple ethnic groups, 23 (1%) were Asian/Asian British, 5 (<1%) were Black African/Caribbean/Black British and 7 (<1%) were from another ethic group. Almost all (2,494 – 97%) had English as a first language. Less than five women had difficulty understanding English and less than five completed each of the Polish, Urdu, Punjabi and Arabic survey versions.

One in 50 women (54 – 2%) had disclosed a history of domestic abuse to their midwife at booking. One in five (572 – 22%) women disclosed a mental health problem (180 with depression, 337 with anxiety and 55 another mental health condition). Household income was less than £26,000 for 381 women (15%), £26–

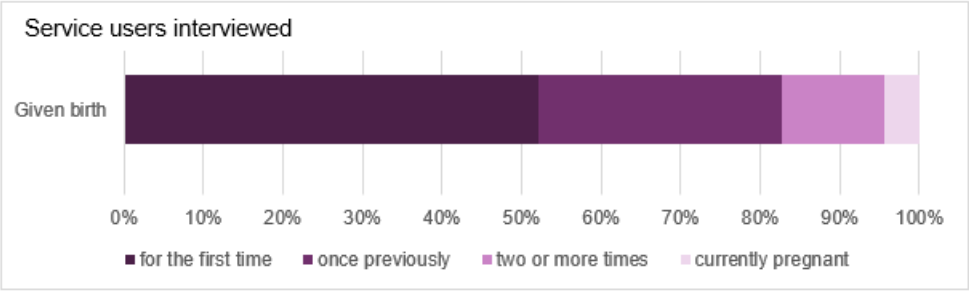
£52K for 876 women (34%) and > £52K for 1,137 women (44%), with 189 choosing not to answer. More than 1 in 3 (38%) of women confirmed that their household income reduced since the pandemic began. For 42% of these women, it was due to loss of employment for themselves or their partner.

Women had received maternity care in the following Health Boards: NHS Ayrshire and Arran (275 – 11%); NHS Borders (10 – 0.4%); NHS Dumfries and Galloway (25 – 1%); NHS Fife (47 – 2%); NHS Forth Valley (105 – 4%); NHS Grampian (169 – 6.5%); NHS Greater Glasgow and Clyde (1128 – 44%); NHS Highland (117 – 4.5%); NHS Lanarkshire (378 – 15%); NHS Lothian (329 – 13%); NHS Orkney (26 – 1%); and NHS Tayside (113 – 4%). Fifteen women received care in Shetland, NHS Eileanan Siar Western Isles or did not answer. Some women received care in more than one Health Board.

Service user interview participant demographics

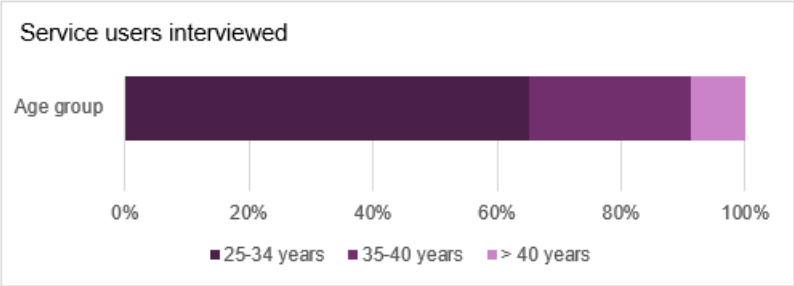
A total of 23 service users were interviewed who received care across seven Health Boards. Some women received care within more than one HB due to complications during pregnancy, labour or birth. Just over half (n=12) of the women had given birth for the first time, seven had given birth once previously, three had previously given birth two or more times, and one participant was pregnant at the time of taking part in the interview. See Figure 3:

Figure 3: Service user interviewees by number of pregnancies



Most women (n=15) were aged 25–34 years, six were aged 35–40 years and two were aged over 40 years. Twenty women identified themselves as white, three identified themselves as Asian or Asian British. See Figure 4:

Figure 4: Service user interviewees by age group



Bereavement care

Eleven women who responded to the survey indicated that their baby had died prior to birth or in the first 10 days after birth. Of those, 10 answered questions about bereavement support. Bereavement support met their needs in less than half of cases. Free-text comments suggested that care provided in hospital was well received and valued but that there were limited wider (external) sources of support available due to pandemic restrictions. This contributed to feelings of helplessness.

Antenatal appointments and ultrasound scans

Routine antenatal appointments in hospital

Women who responded to the survey experienced antenatal appointments at a hospital (n=2270); community midwifery unit, hub or health centre (n=2148); at home (n=783); by telephone (n=1881); and/or by video (n=372). These methods were not mutually exclusive, some women may have had antenatal appointments in different locations and using different remote delivery methods.

The majority (88%) of women experienced a routine hospital antenatal appointment. Of those who attended this type of appointment, a small number of women (n=33) missed a hospital appointment due to fear of getting COVID-19. Over three quarters (76%) of women felt their physical health needs were met, and half (51%) felt their mental or emotional needs were met at these hospital appointments. About a third (36%) had their chosen person accompany them to at least some of these

appointments. The majority (62%) of women felt included in planning their care at these appointments.

Women from higher income households were less likely to miss appointments, more likely to have their physical, mental and emotional needs met and more likely to feel included in planning their care – see Figure 3 below. Women aged under 25 years were most likely to miss appointments. The proportion who agreed that their physical and mental/emotional needs were met increased with age. Women under 25 years were most likely to have their chosen person with them and were least likely to feel included in planning their care.

Women with pre-existing mental health conditions were less likely to agree that their physical (67% versus 79%) or mental/emotional health needs (41% versus 54%) were met at these hospital appointments compared to women without these conditions. Affected women were also less likely (54% versus 64%) to feel involved in planning their care.

Figure 5: Experience of routine in-person hospital antenatal appointments by household income

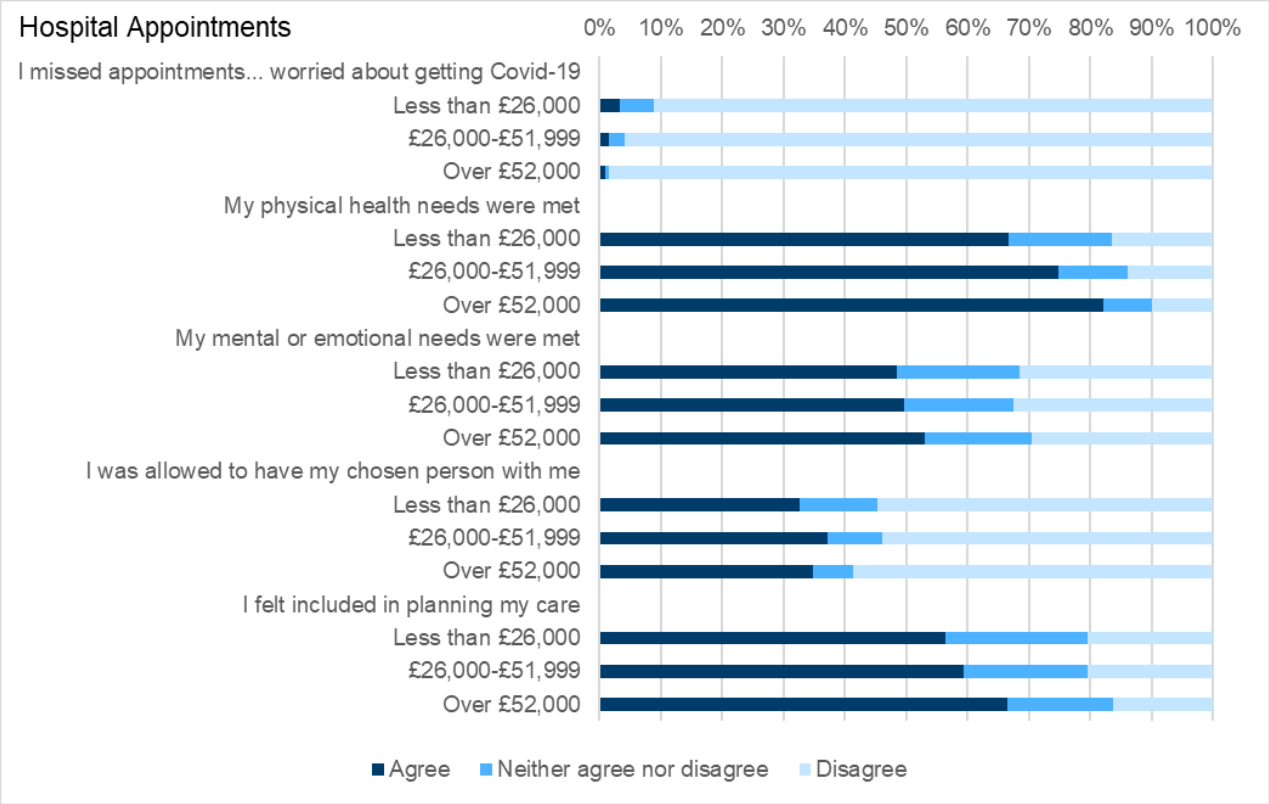
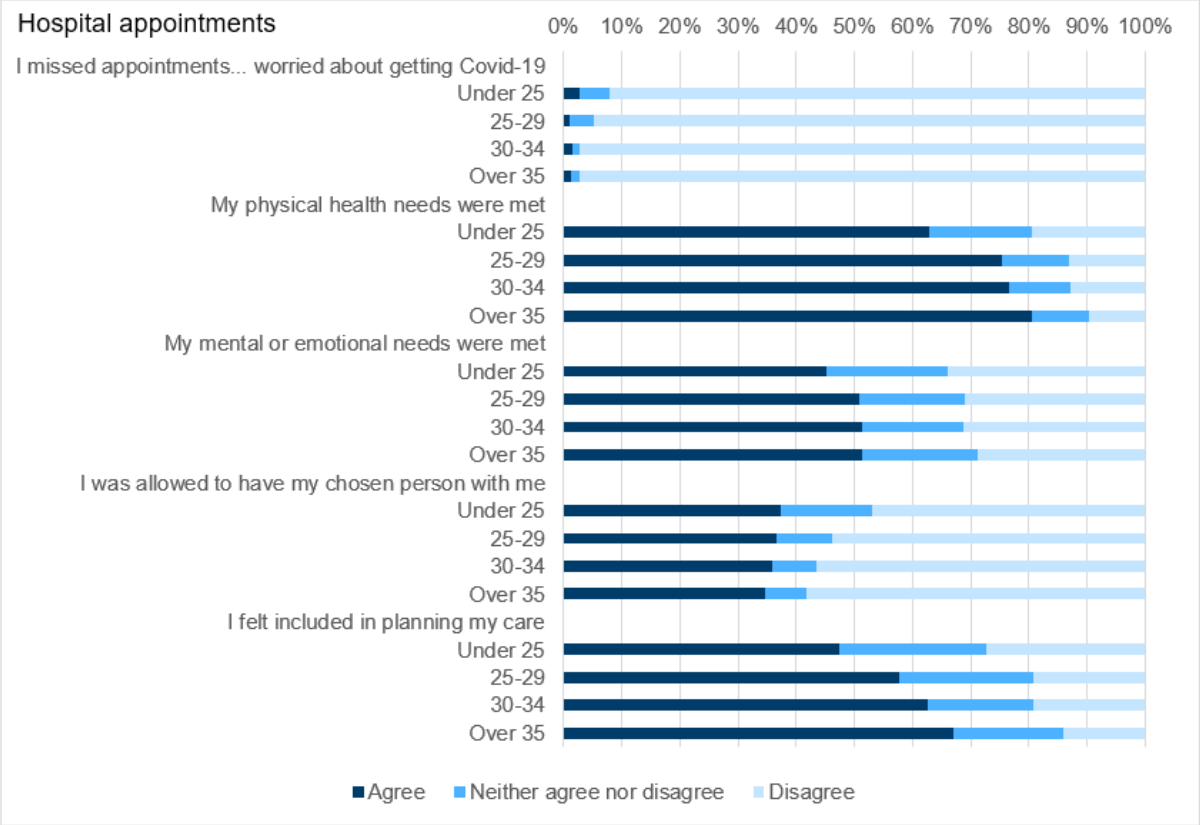


Figure 6: Experience of routine in-person hospital antenatal appointments by age



Anxiety associated with having to attend appointments alone, particularly in relation to the 12-week scan appointment, was the main issue highlighted by women in interviews and survey comments about their experiences:

> ‘So my husband couldn’t come along to the scan, and that for me was probably the most difficult bit particularly because the lady in front of me who was waiting, and she’d obviously got bad news during the scan, so they were trying to comfort her and she was coming out and they were obviously trying to find her husband who was out in the car park, but it was just before I was going into my first scan, and I sort of had this sort of five minutes of complete panic, thinking, ‘Oh god, what if that happens to me? My husband]’s not here’. I think that was the most negative part for me was not having a partner at the scan. I think in case I’d had bad news, and

obviously the woman in front of me, her husband wasn't there, he was sat in the car.' (P02)

Travel time and mode

The time taken to travel to a hospital appointment did not cause any difficulties for the majority of women (91%) who responded to the survey. More than 90% of women travelled to the hospital by private car driven by someone from their household (or by themselves) at least once – see Figure 7. Fear of contracting COVID-19 was described by some as a reason to be driven by family members from outside their household rather than take a taxi, and of the 4% who travelled this way, 16% felt quite concerned about it – see Figure 6. Younger women (under 25 years) and those from low-income households were least likely to travel by private car. Women from higher income households and those in older age groups were least likely to experience difficulties with journey time to attend hospital appointments – see Figure 9.

Within the interviews, travel and time and mode was rarely raised as an issue.

Figure 7: Mode of transport to attend hospital appointments, by household income and age

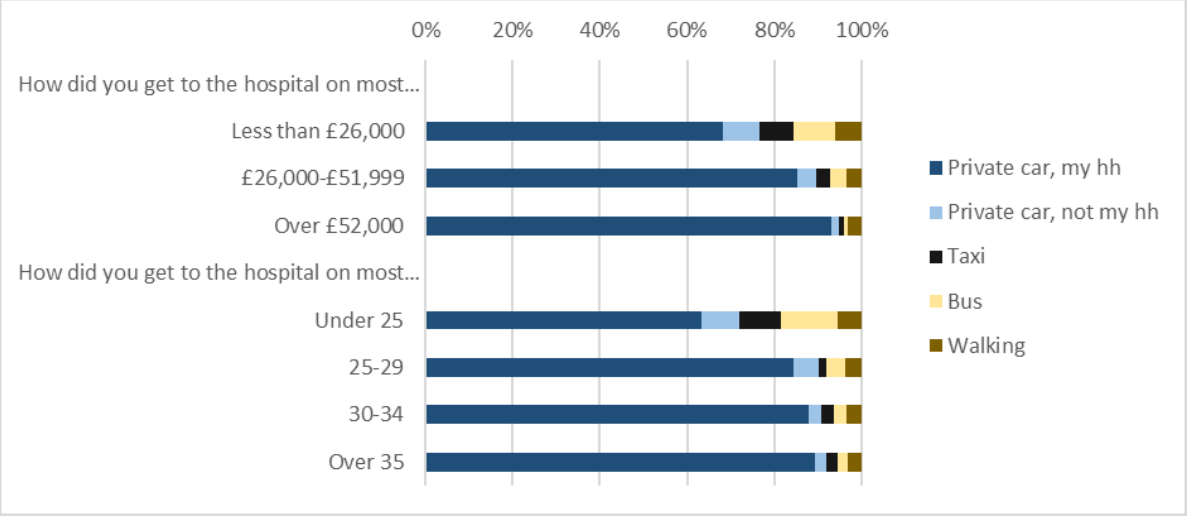


Figure 8: Experience of using modes of transport to attend hospital appointments

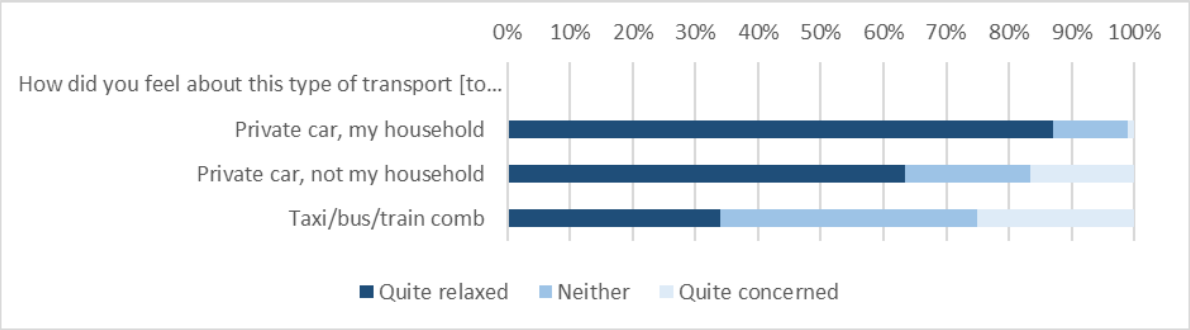
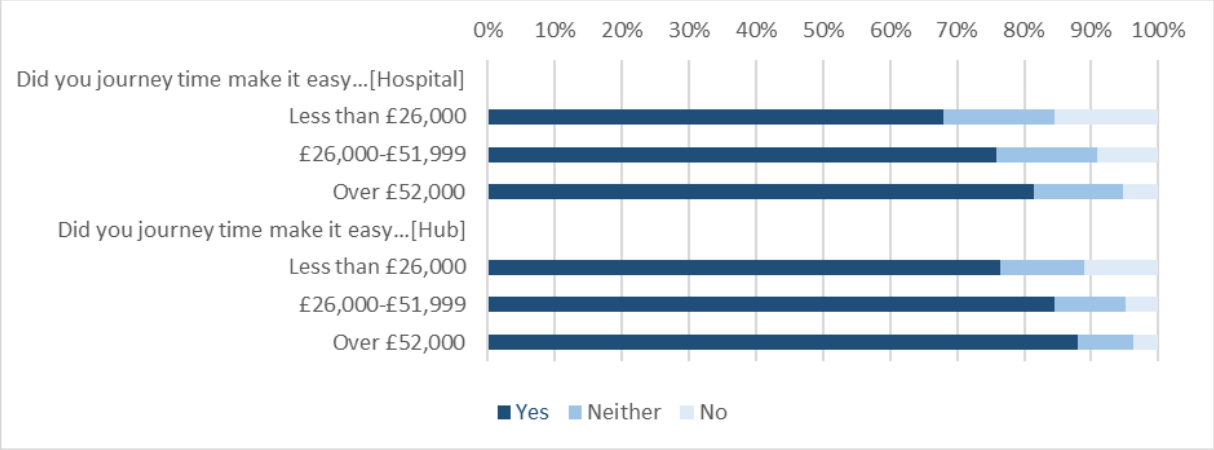


Figure 9: Experience of whether journey time to hospital made it easy to attend or not, by household income



Parking problems were a common theme in free-text survey comments, with free parking being a help in some areas but a hindrance in others as car parks were busier as a result. Some women described a long and painful walk from their car to their appointment when they attended alone, whereas if their partner had come with them, they would have been dropped off at the hospital door before their partner parked the car.

Routine antenatal appointments at a community midwifery unit, hub or health centre

Most women (85%) experienced at least one routine antenatal appointment in a community midwifery unit, hub or health centre. Thirty-four women missed an appointment due to a fear of getting COVID-19. A high proportion of women (80%) felt their physical health needs were met and 62% felt their mental or emotional needs were met at these appointments.

Just under a quarter (24%) had their chosen person with them and most (69%) felt included in planning their care at these appointments.

Figure 10 shows that women with a higher household income were less likely to miss appointments, were most likely to have physical and mental/emotional needs met, most likely to feel included in planning their care and most likely to leave a comment, but least likely to have their chosen person with them at appointments.

Younger women (under 25 years) were most likely to miss appointments, feel that their physical and mental/emotional needs were not met, and were least likely to feel included in planning their care – see Figure 11. Increasing age was associated with increased feelings of being included in the planning of their care.

Figure 10: Experience of routine in-person hub/midwifery unit/health centre antenatal appointments, by household income

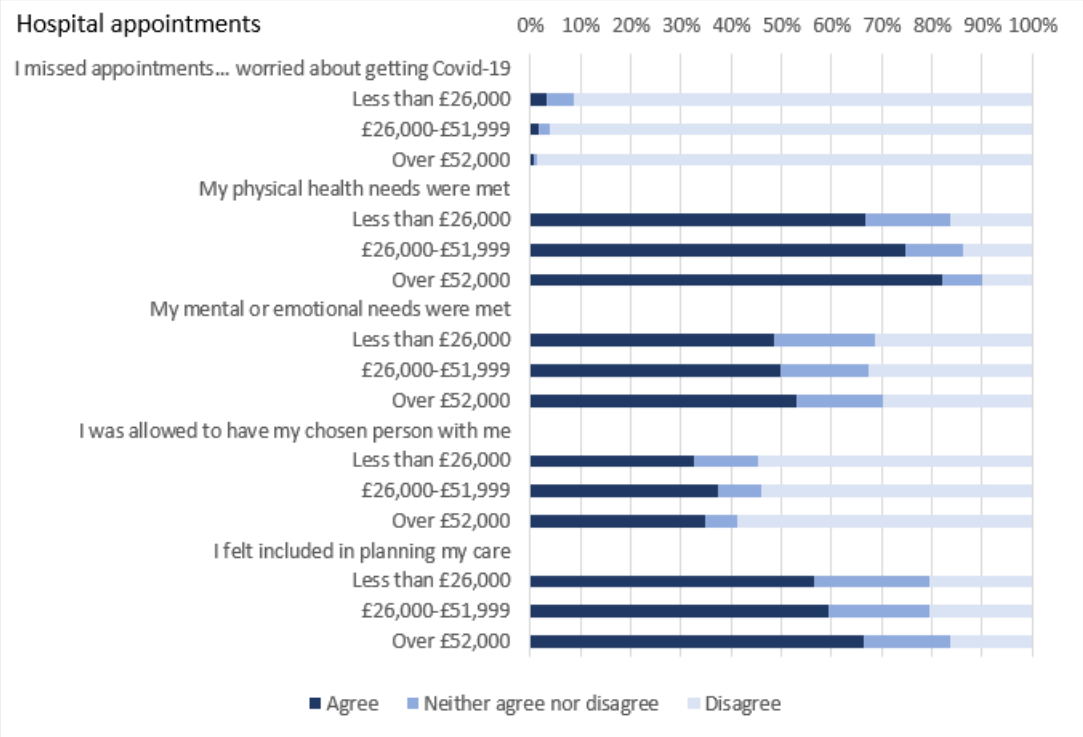
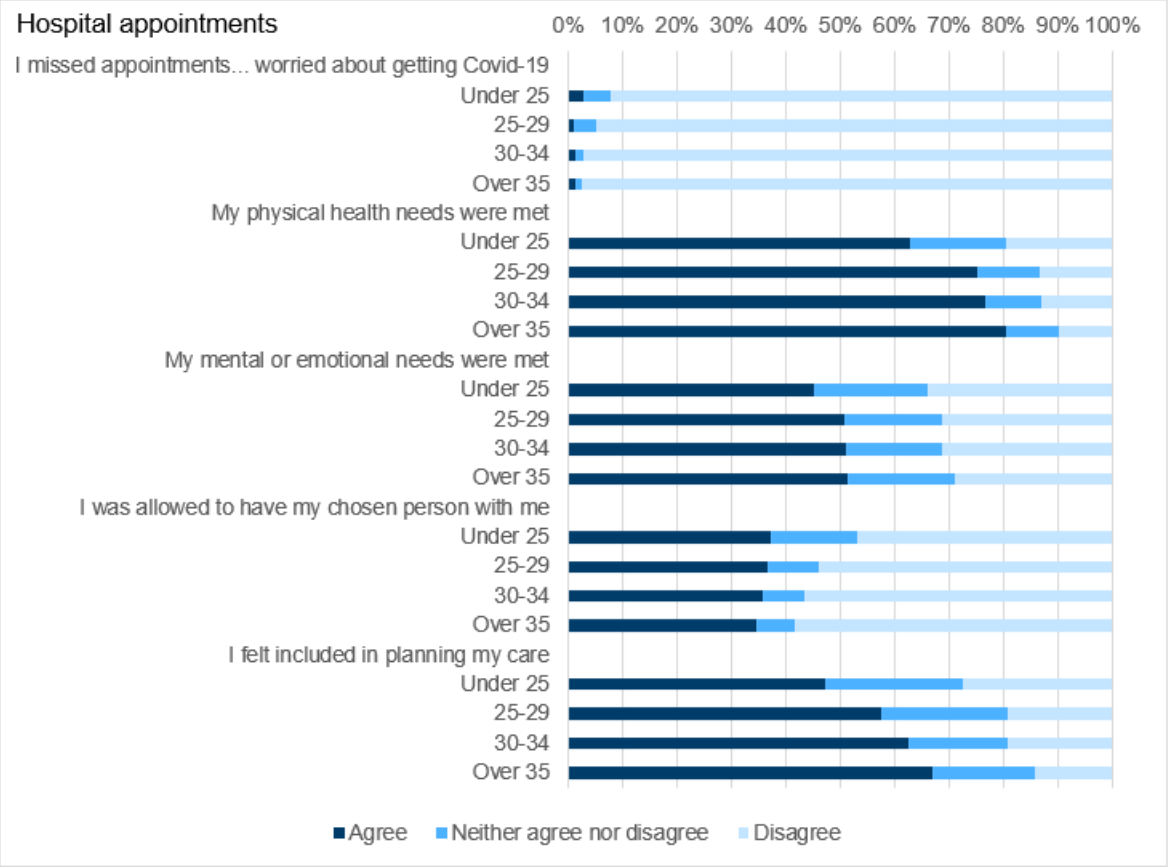


Figure 11: Experience of routine in-person hub/midwifery unit/health centre antenatal appointments, by age



Women with pre-existing mental health conditions were less likely to agree that their physical (75% versus 82%) or mental/emotional health needs (52% versus 65%) were met at these appointments compared to women without these conditions. Affected women were also less likely to feel involved in planning their care (62% versus 71%).

Women's experiences described in interviews and survey comments raised issues with communication, including barriers to reach out to their named midwives or midwifery teams and lack of continuity, which in some cases was linked to mental health and anxiety issues:

> 'I think when you don't have the continuity it's even harder to make a connection. Towards the end of the pregnancy, I did see the same midwife. I think once you're 30 weeks they actually had you to come into

the GP practice and you had appointments face-to-face. But again, togged up with masks and again, because you're face-to-face I think they wanted you in and out quite quickly so that you weren't actually prolonging the exposure to the staff. Which again makes sense, but it felt like the appointment is just like, we've got this, this and this to do. How are you feeling? Great. On you go. And you just didn't ... it didn't really again feel like I made much of a connection to the staff. [truncated] … yes it just felt like there was no connection. So discussing what was going on didn't really happen.' (P11)

Travel time and mode

Eighty-five percent of women responding to the survey reported that journey time to hub/health centre/midwifery unit made it easy to attend their appointments, 5% reported that it did not and 10% said it had neither effect.

Women from higher income households and older women were more likely to report that the journey time made it easy to attend these appointments.

Eight-four percent of women travelled to the hub/midwifery unit/health centre by private car driven by someone from their household (or by themselves) at least once. Less than 5% of women travelled by private car driven by someone from out-with their household or by taxi, bus or train. Almost a fifth (19%) of women walked to their appointment at least once.

Women from low-income households and those aged under 25 years were least likely to travel by private car and most likely to travel by taxi or bus.

Very few (<1%) women who attended by private car driven by someone from their own household were concerned about the mode of transport. Of those who attended by private car driven by someone from outwith their own household (n=21) or who walked (n=241), less than 5% of women felt quite concerned about the mode of transport. This contrasts sharply with those who attended by taxi, bus or train (n=41), of whom 37% felt quite concerned about the mode of transport.

Routine antenatal appointments at home

Just under a third of women (32%) experienced a routine antenatal appointment in their own home. Almost a quarter (24%) of these women were concerned about having people in their home for these appointments due to COVID-19. However, these appointments were most likely to elicit a positive response from women in terms of meeting their physical health needs (81%), meeting their mental and emotional needs (70%), offering adequate privacy (89%) and feeling involved in planning their care (75%).

Women from lower income households were more likely to feel concerned about having people come into their home due to COVID-19, less likely to have their physical and mental/emotional needs met, less likely to feel included in their care planning, less likely to have enough privacy and less likely to feel involved in planning their care compared to those from higher income households – see Figure 10. Younger women were less likely to have their physical and mental/emotional needs met, less likely to have enough privacy and less likely to feel involved in planning their care at these appointments compared to older women – see Figure 11.

Figure 12: Experience of routine in-person antenatal appointments at home, by household income

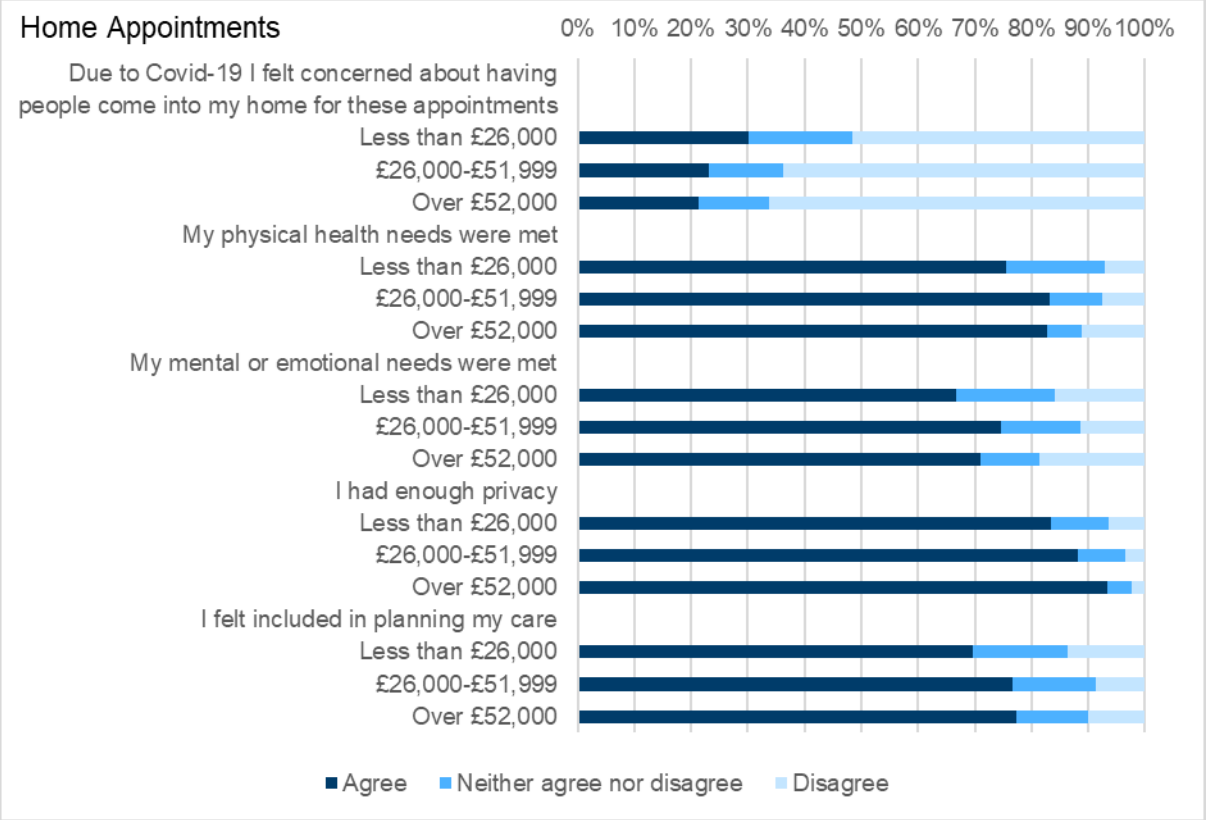
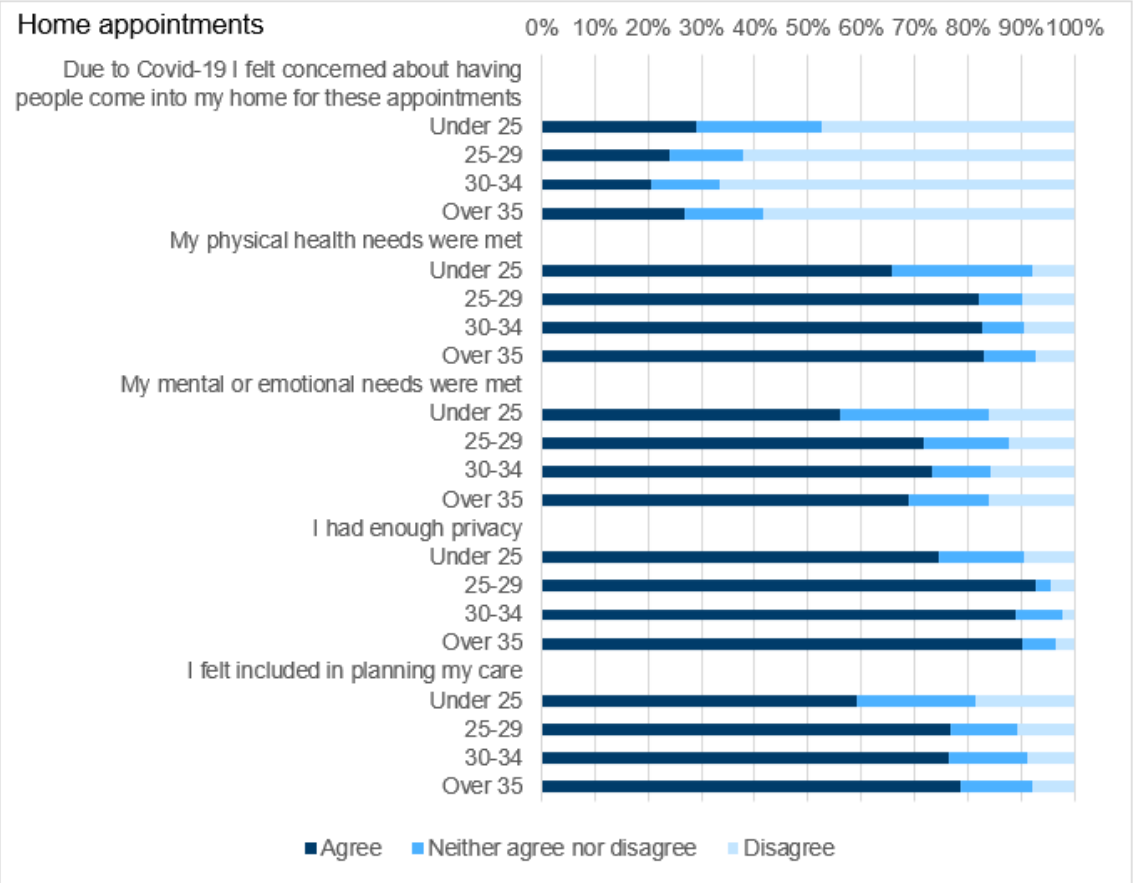


Figure 13: Experience of routine in-person antenatal appointments at home, by age



Women with pre-existing mental health conditions were less likely to agree that their physical (75% versus 83%) or mental/emotional health needs (66% versus 71%) were met at these appointments compared to women without these conditions. Affected women were also less likely to feel involved in planning their care (70% versus 77%).

The qualitative data supported an overall positive experience of home appointments. Women described feeling safe due to midwives' personal protection equipment (PPE) practices, that their partners could be involved and that they felt reassured and supported in a relaxed and unhurried atmosphere. These appointments were described as very convenient and easier to juggle with other family and work commitments:

> ‘My midwife came to my home for my appointments, in fact it was even easier than meeting in the surgery. (…) The first time was in the doctor’s surgery and the rest of the time she came to my home so as I say so even easier because I didn’t have to go out to the doctor’s surgery and think it would be maybe easier for me [as] I was working at the time, working from home. So, yeah, that was I guess, a positive, there was less disruption.’ (P08)

Routine antenatal appointments using telephone to replace in-person appointments

In total, 75% of women responding to the survey experienced a routine appointment by telephone. Generally, women were less likely to report that their needs were met using the telephone compared to in-person appointments, with less than half agreeing that these appointments met their physical needs (49%) or mental or emotional needs (44%), and just over half feeling included in planning their care (58%). Forty-two percent of women also reported that using the telephone stopped them from building a good relationship with their midwife/doctor and 44% did not ask all the questions they wanted to ask. However, 79% of women reported that they understood what was talked about at these appointments and that they had enough privacy.

Women from lower income households and those aged under 25 years were more likely to feel that using the telephone stopped them from building a good relationship with their midwife/doctor. These women were less likely to feel that their mental or emotional needs were met, understand what had been talked about, have asked all the questions that they wanted to ask, felt included in planning their care or have felt that they had enough privacy at these appointments compared to older women – see Figures 14 and 15.

Figure 14: Experience of using telephone to replace in-person routine antenatal appointments, by household income

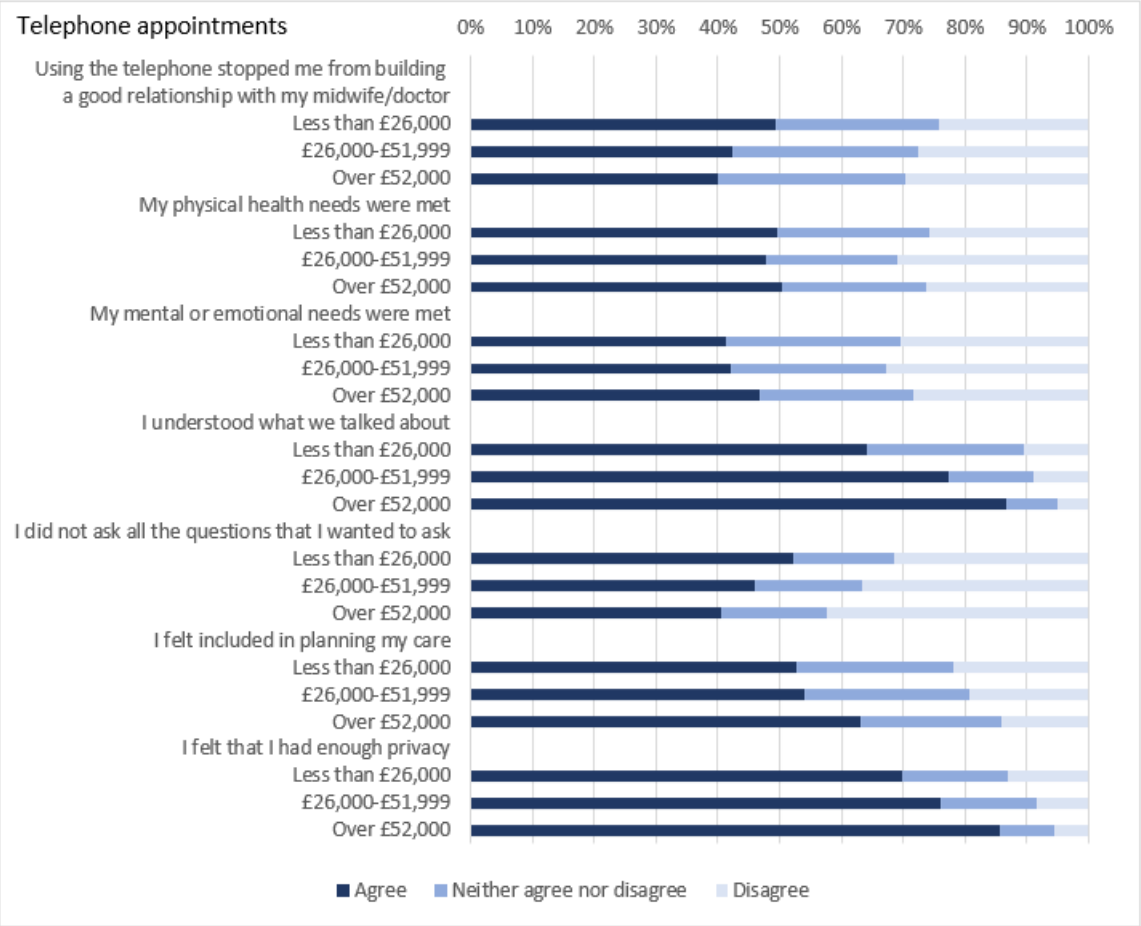
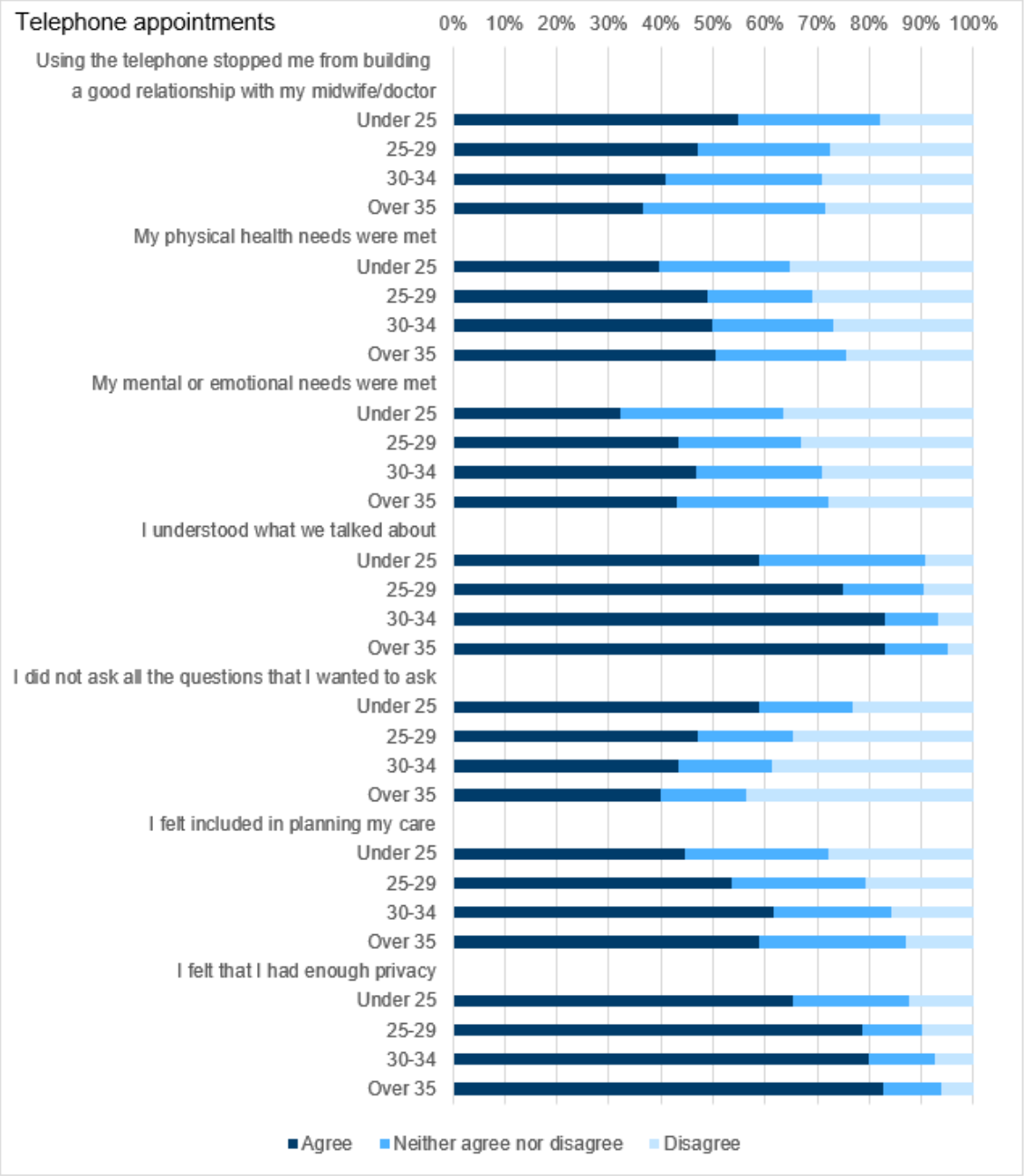


Figure 15: Experience of using telephone to replace in-person routine antenatal appointments, by age



Women with pre-existing mental health conditions were less likely to agree that their physical (44% versus 50%) or mental/emotional health needs (35% versus 47%) were met through these appointments compared to women without mental health conditions. Affected women were also less likely to understand what was talked about (70% versus 82%) or feel involved in planning their care (48% versus 60%). A higher proportion of women with mental health conditions reported not asking all the

questions they wanted to ask at telephone appointments compared to women without these conditions (55% versus 41%), and that using the telephone prevented them from building a good relationship with their midwife or doctor (49% versus 40%).

Survey and interview data reflected that telephone appointments tended to feel rushed, impersonal, lacking in support and were experienced as one-sided (information flow from midwife to woman). Women found it difficult to establish the required level of communication and connection in the context of a telephone consultation.

> ‘I suppose in terms of the interactions with the midwives, again all of that [the results of genetic testing] was conveyed to me over the phone, which is – it was fine. But I think I prefer face to face contact. And I think I am less inclined to ask questions or like seek clarification over the phone. I don’t know really why, I think that’s just my personality. But after the few face-to-face interactions, you have actually again only being able to see half a person’s face when you’re discussing things, it makes a difference to me [to be able to have a face to face interaction], I guess you can’t really read a person’s expression [with all the PPE]. It’s even harder over the telephone. But yes, I really did feel like that [being able to have a face-to-face appointment] made a difference.’ (P11)

There were practical difficulties including a lack of set times for phone calls, lack of privacy due to other children or colleagues being nearby, difficulties understanding the clinicians’ voice/accent or in obtaining a good quality signal.

> ‘I was due to have phone appointments, and no one phoned me. Like my 16-week check and then between like my 12-week scan and my 20-week scan, I never spoke to anyone at all. I was supposed to get a phone call and they kept just saying they were busy and never got in touch, and I couldn’t contact them on the phone. So that was annoying.’ (P01)

However, for some women these appointments had a place in providing non-emotive information and fitted in better with their other commitments, such as work or childcare.

> ‘I still had to go in to get the bloods done anyway, but most of it was done over the phone, which really suited me because of having two other kids, they wouldn’t have liked to sit, and to be honest for me as well, at that point, if you’re feeling quite unwell in the early stages of pregnancy the last thing you want to do is go and sit in a hot room wearing a mask for an hour.’ (P17)

Some comments made clear that when quality of communication was good these calls could work well.

> ‘my booking-in appointment which would normally be a face-to-face appointment, that very early appointment, was done over the phone, which was fine in a way because actually they’re asking you a whole series of pretty mundane questions, the majority of it it’s a conversation and so that can be done over the phone.’ (P16)

Routine antenatal appointments using video to replace in-person appointments

Video appointments were experienced by 15% of women. Video appointments were generally viewed more favourably compared to telephone appointments but less so compared to in-person appointments.

A third of women felt that using the video stopped them from building a good relationship with their midwife/doctor. Similar proportions of women felt that that the physical health needs (58%) and mental or emotional needs (56%) were met at these appointments.

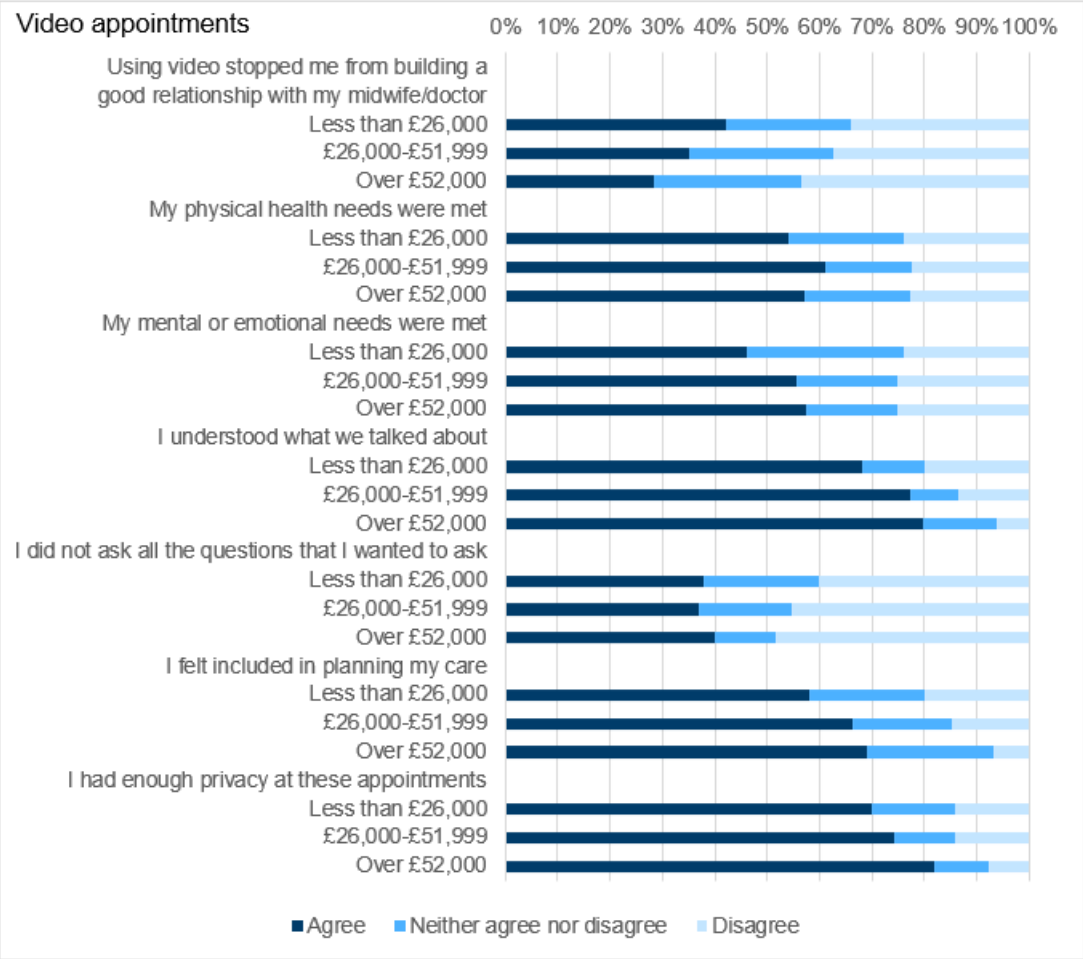
Most (78%) women understood what was talked about at these appointments and felt included in planning their care at these appointments (67%). However, more than a

third (38%) did not ask all the questions they wanted to ask. Video appointments did provide sufficient privacy for 78% of women.

Women from lower income households and those aged under 25 years were more likely to feel that using video stopped them from building a good relationship with their midwife/doctor and were less likely to feel that their physical health, mental or emotional needs were met or that they had enough privacy. Women from low-income households were also less likely to understand what had been talked about, or to feel involved in planning their care at these appointments compared to those from higher income households, although overall numbers were low in these categories – see Figure 16.

Women aged under 25 years were less likely to have asked all the questions that they wanted to ask at these appointments compared to older women, although overall numbers were low in these categories.

Figure 16: Experience of using video to replace in-person routine antenatal appointments, by household income

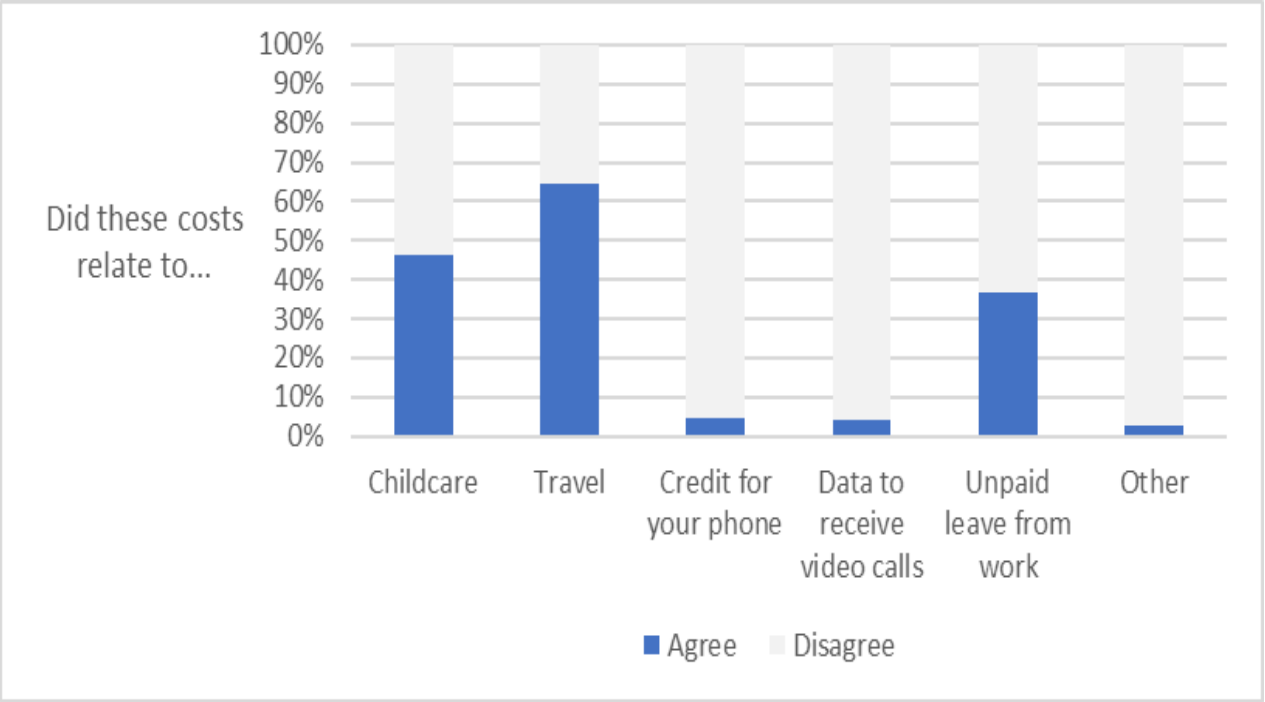


Women with pre-existing mental health conditions were less likely to agree that their physical (51% versus 61%) or mental/emotional health needs (50% versus 59%) were met through video appointments compared to women without mental health conditions. Affected women were also less likely to understand what was talked about (69% versus 81%) or feel involved in planning their care (57% versus 72%). A higher proportion of women with mental health conditions reported not asking all the questions they wanted to ask at telephone appointments compared to women without these conditions (45% versus 36%), and that using video prevented them from building a good relationship with their midwife or doctor (41% versus 29%).

Costs of attending appointments

Although only a small proportion of women reported experiencing money problems due to cost of attending routine antenatal appointments (7%), of those who did, 15% missed appointments due to cost of attending these. The type of problem costs included: 46% childcare, 64% travel, 5% credit for phone, 4% data to receive video calls, 37% unpaid leave from work, 3% other – see Figure 17. (Note: percentages are out of 177 unique respondents and cannot be cumulated as more than one option could be chosen).

Figure 17: Costs of attending appointments that led to money problems for women



Missing appointments due to childcare

Five percent of women who responded to the survey missed appointments because they had other children to look after, 66% rearranged an appointment due to lack of childcare. Of those who missed appointments, only a third (34%) felt they got the care/support they needed while 66% felt they did not (n=71).

Attending appointments alone

Ninety percent of women attended at least one antenatal appointment alone due to COVID-19 pandemic restrictions. Comfort with having to attend appointments alone varied; 18% felt okay with it and may have attended appointments alone anyway and 15% felt quite comfortable, however the majority of women felt uncomfortable (19%) or very uncomfortable (49%). Among women with mental health conditions, these figures were 11%, 8%, 17% and 63% respectively.

Seventy-two percent attended scan appointments alone due to pandemic restrictions. Of those, 42% reported receiving the support they needed. Among women with pre-existing mental health conditions who attended scan appointments alone, 35% reported receiving the support they needed.

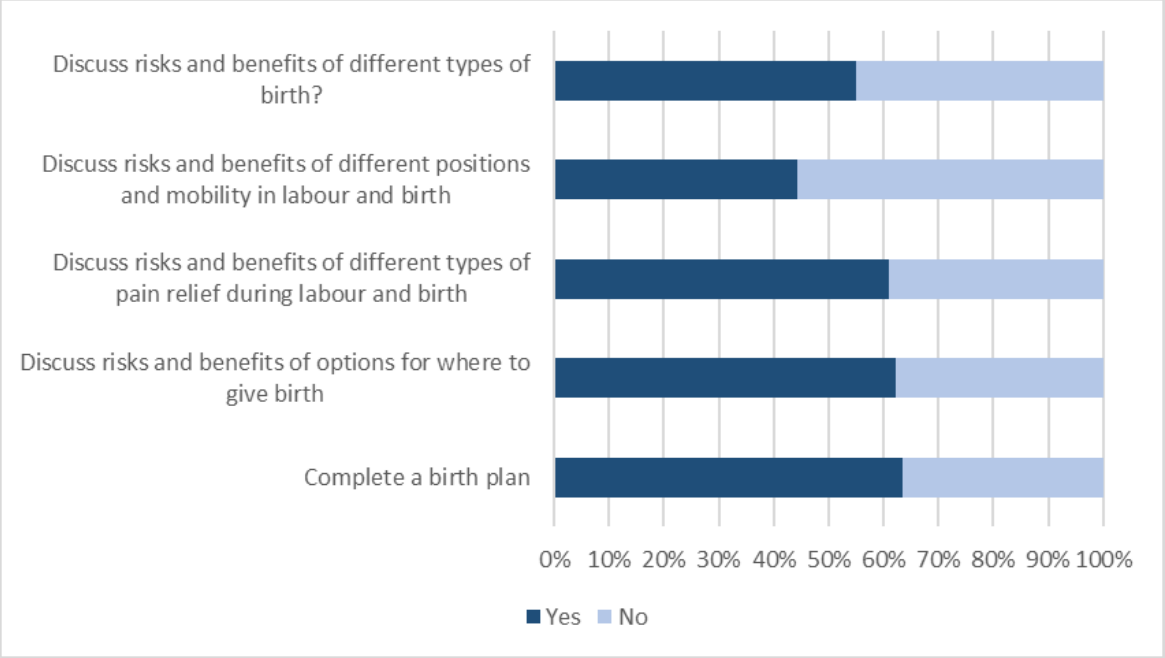
The possibility of having to attend appointments alone was a consistent and major theme from interviews and survey comments. The implications of this were several, including: a heightened sense of anxiety in the event of receiving bad news, particularly when attending on their own following a previous miscarriage; feeling lonely and unsupported; feeling unable to remember all the questions to ask whilst trying to retain all the information to relay; a sense of loss of the family-building process; partners feeling excluded and prevented from the opportunity to bond with the unborn baby. Conversely, being allowed to attend appointments with one's partner was extremely valued by women.

> 'My husband wasn't able to come to our first scan. But he was able to come to our second, and actually [baby] was a bit sluggish in the growth department so he was actually in the end we had two extra scans. So he was able to be at three of the four scans we had. So I think because it was the first one he missed and there were others that he was able to come to, that didn't feel as much of a sort of- He didn't feel as much that he missed out as he might have had he missed out on others as well. Obviously, we were lucky that it was very good news at the first. I would have found it quite hard if there had been bad news obviously at that appointment.' (P09)

Topics discussed in antenatal appointments

More than half of women responding to the survey reported that, during routine antenatal appointments, they discussed their birth plan (64%), the risks and benefits of options for where to give birth (62%), types of birth (55%) and different types of pain relief during labour and birth (61%). Less than half discussed risks and benefits of different positions and mobility in labour and birth (44%) – see Figure 18.

Figure 18: Topics discussed during antenatal appointments



Free-text survey comments suggested that not completing a birth plan caused substantial concern to many women, especially for those who had not given birth before. Antenatal anxiety about what to expect during the birth and postnatal reflection on the birth with a sense of having been 'unprepared' for complications were recurrent issues. Many women described attempting to discuss a birth plan with their midwife but were advised that this would happen at a later date when in reality it did not.

Antenatal education

Nineteen percent of women who responded to the survey received antenatal education or attended classes, the majority of whom had not previously given birth.

Of these, almost three quarters (74%) involved online information, 13% involved going to a group and 14% were ‘other’ types of antenatal education. Less than half of these women (42%) were able to interact with other pregnant women at the same time. Just over one in three (37%) felt the education/classes made them feel ready to have their baby and become a new parent.

Free-text survey comments highlighted that many women felt there was absolutely no provision of antenatal education by the NHS during the pandemic.

> ‘that was the other thing, I wasn’t really seeing anyone else so I never got a chance to meet other mums or other mums to be. There was no antenatal classes.’ (P11)

Many women utilised private antenatal education instead, including Daisy Foundation, NCT and hypnobirthing classes via Zoom virtual meeting service. While some women responding to the survey reflected positively on an online resource provided by the NHS, others described it as inadequate to meet their needs. It was described as being heavily scripted and ‘awkward to ask questions’. Some women valued being directed to local social media groups where they were able to interact with other mothers. Some comments made clear that accessing adequate antenatal education online was too expensive, and that attending in person carried too much risk of contracting COVID-19. Comments reflected that some women felt that they missed out on the opportunity that antenatal education could have provided to make friends with other expectant parents:

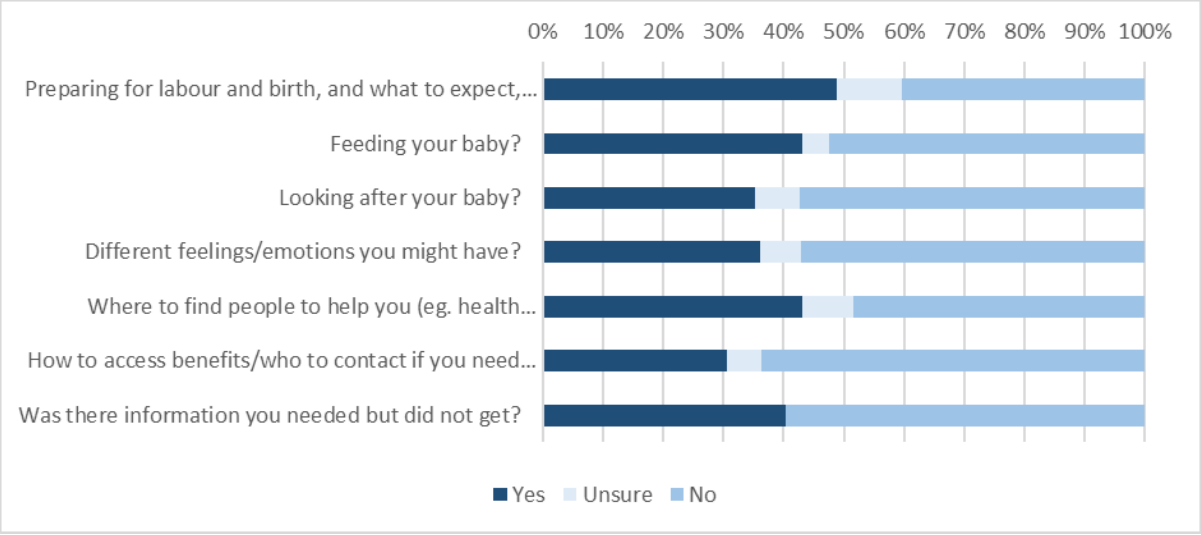
> ‘no antenatal, no mother and baby groups, no meeting up with people. It was just really difficult doing it all on your own and not having that interaction with everyone. Once your - like, my partner went back to work, I was just on my own for months, you know, months and months on your own, and thankfully we have technology and you could phone, but it’s not the same as that – (…) All the antenatal classes were stopped because of Covid. Afterwards, there was no groups, there was no - you couldn’t do anything, and in my case, when the groups have met - they’ve only now

really started opening up again. You know, my maternity leave was over long ago, so that chance is gone to meet people in the same situation and meet people with babies the same age, and all that kind of thing. So yes, that was something that was really difficult because of Covid, you couldn't have any of that normal experience that you would have on maternity leave.' (P32)

Information provision at antenatal appointments

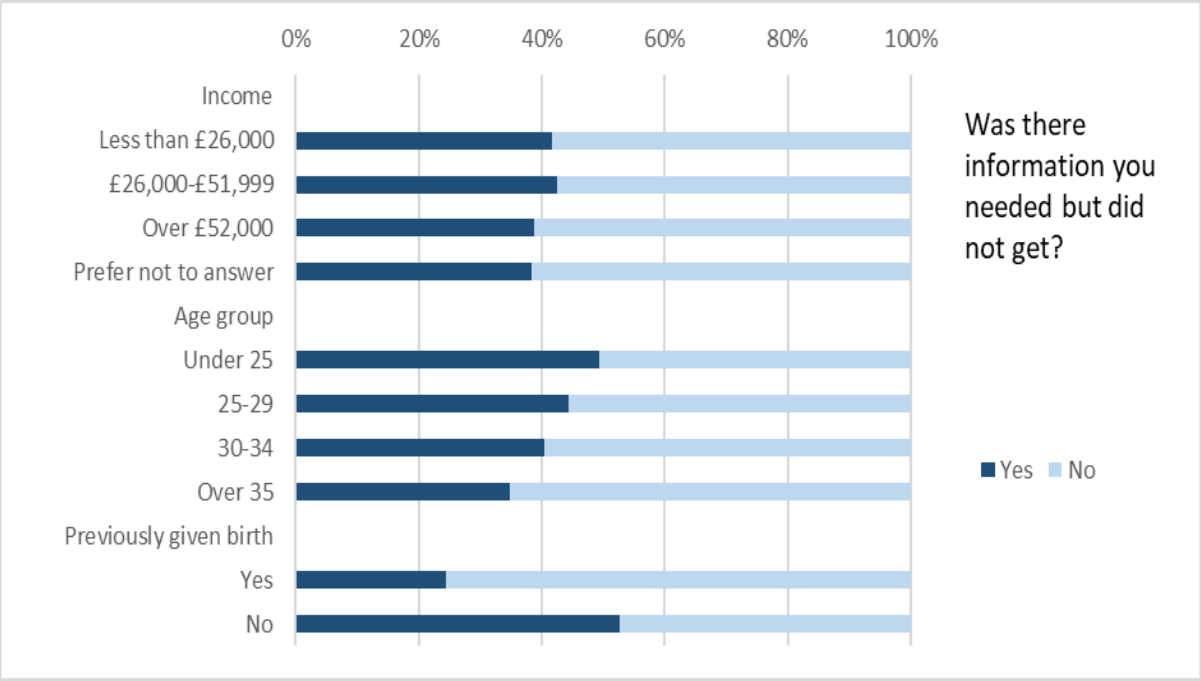
Less than half of women responding to the survey reported having received enough information on specific topics during antenatal appointments. Women reported receiving enough information on: preparing for labour and birth, and what to expect, including choices they could make (49%); feeding their baby (43%); different feelings/emotions they might have (36%); where to find people to help them, e.g. health professionals or online support groups (43%); how to access benefits/who to contact if they needed help with money (31%) – see Figure 19.

Figure 19: Adequate information received on specific topics during antenatal appointments



For 40% of women there was information they needed but did not get – see Figure 19 and 20.

Figure 20: Experience of information needed but not received, by household income, age and whether or not had previously given birth



A perceived lack of information on pregnancy, birth and becoming a new parent were mitigated for by utilising the internet, family and friends or paying for private antenatal education. Additional areas where information was lacking included how to manage pelvic pain, what to expect after a complicated birth (e.g. emergency caesarean) and how to access emotional support.

Overall reflections on antenatal care provision (not specific to appointment type)

Attending alone: some service user reflections came through qualitative data that highlighted more general challenges with attending antenatal care alone. These included the mental stress of processing complications of pregnancy without a partner present for support, which included pregnancies affected by foetal anomaly, gestational diabetes, in vitro fertilisation and hyperemesis.

Mask wearing: a number of comments highlighted how wearing a mask contributed substantially to maternal distress. This was especially relevant to women with hyperemesis.

Information and communication: limitations to how information was communicated to service users about restrictions on partners attending hospital and COVID-related childcare regulations were described.

Some women took this opportunity to thank NHS staff for their hard work during the pandemic, and others to describe excellent care experiences.

Free-text comments specific to younger women, those from low-income households and from ethnic minority background suggested that a number of issues were particularly pronounced:

- challenges in accessing maternity care due to financial concerns
- concerns about using public transport due to COVID-19
- lack of privacy at home
- the need for support from a partner/supporter when receiving care.

A lack of supported decision-making practices were especially evident among women from minority ethnic groups.

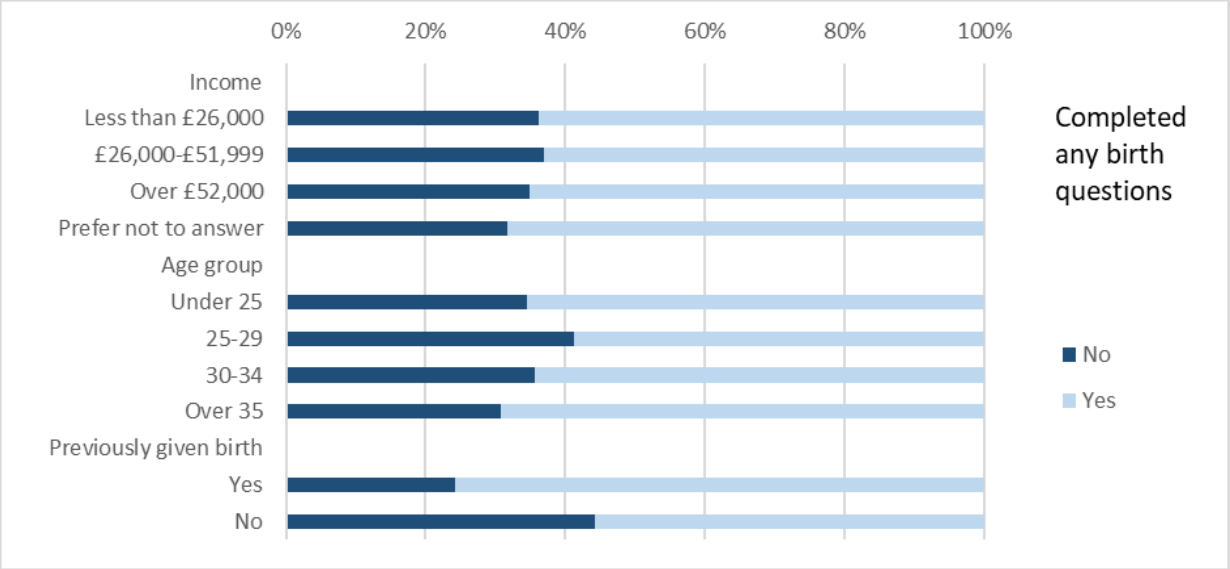
Birth

The maximum number of women who responded to the survey is 1,663 in the birth section (from a potential maximum of 2,281 who submitted a survey and had given birth). This lower number reflects a survey routing error for those who provided a comment to the previous question (type of information wanted but not received at antenatal appointments). Those who left a comment were routed to the demographic questions at the end of the survey, so did not complete questions on the birth, postnatal care or access to services related to maternity care.

The women directed to the birth questions were more likely to be in the 35–40-year age group and less likely to be the 25–29-year age group than those who were routed directly to the demographic questions – see Figure 19. Related to the age difference, women were also more likely to have previously given birth prior to this pregnancy (51% versus 30%) or be looking after other children during pregnancy

(52% versus 33%). They were slightly more likely to be white (although the proportion of non-white women is low overall). There were no significant differences in disability, mental health problems, household income or reduction in household income. With respect to Health Board, the proportion from Glasgow was lower in those directed to the birth questions (37% versus 44%) and the proportion from Lothian was higher (15% versus 8%).

Figure 21: Women who completed birth and post-natal questions, by household income, age and whether or not they had previously given birth



Planned caesarean birth

One in five (22%) of women responding to the survey had a planned caesarean birth before labour.

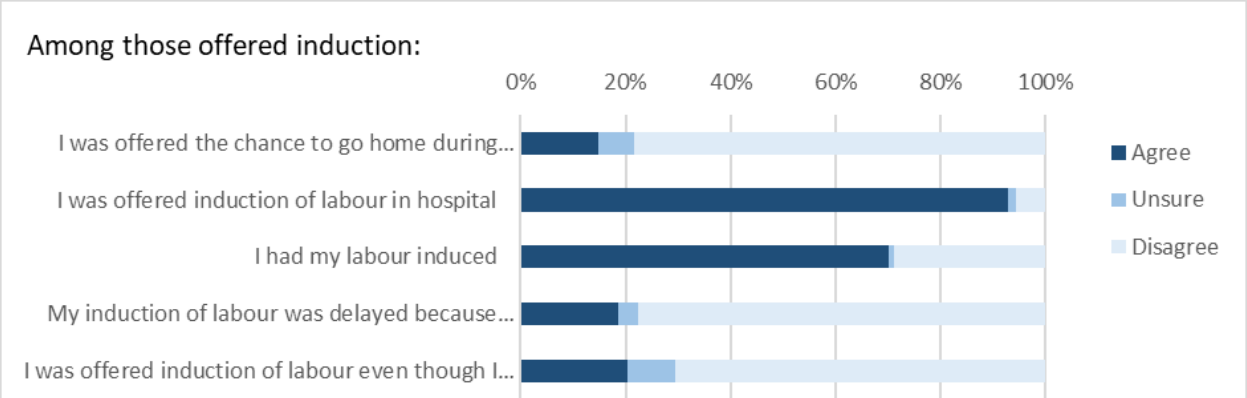
Induction of labour

Of those who did not have a planned caesarean birth, 66% of women responding to the survey were offered induction of labour. Of those offered induction of labour, 15% were offered the chance to go home during the process. Ninety three percent were offered induction of labour in hospital and in total 70% of those offered induction of labour actually had their labour induced. Almost one in five (19%) had their induction

of labour delayed because there were no available appointments. A fifth of women felt they were offered induction of labour even although they did not think they needed it.

Of those not offered induction of labour, 81% felt that this was because their care team did not think they needed it and just 6% felt that they should have been offered it.

Figure 22: Experiences of being offered induction of labour



Being at home in labour before attending planned place of birth

Of those who did not have labour induced and did not have a pre-labour caesarean birth, 29% said that the pandemic meant that they stayed at home longer than they should have before going to the maternity hospital.

Birth choices in labour

Of those who did not have labour induced and did not have a pre-labour caesarean birth, 53% said that when labour was confirmed, they were given the option to follow their plan for the type of birth they wanted.

Of those who did not have labour induced and did not have a pre-labour caesarean birth, 56% said that they were able to choose where to have their baby (home, hospital or midwifery-led birthing unit).

Birth partner attendance during labour/birth

During labour and birth, 78% of women who responded to the survey were able to have the birth partner they wanted with them.

Perceived quality of care during labour

While in the maternity unit, or at home during a planned home birth, 70% of women who responded to the survey rated their care during labour as excellent, 16% as good, 8% as average, 3% as poor, and 2% as very poor.

Perceived quality of care after birth

While in the maternity unit, or at home during a planned home birth, 47% of women who responded to the survey rated their care after birth as excellent, 24% as good, 14% as average, 9% as poor and 6% as very poor.

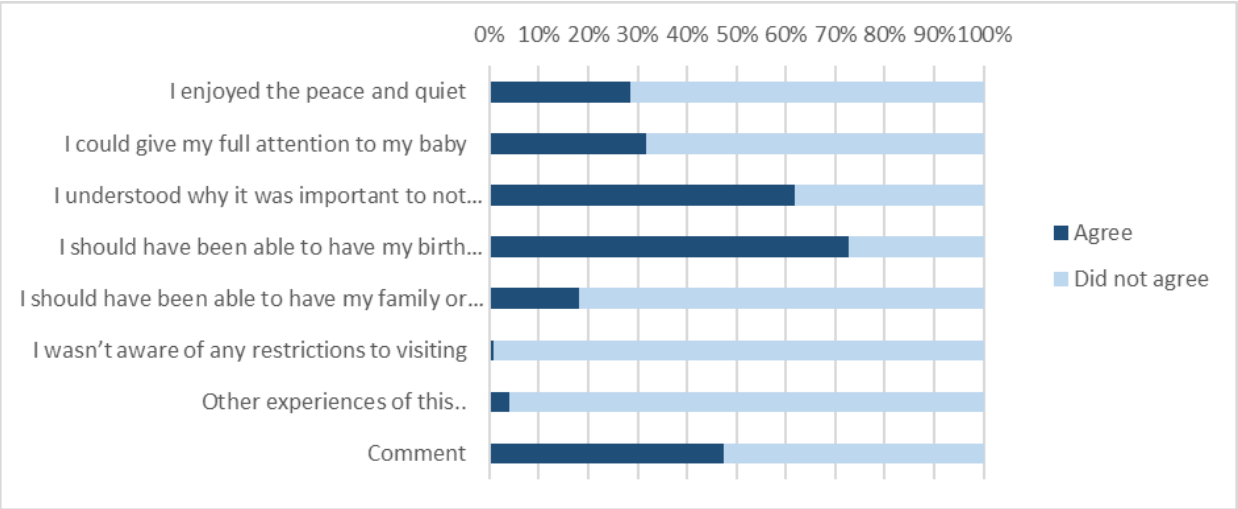
Postnatal ward experience

Ninety percent of women who responded to the survey spent time on a postnatal ward after giving birth.

Visitor restrictions

Regarding restricted visiting on postnatal wards: 28% of women responding to the survey enjoyed the peace and quiet; 31% could give their baby their full attention; 62% understood why it was important to not have lots of visitors to the hospital during the pandemic; 73% felt they should have been able to have their birth partners/supportive person with them more often; 18% felt they should have been able to have their family and friends visit/visit more often; <1% were not aware of any restriction to visiting; and 4% described other experiences of restricted visiting – see Figure 23.

Figure 23: Experiences of visiting/partner attendance in postnatal wards



Perceived quality of care on a postnatal ward

While in the postnatal ward 36% rated their care on a postnatal ward as excellent, 29% as good, 20% as average, 10% as poor and 6% as very poor.

Duration of time in hospital after birth

Eighty-seven percent of women responding to the survey felt they had enough time in hospital before going home.

Infant feeding in first 10 days of life

Forty-five percent of women responding to the survey fed their baby in the first 10 days of life with breastmilk only, 30% with formula milk only, 25% with a mix of breastmilk and formula milk, with 18 women stating that this was not applicable to them.

Seventy-four percent of women felt that their choices around how to feed their baby were respected by staff always, 14% most of the time, 10% some of the time, 2% never, with 26 women stating that this was not applicable to them.

Postnatal care received at home

In-person/virtual care type

While at home in the postnatal period, 25% of women who responded to the survey felt that they were given a choice about how to receive postnatal checks from their midwife (e.g. at home, in a local health centre, hub or midwifery unit, or by text, telephone or video call).

Ninety-eight percent of women received midwifery checks by home visit, 3% by appointments at a local health centre/hub/midwifery unit, 4% at a hospital, 23% by telephone call, 3% by text message and 2% by video call (number of women = 1,602, percentages cannot be cumulated as more than one option could be chosen).

Of those who received home visits, 6% received these on one occasion, 24% on two occasions and 70% on three or more occasions. Five percent of these women felt that the number of home visits (even if none) was more than they needed, 79% felt it was just right and 16% felt it was less than they needed.

Checks carried out by a midwife (by any means) met women's physical needs in the vast majority of cases (85%), mental health needs for 71%, needs to discuss physical health and emotional wellbeing for 74% and met their needs to talk about baby's health for almost all (94%). These checks also provided the necessary reassurance for 86% of women and met the need for assessment of the baby for 94%.

Perceived quality of care received at home

Regarding care while at home, 58% of women rated their care received from maternity staff as excellent, 28% as good, 10% as average, 3% as poor and 1% as very poor.

Access to maternity services

Access to services linked to maternity care were problematic for a proportion of women. Given the option of finding access to services 'quite difficult' or 'quite easy' (where the service was applicable to them), women reported that the following services were 'quite difficult' to access:

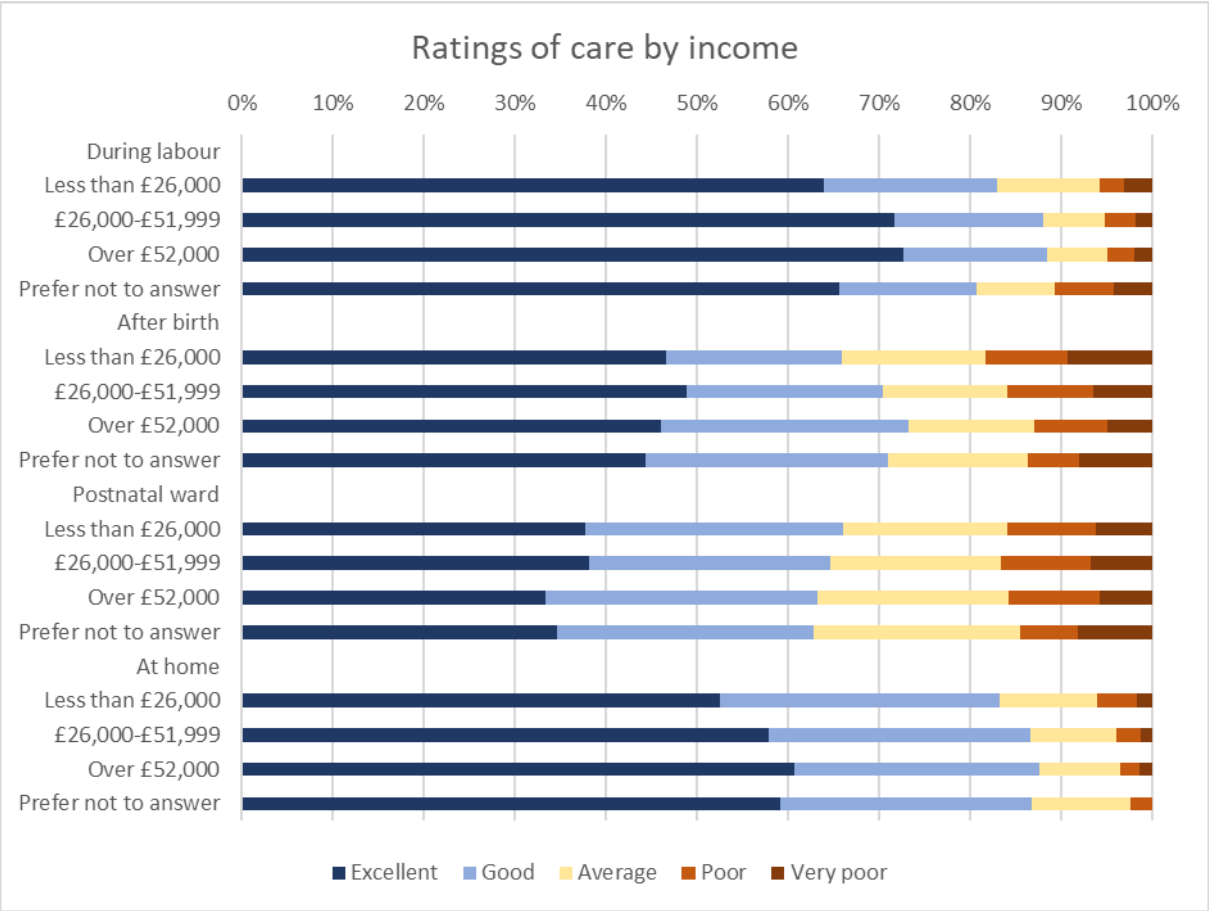
- contact a community midwife (23%)
- antenatal screening tests (16%)
- attend unplanned appointments, e.g. ‘because of concerns about your health or your unborn baby’ (23%)
- attend an appointment with an obstetrician (pregnancy/childbirth doctor) (25%)
- be seen by a mental health specialist (70%)
- receive other services they needed (45%).

All other women reporting access to these services as ‘quite easy’ where relevant to them.

Overall care ratings

Overall care ratings during labour, after birth, on the postnatal ward and at home varied to an extent by Health Board, age, household income, by whether or not women had previously given birth, had disclosed domestic abuse or by disability status – see Figure 24 for findings by household income.

Figure 24: Overall care ratings, by household income



Study results for maternity care staff

Staff survey respondent demographics

Four hundred and forty-five staff completed the survey, including 330 midwives (42 continuity of care model, 21 in alongside midwifery unit, 177 in consultant led unit, 31 in standalone midwifery unit, 34 as community midwifery unit in traditional care model), 24 obstetricians, 42 maternity health care support workers, 18 anaesthetists, 14 sonographers, six student midwives, 18 maternity admin team members and less than five in other roles. (Ten respondents chose more than one job role.)

Staff provided care across maternity services (see Table 1). Around 71% of staff provided a mix of more than one care type.

Table 1: Type of care provided by staff during the COVID-19 pandemic

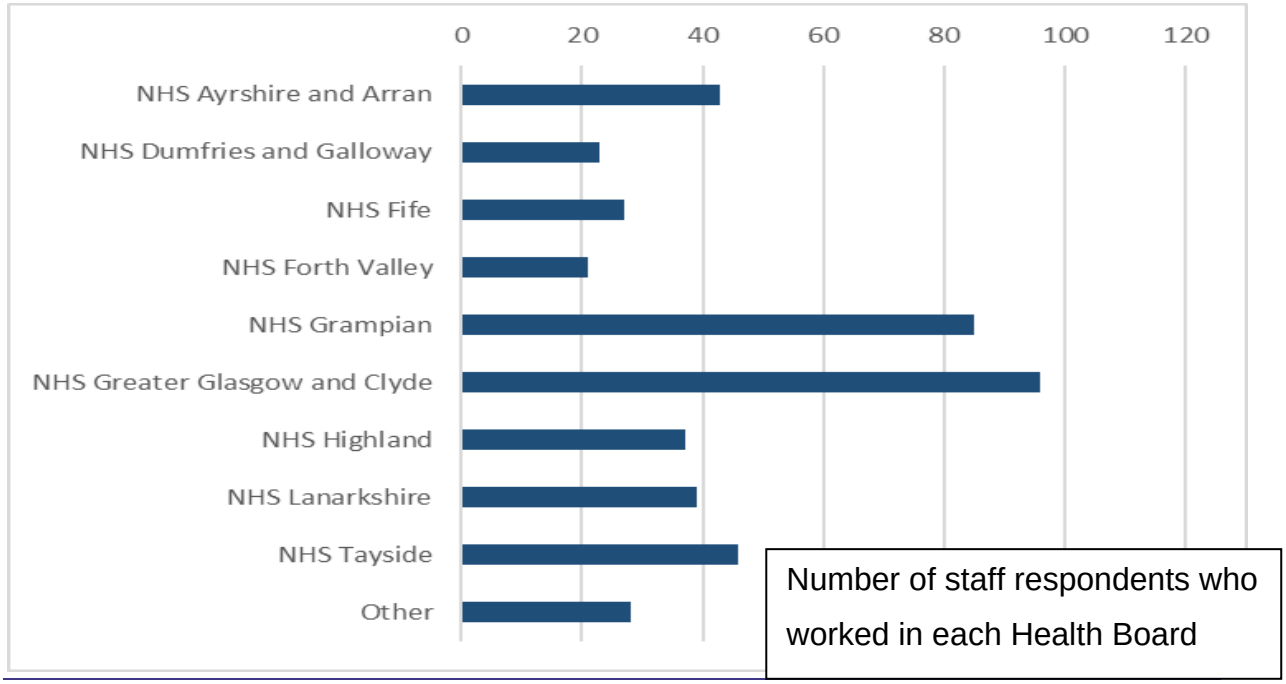
Since April 2020 have you provided … (choose all that apply)	Count	% (n=417)
Antenatal care	341	82
Intrapartum care	308	74
Postnatal care	333	80
Pregnancy ultrasound	50	12

a Numbers cannot be cumulated.

Most staff had been in their current post for more than 10 years (297). The remaining staff had been in their post: less than one year (10); 1–3 years (54); 4–6 years (46); and 7–9 years (38).

Respondents were from the following Health Boards: NHS Ayrshire and Arran (43); Dumfries and Galloway (23); NHS Fife (27); NHS Forth Valley (21); NHS Grampian (85); NHS Greater Glasgow and Clyde (96); NHS Highland (37); NHS Lanarkshire (39); NHS Lothian (7); NHS Orkney (5); NHS Shetland (9); NHS Tayside (46) and the remaining seven staff were from other Health Boards or preferred not to say – see Figure 25.

Figure 25: Health Board in which staff work



Staff interview participant demographics

Fifteen members of staff were interviewed, mostly within midwifery (12), but also obstetrics (1), obstetric anaesthetics (1) and obstetric physiotherapy (1).

Three participants provided care in NHS Greater Glasgow and Clyde; three in NHS Ayrshire and Arran; two in NHS Grampian; two in NHS Western Isles; one in NHS Dumfries and Galloway; one in NHS Lothian; one in NHS Tayside; one in NHS Highland; and one in NHS Shetland.

Working during a pandemic

Compared to pre-pandemic, 64% agreed their work-life balance was worse than before the pandemic, while 15% disagreed with this and 21% neither agreed nor disagreed.

In addition to this, our interview data reflects how, for many members of staff, there were also additional concerns relating to their families' safety, particularly in instances where there were caring responsibilities for any vulnerable family members.

> 'People with young families were worried about, you know, what they might take back in their car, what they might take back in their home and the impact that would have on their families.' (P24)

During interviews, many members of staff made clear that the overall set of circumstances surrounding their work during the pandemic translated into significant stress for members of staff individually, but also as an issue for teams to manage (i.e. supporting stressed staff), which had implications for many, both personally and professionally:

> 'Everybody was a lot tetchier, everybody flew off the handle, it's probably getting a bit better now, but even a couple of months ago people were still you know, they could fly off the handle and I'm not – I'm certainly guilty of that, especially at home.' (P6)

> ‘we need to look out for each other, we need to be kinder to each other, we need to work well as teams and look out for our team members, and just be mindful that people can be having a really rough time at home and so sometimes when that manifests itself in the workplace you need to see the bigger picture.’ (P5)
>
> ‘There’s been various drives for delivering kindness and things just to make sure that people are being positive to each other.’ (P34)

When asked whether changes to maternity services within their Health Board were well communicated to them, similar proportions agreed (40%) and disagreed (41%), with around a fifth (19%) neither agreeing nor disagreeing.

Most staff (66%) agreed that they had adequate access to PPE during the pandemic, while 19% disagreed with this and 15% neither agreed nor disagreed.

A fifth of staff (20%) agreed that training opportunities were sufficient during the pandemic, 63% disagreed and 17.5% neither agreed nor disagreed.

Table 2: Staff experiences of changes to service where these increased

Service changes: specific changes were experienced more frequently by staff in their role during the pandemic compared to pre-pandemic	Count	Valid %
Replacement of in-person appointments with consultations using video technology to deliver maternity appointments	156	35.2
Replacement of in-person appointments with consultations using telephone to deliver maternity appointments	205	46.3
Provision of online antenatal education to complete in women’s own time	132	68.4
Provision of live online antenatal classes	80	52.6
Opportunity for women to birth in alongside midwifery units	23	9.7
Opportunity for women to birth in community midwifery units	16	7.8
Services to support planned homebirths	60	23.4
Access to outpatient induction of labour	109	42.2
Access to planned caesarean births	35	12.4

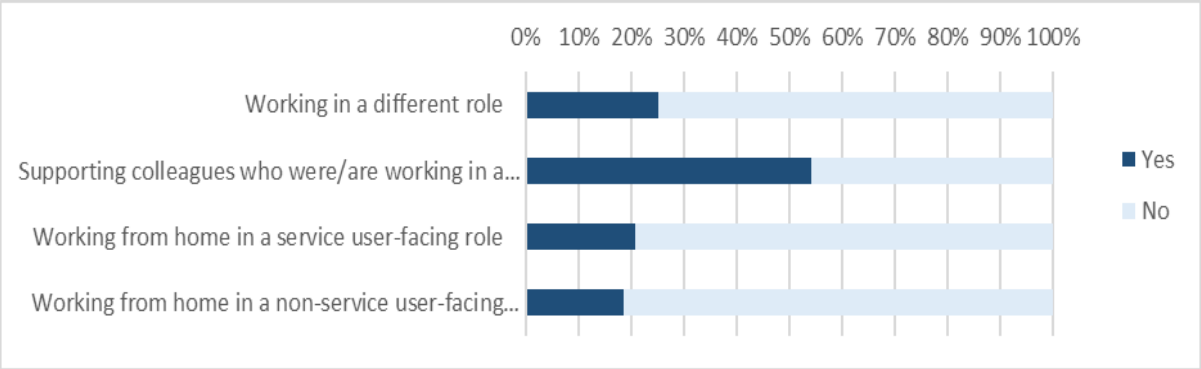
Service changes: specific changes were experienced more frequently by staff in their role during the pandemic compared to pre-pandemic	Count	Valid %
Women choosing planned freebirths	65	14.8
Women choosing planned homebirths	169	64.8
Length of time mothers spend in hospital	24	6.5
In-person postnatal home visits by midwives	8	4.3
Delivery of virtual (telephone call, text message or video) postnatal care	172	81.1
Delivery of in-person breastfeeding support	22	8.1
Delivery of virtual breastfeeding support	87	50.9

*valid % reflects those respondents who ticked 'not part of my role' were not included in the total when calculating % for each question.

Working in a different role

Among those who worked in a different role during the pandemic (n=110) – see Figure 26 – more staff reported adequate pastoral support from colleagues compared to their line manager (62% versus 26%). Most staff did not feel that they had sufficient pastoral support from their line manager in their new role (44%), with the remainder neither agreeing nor disagreeing, or unsure (30%). Although just over half of staff (53%) felt able to fully deliver the duties expected of them in the new role, 29% did not and 19% were unsure.

Figure 26: Staff experience of working during the pandemic.



For those staff who worked with colleagues in a different role during the pandemic, either as a line manager or colleague, almost a third (31%) found it difficult to provide pastoral support, a fifth (20%) found it easy and 25% found it neither easy nor difficult. More than a third of staff found providing the expected standard of care with

these new colleagues difficult (37%), 30% found it neither easy nor difficult, 18% found it easy.

Alongside this, qualitative data from staff interviews showed that the implications of redeployment could reach further for members of staff who, whilst understanding the need for redeployments and feeling able to deliver the duties expected of them, still perceived that such moves signalled that the importance and contribution of their original roles in the context of the pandemic were not sufficiently valued. Members of staff described that there were not only individual implications associated with this, but also team level implications with managing such perceptions, the anxiety associated with undertaking the new roles, the frustration of not being able to deliver on their original roles and the knock-on effect on the team's ability to deliver their original remit to the same standards.

> 'So, you're getting pulled in a lot of directions. It's quite difficult, certainly for us and the team here, and knowing that we haven't got a big team, that's been really difficult.' (P30)

Similar perceptions were expressed in relation to the position and priority level of maternity care during the pandemic on a wider Health Board level:

> 'the key lesson that I feel is that what they need to understand for services going forward is that maternity services can't stop, for anything.' (P25)

Working from home

Some staff worked from home in a service user-facing role (n=89) and others in a non-service user-facing role (n=80) at least in part during the pandemic. Just over half (53%) of those interacting with women felt adequately trained to provide care working from home, 17% disagreed and 23% were neutral. While most staff (65%) agreed that they had all the necessary resources to provide care from home and received adequate pastoral support from their line manager to do so (47%), a quarter did not. Despite these challenges, most (66%) were comfortable providing care from home and 71% agreed that working from home should remain as an option in the

longer term. Less than 12% did not want this option to remain and 10% neither agreed nor disagreed.

Furthermore, staff also noted in qualitative interviews how working from home had also been a source of additional strain on teams that had to be carefully addressed and managed:

> ‘it [the situation] was a wee bit better with the second lockdown and the second lot of shielding because we had systems and processes in place that people could do some work from home but they still couldn’t do their full role. So, although you were saying, “Well they’re working from home”. Actually, they were probably only doing about a quarter of their role so their colleagues were having to pick up the rest and the colleagues that were in at work and doing it felt a bit aggrieved really that how is their health not as important as other peoples’ health. And why is it okay for them to be putting themselves at risk, while as far as they could see their colleagues were sitting at home on a, you know on a jolly.’ (P25)

The responses of those working from home in a non-service user-facing role were similar. However, a third (34%) of those staff did not feel well connected with colleagues and a quarter (25%) did not feel that they had received adequate pastoral support from their line manager in their role. Nonetheless, 80% agreed that the change they experienced should remain as an option in the longer term, with less than 10% disagreeing.

Delivery of scheduled and unscheduled maternity care

The pandemic resulted in an increase in the use of technology to deliver care, which some staff had limited or no experience of using. This new way of working brought with it technical and training needs, changes to working patterns, differences in how staff communicated and exchanged information with women, and changes to how routine and non-routine care was delivered.

Use of video technology to deliver core scheduled or unscheduled care

Just under half (48%) of all staff agreed that they were adequately trained to deliver care this way, 34% disagreed and 19% neither agreed nor disagreed. The majority (71%) of staff agreed that they had the necessary equipment to deliver care this way, but just over a fifth (23%) disagreed. A third (32%) of staff did not agree that they had the necessary technological support to deliver care this way. Staff confidence in being able to deliver care via video varied – two thirds were either confident (57%) or neutral (10%), whereas a third (34%) did not feel confident. Some members of staff highlighted how challenging it had been for them to build that confidence and navigate the use and embedding of such technologies into their role:

> ‘I'm an older midwife. I've been in the job for a long time, so my IT skills weren’t really the best. But I would see over the last 18 months, I’ve learnt very quickly to use computers and use Near Me and Teams and that’s been good, it’s been good for me. But, yes, it’s been a challenge.’ (P30)

Just over half (51%) agreed that delivering care in this way was a more effective use of clinical time, 26% disagreed and 23% neither agreed nor disagreed. However, 47% felt the opportunity to deliver all aspects of care as per maternity pathways had worsened, while 53% felt it had improved (23%) or it was unchanged (30%).

More than 50% of staff agreed that certain aspects of care were either improved or unchanged through delivering care by video. These included: opportunities to address and discuss health behaviours (e.g. smoking, alcohol, diet) (59%); provide information to women about their care choices (73%); provide care that addresses the specific needs of the woman (57%); and raise the issue of financial concerns (52%).

However, most staff indicated that opportunities to build rapport with women and families had worsened (70%), as had opportunities to assess women’s mental health status and emotional wellbeing (74%). Three quarters (74%) of all staff indicated that

discussing or raising domestic abuse as part of routine enquiry had worsened. For example, one member of staff noted during an interview that:

> ‘we [the team] were worried that maybe things were going to be missed. Not on a clinical basis, but maybe something, maybe dynamics within the families. And also, when they were having their scans, normally they would be one of her care assistants or maybe a midwife going in also to the scans and that was another place where we could maybe pick up or maybe domestic abuse or any kind of other issues not relating to clinical care. So, I think we felt that maybe because we weren’t seeing them on a regular basis like we would normally do that some of these things would be missed. Also, for COVID, there has been a high incidence of domestic abuse anyway within families. Maybe not related to pregnancy but outwith pregnancy as well. So, I think maybe that was quite a bit of a challenge, that we weren’t seeing as regularly as we should have been.’ (P22)

Although there were some challenges involved in delivering all aspects of care as per maternity pathways, 53% felt that this had improved or was unchanged with use of video appointments. Two thirds (66%) of staff reported that continuity of carer for women was improved or unchanged as a result. The opportunity to screen for complications of pregnancy was thought to have worsened by 45–50% of staff, with a similar proportion indicating that it was unchanged (45–50%). Staff’s responses were similar when asked about the opportunity to manage complications of pregnancy – 44% indicated that it had worsened, while 51% indicated that it was unchanged.

Overall, staff were positive about the use of video consultations to deliver at least some aspects of care – 64% agreed this form of consultation should remain as an option in the longer term, while 23% disagreed and 13% neither agreed nor disagreed. This was echoed by staff taking part in interviews, with most who delivered service user-facing care by video expressing that this should remain as an option in the future:

> ‘if somebody didn’t need a face to face appointment and wasn’t already attending the hospital for a scan or some other reason that they actually needed to be here in person. Then we did move to doing some of our consultations virtually, which probably was good for a lot of women and we still, I think we probably will still keep some of that in place. Because we have quite a geographically diverse population so, it’s quite nice if people don’t have to travel an hour to get to hospital for those women who live far away. Obviously, there are issues sometimes with internet access and hospital Wi-Fi isn’t always 100% but mostly it does work so, that has been good.’ (P34)

While views on the use of virtual appointments varied depending on the care being provided, they were acknowledged as a means of increasing efficiency during a crisis. In survey comments, these appointments were especially complemented when involving delivery of remote obstetric input when a midwife can be in-person with the woman.

Using telephone consultations to replace outpatient appointments to deliver maternity

Telephone consultations replaced some of face-to-face outpatient maternity appointments. As this was a more familiar form of technology, most staff agreed that they were adequately trained to deliver care this way (75%), confident to deliver care this way (83%), had the necessary equipment (77%) and the necessary technological support (72%) to deliver care this way.

However, not all staff would have had experience of delivering care in this way prior to the pandemic and this may have impacted on their experience of communicating and exchanging information with women. Almost half (48%) of staff indicated that the opportunity to address and discuss health behaviours (e.g. smoking, alcohol, diet) had worsened. A similar proportion (46%) of staff said the opportunity to provide care that addresses the specific needs of the woman had also worsened.

More than 70% of staff indicated a worsening in the opportunity to build rapport with women and families (77%), to assess women's mental health status and emotional wellbeing (70–80%), to discuss or raise domestic abuse as part of routine enquiry (73%) and to raise the issue of financial concerns (53%). However, most staff (56%) felt the opportunity to provide information to women about their care choices was unchanged.

Telephone consultation was reported as being a more effective use of clinical time by most staff (76% agreed or were neutral).

The use of telephone consultation to deliver all aspects of care as per maternity pathways was reported to have worsened by 54% of staff. Continuity of carer for women was reported as improved (15%) or unchanged (44%) by staff, but 42% reported it had worsened. Similar proportions of staff reported worsening or unchanged opportunities to screen for complications of pregnancy using telephone appointments – 45–55% reported it as worsened, 45–50% reported it was unchanged, with similar proportions reporting the opportunity to manage complications of pregnancy as worsened (50–55%) and 45–50% reported it as unchanged. Most staff (63%) agreed that telephone appointments should remain as an option in the longer term, while 22% disagreed and 15% neither agreed nor disagreed.

Online antenatal education (e.g. pre-recorded videos/e-learning) to complete in women's own time

Among staff who experienced an increase in provision of online antenatal education for women to complete in their own time, around 10% reported improved opportunity to share information using this approach but many more reported that this had worsened. Almost half (46%) of staff reported worsening of opportunity to provide women with evidence-based information to prepare for birth, 44% reported worsening of opportunity to provide women with evidence-based information to plan their birth and 45% reported worsening of opportunity to educate women on possible signs of pregnancy complications. Over half of staff (54%) reported worsening of opportunity to support women and their partners to make positive health and behaviour choices and 62% reported worsening of opportunity to prepare parents for infant feeding.

Relating to preparation for parenthood, 61% of staff reported that online antenatal education to complete in women's own time meant the opportunity to prepare parents for looking after a baby worsened, 76% reported worsening opportunity for peer-to-peer relationship building, yet 48% agreed that online antenatal education should remain as an option in the longer term.

In total, 18 staff experienced a decrease in provision of this type of online antenatal education. No further breakdown of responses is provided due to very low numbers.

Staff also highlighted in interviews that beyond those formal aspects and direct benefits of antenatal education, the move to online provision had meant the loss of the informal aspects and indirect benefits of attending antenatal education sessions for women, such as being in contact with other women and opportunities to build supportive peer relationships:

> 'I think the women are missing contact with other pregnant mums, so the antenatal education stopped, so that was difficult. Again, we had to put that onto virtual platforms.' (P30)

Live online antenatal classes

Among the 80 staff who experienced an increase in provision of live online antenatal classes, up to one in four reported improved opportunities to share information using this approach. Many more staff reported that these opportunities had worsened. Almost half (40–45%) reported worsening of opportunity to provide women with evidence-based information to prepare for birth and to provide women with evidence-based information to plan their birth. In total, 39% reported worsening of opportunity to educate women on possible signs of pregnancy complications. Almost half (40–45%) reported worsening of opportunity to support women and their partners to make positive health and behaviour choices and 50–55% reported worsening of opportunity to prepare parents for infant feeding.

Relating to preparation for parenthood, 54% of staff reported that live online antenatal classes meant the opportunity to prepare parents for looking after a baby worsened, 70–80% reported that the opportunity for peer-to-peer relationship building

worsened, yet 54% agreed that live online antenatal classes should remain as an option in the longer term.

A total of 27 staff experienced a decrease in provision of this type of online antenatal education.

Supporting birth planning

Opportunity to birth in alongside midwifery units

A total of 23 staff experienced an increase in opportunity for women to birth in alongside midwifery units.

Among the 47 staff who experienced a decrease in opportunity for women to birth in alongside midwifery units, 83% reported a worsening of opportunity to provide individualised care to women, 89% reported a worsening of opportunity to provide continuity of carer and 68% reported a worsening of opportunity to provide evidence-based informed choice in relation to this service change.

Opportunity to birth in community midwifery units

A total of 16 staff experienced an increase in opportunity to birth in community midwifery units.

Among the 60 staff who experienced a decrease in opportunity to birth in community midwifery units, 82% reported a worsening of opportunity to provide individualised care to women, 84% reported a worsening of opportunity to provide continuity of carer, 74% reported a worsening of opportunity to support evidence-based fully informed choice. Less than half (39%) believe the decreased opportunity to birth in a community midwifery unit should remain in the longer term.

Services to support women to birth at home

Among the 60 staff who experienced an increase in services to support planned homebirth, 42% reported improved opportunity for providing individualised care, 40% reported improved opportunity for providing continuity of carer and 37% reported

feeling that the change meant the opportunity for supporting evidence-based fully informed choice improved overall. Sixty three percent believe that increased services to support home birth should remain as an option in the longer term, while 12% disagreed with this.

Among the 100 staff who experienced a decrease in services to support planned homebirth, over half (68%) reported that this change meant worsening of opportunity for providing individualised care, 62% reported worsening of opportunity to provide continuity of carer and over half (53%) reported that the opportunity to support evidence-based fully informed choice worsened overall. One in three (32%) believe the reduction in homebirth services should remain as an option in the longer term, 39% disagree and 21% neither agree nor disagree.

Access to outpatient induction of labour

Forty-two percent of staff responding to the survey reported an overall increase in access to induction of labour (combined inpatient/outpatient) in their unit, 4% witnessed a decrease and 54% felt it stayed the same (n=258).

Among those who reported an increase in access to outpatient induction of labour (n=109), 43% reported feeling that this means the opportunity for providing individualised care is improved overall, with 16% reporting it had worsened overall. Fifty one percent reported that that the change means the opportunity for supporting evidence-based fully informed choice is improved overall, with 16% reporting it had worsened overall. Forty one percent feel that the increased access to outpatient induction of labour means the opportunity to support women during induction of labour is improved overall, with 24% reporting it had worsened overall and 80% reported that the change should remain as an option in the longer term, with 11% disagreeing with that.

A total of 10 staff reported a decrease in access to outpatient induction of labour.

Access to planned caesarean births

A total of 35 staff reported an increase in access to planned caesarean birth. Of these 35% reported that the opportunity for providing individualised care worsened

overall, while less than 20% felt it improved overall and less than 20% reported that the opportunity for supporting evidence-based fully informed choice improved overall, while 33% felt it has worsened overall.

A total of 11 staff reported a decrease in access to planned caesarean birth

Planned freebirths

Among those who reported an increase in women choosing to plan to freebirth (n=65): 54% reported that the change they have experienced means the opportunity for supporting evidence-based fully informed choice is worsened overall, while 35% reported it is unchanged. Forty eight percent reported that the increase in women planning to freebirth means that how women weigh up risk when planning their birth has definitely changed, while 32% reported it probably changed.

Planned homebirths

Among those staff who reported an increase in women choosing to plan homebirth (n=169): 25% reported that this meant the opportunity for supporting evidence-based fully informed choice is improved overall, while 20% reported it has worsened; 35–45% reported that the change they have experienced means that how women weigh up risk when planning their birth has definitely changed; while 45–50% reported that it had probably changed; and 5–10% reported that it had probably or definitely not changed.

In total, 25 survey respondents reported a decrease in women choosing to plan homebirth.

Supporting in-hospital maternity care

Length of time mothers spend in hospital

In total, 24 staff who responded to the survey reported an increase in length of time mothers spend in hospital after giving birth.

Among those who reported a decrease in the length of time mothers spend in hospital after giving birth (n=258):

- 8% reported that this means the opportunity to risk assess a woman's clinical status is improved overall, while 42% reported it has worsened overall
- 4% reported that this means the opportunity to prevent complications of pregnancy, birth or the postnatal period is improved overall, while 50% reported it has worsened overall
- 6% reported that this means the opportunity to support parents with infant feeding is improved overall, while 69% feel it has worsened overall
- 4% reported that this means the opportunity to provide families with information to help them prepare for parenting is improved overall, while 61% reported it has worsened overall
- 22% reported agreeing that the change should remain in the longer term, while 47% reported disagreeing with that.

Postnatal care

In-person postnatal home visits by midwives

Eight staff who responded to the survey reported an increase in in-person postnatal home visits by midwives.

Among those who reported a decrease in in-person postnatal home visits by midwives (n=127):

- 77% reported that this means the opportunity to support infant feeding is worsened overall
- 81% reported that this means the opportunity to support parenting is worsened overall
- 53% reported that this means the opportunity to provide continuity of carer for women is worsened overall

- 60% reported that the change means the family-centred care they provide is worsened overall
- 68% reported that the change means the opportunity for timely management of complications of the postnatal period is worsened overall
- 80% reported that the change means the opportunity to perform screening tests on the infant is unchanged.

Delivery of virtual (telephone call, text message or video) postnatal care

Among those who reported an increase in delivery of virtual postnatal care (n=172):

- 7% reported that this meant the opportunity to support infant feeding has improved overall, while 51% reported it has worsened
- 5% reported that this meant the opportunity to support parenting has improved overall, while 56% reported it has worsened
- 5% reported that this meant the opportunity to provide continuity of carer for women has improved overall, while 56% reported it has worsened
- 5% reported that this meant that the family-centred care they provide has improved overall, while 45% reported it has worsened
- 4% reported that this meant the opportunity for timely management of complications of the postnatal period has improved overall, while 51% feel it has worsened
- 17% reported that this meant the opportunity to perform screening tests on the infant has worsened overall (<5% felt this was improved)
- 7% reported that this change means the opportunity to provide reassurance to women and families has improved overall, while 44% reported it has worsened.

Delivery of in-person breastfeeding support

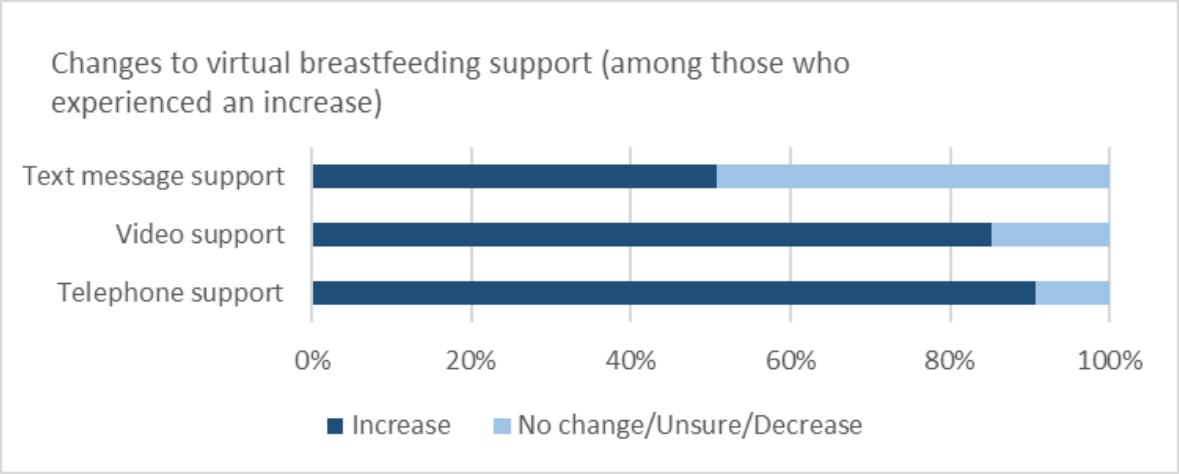
In total, 22 staff reported an increase in delivery of in-person breastfeeding support.

Among those who reported a decrease in delivery of in-person breastfeeding support (n=104): 6% reported that the change they have experienced means the individualised care they provide is improved overall, while 67% reported it has worsened overall, 17% reported it is unchanged and <15% reported being unsure or felt it did not apply to them.

Delivery of virtual breastfeeding support

In total 87 staff experienced an increase in delivery of virtual breastfeeding support.

Figure 27: Changes in virtual breastfeeding support experienced by staff



Maternity service changes and job satisfaction

Staff who responded to the survey indicated that changes in maternity services impacted on their job satisfaction. The changes most often described as increasing job satisfaction were working from home in a non-service user-facing role (52%), increased access to outpatient induction of labour (45%) and working from home in a service user-facing role (42%). Changes most linked to decreased job satisfaction were replacement of in-person appointments with video technology (63%), replacement of in-person appointments with telephone appointments (58%) and working in a different role (56%).

Table 3: Impact of changes on staff job satisfaction

Impact of specific service changes (where these increased) on staff job	Increased (%)	Decreased (%)
Working in a different role	20	56
Supporting colleagues who were/are working in a different role	19	30
Replacement of in-person appointments with consultations using video technology to deliver maternity appointments	14	63
Replacement of in-person appointments with consultations using telephone to deliver maternity appointments	11	58
Provision of online antenatal education to complete in women's own time	19	50
Provision of live online antenatal classes	–	–
Opportunity to birth in alongside midwifery units	–	–
Opportunity to birth in community midwifery units	–	–
Services to support planned homebirths	13	42
Access to outpatient induction of labour	45	14
Access to planned caesarean birth	–	–
In-person postnatal visits at home by midwives	22	55
Delivery of virtual (telephone call, text message or video) postnatal care	19	55
Delivery of in-person breastfeeding support	19	53
Delivery of virtual breastfeeding support	20	47
Working from home in a service user-facing role	42	31
Working from home in a non-service user-facing role	54	24

Staff providing free-text survey comments described strategies for more efficient information delivery to women. These included live online education for those having elective caesarean birth. Suggestions included outlining the process before, during and after caesarean birth along with opportunities provided to ask questions.

Virtual meeting attendance was praised by some staff in free-text survey comments as giving them the opportunity to learn and be involved in activities when at home, even on non-workdays.

Use of social media to improve communication with the service user community was hailed by staff as progress made during the pandemic. Home blood pressure (BP) monitoring and urine testing were also well received overall.

A final strong theme was that homeworking was mostly well received in both service-facing and non service-user facing roles, with the majority preferring that this option remains in the long-term.

Discussion

This section reflects upon the study findings and their potential implications for future practice and policy in NHS Scotland maternity care and for future research.

Service user experiences with a focus on disadvantaged groups

This study identified a wide range of service user experiences of NHS Scotland maternity services during the COVID-19 pandemic, with key differences identified between the experiences of women from more and less socially disadvantaged groups. The aspects of care explored ranged from routine antenatal appointments through to postnatal care until 10 days after birth. As the sample studied did not fully represent the range of socioeconomic, demographic and ethnic diversity within the NHS Scotland maternity service user community, findings are considered with this in mind.

Although more than half of women who responded to the survey indicated positive experiences of their maternity care through a range of survey items, these positive findings were set against a stark dissatisfaction with the exclusion of partners from the maternity care environment. The impact of restrictions on women's partners attending maternity services with them – due to infection control measures – emerged as the most dominant theme of the study. The perceived maternal mental health impact of attending scans, appointments, unscheduled care and labour services alone was substantial and evident across diverse groups of women.

Experience of antenatal appointments varied by how and where these appointments took place (hospital, midwifery-led setting, home, telephone or video), with younger women and those from lower income households being least likely to have their health needs met or to feel involved in planning their care across all types of appointment. Further challenges for younger women and those from lower income households were evident in telephone and video appointments as communications issues meant these women were less likely to understand the conversations or ask key questions. This was linked to a sense of poor relationship-building with their midwife or doctor. In contrast, receiving antenatal care by telephone and video was viewed positively by some women, particularly due to convenience factors, although

this was more evident for older women and those in high-income households. The major limitations in receiving care by telephone and video were evident across a range of women who responded to the survey. Key issues included lack of privacy to take a call as timing was often unpredictable (whether at work or at home) and suboptimal relationship-building with their midwife at a time when wider social interaction was limited. These findings raise key issues for consideration when planning optimal use of telephone and video consultations with women in socially disadvantaged situations.

Antenatal appointment provision in women's homes stood out as being received more positively than all other types of appointment. All aspects of care were rated highly, except for having enough privacy, which was a challenge for women from low-income groups in particular. These findings may influence future care planning as continuity of carer caseload models of care may support more time being spent with women in their own homes and would be expected to improve quality of care as a result.

The major theme of a perceived lack of emotional support from staff and insufficient information provision during antenatal appointments (of all types) is a critical issue given that many women experience mental health issues linked to anxiety in pregnancy.[ii] Given that even with in-person appointments, women described 'impersonal' care and a sense of being 'in and out' such that only practical care was provided (blood pressure and urine checks), consideration must be given to how more personal care can be provided whether virtual or in-person. Women clearly place value upon receiving information ahead of labour and birth to allow them to develop expectations, and not having these requests for information met led to substantial anxiety ahead of labour. Given that 22% of women in this study declared an existing mental health condition, it is possible that this has influenced the findings accordingly, but with estimated prevalence of perinatal anxiety of around 17%, it is

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[ii] Fairbrother N, Janssen P, Antony MM, Tucker E and Young AH. 2016.'Perinatal anxiety disorder prevalence and incidence, *Journal of Affective Disorders*, 200: 148–155. (**PubMed**)

unlikely that mental health conditions were over-represented in the sample.[ii] Ongoing and future research to address prevention and management of anxiety in pregnancy is expected to address key knowledge gaps in this area.[iii] A key focus for quality improvement should be how to ensure that at least as much importance is placed upon meeting mental and emotional needs as is placed upon meeting physical needs at antenatal appointments.

The study highlighted further differences in experiences of maternity care according to women's social, clinical and demographic features. Findings specific to women under 20 years of age, from black and other minority ethnic groups and from low-income groups highlight common antenatal issues that are more pronounced in these more disadvantaged communities. Challenges in accessing maternity care due to financial concerns, concerns about using public transport due to COVID, lack of privacy at home and the need for support from a partner/supporter when receiving care were greater for younger women and those on lower income. A lack of supported decision-making practices was described by women responding to the survey who were from minority ethnic groups, a finding that echoes recent research into UK maternity care experiences of such women.[iv]

Few women (one in five) received antenatal education, of whom less than half were able to enjoy interacting with other women at the same time. Only one in three of those who received antenatal education felt that it had made them feel ready to have their baby and become a new parent, with similar findings regarding information shared at antenatal appointments. Such was the need for information on labour, birth and parenthood that this was often sought elsewhere or anxiety followed. This is a key issue for consideration in future policy, as health promotion opportunities, including promoting good mental health, may be missed without interactive forums

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[iii] City University, London. Maternal Anxiety in Pregnancy (MAP) Study. Pregnancy research to make a difference (**city.ac.uk**).

[iv] John JR, Curry G, Cunningham-Burley S. Exploring ethnic minority women's experiences of maternity care during the SARS-CoV-2 pandemic: a qualitative study, BMJ Open 2021;11:e050666. doi: 10.1136/bmjopen-2021-050666.

for discussion. Future antenatal education packages should be coproduced with women, both influencing content and plans for implementation.

Overall care during labour was viewed positively by 86% of women who responded to the survey and negatively by only 5%. Respective figures for care immediately after birth were 71% and 14%, suggesting high levels of satisfaction with care close to birth. However, as only 30% of the sample answering the birth-related questions were first-time mothers, it is possible that this rating reflects that most women had previously given birth and thus may have had a less complicated labours or births, or indeed may have rated their care relative to their previous birth experience.

Postnatal ward care was not well received overall, partly in keeping with previous national surveys highlighting this as the area with most room for improvement in maternity care.[i] In keeping with the overwhelming sense that women wanted partners to be present throughout their maternity journeys, almost three quarters of women wanted their partner/a supportive person with them more often in the postnatal ward and one in five felt the same about family/friends visiting. As this survey item was presented in the context of a pandemic and not about whether or not this change should remain in the longer term, it is not clear whether women would support restrictions on the number of visitors to the postnatal ward in future.

Postnatal care provided in the home was very well received and highlighted how much new parents valued support in-person, particularly when support from other people was limited due to pandemic restrictions. Women's reflections on how interested midwives were in their emotional wellbeing in the postnatal period was in stark contrast to the more negative accounts of many antenatal appointment experiences. This further highlights the perception that women's mental health needs are not being fully met in the antenatal period.

Staff experiences of maternity care provision

Staff clearly articulated how key service changes impacted upon their experience of providing maternity care. Key challenges included providing care using virtual communication, with extensive discussion of the associated challenges.

Staff felt challenged by the lack of social support available for pregnant women to meet their emotional needs, partly due to a lack of antenatal classes but also due to general pandemic restrictions resulting in women having limited social interaction. Consideration should be given to how the NHS could support peer-to-peer interaction going forward.

Leadership shortcomings were described as staff indicated insufficient pastoral support from line managers when working in a different role and overall lack of communication regarding changing pandemic-related restrictions related to care delivery.

Wearing masks and PPE were described by some staff in free-text survey comments as key challenges in daily work as difficulties arose in communicating and building rapport with women. Strategies for overcoming these barriers should be explored as the pandemic evolves.

The sense of delivering only 'task-based' care was strong among some staff in free-text survey comments, with examples provided of being unable to communicate information effectively due to enforced virtual appointments, especially for booking appointments. Several commented that they had not met the women they were caring for in person until 16 weeks or later in pregnancy. Future care planning would benefit from supporting midwives and women to decide whether virtual appointments are appropriate rather than having quotas set by hospital management to inform the number of virtual appointments to be conducted per midwife or health board.

Restrictions on partner attendance at maternity services were a major source of concern for staff due to the perceived importance of the partner's role in providing emotional support in the antenatal period and both practical and emotional support in the postnatal period.

A very strong theme from staff was the impression that allowing only partners and baby's siblings to attend the postnatal wards would lead to improved maternal and infant outcomes based upon their pandemic experience. Many described seeing more calm environments, women interacting with each other, being able to focus on bonding and breastfeeding due to having less visitors than pre-pandemic.

Restricted provision of midwife-led birthing and homebirth services were a source of frustration for several staff who responded to the survey who felt that limited their ability to support evidence-based informed choice and that this had also impacted upon their job satisfaction. This should be considered in future service planning processes.

Almost half of staff felt that the reduced amount of time women spend in hospital after birth should not remain in the long term, reflecting that many felt it worsened the opportunity to risk assess women's clinical status, prevent complications, support parents with breastfeeding and to provide families with information to help them prepare for parenting.

Based upon staff experiences, future maternity policies should consider including use of technology to provide non-emotive aspects of care and provide information on service processes, e.g. in the logistics of preparing for and having a planned caesarean birth.

Pandemic-related changes to maternity care to be maintained or reversed, with a focus on how key groups of women or staff may benefit or be challenged by the changes

Both service user and staff experiences highlight that all women are likely to benefit from being able to involve their partner at all stages of maternity care in future, if restrictions were adapted to accommodate this.

Supporting the most disadvantaged women requires individualised care and support, including routine assessment of financial situations to identify those at risk of missing out on antenatal care due to the costs of attending appointments. Those women from lower income households and of younger age should be identified as being most likely to benefit from in-person appointments, requiring time and clear communication to ensure that information is understood and that questions can be asked. Additional resources should be provided to ensure that midwifery staff can both identify those with risk factors but also ensure that their care meets their individual requirements.

Technology use to support care delivery should be considered for use only when preferred by both women and staff. Given the many disadvantages to delivering care this way, decisions to use this technology should be carefully considered and only made where both the woman and health professional are confident that the aim of the appointment can be achieved. Attention must be paid to women's emotional support needs as these may otherwise go unaddressed.

Further roll-out of outpatient induction of labour options would appear to enhance the delivery of individualised care to benefit both women and staff.

Consideration may be given to restricting postnatal visiting to partners/siblings to promote maternal and infant wellbeing. This should be subject to further research.

Technology should be utilised to enhance participation in staff training, meetings and networking so that geography is not a barrier to staff development. Virtual staff training/meeting attendance options to increase staff morale and skill development are expected to have extensive benefit and to be valued by staff.

Pressure put on staff, particularly midwives, to perform their role in new ways, to minimise physical contact with women and to manage their own home lives during a pandemic mean that some feel unable to perform their professional role to their desired standard. This must be borne in mind by managers who are striving to improve care quality during the pandemic, as additional support may be needed to ensure that midwives can still provide good quality maternity care.

Non-NHS sources of physical or emotional healthcare support valued by pregnant and postnatal women in Scotland during the COVID-19 pandemic

Unmet information needs, and how women dealt with these, were important findings of this work. Women turned to alternative sources of information including private antenatal education, web browsing and advice from family and friends. A reliance upon family and friends along with social media groups to provide peer support were also evident. The social isolation felt by pregnant women during the pandemic meant that many, where possible, sought peer-relationship building via the internet. This

highlights the potential role that both NHS and non-NHS online groups could have in providing emotional support to women during pregnancy and in the months after birth in future.

How women's health behaviours relating to maternity service use were impacted during the COVID-19 pandemic

The context of women's lives and the restrictions they faced during the COVID-19 pandemic evolved over time and women's behaviours changed as a result. With limited social interactions between women, their families, friends, colleagues and other pregnant women, the relative importance of maternity service interactions as a source of support and information appears to have increased. Women's expectations of access to, and quality of, services persisted, alongside recognition that staff were under pressure to follow ever-changing guidance relating to care delivery in the pandemic. The relative social isolation and COVID-related difficulties that women faced often heightened existing concerns and anxieties and led them to seek support online from both peer-groups and professional organisations.

Strengths of the study

The main strengths of this study include the mixed methods approach to maximising depth of understanding of the data collected, methods used to reach disadvantaged women and the focus put upon using experiences to inform future maternity care.

The size of the samples obtained were large enough to provide a broad range of experiences across the sociodemographic spectrum and in the context of mental health conditions. The timescale of the study ensured that the experiences considered were those that reflected changes over an entire year of the pandemic. Sample size and diversity also ensured that a range of geographical locations were represented in the data.

A further major strength is that the study considered perspectives of both women and staff across Scotland such that both 'sides of the story' could be considered when developing recommendations for future maternity care.

Study limitations

The generalisability of the study sample was a limitation, reflecting a responder bias. This sample bias arose despite extensive efforts to reach out to teenage mothers, women from ethnic minority groups, those who do not speak English as a first language and those from low-income households. The final sample under-represented ethnic minority women, younger women and those from low-income households. However, the large sample size meant that experiences of younger women, those from low-income households and those with mental health conditions could be analysed to some extent to identify differences in care experience.

Lack of birth data arising from a routing error meant that less is known about the birth experience of some women who responded to the survey than others, particularly less from those who were giving birth for the first time.

A further potential limitation is that the invitation to take part in the survey asked for women who had ‘given birth in the past year’ with the intention of including those who had reached the second half of pregnancy at least. This was intended to maximise the amount of relevant data on the entire maternity care journey that each woman could provide. As there was no strict gestation cut-off, it is possible that a small number of women interpreted ‘giving birth’ as including the loss of a baby in the first half of pregnancy. The survey did not collect data on gestation at birth so it is not possible to be clear on whether women who experienced miscarriage were included in the sample.

Implications for research

Given the very strong sense from maternity staff that restricted visiting has extensive benefits to women and babies, future research should explore women’s thoughts on restricting postnatal ward visiting to partners and baby’s sibling only.

Conclusions

The findings of this study highlight that socially disadvantaged women are more likely to experience poor quality maternity care when technology is used to replace in-person appointments. Similarly, women with mental health conditions are less likely to perceive good quality care across a range of appointment types and care settings. Consideration should be given to prioritising care at home to women with greatest social adversity. Use of technology to deliver appointments has benefits for some women and for specific appointment types but should not be a default approach. Virtual appointments should be subject to very careful consideration before being adopted for women in adverse social circumstances or for those with mental health conditions. Pressure on maternity staff both at home and at work means that many are unable to deliver the care that they want to provide, but awareness of this among staff has promoted peer-support. Future maternity care policies should consider how antenatal education can promote peer-to-peer interactions for women, how antenatal care can support relationship-building with midwives, how visiting policies could promote maternal-infant bonding and how partners can be included in all aspects of the maternity care journey.

Appendix

The appendix contains tables from which findings in the main report have been obtained.

Women (service users) survey findings: tables A1–A28

Table A1: Postnatal duration and pregnancy gestation at time of survey completion

Have you given birth in the past 12 months?	Count	%
Yes	**2,281**	**88**
Baby is less than 10 days	49	2
11–28 days old	114	5
1–3 months old	461	20
4–6 months old	513	23
7–12 months old	1,137	50
Sub total	**2,274**	**100**
No, I'm still pregnant (36 weeks/8 months or more)	**307**	**12**
36 weeks pregnant	144	47
37–39 weeks pregnant	140	46
40–41 weeks pregnant	21	7
Sub total	**305**	**100**
Total	**2,588**	**100**

Table A2: Experience of routine hospital appointments by income

What is your total household income before tax?	Less than £26,000	£26,000–£51,999	Over £52,000
I missed one or more appointments because I was worried about getting COVID-19	**Count (%)**	**Count (%)**	**Count (%)**
Agree	11 (3%)	12 (2%)	8 (1%)
Neither agree nor disagree	19 (6%)	19 (3%)	6 (1%)
Disagree	311 (91%)	744 (96%)	952 (99%)
My physical health needs were met	**Count (%)**	**Count (%)**	**Count (%)**
Agree	227 (67%)	582 (75%)	799 (82%)
Neither agree nor disagree	58 (17%)	88 (11%)	77 (8%)
Disagree	56 (16%)	108 (14%)	97 (10%)
Total	**341 (100%)**	**778 (100%)**	**973 (100%)**
My mental or emotional needs were met	**Count (%)**	**Count (%)**	**Count (%)**
Agree	165 (49%)	385 (50%)	513 (53%)
Neither agree nor disagree	68 (20%)	138 (18%)	168 (17%)
Disagree	107 (32%)	252 (33%)	287 (30%)
Total	**340 (100%)**	**775 (100%)**	**968 (100%)**

What is your total household income before tax?	Less than £26,000	£26,000–£51,999	Over £52,000
I was allowed to have my chosen person with me	**Count (%)**	**Count (%)**	**Count (%)**
Agree	110 (33%)	289 (37%)	339 (35%)
Neither agree nor disagree	43 (13%)	68 (9%)	63 (7%)
Disagree	185 (55%)	419 (54%)	573 (59%)
Total	**338 (100%)**	**776 (100%)**	**975 (100%)**
I felt included in planning my care	**Count (%)**	**Count (%)**	**Count (%)**
Agree	190 (56%)	460 (59%)	649 (66%)
Neither agree nor disagree	78 (23%)	157 (20%)	169 (17%)
Disagree	69 (21%)	158 (20%)	159 (16%)
Total	**337 (100%)**	**775 (100%)**	**977 (100%)**
Tell us more about your hospital appointments here	**Count (%)**	**Count (%)**	**Count (%)**
Blank	240 (63%)	497 (57%)	619 (54%)
Comment	141 (37%)	379 (43%)	518 (46%)
Total	**381 (100%)**	**876 (100%)**	**1,137 (100%)**

*Figures not provided for those who selected ‘prefer not to answer’ for household income due to categories containing numbers <5

Table A3: Experience of routine hospital appointments by age

Experience	Under 25	25–29	30–34	Over 35
I missed one or more appointments because I was worried about getting Covid-19	**Count (%)**	**Count (%)**	**Count (%)**	**Count (%)**
Agree	5 (3%)	6 (1%)	13 (1%)	9 (1%)
Neither agree nor disagree	9 (5%)	21 (4%)	12 (1%)	8 (1%)
Disagree	162 (92%)	502 (95%)	878 (97%)	621 (97%)
Total	**176 (100%)**	**529 (100%)**	**903 (100%)**	**638 (100%)**
My physical health needs were met	**Count (%)**	**Count (%)**	**Count (%)**	**Count (%)**
Agree	110 (63%)	401 (75%)	698 (77%)	515 (81%)
Neither agree nor disagree	31 (18%)	61 (12%)	95 (10%)	63 (10%)
Disagree	34 (19%)	70 (13%)	117 (13%)	62 (10%)
Total	**175 (100%)**	**532 (100%)**	**910 (100%)**	**640 (100%)**
My mental or emotional needs were met	**Count (%)**	**Count (%)**	**Count (%)**	**Count (%)**
Agree	80 (45%)	268 (51%)	463 (51%)	329 (51%)
Neither agree nor disagree	37 (21%)	95 (18%)	159 (18%)	127 (20%)
Disagree	60 (34%)	164 (31%)	282 (31%)	185 (29%)
Total	**177 (100%)**	**527 (100%)**	**904 (100%)**	**641 (100%)**
I was allowed to have my chosen person with me	**Count (%)**	**Count (%)**	**Count (%)**	**Count (%)**
Agree	66 (37%)	192 (37%)	325 (36%)	222 (35%)

Experience	Under 25	25–29	30–34	Over 35
Neither agree nor disagree	28 (16%)	50 (10%)	71 (8%)	46 (7%)
Disagree	83 (47%)	283 (54%)	513 (56%)	374 (58%)
Total	177 (100%)	525 (100%)	909 (100%)	642 (100%)
I felt included in planning my care	**Count (%)**	**Count (%)**	**Count (%)**	**Count (%)**
Agree	83 (47%)	305 (58%)	568 (63%)	431 (67%)
Neither agree nor disagree	44 (25%)	122 (23%)	165 (18%)	121 (19%)
Disagree	48 (27%)	102 (19%)	175 (19%)	91 (14%)
Total	**175 (100%)**	**529 (100%)**	**908 (100%)**	**643 (100%)**
If you would like to tell us more about your hospital appointment	**Count (%)**	**Count (%)**	**Count (%)**	**Count (%)**
Blank	141 (71%)	380 (62%)	564 (54%)	391 (54%)
Comment	59 (30%)	234 (38%)	483 (46%)	330 (46%)
Total	**200 (100%)**	**614 (100%)**	**1,047 (100%)**	**721 (100%)**

Table A4: Experience of routine hospital appointments by mental health status

Do you suffer from any mental health problems?	Yes	No	Prefer not to answer
I missed one or more appointments because I was worried about getting Covid-19	**Count (%)**	**Count (%)**	**Count (%)**
Agree	13 (3%)	19 (1%)	– (–)
Neither agree nor disagree	15 (3%)	30 (2%)	– (–)
Disagree	481 (95%)	1,638 (97%)	– (–)
Total	**509 (100%)**	**1,687 (100%)**	**50 (100%)**
My physical health needs were met	**Count (%)**	**Count (%)**	**Count (%)**
Agree	343 (67%)	1,353 (80%)	29 (57%)
Neither agree nor disagree	85 (17%)	153 (9%)	12 (24%)
Disagree	82 (16%)	191 (11%)	10 (20%)
Total	**510 (100%)**	**1,697 (100%)**	**51 (100%)**
My mental or emotional needs were met	**Count (%)**	**Count (%)**	**Count (%)**
Agree	212 (42%)	915 (54%)	12 (24%)
Neither agree nor disagree	88 (17%)	318 (19%)	13 (26%)
Disagree	207 (41%)	459 (27%)	26 (51%)
Total	**507 (100%)**	**1,692 (100%)**	**51 (100%)**
I was allowed to have my chosen person with me	**Count (%)**	**Count (%)**	**Count (%)**
Agree	160 (31%)	630 (37%)	16 (31%)
Neither agree nor disagree	61 (12%)	127 (8%)	7 (14%)
Disagree	288 (57%)	937 (55%)	28 (55%)

Do you suffer from any mental health problems?	Yes	No	Prefer not to answer
Total	**509 (100%)**	**1,694 (100%)**	**51 (100%)**
I felt included in planning my care	**Count (%)**	**Count (%)**	**Count (%)**
Agree	278 (55%)	1,091 (64%)	19 (38%)
Neither agree nor disagree	109 (21%)	330 (19%)	13 (26%)
Disagree	122 (24%)	276 (16%)	18 (36%)
Total	**509 (100%)**	**1,697 (100%)**	**50 (100%)**

‘–’ used’ to indicate a total <5

Table A5: Experience of journey time to hospital by income and age

Did journey time to hospital make it easy for you to attend...	Yes	No	Neither	Total
What is your total household income before tax?	**Count (%)**	**Count (%)**	**Count (%)**	**Count (%)**
Less than £26,000	232 (68%)	53 (16%)	56 (16%)	341 (100%)
£26,000–£51,999	589 (76%)	71 (9%)	117 (15%)	777 (100%)
Over £52,000	795 (81%)	51 (5%)	131 (13%)	977 (100%)
Prefer not to answer	118 (72%)	24 (15%)	23 (14%)	165 (100%)
Age group (4 groups)	**Count (%)**	**Count (%)**	**Count (%)**	**Count (%)**
Under 25	117 (67%)	30 (17%)	29 (17%)	176 (100%)
25–29	402 (76%)	56 (11%)	74 (14%)	532 (100%)
30–34	717 (79%)	64 (7%)	131 (14%)	912 (100%)
Over 35	499 (78%)	49 (8%)	92 (14%)	640 (100%)

Table A6: Mode of transport to hospital on most occasions (selected all that applied) by income and age

How did you get to the hospital on most occasions?	Private car, my hh	Private car, not my hh	Taxi	Bus	Walking
What is your total household income before tax?	**n (%)**	**n (%)**	**n (%)**	**n (%)**	**n (%)**
Less than £26,000	270 (13%)	33 (33%)	31 (40%)	38 (41%)	24 (27%)
£26,000–£51,999	731 (35%)	38 (38%)	27 (35%)	32 (34%)	29 (32%)
Over £52,000	950 (45%)	19 (19%)	11 (14%)	11 (12%)	31 (34%)
Prefer not to answer	147 (7%)	9 (9%)	9 (12%)	12 (13%)	6 (7%)
Total	**2,098 (100%)**	**99 (100%)**	**78 (100%)**	**93 (100%)**	**90 (100%)**

How did you get to the hospital on most occasions?	Private car, my hh	Private car, not my hh	Taxi	Bus	Walking
Age group (4 groups)	**n (%)**	**n (%)**	**n (%)**	**n (%)**	**n (%)**
Under 25	138 (7%)	19 (19%)	21 (27%)	28 (30%)	12 (13%)
25–29	491 (23%)	33 (33%)	11 (14%)	24 (26%)	22 (24%)
30-34	860 (41%)	29 (29%)	29 (37%)	26 (28%)	35 (39%)
Over 35	609 (29%)	18 (18%)	18 (23%)	16 (17%)	21 (23%)
Total	**2,098 (100%)**	**99 (100%)**	**79 (100%)**	**94 (100%)**	**90 (100%)**

Train figures removed as majority of totals <5
hh=household

Table A7: Feelings about the type of transport used to reach hospital

How did you feel about this type of transport [to hospital] due to covid?	Quite relaxed n (%)	Neither n (%)	Quite concerned n (%)	Total n (%)
Private car, my household	1,695 (87%)	230 (12%)	22 (1%)	1,947 (100%)
Private car, not my household	19 (63%)	6 (20%)	5 (17%)	30 (100%)
Taxi/bus/train comb	19 (34%)	23 (41%)	14 (25%)	56 (100%)
Walking	20 (–)	15 (–)	– (–)	– (100%)
Total	**1,753 (–)**	**274 (–)**	**– (–)**	**– (100%)**

a Restricted to only women who chose a single type of transport
'–' used' to indicate a total <5

Table A8: Experience of routine hub/health centre/midwifery unit appointments by income

Total household income before tax	Less than £26,000	£26,000–£51,999	Over £52,000	Prefer not to answer
I missed one or more appointments because I was worried about getting Covid-19	**Count (%)**	**Count (%)**	**Count (%)**	**Count (%)**
Agree	11 (4%)	13 (2%)	10 (1%)	– (–)
Neither agree nor disagree	15 (5%)	16 (2%)	15 (2%)	– (–)
Disagree	273 (91%)	680 (96%)	933 (97%)	141 (–)
Total	**299 (100%)**	**709 (100%)**	**958 (100%)**	**148 (100%)**
My physical health needs were met	**Count (%)**	**Count (%)**	**Count (%)**	**Count (%)**
Agree	217 (73%)	566 (79%)	806 (83%)	116 (77%)
Neither agree nor disagree	42 (14%)	71 (10%)	64 (7%)	17 (11%)
Disagree	40 (13%)	78 (11%)	97 (10%)	17 (11%)
Total	**299 (100%)**	**715 (100%)**	**967 (100%)**	**150 (100%)**
My mental or emotional needs were met	**Count (%)**	**Count (%)**	**Count (%)**	**Count (%)**
Agree	158 (54%)	437 (62%)	619 (65%)	84 (56%)
Neither agree nor disagree	61 (21%)	119 (17%)	141 (15%)	33 (22%)
Disagree	76 (26%)	155 (22%)	191 (20%)	32 (22%)
Total	**295 (100%)**	**711 (100%)**	**951 (100%)**	**149 (100%)**
I was allowed to have my chosen person with me	**Count (%)**	**Count (%)**	**Count (%)**	**Count (%)**

Total household income before tax	Less than £26,000	£26,000–£51,999	Over £52,000	Prefer not to answer
Agree	78 (26%)	183 (26%)	201 (21%)	39 (26%)
Neither agree nor disagree	26 (9%)	64 (9%)	93 (10%)	17 (11%)
Disagree	195 (65%)	468 (66%)	672 (70%)	93 (62%)
Total	**299 (100%)**	**715 (100%)**	**966 (100%)**	**149 (100%)**
I felt included in planning my care	**Count (%)**	**Count (%)**	**Count (%)**	**Count (%)**
Agree	183 (63%)	488 (68%)	687 (71%)	103 (69%)
Neither agree nor disagree	55 (19%)	111 (16%)	132 (14%)	28 (19%)
Disagree	59 (20%)	118 (17%)	149 (15%)	19 (13%)
Total	**297 (100%)**	**717 (100%)**	**968 (100%)**	**150 (100%)**
Tell us more about your health centre appointment	**Count (%)**	**Count (%)**	**Count (%)**	**Count (%)**
Blank	299 (79%)	611 (70%)	774 (68%)	131 (69%)
Comment	82 (22%)	265 (30%)	363 (32%)	58 (31%)
Total	**381 (100%)**	**876 (100%)**	**1,137 (100%)**	**189 (100%)**

Table A9: Experience of routine hub/health centre/midwifery unit appointments by mental health status

Do you suffer from any mental health problems?	Yes	No	Prefer not to answer
I missed one or more appointments because I was worried about getting Covid-19	**Count (%)**	**Count (%)**	**Count (%)**
Agree	12 (3%)	20 (1%)	– (–)
Neither agree nor disagree	19 (4%)	30 (2%)	– (–)
Disagree	446 (94%)	1,533 (97)	– (–)
Total	477 (100%)	1,583 (100%)	53 (100%)
My physical health needs were met	**Count (%)**	**Count (%)**	**Count (%)**
Agree	359 (75%)	1,308 (82%)	36 (64%)
Neither agree nor disagree	60 (13%)	123 (8%)	12 (21%)
Disagree	57 (12%)	167 (11%)	8 (14%)
Total	**476 (100%)**	**1,598 (100%)**	**56 (100%)**
My mental or emotional needs were met	**Count (%)**	**Count (%)**	**Count (%)**
Agree	249 (53%)	1,030 (65%)	17 (32%)
Neither agree nor disagree	80 (17%)	258 (16%)	16 (30%)
Disagree	144 (30%)	291 (18%)	20 (38%)
Total	**473 (100%)**	**1,579 (100%)**	**53 (100%)**
I was allowed to have my chosen person with me	**Count (%)**	**Count (%)**	**Count (%)**
Agree	98 (21%)	389 (24%)	– (–)
Neither agree nor disagree	41 (9%)	158 (10%)	– (–)
Disagree	340 (71%)	1,047 (66%)	– (–)
Total	**479 (100%)**	**1,594 (100%)**	55 (100%)
I felt included in planning my care	**Count (%)**	**Count (%)**	**Count (%)**

Do you suffer from any mental health problems?	Yes	No	Prefer not to answer
Agree	297 (62%)	1,136 (71%)	27 (48%)
Neither agree nor disagree	80 (17%)	231 (14%)	15 (27%)
Disagree	99 (21%)	232 (15%)	14 (25%)
Total	**476 (100%)**	**1,599 (100%)**	**56 (100%)**

Table A10: Ease of journey time to hub, midwifery unit or health centre

Did journey time to hub, midwifery unit or health centre make it easy for you to attend?	Yes	No	Neither	Total
What is your total household income before tax?	**Count (%)**	**Count (%)**	**Count (%)**	**Count (%)**
Less than £26,000	230 (76%)	33 (11%)	38 (13%)	301 (100%)
£26,000–£51,999	605 (85%)	35 (5%)	76 (11%)	716 (100%)
Over £52,000	851 (88%)	36 (4%)	81 (8%)	968 (100%)
Prefer not to answer	117 (78%)	8 (5%)	25 (17%)	150 (100%)
Age group (4 groups)	**Count (%)**	**Count (%)**	**Count (%)**	**Count (%)**
Under 25	126 (78%)	17 (11%)	19 (12%)	162 (100%)
25–29	421 (84%)	29 (6%)	52 (10%)	502 (100%)
30–34	745 (85%)	45 (5%)	88 (10%)	878 (100%)
Over 35	510 (86%)	21 (4%)	60 (10%)	591 (100%)

Table A11: Mode of transport to hub, midwifery unit or health centre

How did you get to the health centre, hub or midwifery unit on most occasions?	Private car, my household	Private car, not my household	Taxi	Bus	Walking
What is your total household income before tax?	**n (%)**	**n (%)**	**n (%)**	**n (%)**	**n (%)**
Less than £26,000	223 (12%)	23 (39%)	19 (39%)	28 (–)	51 (13%)
£26,000–£51,999	617 (34%)	21 (36%)	16 (33%)	20 (–)	119 (31%)
Over £52,000	840 (47%)	10 (17%)	9 (18%)	– (–)	185 (49%)
Total	**1,803 (100%)**	**59 (100%)**	**49 (100%)**	**– (–)**	**380 (100%)**
Age group (4 groups)	**n (%)**	**n (%)**	**n (%)**	**n (%)**	**n (%)**
Under 25	121 (7%)	14 (24%)	12 (25%)	23 (37%)	23 (6%)
25–29	431 (24%)	19 (32%)	9 (18%)	14 (23%)	74 (20%)
30–34	755 (42%)	16 (27%)	14 (29%)	18 (29%)	162 (43%)
Over 35	494 (27%)	10 (17%)	14 (29%)	7 (11%)	120 (32%)
Total	**1,801 (100%)**	**59 (100%)**	**49 (100%)**	**62 (100%)**	**379 (100%)**
Ethnic group (binary)	**n (%)**	**n (%)**	**n (%)**	**n (%)**	**n (%)**
White	1,749 (97%)	55 (96%)	47 (97%)	60 (–)	370 (98%)
Not white	47 (3%)	– (–)	– (–)	– (–)	9 (2%)
Total	**1,796 (100%)**	**–**	**1**	**–**	**379 (100%)**

‘–’ used to replace figures that could lead to disclosure of values <5

Table A12: Feelings about mode of transport to hub, midwifery unit or health centre

Due to the pandemic, how did you feel about the type of transport you used to get to the health centre, hub or midwifery unit?	Quite relaxed n (%)	Neither n (%)	Quite concerned n (%)	Total n (%)
Private car, my household	1,411 (87%)	196 (12%)	12 (1%)	1,619 (100%)
Private car, not my household	12 (–)	6 (–)	– (–)	– (100%)
Taxi/bus/train combined	11 (27%)	15 (37%)	15 (37%)	41 (100%)
Walking	197 (82%)	39 (16%)	5 (2%)	241 (100%)
Total	– (–)	– (–)	– (–)	– (–)

a Restricted to only women who chose a single type of transport
'–' used to replace figures that could lead to disclosure of values <5

Table A13: Experience of routine appointments at home by income

What is your total household income before tax?	Less than £26,000	£26,000–£51,999	Over £52,000	Prefer not to answer
Due to COVID-19, I felt concerned about having people come into my home for these appointments	**Count (%)**	**Count (%)**	**Count (%)**	**Count (%)**
Agree	38 (30%)	67 (23%)	63 (21%)	16 (26%)
Neither agree nor disagree	23 (18%)	38 (13%)	37 (13%)	14 (23%)
Disagree	65 (52%)	185 (64%)	196 (66%)	32 (52%)
Total	**126 (100%)**	**290 (100%)**	**296 (100%)**	**62 (100%)**

What is your total household income before tax?	Less than £26,000	£26,000–£51,999	Over £52,000	Prefer not to answer
My physical health needs were met	**Count (%)**	**Count (%)**	**Count (%)**	**Count (%)**
Agree	96 (76%)	242 (83%)	246 (83%)	46 (74%)
Neither agree nor disagree	22 (17%)	27 (9%)	18 (6%)	11 (18%)
Disagree	9 (7.1%)	22 (7%)	33 (11.1%)	5 (8%)
Total	**127 (100%)**	**291 (100%)**	**297 (100%)**	**62 (100%)**
My mental or emotional needs were met	**Count (%)**	**Count (%)**	**Count (%)**	**Count (%)**
Agree	84 (67%)	215 (75%)	211 (71%)	34 (55%)
Neither agree nor disagree	22 (18%)	40 (14%)	31 (10%)	21 (34%)
Disagree	20 (16%)	33 (12%)	55 (19%)	7 (11%)
Total	**126 (100%)**	**288 (100%)**	**297 (100%)**	**62 (100%)**
I had enough privacy	**Count (%)**	**Count (%)**	**Count (%)**	**Count (%)**
Agree	105 (83%)	256 (88%)	278 (93%)	50 (–)
Neither agree nor disagree	13 (10%)	24 (8%)	13 (4%)	– (–)
Disagree	8 (6%)	10 (3%)	7 (2%)	– (–)
Total	**126 (100%)**	**290 (100%)**	**298 (100%)**	**– (100%)**
I felt included in planning my care	**Count (%)**	**Count (%)**	**Count (%)**	**Count (%)**
Agree	87 (70%)	222 (77%)	231 (77%)	45 (73%)
Neither agree nor disagree	21 (17%)	43 (15%)	38 (13%)	11 (18%)
Disagree	17 (14%)	25 (9%)	30 (10%)	6 (10%)
Total	**125 (100%)**	**290 (100%)**	**299 (100%)**	**62 (100%)**

What is your total household income before tax?	Less than £26,000	£26,000–£51,999	Over £52,000	Prefer not to answer
If you want to tell us more about your appointments at your home	**Count (%)**	**Count (%)**	**Count (%)**	**Count (%)**
Blank	363 (95%)	798 (91%)	1,043 (92%)	176 (93%)
Comment	18 (5%)	78 (9%	94 (8%)	13 (7%)
Total	**381 (100%)**	**876 (100%)**	**1,137 (100%)**	**189 (100%)**

‘–’ used’ to replace figures that could lead to disclosure of values <5

Table A14: Experience of routine appointments at home by age

Age group (4 groups)	Under 25	25–29	30–34	Over 35
Due to COVID-19 I felt concerned about having people come into my home for these appointments	**Count (%)**	**Count (%)**	**Count (%)**	**Count (%)**
Agree	22 (29%)	50 (24%)	65 (21%)	47 (27%)
Neither agree nor disagree	18 (24%)	28 (14%)	40 (13%)	26 (15%)
Disagree	36 (47%)	129 (62%)	209 (67%)	103 (59%)
Total	**76 (100%)**	**207 (100%)**	**314 (100%)**	**176 (100%)**
My physical health needs were met	**Count (%)**	**Count (%)**	**Count (%)**	**Count (%)**
Agree	50 (66%)	170 (82%)	261 (83%)	147 (83%)
Neither agree nor disagree	20 (26%)	17 (8%)	25 (8%)	17 (10%)
Disagree	6 (8%)	20 (10%)	30 (10%)	13 (7%)
Total	**76 (100%)**	**207 (100%)**	**316 (100%)**	**177 (100%)**
My mental or emotional needs were met	**Count (%)**	**Count (%)**	**Count (%)**	**Count (%)**
Agree	42 (56%)	147 (72%)	232 (73%)	121 (69%)
Neither agree nor disagree	21 (28%)	33 (16%)	34 (11%)	27 (15%)
Disagree	12 (16%)	25 (12%)	50 (16%)	28 (16%)
Total	**75 (100%)**	**205 (100%)**	**316 (100%)**	**176 (100%)**
I was allowed to have my chosen person with me	**Count (%)**	**Count (%)**	**Count (%)**	**Count (%)**
Agree	56 (75%)	192 (93%)	281 (89%)	159 (90%)

Age group (4 groups)	Under 25	25–29	30–34	Over 35
Neither agree nor disagree	12 (16%)	6 (3%)	28 (9%)	11 (6%)
Disagree	7 (9%)	9 (4%)	7 (2%)	6 (3%)
Total	**75 (100%)**	**207 (100%)**	**316 (100%)**	**176 (100%)**
I felt included in planning my care	**Count (%)**	**Count (%)**	**Count (%)**	**Count (%)**
Agree	45 (59%)	158 (77%)	241 (76%)	139 (79%)
Neither agree nor disagree	17 (22%)	26 (13%)	47 (15%)	24 (14%)
Disagree	14 (18%)	22 (11%)	28 (9%)	14 (8%)
Total	**76 (100%)**	**206 (100%)**	**316 (100%)**	**177 (100%)**
If you want to tell us more about your appointments at your home	**Count (%)**	**Count (%)**	**Count (%)**	**Count (%)**
Blank	190 (95%)	570 (93%)	950 (91%)	669 (93%)
Comment	10 (5%)	44 (7%)	97 (9%)	52 (7%)
Total	200 (100%)	614 (100%)	1,047 (100%)	721 (100%)

‘–’ used’ to indicate a total <5

Table A15: Experience of routine antenatal appointments at home

Do you suffer from any mental health problems?	Yes	No	Prefer not to answer
Due to COVID-19 I felt concerned about having people come into my home for these appointments	**Count (%)**	**Count (%)**	**Count (%)**
Agree	59 (31%)	116 (21%)	– (–)
Neither agree nor disagree	28 (15%)	81 (15%)	– (–)

Do you suffer from any mental health problems?	Yes	No	Prefer not to answer
Disagree	102 (54%)	362 (65%)	– (–)
Total	**189 (100%)**	**559 (100%)**	**26 (100%)**
My physical health needs were met	**Count (%)**	**Count (%)**	**Count (%)**
Agree	144 (75%)	466 (83%)	– (–)
Neither agree nor disagree	24 (13%)	51 (9%)	– (–)
Disagree	24 (13%)	43 (8%)	– (–)
Total	**192 (100%)**	**560 (100%)**	**25 (100%)**
My mental or emotional needs were met	**Count (%)**	**Count (%)**	**Count (%)**
Agree	126 (66%)	399 (72%)	– (–)
Neither agree nor disagree	27 (14%)	84 (15%)	– (–)
Disagree	37 (20%)	74 (13%)	– (–)
Total	**190 (100%)**	**557 (100%)**	26 (100%)
I had enough privacy	**Count (%)**	**Count (%)**	**Count (%)**
Agree	160 (84%)	508 (91%)	– (–)
Neither agree nor disagree	20 (11%)	34 (6%)	– (–)
Disagree	11 (6%)	16 (3%)	– (–)
Total	**191 (100%)**	**558 (100%)**	**26 (100%)**
I felt included in planning my care	**Count (%)**	**Count (%)**	**Count (%)**
Agree	133 (70%)	433 (77%)	– (–)
Neither agree nor disagree	29 (15%)	81 (14%)	– (–)
Disagree	27 (14%)	47 (8%)	– (–)
Total	**189 (100%)**	**561 (100%)**	**26 (100%)**

Table A16: Experience of routine telephone appointments by household income

What is your total household income before tax?	Less than £26,000	£26,000-£51,999	Over £52,000	Prefer not to answer
Using the telephone stopped me from building a good relationship with my midwife/doctor	**Count (%)**	**Count (%)**	**Count (%)**	**Count (%)**
Agree	130 (49%)	278 (42%)	327 (40%)	53 (40%)
Neither agree nor disagree	70 (27%)	197 (30%)	249 (30%)	47 (35%)
Disagree	64 (24%)	181 (28%)	242 (30%)	33 (25%)
Total	**264 (100%)**	**656 (100%)**	**818 (100%)**	**133 (100%)**
My physical health needs were met	**Count (%)**	**Count (%)**	**Count (%)**	**Count (%)**
Agree	129 (50%)	313 (48%)	412 (50%)	61 (46%)
Neither agree nor disagree	64 (25%)	140 (21%)	191 (23%)	37 (28%)
Disagree	67 (26%)	203 (31%)	214 (26%)	34 (26%)
Total	**260 (100%)**	**656 (100%)**	**817 (100%)**	**132 (100%)**
My mental or emotional needs were met	**Count (%)**	**Count (%)**	**Count (%)**	**Count (%)**
Agree	107 (41%)	272 (42%)	376 (47%)	49 (38%)
Neither agree nor disagree	73 (28%)	161 (25%)	200 (25%)	43 (33%)
Disagree	79 (31%)	211 (33%)	229 (28%)	37 (29%)
Total	**259 (100%)**	**644 (100%)**	**805 (100%)**	**129 (100%)**
I understood what we talked about	**Count (%)**	**Count (%)**	**Count (%)**	**Count (%)**

What is your total household income before tax?	Less than £26,000	£26,000-£51,999	Over £52,000	Prefer not to answer
Agree	167 (64%)	500 (77%)	703 (87%)	95 (73%)
Neither agree nor disagree	66 (25%)	89 (14%)	69 (9%)	28 (21%)
Disagree	27 (10%)	58 (9%)	40 (5%)	8 (6%)
Total	**260 (100%)**	**647 (100%)**	**812 (100%)**	**131 (100%)**
I did not ask all the questions that I wanted to ask	**Count (%)**	**Count (%)**	**Count (%)**	**Count (%)**
Agree	136 (52%)	299 (46%)	329 (41%)	57 (44%)
Neither agree nor disagree	43 (17%)	113 (17%)	140 (17%)	32 (24%)
Disagree	82 (31%)	238 (37%)	343 (42%)	42 (32%)
Total	**261 (100%)**	**650 (100%)**	**812 (100%)**	**131 (100%)**
I felt included in planning my care	**Count (%)**	**Count (%)**	**Count (%)**	**Count (%)**
Agree	138 (53%)	350 (54%)	515 (63%)	69 (52%)
Neither agree nor disagree	67 (26%)	173 (27%)	186 (23%)	45 (34%)
Disagree	57 (22%)	125 (19%)	116 (14%)	19 (14%)
Total	**262 (100%)**	**648 (100%)**	**817 (100%)**	**133 (100%)**
I felt that I had enough privacy	**Count (%)**	**Count (%)**	**Count (%)**	**Count (%)**
Agree	184 (70%)	496 (76%)	699 (86%)	99 (74%)
Neither agree nor disagree	45 (17%)	102 (16%)	72 (9%)	20 (15%)
Disagree	34 (13%)	55 (8%)	46 (6%)	14 (11%)
Total	**263 (100%)**	**653 (100%)**	**817 (100%)**	**133 (100%)**

What is your total household income before tax?	Less than £26,000	£26,000-£51,999	Over £52,000	Prefer not to answer
If you want to tell us more about your telephone appointment, please type here	**Count (%)**	**Count (%)**	**Count (%)**	**Count (%)**
Blank	340 (89%)	701 (80%)	895 (79%)	165 (87%)
Comment	41 (11%)	175 (20%)	242 (21%)	24 (13%)
Total	**381 (100%)**	**876 (100%)**	**1,137 (100%)**	**189 (100%)**

Table A17: Experiences of using telephone to replace routine in-person antenatal appointments

Do you suffer from any mental health problems?	Yes	No	Prefer not to answer
Using the telephone stopped me from building a good relationship with my midwife/doctor	**Count (%)**	**Count (%)**	**Count (%)**
Agree	209 (49%)	559 (40%)	21 (48%)
Neither agree nor disagree	108 (25%)	438 (31%)	17 (39%)
Disagree	110 (26%)	403 (29%)	6 (14%)
Total	**427 (100%)**	**1,400 (100%)**	**44 (100%)**
My physical health needs were met	**Count (%)**	**Count (%)**	**Count (%)**
Agree	189 (45%)	710 (51%)	15 (35%)
Neither agree nor disagree	92 (22%)	328 (23%)	12 (28%)
Disagree	141 (33%)	362 (26%)	16 (37%)
Total	**422 (100%)**	**1,400 (100%)**	**43 (100%)**
My mental or emotional needs were met	**Count (%)**	**Count (%)**	**Count (%)**

Do you suffer from any mental health problems?	Yes	No	Prefer not to answer
Agree	148 (35%)	649 (47%)	7 (16%)
Neither agree nor disagree	112 (27%)	350 (25%)	15 (35%)
Disagree	158 (38%)	377 (27%)	21 (49%)
Total	**418 (100%)**	**1,376 (100%)**	**43 (100%)**
I understood what we talked about	**Count (%)**	**Count (%)**	**Count (%)**
Agree	297 (70%)	1,139 (82%)	– (–)
Neither agree nor disagree	83 (20%)	158 (11%)	– (–)
Disagree	42 (10%)	87 (6%)	– (–)
Total	**422 (100%)**	**1,384 (100%)**	**43 (100%)**
I did not ask all the questions that I wanted to ask	**Count (%)**	**Count (%)**	**Count (%)**
Agree	235 (55%)	564 (41%)	23 (54%)
Neither agree nor disagree	64 (15%)	258 (19%)	6 (14%)
Disagree	125 (30%)	565 (41%)	14 (33%)
Total	**424 (100%)**	**1,387 (100%)**	**43 (100%)**
I felt included in planning my care	**Count (%)**	**Count (%)**	**Count (%)**
Agree	205 (49%)	849 (61%)	17 (39%)
Neither agree nor disagree	117 (28%)	334 (24%)	21 (48%)
Disagree	97 (23%)	214 (15%)	6 (14%)
Total	**419 (100%)**	**1,397 (100%)**	**44 (100%)**
I felt that I had enough privacy	**Count (%)**	**Count (%)**	**Count (%)**
Agree	312 (73%)	1,136 (81%)	– (–)
Neither agree nor disagree	64 (15%)	165 (12%)	– (–)
Disagree	49 (12%)	96 (7%)	– (–)
Total	**425 (100%)**	**1,397 (100%)**	**44 (100%**

Table A18: Experience of routine video appointments by age

By Age (4 age groups)	Under 25	25–29	30–34	Over 35
Using video stopped me from building a good relationship with my midwife/doctor	**Count (%)**	**Count (%)**	**Count (%)**	**Count (%)**
Agree	12 (38%)	23 (29%)	53 (35%)	32 (31%)
Neither agree nor disagree	10 (31%)	17 (22%)	45 (30%)	30 (29%)
Disagree	10 (31%)	39 (49%)	52 (35%)	41 (40%)
Total	**32 (100%)**	**79 (100%)**	**150 (100%)**	**103 (100%)**
My physical health needs were met	**Count (%)**	**Count (%)**	**Count (%)**	**Count (%)**
Agree	13 (42%)	50 (65%)	85 (57%)	63 (61%)
Neither agree nor disagree	11 (36%)	14 (18%)	28 (19%)	16 (16%)
Disagree	7 (23%)	13 (17%)	37 (25%)	24 (23%)
Total	31 (100%)	77 (100%)	150 (100%)	103 (100%)
My mental or emotional needs were met	**Count (%)**	**Count (%)**	**Count (%)**	**Count (%)**
Agree	14 (44%)	47 (60%)	80 (54%)	60 (59%)
Neither agree nor disagree	13 (41%)	16 (20%)	28 (19%)	14 (14%)
Disagree	5 (16%)	16 (20%)	39 (27%)	27 (27%)
Total	**32 (100%)**	**79 (100%)**	**147 (100%)**	**101 (100%)**
I understood everything we talked about	**Count (%)**	**Count (%)**	**Count (%)**	**Count (%)**

By Age (4 age groups)	Under 25	25–29	30–34	Over 35
Agree	22 (–)	60 (–)	115 79	79 78
Neither agree nor disagree	– (–)	9 (–)	13 9	14 14
Disagree	5 (–)	– (–)	18 12	8 8
Total	**– (100%)**	**– (100%)**	**146 (100%)**	**101 (100%)**
I did not ask all the questions that I wanted to ask	**Count (%)**	**Count (%)**	**Count (%)**	**Count (%)**
Agree	14 (44%)	24 (30%)	60 (41%)	38 (38%)
Neither agree nor disagree	9 (28%)	14 (18%)	23 (16%)	12 (12%)
Disagree	9 (28%)	41 (52%)	63 (43%)	51 (51%)
Total	**32 (100%)**	**79 (100%)**	**146 (100%)**	**101 (100%)**
I had enough privacy at these appointments	**Count (%)**	**Count (%)**	**Count (%)**	**Count (%)**
Agree	20 (65%)	60 (76%)	115 (78%)	84 (82%)
Neither agree nor disagree	5 (16%)	13 (17%)	15 (10%)	8 (8%)
Disagree	6 (19%)	6 (8%)	18 (12%)	10 (10%)
Total	**31 (100%)**	**79 (100%)**	**148 (100%)**	**102 (100%)**
I felt included in planning my care	**Count (%)**	**Count (%)**	**Count (%)**	**Count (%)**
Agree	19 (–)	57 72	96 64	72 71
Neither agree nor disagree	9 (–)	15 19	31 21	21 21

By Age (4 age groups)	Under 25	25–29	30–34	Over 35
Disagree	– (–)	7 (9%)	23 (15%)	9 (9%)
Total	**– (100%)**	**79 (100%)**	**150 (100%)**	**102 (100%)**
If you want to tell us more about your video appointments	**Count (%)**	**Count (%)**	**Count (%)**	**Count (%)**
Blank	197 (99%)	602 (98%)	1,006 (96%)	685 (95%)
Total	**200 (100%)**	**614 (100%)**	**1,047 (100%)**	**721 (100%)**

'–' used' to indicate a total <5

Table A19: Experience of using video to replace routine in-person antenatal appointments

Do you suffer from any mental health problems?	Yes	No	Prefer not to answer
Using video stopped me from building a good relationship with my midwife/doctor	**Count (%)**	**Count (%)**	**Count (%)**
Agree	41 (41%)	75 (29%)	– (–)
Neither agree nor disagree	22 (22%)	77 (30%)	– (–)
Disagree	36 (36%)	103 (40%)	– (–)
Total	**99 (100%)**	**255 (100%)**	**10 (100%)**
My physical health needs were met	**Count (%)**	**Count (%)**	**Count (%)**
Agree	50 (52%)	156 (61%)	– (–)
Neither agree nor disagree	20 (21%)	47 (19%)	– (–)
Disagree	27 (28%)	51 (20%)	– (–)
Total	**97 (100%)**	**254 (100%)**	**10 (100%)**
My mental or emotional needs were met	**Count (%)**	**Count (%)**	**Count (%)**

Do you suffer from any mental health problems?	Yes	No	Prefer not to answer
Agree	50 (51%)	147 (59%)	– (–)
Neither agree nor disagree	19 (19%)	50 (20%)	– (–)
Disagree	30 (30%)	53 (21%)	– (–)
Total	99 (100%)	250 (100%)	10 (100%)
I understood everything we talked about	**Count (%)**	**Count (%)**	**Count (%)**
Agree	68 (69%)	200 (81%)	–
Neither agree nor disagree	11 (11%)	29 (12%)	– (–)
Disagree	19 (19%)	19 (8%)	– (–)
Total	**98 (100%)**	**248 (100%)**	**10 (100%)**
I did not ask all the questions that I wanted to ask	**Count (%)**	**Count (%)**	**Count (%)**
Agree	44 (45%)	90 (36%)	– (–)
Neither agree nor disagree	16 (16%)	39 (16%)	– (–)
Disagree	38 (39%)	121 (48%)	– (–)
Total	**98 (100%)**	**250 (100%)**	**10 (100%)**
I had enough privacy at these appointments	**Count (%)**	**Count (%)**	**Count (%)**
Agree	65 (66%)	206 (82%)	– (–)
Neither agree nor disagree	15 (15%)	26 (10%)	– (–)
Disagree	18 (18%)	20 (8%)	– (–)
Total	**98 (100%)**	**252 (100%)**	**10 (100%)**
I felt included in planning my care	**Count (%)**	**Count (%)**	**Count (%)**
Agree	56 (57%)	183 (72%)	– (–)
Neither agree nor disagree	24 (25%)	50 (20%)	– (–)

Do you suffer from any mental health problems?	Yes	No	Prefer not to answer
Disagree	18 (18%)	22 (9%)	– (–)
Total	**98 (100%)**	**255 (100%)**	**10 (100%)**

Table A20: Cost of attending appointments

Question	Answer	Count	%
Did the costs of attending routine antenatal appointments cause financial problems for you (e.g. for childcare, transport, mobile phone credit, missing work)?	Yes	178	7
Did the costs of attending routine antenatal appointments cause financial problems for you (e.g. for childcare, transport, mobile phone credit, missing work)?	No	2403	93
Total	**–**	**2,581**	**100**
Did you miss any appointments due to the cost of attending these?	Yes	27	15
Did you miss any appointments due to the cost of attending these?	No	151	85
Total	**–**	**178**	**100**
Did these costs relate to **childcare?**	Yes	82	46
Did these costs relate to **travel?**	Yes	114	64
Did these costs relate to **credit for your phone?**	Yes	8	5
Did these costs relate to d**ata to receive video calls?**	Yes	7	4
Did these costs relate to **unpaid leave from work?**	Yes	65	37
Did these costs relate to **other?**	Yes	5	3
Total unique respondents	**–**	**177**	**–**

Table A21: Topics discussed at antenatal appointments

Question	Answer	Count	%
Before giving birth/so far in pregnancy, did you have/or have you had the opportunity to complete a birth plan?	Yes	1,587	64
Before giving birth/so far in pregnancy, did you have/or have you had the opportunity to complete a birth plan?	No	913	37
Total	**–**	**2,500**	**100**
Before giving birth/so far in pregnancy, did you have/or have you had the opportunity to discuss risks and benefits of options for where to give birth?	Yes	1,516	62
Before giving birth/so far in pregnancy, did you have/or have you had the opportunity to discuss risks and benefits of options for where to give birth?	No	922	38
Total	**–**	**2,438**	**100**
Before giving birth/so far in pregnancy, did you have/or have you had the opportunity to discuss risks and benefits of different types of pain relief during labour and birth?	Yes	1,455	61
Before giving birth/so far in pregnancy, did you have/or have you had the opportunity to discuss risks and benefits of different types of pain relief during labour and birth?	No	936	39
Total	**–**	**2,391**	**100**
Before giving birth/so far in pregnancy, did you have/or have you had the opportunity to discuss risks and benefits of different positions and mobility in labour and birth?	Yes	1,029	44
Before giving birth/so far in pregnancy, did you have/or have you had the opportunity to discuss risks and benefits of different positions and mobility in labour and birth?	No	1,288	56

Question	Answer	Count	%
Total	**–**	**2,317**	**100**
Before giving birth/so far in pregnancy, did you have/or have you had the opportunity to discuss risks and benefits of different types of birth?	Yes	1350	55
Before giving birth/so far in pregnancy, did you have/or have you had the opportunity to discuss risks and benefits of different types of birth?	No	1,104	45
Total	**–**	**2,454**	**100**

Table A22: Information provision at antenatal appointments

Question and answer	Answer	Count	%
During your antenatal appointments, did you get enough information about preparing for labour and birth, and what to expect, including choices you could make?	Yes	1,151	49
During your antenatal appointments, did you get enough information about preparing for labour and birth, and what to expect, including choices you could make?	No	955	40
During your antenatal appointments, did you get enough information about preparing for labour and birth, and what to expect, including choices you could make?	Unsure	255	11
Total	**–**	**2,361**	**100**
During your antenatal appointments, did you get enough information about feeding your baby?	Yes	1,021	43
During your antenatal appointments, did you get enough information about feeding your baby?	No	1,246	53

Question and answer	Answer	Count	%
During your antenatal appointments, did you get enough information about feeding your baby?	Unsure	107	5
Total	**–**	**2,374**	**100**
During your antenatal appointments, did you get enough information about looking after your baby?	Yes	813	35
During your antenatal appointments, did you get enough information about looking after your baby?	No	1,321	57
During your antenatal appointments, did you get enough information about looking after your baby?	Unsure	170	7
Total	**–**	**2,304**	**100**
During your antenatal appointments, did you get enough information about different feelings/emotions you might have?	Yes	863	36
During your antenatal appointments, did you get enough information about different feelings/emotions you might have?	No	1,366	57
During your antenatal appointments, did you get enough information about different feelings/emotions you might have?	Unsure	160	7
Total	**–**	**2,389**	**100**
During your antenatal appointments, did you get enough information about where to find people to help you (e.g. health professionals or online support groups)?	Yes	1,040	43
During your antenatal appointments, did you get enough information about where to find people to help you (e.g. health professionals or online support groups)?	No	1,169	49

Question and answer	Answer	Count	%
During your antenatal appointments, did you get enough information about where to find people to help you (e.g. health professionals or online support groups)?	Unsure	202	8
Total	**–**	**2,411**	**100**
During your antenatal appointments, did you get enough information about how to access benefits/who to contact if you need help with money?	Yes	575	31
During your antenatal appointments, did you get enough information about how to access benefits/who to contact if you need help with money?	No	1,201	64
During your antenatal appointments, did you get enough information about how to access benefits/who to contact if you need help with money?	Unsure	109	6
Total	**–**	**1,885**	**100**
Was there information you needed but did not get?	Yes	1,038	40
Was there information you needed but did not get?	No	1,531	60
Total	**–**	**2,569**	**100**

Table A23: Missing appointments due to childcare

Question	Answer	Count	%
Did you miss any appointments because you had other children to look after?	Yes	58	5
Did you miss any appointments because you had other children to look after?	No	758	66
Did you miss any appointments because you had other children to look after?	No, but I did rearrange an appointment due to lack of childcare	342	30
Total	**–**	**1,158**	**100**
When you missed any appointments, did you still feel you got the care/support you needed?	Yes	24	34
When you missed any appointments, did you still feel you got the care/support you needed?	No	47	66
Total		**71**	**100**

Table A24: Attending appointments alone

Question	Answer	Count	%
Did you have to attend antenatal appointments on your own due to COVID-19 pandemic restrictions?	Yes	2,288	89
Did you have to attend antenatal appointments on your own due to COVID-19 pandemic restrictions?	No	285	11
Total	**–**	**2,573**	**100**
How did you feel about this?	I felt okay with it – I might have attended on my own anyway	400	18
How did you feel about this?	Quite comfortable	350	15

Question	Answer	Count	%
How did you feel about this?	Quite uncomfortable	423	19
How did you feel about this?	**I** really did not like being on my own	1,111	49
Total	**–**	**2,284**	**100**
Did you go to any scan appointments on your own due to pandemic restrictions?	Yes	1,864	72
Did you go to any scan appointments on your own due to pandemic restrictions?	No	720	28
Total	**–**	**2,584**	**100**
While attending the scan appointment(s) alone, did you receive the support you needed? **Yes**	Yes	783	42
While attending the scan appointment(s) alone, did you receive the support you needed?	No	679	36
While attending the scan appointment(s) alone, did you receive the support you needed?	Unsure	402	22
Total	**–**	**1,864**	**100**

Table A25: Attending appointments alone, by mental health status

Do you suffer from any mental health problems?	Yes	No	Prefer not to answer
Did you have to attend antenatal appointments on your own due to COVID-19 pandemic restrictions	**Count (%)**	**Count (%)**	**Count (%)**
Yes	523 (92%)	1,711 (88%)	52 (88%)
No	47 (8%)	231 (12%)	7 (12%)
Total	570 (100%)	1,942 (100%)	59 (100%)
How did you feel about this?	**Count (%)**	**Count (%)**	**Count (%)**
I felt okay with it - I might have attended on my own anyway	60 (12%)	334 (20%)	6 (12%)
Quite comfortable	44 (8%)	299 (18%)	7 (14%)
Quite uncomfortable	90 (17%)	327 (19%)	5 (10%)
I really did not like being on my own	329 (63%)	748 (44%)	33 (65%)
Total	523 (100%)	1,708 (100%)	51 (100%)
Did you go to any scan appointments on your own due to pandemic restrictions?	**Count (%)**	**Count (%)**	**Count (%)**
Yes	445 (78%)	1,376 (71%)	40 (67%)
No	127 (22%)	573 (29%)	20 (33%)
Total	**572 (100%)**	**1,949 (100%)**	**60 (100%)**
While attending the scan appointment(s) alone, did you receive the support you needed?	**Count (%)**	**Count (%)**	**Count (%)**
Yes	156 (35%)	612 (45%)	13 (33%)
No	213 (48%)	452 (33%)	14 (35%)
Unsure	76 (17%)	312 (23%)	13 (33%)
Total	**445 (100%)**	**1,376 (100%)**	**40 (100%)**

Table A26: Antenatal education/classes

Question	Answer	Count	%
Did you get any antenatal education or go to any classes?	Yes	478	19
Did you get any antenatal education or go to any classes?	No	2,103	82
Total	–	2,581	100
An on-line antenatal session	Online antenatal information(s)	351	74
An on-line antenatal session	A group that you went to	61	13
An on-line antenatal session	Other	65	14
Total	–	477	100
Did this mean you could enjoy being able to talk to/interact with other pregnant women at the same time?	Yes	199	42
Did this mean you could enjoy being able to talk to/interact with other pregnant women at the same time?	No	277	58
Total	–	476	100
Did the education/classes make you feel ready to have your baby and become a new parent?	Yes	153	37
Did the education/classes make you feel ready to have your baby and become a new parent?	Maybe	106	25
Did the education/classes make you feel ready to have your baby and become a new parent?	No	125	30
Did the education/classes make you feel ready to have your baby and become a new parent?	Unsure	35	8
Total	–	419	100

Table A27: Demographic differences in those completing the birth questions

Completed any birth questions	No	Yes
What is your age in years?	**Count (%)**	**Count (%)**
Under 20	9 (1%)	12 (1%)
20–24	60 (7%)	119 (7%)
25–29	253 (28%)	361 (22%)
30–34	374 (41%)	673 (40%)
35–40	195 (21%)	456 (27%)
>40	27 (3%)	43 (3%)
Total	**918 (100%)**	**1,664 (100%)**
Ethnic group (binary)	**Count (%)**	**Count (%)**
White	882 (96%)	1,623 (98%)
Non-white*	36 (4%)	35 (2%)
Health Boards	**Count (%)**	**Count (%)**
Ayrshire and Arran	91 (10%)	173 (10%)
Dumfries and Galloway	10 (1%)	15 (1%)
Fife	17 (2%)	26 (2%)
Forth Valley	40 (4%)	47 (3%)
Grampian	52 (6%)	107 (6%)
Greater Glasgow and Clyde	404 (44%)	613 (37%)
Highland	41 (5%)	52 (3%)
Lanarkshire	92 (10%)	185 (11%)
Lothian	76 (8%)	243 (15%)
Tayside	36 (4%)	72 (4%)
Prefer not to answer/small HB	– (–)	– (–)
Multiple selected	– (–)	– (–)

‘–’ used’ to indicate a total <5

Table A28: Feelings about restricted visiting on postnatal ward

Thinking about restricted visiting on the postnatal ward, can you tell us how you felt about this? Select all that apply	Count n=1,474	%
I enjoyed the peace and quiet	420	29
I could give my full attention to my baby	468	32
I understood why it was important to not have lots of visitors to the hospital during the pandemic	911	62
I should have been able to have my birth partner/a supportive person with me more often	1,073	73
I should have been able to have my family or friends visit/visit more often	266	18
I wasn’t aware of any restrictions to visiting	11	<1
Other experiences of this ...	60	4
Comment	698	47

Staff survey findings tables

Table A29: Experiences of changes in professional role during the pandemic

Experience	Answer	Count	%
Working in a different role	Yes	110	25
Working in a different role	No	325	75
Total	**–**	**435**	**100**
Supporting colleagues who were/are working in a different role	Yes	237	54
Supporting colleagues who were/are working in a different role	No	201	46
Total	**–**	**438**	**100**
Working from home in a service user-facing role	Yes	90	21
Working from home in a service user-facing role	No	345	79
Total	**–**	**435**	**100**
Working from home in a non-service user-facing role	Yes	80	19
Working from home in a non-service user-facing role	No	352	82
Total	**–**	**432**	**100**

Table A30: Experiences of providing service user-facing care from home

Experience	Answer	Count	%
I feel adequately trained to provide service user-facing care from home	Disagree	15	17
I feel adequately trained to provide service user-facing care from home	Agree	47	53
I feel adequately trained to provide service user-facing care from home	Neither agree nor disagree	20	23
I feel adequately trained to provide service user-facing care from home	Not applicable	7	8
Total	**–**	**89**	**100**
I have all the necessary resources to provide service user-facing care from home	Disagree	20	23
I have all the necessary resources to provide service user-facing care from home	Agree	58	65
I have all the necessary resources to provide service user-facing care from home	Neither agree nor disagree/not applicable (combined as low numbers)	11	12
Total	**–**	**89**	**100**
I feel comfortable providing service user-facing care from home	Disagree	12	14
I feel comfortable providing service user-facing care from home	Agree	59	66
I feel comfortable providing service user-facing care from home	Neither agree nor disagree	11	12
I feel comfortable providing service user-facing care from home	Not applicable	7	8
Total	**–**	**89**	**100**

Experience	Answer	Count	%
I receive/received adequate pastoral support from my line manager to perform this role at home	Disagree	22	25
I receive/received adequate pastoral support from my line manager to perform this role at home	Agree	42	47
I receive/received adequate pastoral support from my line manager to perform this role at home	Neither agree nor disagree	16	18
I receive/received adequate pastoral support from my line manager to perform this role at home	Not applicable	9	10
Total	**–**	**89**	**100**
Performing a service user-facing role from home should be an option in the longer term	Disagree	11	12
Performing a service user-facing role from home should be an option in the longer term	Agree	63	71
Performing a service user-facing role from home should be an option in the longer term	Neither agree nor disagree	9	10
Performing a service user-facing role from home should be an option in the longer term	Not applicable	6	6
Total	–	**89**	**100**

Table A31a: Staff experience of increased virtual breastfeeding support

Type of support	Finding	Count	%
Telephone support	Increase	68	82
Total	–	**83**	**100**
Video support	Increase	63	73
Total	**–**	**86**	**100**
Text message support	Increase	30	37
Total	**–**	**82**	**100**

A31b:

The individualised care provided to women has ...	Count	%
Improved overall	21	24
Unchanged	7	8
Worsened overall	41	47
Unsure	13	15
Not applicable to me	5	6
Total	**87**	**100**

Table A32: Staff experiences of women planning to freebirth

Experience	Answer	Count	%
The opportunity for staff to support women with evidenced-based informed choice is	Improved overall	–	–
The opportunity for staff to support women with evidenced-based informed choice is	No change	22	35
The opportunity for staff to support women with evidenced-based informed choice is	Worsened overall	34	54

Experience	Answer	Count	%
The opportunity for staff to support women with evidenced-based informed choice is	Unsure	–	–
Total	**–**	63	100
How women weigh up risk when planning their birth has changed compared to pre-pandemic?	Yes, definitely	30	48
How women weigh up risk when planning their birth has changed compared to pre-pandemic?	Unsure	–	–
How women weigh up risk when planning their birth has changed compared to pre-pandemic?	Probably yes	20	32
How women weigh up risk when planning their birth has changed compared to pre-pandemic?	Probably not	6	9
How women weigh up risk when planning their birth has changed compared to pre-pandemic?	Definitely not	–	–
Total	**–**	62	100

‘–’ used’ to indicate a total <5

Table A33: Staff experiences of women planning homebirth

Experience	Answer	Count	%
The opportunity for staff to support women with evidenced-based informed choice	Improved overall	40	25
The opportunity for staff to support women with evidenced-based informed choice	No change	72	44
The opportunity for staff to support women with evidenced-based informed choice	Worsened overall	32	20

Experience	Answer	Count	%
The opportunity for staff to support women with evidenced-based informed choice	Unsure	19	12
Total	–	163	100
How women weigh up risk when planning their birth has changed compared to pre-pandemic?	Yes, definitely	65	35–45
How women weigh up risk when planning their birth has changed compared to pre-pandemic?	Unsure	–	–
How women weigh up risk when planning their birth has changed compared to pre-pandemic?	Probably yes	75	45–50
How women weigh up risk when planning their birth has changed compared to pre-pandemic?	Probably not	13	5–10
How women weigh up risk when planning their birth has changed compared to pre-pandemic?	Definitely not	–	–
Total	**–**	**–**	100

‘–’ used’ to indicate a total <5

Table A34: Increased length of time mothers spent in hospital

Question	Answer	Count	%
The opportunity to risk assess a woman’s clinical status is **improved overall**	Improved overall	19	8
The opportunity to risk assess a woman’s clinical status is	No change	99	39
The opportunity to risk assess a woman’s clinical status is	Worsened overall	106	42

Question	Answer	Count	%
The opportunity to risk assess a woman's clinical status is	Unsure	30	12
Total	**–**	**254**	**100**
The opportunity to prevent complications of pregnancy, birth or the postnatal period is	Improved overall	9	4
The opportunity to prevent complications of pregnancy, birth or the postnatal period is	No change	96	38
The opportunity to prevent complications of pregnancy, birth or the postnatal period is	Worsened overall	127	50
The opportunity to prevent complications of pregnancy, birth or the postnatal period is	Unsure	24	9
Total	**–**	**256**	**100**
The opportunity to support parents with infant feeding is	Improved overall	15	6
The opportunity to support parents with infant feeding is	No change	37	14
The opportunity to support parents with infant feeding is	Worsened overall	178	69
The opportunity to support parents with infant feeding is	Unsure	27	11
Total	**–**	**257**	**100**
The opportunity to provide families with information to help them prepare for parenting is	Improved overall	9	4
The opportunity to provide families with information to help them prepare for parenting is	No change	59	23

Question	Answer	Count	%
The opportunity to provide families with information to help them prepare for parenting is	Worsened overall	156	61
The opportunity to provide families with information to help them prepare for parenting is	Unsure	32	13
Total	**–**	**256**	**100**
That the change you experienced in mother's time spent in hospital should remain in the longer term	Agree	55	22
That the change you experienced in mother's time spent in hospital should remain in the longer term	Neither agree nor disagree	68	27
That the change you experienced in mother's time spent in hospital should remain in the longer term	Disagree	120	47
That the change you experienced in mother's time spent in hospital should remain in the longer term	Unsure	11	4
Total	**–**	**254**	**100**

Table A35: Experience of a decrease in in-person postnatal home visits

Answer	Count	%
The opportunity to support infant feeding is **improved overall**	–	–
The opportunity to support infant feeding is **worsened overall**	98	77
Total	**127**	**100**
The opportunity to support parenting is **improved overall**	–	–

Answer	Count	%
The opportunity to support parenting is **worsened overall**	103	81
Total	**127**	**100**
Continuity of carer for women is **improved overall**	11	9
Continuity of carer for women is **worsened overall**	67	53
Total	**126**	**100**
The family-centred care you provide is **improved overall**	–	–
The family-centred care you provide is **worsened overall**	75	61
Total	**–**	100
The opportunity for timely management of complications in the postnatal period (including with infant feeding) is **improved overall**	–	–
The opportunity for timely management of complications in the postnatal period (including with infant feeding) is **worsened overall**	86	68
Total	**127**	**100**
The opportunity to perform screening tests on the infant is **improved overall**	–	–
The opportunity to perform screening tests on the infant is **worsened overall**	17	14
Total	**125**	**100**

‘–’ used’ to indicate a total <5

Table A36: Delivery of virtual postnatal care

Answer	Count	%
The opportunity to support infant feeding is **improved overall**	12	7
The opportunity to support infant feeding is **worsened overall**	86	51
Total	**168**	**100**

Answer	Count	%
The opportunity to support parenting is **improved overall**	9	5
The opportunity to support parenting is **worsened overall**	94	56
Total	168	100
Continuity of carer for women is **improved overall**	13	8
Continuity of carer for women is **worsened overall**	62	37
Total	**166**	**100**
The family-centred care you provide is **improved overall**	8	5
The family-centred care you provide is **worsened overall**	73	45
Total	**162**	**100**
The opportunity for timely management of complications in the postnatal period (including with infant feeding) is **improved overall**	7	4
The opportunity for timely management of complications in the postnatal period (including with infant feeding) is **worsened overall**	86	52
Total	**167**	**100**
The opportunity to perform screening tests on the infant is **improved overall**	<5	–
The opportunity to perform screening tests on the infant is **worsened overall**	28	17
Total	**–**	100
The opportunity to provide reassurance to women and families is **improved overall**	11	8
The opportunity to provide reassurance to women and families is **worsened overall**	72	44
Total	**163**	100

Remaining responses were ‘no change’ or ‘not applicable to my role’
‘–’ used’ to indicate a total <5

Table A37: Decreased delivery of in-person breastfeeding support

The opportunity to support infant feeding is ...	Count	%
Improved overall	5	6
No change	13	17
Worsened overall	53	67
Not applicable to my role	8	10
Total	**79**	**100**

Table A38: Impact of changes on job satisfaction

Change	Increased n (%)	Decreased n (%)	No change n (%)	Unsure n (%)	Total n (%)
Working in a different role	22 (20%)	62 (56%)	18 (16%)	8 (7%)	110 (100%)
Supporting colleagues who were/are working in a different role	45 (19%)	70 (29%)	107 (45%)	14 (6%)	236 (100%)
Replacement of in-person appointments with consultations using video technology to deliver maternity appointments	21 (14%)	96 (63%)	29 (19%)	7 (5%)	153 (100%)
Replacement of in-person appointments with consultations using telephone to deliver maternity appointments	22 (11%)	118 (58%)	56 (28%)	8 (4%)	204 (100%)
Provision of online antenatal education	27 (19%)	72 (50%)	32 (22%)	14 (10%)	145 (100%)

Change	Increased n (%)	Decreased n (%)	No change n (%)	Unsure n (%)	Total n (%)
to complete in women's own time					
Provision of live online antenatal classes	22 (–)	55 (–)	25 (–)	– (–)	– (100%)
Opportunity to birth in alongside midwifery units	9 (–)	30 (–)	26 (–)	– (–)	– (100%)
Opportunity to birth in community midwifery units	7 (–)	32 (–)	31 (–)	– (–)	– (100%)
Services to support planned homebirths	21 (13%)	69 (42%)	59 (36%)	16 (10%)	165 (100%)
Access to outpatient induction of labour	52 (45%)	16 (14%)	40 (35%)	8 (7%)	116 (100%)
Access to planned caesarean birth	– (–)	16 (–)	24 (–)	– (–)	– (100%)
In-person postnatal visits at home by midwives	29 (22%)	72 (55%)	26 (20%)	5 (4%)	132 (100%)
Delivery of virtual (telephone call, text message or video) postnatal care	32 (19%)	94 (55%)	36 (21%)	10 (6%)	172 (100%)
Delivery of in-person breastfeeding support	23 (19%)	64 (53%)	27 (22%)	8 (7%)	122 (100%)
Delivery of virtual breastfeeding support	21 (20%)	49 (47%)	24 (23%)	10 (10%)	104 (100%)

Change	Increased n (%)	Decreased n (%)	No change n (%)	Unsure n (%)	Total n (%)
Working from home in a service user-facing role	38 (42%)	28 (31%)	17 (19%)	7 (8%)	90 (100%)
Working from home in a non-service user-facing role	42 (54%)	19 (24%)	10 (13%)	7 (9%)	78 (100%)

‘–’ used to indicate a total <5