

Central Lancashire Online Knowledge (CLOK)

Title	Sustaining quality midwifery care in a pandemic and beyond
Type	Article
URL	https://clock.uclan.ac.uk/id/eprint/33514/
DOI	https://doi.org/10.1016/j.midw.2020.102759
Date	2020
Citation	Renfrew, Mary J, Cheyne, Helen, Craig, Justine, Duff, Elizabeth, Dykes, Fiona Clare, Hunter, Billie, Lavender, Tina, Page, Lesley, Ross-Davie, Mary et al (2020) Sustaining quality midwifery care in a pandemic and beyond. Midwifery, 88 (102759). ISSN 0266-6138
Creators	Renfrew, Mary J, Cheyne, Helen, Craig, Justine, Duff, Elizabeth, Dykes, Fiona Clare, Hunter, Billie, Lavender, Tina, Page, Lesley, Ross-Davie, Mary, Spiby, Helen and Downe, Soo

It is advisable to refer to the publisher's version if you intend to cite from the work.
<https://doi.org/10.1016/j.midw.2020.102759>

For information about Research at UCLan please go to <http://www.uclan.ac.uk/research/>

All outputs in CLOK are protected by Intellectual Property Rights law, including Copyright law. Copyright, IPR and Moral Rights for the works on this site are retained by the individual authors and/or other copyright owners. Terms and conditions for use of this material are defined in the <http://clock.uclan.ac.uk/policies/>

Sustaining quality midwifery care in a pandemic and beyond

Mary J Renfrew – corresponding author
Professor of Mother and Infant Health
Mother and Infant Research Unit
School of Health Sciences
University of Dundee
DD1 4HN
m.renfrew@dundee.ac.uk
Twitter @maryrenfrew

Conflict of interest: none declared
Ethical approval: not applicable
Funding sources: none declared

Conceptualisation, original draft, writing, review and editing

Helen Cheyne
Professor of Maternal and Child Health Research & RCM (Scotland) Professor of Midwifery Research
NMAHP Research Unit
Faculty of Health Sciences and Sport
University of Stirling
Stirling FK9 4NF
h.l.cheyne@stir.ac.uk
@HelenCheyne

Conflict of interest: none declared
Funding sources: I receive funding from The Scottish Government CSO and NIHR – there is no funding conflict of interest.

Conceptualisation, writing, review and editing

Justine Craig
Associate Midwife Director
NHS Tayside
Ninewells Hospital
Dundee
justinecraig@nhs.net
@justine_mw

Conflict of interest: none declared
Funding sources: none declared

Review and editing

Elizabeth Duff
Senior Policy Adviser
NCT
30 Euston Square
London NW1 2FB
elizabeth.duff@nct.org.uk
@elizabethduff2

Conflict of interest: none declared
Funding sources: none declared

Review and editing

Fiona Dykes,
Professor of Maternal and Infant Health
Maternal and Infant Nutrition and Nurture Unit (MAINN)
University of Central Lancashire
Preston
PR1 2HE
fc Dykes@uclan.ac.uk

Conflict of interest: none declared
Funding sources: none declared

Review and editing

Billie Hunter
RCM Professor of Midwifery/Director, WHO Collaborating Centre for Midwifery Development
School of Healthcare Sciences
College of Biomedical and Life Sciences
Cardiff University
CF24 0AB
hunterb1@cardiff.ac.uk
@CUHealthSci

Conflict of interest: none declared
Funding sources: none declared

Review and editing

Tina Lavender
Professor of Midwifery
School of Health Sciences
The University of Manchester
Manchester M139PL
Tina.lavender@manchester.ac.uk
@DameTina1

Conflict of interest: none declared
Funding sources: none declared

Review and editing

Lesley Page
Visiting Professor in Midwifery, King's College London
Florence Nightingale Faculty of Nursing and Midwifery
James Clerk Maxwell Building
57 Waterloo Rd
London
SE18WA
Lesley.page@kcl.ac.uk
@Humanisingbirth

Conflict of interest: none declared
Funding sources: none declared

Review and editing

Mary Ross-Davie
Director, Royal College of Midwives Scotland
37 Frederick Street
Edinburgh EH1 9NH
Mary.RossDavie@rcm.org.uk
@MaryRossDavie

Conflict of interest: none declared
Funding sources: none declared

Review and editing

Helen Spiby
Professor in Midwifery
School of Health Sciences
University of Nottingham
Nottingham
NG7 2RD
helen.spiby@nottingham.ac.uk

Conflict of interest: none declared
Funding sources: none declared

Review and editing

Soo Downe
Professor of Midwifery Studies
THRIVE Centre
University of Central Lancashire
Preston PR1 2HE
sdowne@uclan.ac.uk

Conflict of interest: none declared
Funding sources: none declared

Review and editing

Acknowledgements: with thanks to Professor Jane Sandall, Professor of Social Science and Women's Health, King's College London.

Key words

Pandemic, COVID-19, midwifery, maternity services, quality care, sustainability

Abstract

The rapid development of COVID-19 has altered the context of healthcare and services around the world. In maternal and newborn services, restrictive practices have been introduced in many settings that limit women's decisions and the rights of women and newborn infants. In many countries the immediate response of the maternity services resulted in restrictions on the place of birth, continuity of care, and mother-baby contact. The UK provides an examples of a country in which an evidence-informed approach is now developing in which essential elements of quality can be maintained. To keep women, newborn infants, families, and staff safe in all countries, balance is needed between the restrictions required to control the spread of infection and maintaining evidence-informed, effective, equitable, respectful, kind and compassionate care. A set of key principles is proposed in this paper, to inform care and service provision in this current crisis and beyond. The public health and human rights agendas should be aligned. Covid-relevant, evidence-informed, rights-respecting, effective, compassionate, and sustainable public health and clinical policy, guidance, and practice should be developed. A pro-active strategy to inform longer-term planning for life during and after the pandemic should be grounded in evidence and co-created with women, families, and staff.

Highlights

- Rapid development of COVID-19 has altered healthcare and services around the world; changes have affected women, newborn infants, families, and staff
- Restrictive practices have been introduced in maternal and newborn care that limit women's decisions and rights of women and newborn infants, including restrictions on the place of birth, continuity of care, and mother-baby contact
- An evidence-informed approach is now developing in some countries in which essential elements of quality can be maintained while also protecting and supporting staff
- To keep women, newborn infants, families, and staff safe, balance is needed between the public health, quality care, and human rights agendas
- A set of key principles is proposed to inform COVID-relevant quality care and service provision
- A pro-active strategy to inform longer-term planning for life during and after the pandemic should be grounded in evidence and co-created with women, families, and staff

Authorship declaration: All authors meet the criteria for authorship and have approved the final article. All those entitled to authorship are listed as authors.

Funding declaration: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors

Introduction

The rapid development of COVID-19 has completely altered the context of health care across the UK and around the world. The speed and severity of the pandemic has taken us all by surprise, priorities have shifted and the balance of risks has changed. Things that seemed to be of the greatest importance only a few weeks ago have been swept away. Practice environments have changed almost beyond recognition, especially in hospitals, and a heightened sense of urgency and even fear can, understandably, predominate. The public health and medical imperative is such that there is a perception that the needs, preferences and decisions of childbearing women and even their rights and those of their babies are less important or even irrelevant (Birthrights, 2020).

At such a time of rapidly changing priorities and heightened awareness of risk, and despite the overwhelming sense of crisis, a focus on evidence is essential to inform decision-making and to avoid harm. Making swift, if well intentioned, changes without evidence of effectiveness may lead to unanticipated consequences which could seriously compromise the quality of care and outcomes. Maternity workload pressures have increased as a result of the pandemic. Staff have had to self-isolate to protect their own health or when family members are infected. The priority of keeping women and babies – and staff - safe in a pandemic means that we must have the ability to balance the restrictions required to control the spread of infection with the essential, evidence-informed principles of safe, effective, equitable, respectful, kind and compassionate care (Renfrew *et al.*, 2014). Is this a dilemma? No, there must be no trade-off between protecting the health and wellbeing of midwives and other health workers, and the rights of women and babies. Both are imperative. If we fail there is a real risk that the safety and rights of women and babies will be seriously compromised (Human Rights Watch, 2020; International Confederation of Midwives, 2020a; International Confederation of Midwives, 2020b).

In this paper we reflect on the immediate response of the maternity services in the UK to the coronavirus pandemic, and the evidence-informed developments that are now emerging (May 2020). We propose a way forward that includes seeking the views of women themselves and their families and the staff who care for them in designing safe and sustainable maternity and neonatal services in the context of coronavirus, recognising that the impact of COVID-19 will last for some years. We present a set of core principles that should be at the heart of care planning and delivery both during and after the pandemic.

Changing health care environment

All of us started from a point of ignorance about this coronavirus. Health professionals and service managers acted swiftly, based on general knowledge of infection control, but we were all ill prepared for the magnitude of this pandemic (Hiam, McKee, Dorling 2020). The scientific community responded at an astonishing rate; specific evidence and information about COVID-19 is being produced, published, and disseminated at a rate never seen before (e.g. <https://www.rsm.ac.uk/latest-news/2020/covid-19-resources-roundup/>). A constant stream of information from countries with experience of this virus is now helping to inform policy and practice. New decisions are being made every day and guidelines are being developed and updated at pace e.g (Royal College of Midwives and Royal College of Obstetricians and Gynaecologists, 2020c, 2020b; Royal College of Obstetricians and Gynaecologists, 2020; World Health Organisation, 2020c). The scale and scope of new collaborations and structures is unprecedented and every aspect of health care is now viewed through a COVID-19 specific lens.

Healthcare managers, policy-makers, and practitioners are all being tasked with making the most important decisions at speed, keeping up with and adapting to guidance that changes frequently as new information emerges, and communicating this effectively to wider staff groups. Anticipated and actual stark increases in the numbers of seriously ill patients and deaths resulting from COVID-19 have propelled health systems to focus on limiting and managing the spread of coronavirus infection. It is important that the response does not create risks that outweigh any benefits, and does not break down existing systems and practices that are critical to survival, health and wellbeing.

Changing maternity care environment

This broader health system response is being manifested in maternity services both in the UK and across the world. Despite the fact that the majority of women and babies are healthy and without serious complications, a focus on acute clinical care is becoming dominant, along with restrictions on practice and behaviour aimed at limiting the risk of cross-infection.

International reports indicate an extensive impact on the quality of care and human rights of women and babies; there are reports from US and China, for example, of mothers being routinely separated from their newborn babies (Vogel, 2020) and reports of over-medicalisation including escalating caesarean section rates in some countries (European Centre for Disease Prevention and Control, 2020).

In the UK, guidelines have been changing rapidly and circumstances vary from region to region, but in the immediate response phase a number of recommended changes were implemented across the country that significantly changed practice and imposed restrictions on services, staff, and women. Services have had to be reconfigured to cope with staff shortages of an average of 20%, up to 40% in some areas (Royal College of Midwives, 2020d) as a result of staff sickness and self-isolation on top of existing workforce constraints. Concerns were initially expressed that maternity staff in the UK might be redeployed to general nursing roles, potentially further depleting already stretched maternity services (NHS England, 2020; Royal College of Midwives, 2020c). Some non-acute, but important, services such as antenatal and postnatal care were changed to virtual delivery, and infant feeding services were closed and replaced with virtual support, much of it from voluntary groups (Royal College of Midwives, 2020c). There was pressure to close or seriously limit provision of community services despite important lessons from other countries indicating that community based care is likely to be safer (Nacoti *et al.*, 2020; Renfrew *et al.*, 2020). Restrictions were imposed on births at home and in freestanding midwifery units in some areas (Summers, 2020), and as a consequence, more women are being cared for in hospital settings. Continuity of care schemes were closed in some areas. Companionship in labour was restricted. There were reports of babies being separated from their mothers, not always for justifiable reasons (Baker, 2020; Brown, 2020). Ancillary services such as ambulances were focussed on patients with COVID-19, and there have been concerns over their availability for emergency maternity transfers. Perhaps unsurprisingly given this context, there have been reports of increased anxiety in pregnant women and in women planning to have unassisted childbirth ('freebirth') (Tull, 2020).

Decision-making in times of uncertainty

We are in a situation of unprecedented uncertainty on a global scale. In this fast-changing, frightening situation, where staff are in short supply and there seems little or no time to weigh up options, it is not surprising that the immediate reaction may be to revert to old patterns of command and control. This could be described as default or status-quo bias (Kahneman *et al.*, 1982). It is not a helpful response, however, for the short and the longer-term safety, health and wellbeing for women, babies, families, or, indeed for staff and

students. Any restrictive practices that are being implemented run counter to the knowledge that safety has physical, psychological, social, cultural, and spiritual dimensions (Nursing and Midwifery Council, 2019).

Research in psychology has demonstrated that when people are working in stressful situations under pressure of time, with access to extensive yet conflicting information from multiple sources, and when outcomes are uncertain, they tend to make more decisions based on intuition, gut feelings or heuristics (rules of thumb) rather than on rational thinking (Kahneman, 2011). In the early days of the pandemic when maternity-specific COVID-19 guidance was unavailable, recourse to these decision-making strategies was the immediate response. While intuitive, tacit knowledge can serve us well in familiar situations the risk is that in these uncharted times the whole system reverts to old patterns of behaviour; in this case, risk-averse and intervention-orientated patterns that run counter to current evidence become predominant. Centralising services and limiting women's options risks returning us to the institutionalised, routine-led focus that predominated in the later 20th Century, or taking us into new patterns of following infection control-led regulations. Developing new practices quickly in the absence of evidence, such as remote and digital consultation, and even home-based electronic fetal monitoring (US Food and Drug Administration, 2020; Van Den Heuvel *et al.*, 2020), goes against the grain of evidence-informed practice and risks unanticipated adverse consequences.

In making rapid decisions in response to this time of crisis there is a real risk that we could lose many of the important gains we have made in terms of safe, quality, personalised care for women, babies and families. Existing evidence-informed approaches are likely to be disrupted or need to be reconsidered; but ensuring further harm does not result from the responses to the situation is critical. Decision-making needs to be informed by existing evidence on quality care together with emerging evidence on the new disease.

Quality still matters, and midwives matter more than ever

There have been extensive improvements in knowledge and in best practice over the last 30 years. We know and understand the key components of good quality, safe care that improve the survival, health and wellbeing of women and newborn infants (Renfrew *et al.*, 2014; Miller *et al.*, 2016; World Health Organisation, 2016, 2018a, 2018b). But these practices may be under threat in some areas as system-wide responses to the pandemic are implemented (Rocca-Ihenacho and Alonso, 2020). Focussing primarily on interventions, important as those can be, risks losing many of the elements of care that make a difference to the safety, health and well-being of women and babies. The loss of key evidence-informed aspects of safe, quality care will have long-lasting consequences for individuals, families, and wider society. These aspects may include continuity of care and carer; community-based services; midwifery-led, women-centred and individualised care that takes into account the context of women's lives; provision of public health information and support; optimising normal processes; avoiding unnecessary interventions; promoting skin-to-skin contact and attachment; enabling women to breastfeed; and supporting women's mental health (Turnbull *et al.*, 1996; Begley *et al.*, 2011; Birthplace in England Collaborative Group, 2011; Renfrew *et al.*, 2014; Balogun *et al.*, 2016; Sandall *et al.*, 2016; Jaafar, Ho and Lee, 2016; Miller *et al.*, 2016; Moore *et al.*, 2016; Homer *et al.*, 2017; McFadden *et al.*, 2017; Stuebe, 2020; Birth Companions, 2020). Mental health is already likely to be adversely affected by the anxiety and fear generated by the coronavirus, so it is especially important not to aggravate this for women, or for staff, by unnecessary and potentially adverse changes to services (Maternal Mental Health Alliance, 2020).

Importantly, students are learning in a context of altered priorities - what matters during this pandemic - and this is likely to influence the way they care for women, babies, and families on into the future (Lehane *et al.*, 2019).

Even in times of crisis - especially in times of crisis - keeping women and babies safe needs a broader view of the evidence, and of the concept of 'safety'. We need to guard against unintended adverse consequences. Centralising services in hospitals may reduce women's access to care, lose the benefits of community-based care, and increase exposure to infection for women, families, and midwives (Rocca-Ihenacho and Alonso, 2020). Returning to fragmented care loses the key safety attributes of continuity, in particular for the vulnerable women experiencing multiple disadvantage who may fall through the net (Birth Companions, 2020). Denying women companionship throughout labour will result in increased interventions, increased length of hospital stay, and increased exposure of women and staff to cross-infection (Lavender *et al.*, 2020). Separating women and babies increases the risks of other infections, interferes with breastfeeding and skin-to-skin care, and loses the essential short- and long-term physiological and psychological benefits of mother-baby contact (Oddy *et al.*, 2010; Howard *et al.*, 2011; Azad, 2019). It is vitally important that the postnatal service is not further weakened or fragmented while COVID is made an excuse for doing so; rather, women's need for postnatal care and support is likely to increase at this time of social isolation. The increased workload, anxiety, and stress that staff face every day is likely to be detrimental to their own physical and mental health and result in burnout and deteriorating workplace behaviours if measures are not put in place to prevent this (O'Connell *et al.*, 2020).

We still need to keep front and centre the key contribution that quality midwifery care offers. Midwifery still matters to the safety, health and well-being of women and newborn infants – now more than ever.

Sustaining quality in the context of a pandemic

The global scientific community has responded swiftly to the need for new knowledge (e.g. <https://www.thelancet.com/coronavirus>). In the UK, pro-active collaboration between interdisciplinary researchers and health professionals is producing regularly updated evidence reviews and guidance (Cheyne *et al.*, 2020; Lavender *et al.*, 2020; Renfrew *et al.*, 2020; Royal College of Midwives, 2020b, 2020a; Royal College of Midwives and Royal College of Obstetricians and Gynaecologists, 2020b). It is clear that as we learn more about COVID-19 and as the system adapts from the actions required in the immediate crisis response, some of the initially restrictive practices imposed in maternal and newborn care in the UK are easing.

What is emerging is the possibility of developing evidence-informed, safe, quality, COVID-relevant practice. Examples include the re-establishment of community care and women-centred care, even in COVID-intense areas such as London and Birmingham (Byrom and Newburn, 2020; South Warwickshire NHS Foundation Trust, 2020). Guidelines are becoming less restrictive and lessons are being learned to identify effective strategies (Royal College of Midwives and Royal College of Obstetricians and Gynaecologists, 2020a). There are emerging reports that high quality, easily accessible virtual postnatal and breastfeeding support may be effective and welcomed by many women. Innovative solutions will be needed – and some are already evolving - to solve the challenges of emergency transport and workforce shortages, and to continue to provide the information, care and support that women need throughout their childbearing journey (Haines *et al.*, 2020). More widespread testing will help to inform levels of infection risk for staff and students and a population-based approach for women, newborn infants, and families.

Maternity care cannot be cancelled or postponed, as elective procedures can (even though with harmful consequences). Pregnancy and birth continue, just as before. And the need for childbearing women and their newborn infants to have quality care continues, so they stay safe and well, and so they have straightforward access to additional care when complications occur. Services must be accessible and appropriate for all, and care must continue to be equitable, respectful and compassionate, to avoid discrimination and any increase in inequalities resulting from this crisis (O'Connell *et al.*, 2020).

The health system must continue to support the health professionals who provide this care, and enable them to do the job that women and their babies and families need. Otherwise women and newborn infants will become ill or die of preventable causes. This includes ensuring that maternity staff can practice in safe conditions such as access to appropriate personal protective equipment (PPE), moving those who are likely to be vulnerable to coronavirus away from front line care, mitigating the very real concerns and anxieties that staff have about their own health and the health of their families, and taking particular care of the students who are working in front-line care.

To optimise outcomes for women and babies, evidence-informed and COVID-relevant core principles for maternity care and services are needed. These key principles are drawn from evidence on quality care and current information on maternity care in this pandemic (Renfrew *et al.*, 2014; International Confederation of Midwives, 2020b; Poon *et al.*, 2020; Royal College of Midwives and Royal College of Obstetricians and Gynaecologists, 2020b, 2020a; World Health Organisation, 2020c, 2020a, 2020b). They call for maternity and newborn services to:

- Continue to provide evidence-informed, equitable, safe, respectful, and compassionate care for the physical and mental health of all women and newborn infants, wherever and whenever care takes place
- Protect the human rights of women and newborn infants
- Ensure strict hygiene measures, and social distancing when possible
- Maintain community services and continuity if possible
- Ensure birth companionship by the women's own chosen companion
- Prevent unnecessary interventions
- Enable close contact between mother and newborn infant from birth
- Promote, enable, and value breastfeeding and support women to breastfeed
- Involve women, families, and staff in co-designing and implementing changes
- Monitor the impact of changes including assessment of unanticipated consequences
- Protect and support maternity and neonatal staff and students, including their mental health needs

The final principle is as critical as the others. It is understandable that staff who are having to work with possibly infected people every day will have concerns that they, or their family, might become infected. Healthcare staff did not sign up to be 'heroes fighting on the frontline', yet many are becoming infected with coronavirus themselves, and some have died. Some staff will themselves be pregnant, have older or vulnerable family members, or child care responsibilities, or be of a Black, Asian and minority ethnic group (BAME), which evidence shows makes them more vulnerable to COVID-19 (Aldridge *et al.*, 2020). Strict hygiene measures that restrict birth companionship and keep mother and baby apart may make some staff safer – and feel safer. The moral distress of not being able to give the quality of care they know is needed, however, and of witnessing the distress of the mother, birth companion, and family, and of knowing their care could contribute to sub-optimal experiences and outcomes, is also a vital safety consideration for staff and students (Greenberg *et al.*, 2020). Their needs should not be ignored as this crisis continues into the foreseeable future.

Students are especially vulnerable as they encounter situations they are not yet fully prepared for. They must be supported and their learning needs acknowledged. When this crisis stage is behind us, students must be allowed to re-group and to be supported in considering the impact this extraordinary situation has had on them. They must be given the opportunity to learn the full range of knowledge and skills needed for quality midwifery care (International Confederation of Midwives, 2019; Nursing and Midwifery Council, 2019).

Developing a new norm - listening to women and to staff, and to emerging evidence

It is tempting to see this pandemic as a battle between public health constraints and the rights and preferences of people – in this case, women and their babies and families. In some parts of the world, that is, sadly, what is happening. But it should be possible to align these agendas and to evolve COVID-relevant, evidence-informed, rights-respecting, effective and compassionate public health and clinical policy, guidance, and practice. It is especially important that areas which have not yet experienced the peak of COVID-19 learn the lessons from places that are ahead of them on the curve to avoid the inadvertent harm that might be caused by overly-restrictive practices.

It is becoming clear that this virus will be with us for many months or even years, and further peaks of infection may occur. A new norm is needed for maternity care and services.

To develop high quality COVID-relevant solutions we need a pro-active strategy, grounded in evidence and co-created with women, families, and staff. Together, we must develop sustainable practice and longer-term planning for our new normal world. What do women and families see as the essential elements of quality care in a context in which coronavirus remains a risk? How do they, and the health professionals who work with them, consider services should best be organised to keep people safe, considering physical, psychological, social, cultural, and spiritual aspects of safety? Research is needed to understand and mitigate the appalling impact that the pandemic has had upon the BAME community, including those in the healthcare workforce (Bailey and West, 2020). Participation, consultation, and listening to women and staff remain as relevant now as they were before this pandemic started (Renfrew *et al.*, 2008; NHS England, 2016). The early results of the UKOSS COVID-19 in pregnancy study have recently been published (Knight *et al.*, 2020; <https://www.npeu.ox.ac.uk/ukoss/current-surveillance/COVID-19-in-pregnancy>). They strengthen the previous observation that people from BAME groups are most at risk, and provide new knowledge to help plan services. Further findings from UKOSS and other studies are needed to identify the changes to systems of care that matter to women, families, and to midwives and their ability to provide quality midwifery care (Kennedy *et al.*, 2016, 2018).

We should value and retain the positive aspects of the informed, coordinated, and collaborative response to this pandemic, and at the same time we should ensure that the essential evidence-informed components of care that keep women and babies safe and optimise their health and well-being are securely embedded in all service provision. There are signs that this is already happening in the UK and across the world, as the early stage of urgent change moves into a better informed and more constant situation; and that gives us hope.

References

- Aldridge, R. W. *et al.* (2020) 'Black, Asian and Minority Ethnic groups in England are at increased risk of death from COVID-19: indirect standardisation of NHS mortality data', *Wellcome Open Research*. F1000 Research Limited, 5, p. 88. doi: 10.12688/wellcomeopenres.15922.1.
- Azad, M. B. (2019) 'Infant Feeding and the Developmental Origins of Chronic Disease in the CHILD Cohort: Role of Human Milk Bioactives and Gut Microbiota', *Breastfeeding Medicine*. Mary Ann Liebert Inc., 14(S1), p. S-22-S-24. doi: 10.1089/bfm.2019.0029.
- Bailey, S. and West, M. (2020) *Ethnic minority deaths and Covid-19*, *The King's Fund Blog*. Available at: <https://www.kingsfund.org.uk/blog/2020/04/ethnic-minority-deaths-covid-19> (Accessed: 4 May 2020).
- Baker, T. (2020) *Coronavirus news: Newborn baby and mother test positive for Covid-19 in London* | *London Evening Standard, Evening Standard*. Available at: <https://www.standard.co.uk/news/health/coronavirus-newborn-baby-mother-infected-covid19-a4387361.html> (Accessed: 29 April 2020).
- Balogun, O. O. *et al.* (2016) 'Interventions for promoting the initiation of breastfeeding', *Cochrane Database of Systematic Reviews*. John Wiley and Sons Ltd. doi: 10.1002/14651858.CD001688.pub3.
- Begley, C. *et al.* (2011) 'Comparison of midwife-led and consultant-led care of healthy women at low risk of childbirth complications in the Republic of Ireland: A randomised trial', *BMC Pregnancy and Childbirth*. BioMed Central Ltd., 11(1), p. 85. doi: 10.1186/1471-2393-11-85.
- Birth Companions (2020) *COVID-19* | *Birth Companions*. Available at: <https://www.birthcompanions.org.uk/pages/103-covid-19> (Accessed: 29 April 2020).
- Birthplace in England Collaborative Group (2011) 'Perinatal and maternal outcomes by place of birth for healthy women with low risk pregnancies: the Birthplace in England national prospective cohort study', *BMJ*, 343(d7400).
- Birthrights (2020) *HUMAN RIGHTS CHARITY CALLS FOR PROTECTION OF UK WOMEN IN CHILDBIRTH DURING NATIONAL EMERGENCY*, *Statement*. Available at: <https://www.birthrights.org.uk/wp-content/uploads/2020/03/Final-Covid-19-Birthrights-31.3.20.pdf> (Accessed: 3 April 2020).
- Brown, T. (2020) *Mother-Baby Separation for COVID-19 Not Evidence-Based*, *Medscape*. Available at: <https://www.medscape.com/viewarticle/928158> (Accessed: 29 April 2020).
- Byrom, S. and Newburn, M. (2020) 'Where to be born during COVID-19? Positive practice to share', *All 4 Maternity*. Available at: <https://www.all4maternity.com/where-to-be-born-during-covid-19-positive-practice-to-share/> (Accessed: 4 May 2020).
- Cheyne, H. *et al.* (2020) *Induction of labour in a pandemic A rapid analytic scoping review*. Available at: www.RCM.org.uk (Accessed: 30 April 2020).
- European Centre for Disease Prevention and Control (2020) *Coronavirus disease 2019 (COVID-19) in the EU/EEA and the UK – eighth update*. Available at:

<https://www.ecdc.europa.eu/sites/default/files/documents/covid-19-rapid-risk-assessment-coronavirus-disease-2019-eighth-update-8-april-2020.pdf> (Accessed: 29 April 2020).

Greenberg, N. *et al.* (2020) 'Managing mental health challenges faced by healthcare workers during covid-19 pandemic', *The BMJ*. BMJ Publishing Group. doi: 10.1136/bmj.m1211.

Haines, A. *et al.* (2020) 'National UK programme of community health workers for COVID-19 response', *The Lancet*. Elsevier, 0(0). doi: 10.1016/S0140-6736(20)30735-2.

Hiam L, McKee M, Dorling, D. (2020) *The NHS has been run on the goodwill of its staff for too long - The BMJ, BMJ Opinion Blogi*. Available at: <https://blogs.bmj.com/bmj/2020/04/07/the-nhs-has-been-run-on-the-goodwill-of-its-staff-for-too-long/> (Accessed: 29 April 2020).

Homer, C. S. *et al.* (2017) 'Midwifery continuity of carer in an area of high socio-economic disadvantage in London: A retrospective analysis of Albany Midwifery Practice outcomes using routine data (1997–2009)', *Midwifery*. Churchill Livingstone, 48, pp. 1–10. doi: 10.1016/j.midw.2017.02.009.

Howard, K. *et al.* (2011) 'Early mother-child separation, parenting, and child well-being in Early Head Start families', *Attachment and Human Development*. NIH Public Access, 13(1), pp. 5–26. doi: 10.1080/14616734.2010.488119.

Human Rights Watch (2020) *Human Rights Dimensions of COVID-19 Response*. Available at: https://www.hrw.org/news/2020/03/19/human-rights-dimensions-covid-19-response#_Toc35446584 (Accessed: 29 April 2020).

International Confederation of Midwives (2019) *Essential Competencies for Midwifery Practice*. Available at: https://www.internationalmidwives.org/assets/files/general-files/2019/10/icm-competencies-en-print-october-2019_final_18-oct-5db05248843e8.pdf (Accessed: 30 April 2020).

International Confederation of Midwives (2020a) *Protecting midwives to sustain care for women, newborns, and their families in the COVID-19 pandemic, Joint statement*. Available at: <https://www.internationalmidwives.org/assets/files/news-files/2020/05/call-to-action-5eb0b4ee47deb.pdf> (Accessed: 6 May 2020).

International Confederation of Midwives (2020b) *Women's rights in childbirth must be upheld during the coronavirus epidemic*. The Hague. Available at: https://www.internationalmidwives.org/assets/files/news-files/2020/03/icm-statement_upholding-womens-rights-during-covid19-5e83ae2ebfe59.pdf.

Jaafar, S. H., Ho, J. J. and Lee, K. S. (2016) 'Rooming-in for new mother and infant versus separate care for increasing the duration of breastfeeding', *Cochrane Database of Systematic Reviews*. John Wiley and Sons Ltd. doi: 10.1002/14651858.CD006641.pub3.

Kahneman, D, Slovic, SP, Slovic, P, Tversky, A. (eds) (1982) *Judgment under uncertainty: heuristics and biases*. Cambridge University Press.

Kahneman, D. (2011) *Thinking fast and slow*. Macmillan.

Kennedy, H. P. *et al.* (2016) 'Asking different questions: research priorities to improve the quality of care for every woman, every child', *The Lancet Global Health*. Elsevier Ltd, pp. e777–e779. doi: 10.1016/S2214-109X(16)30183-8.

Kennedy, H. P. et al. (2018) 'Asking different questions: A call to action for research to improve the quality of care for every woman, every child', *Birth*. Blackwell Publishing Inc., 45(3), pp. 222–231. doi: 10.1111/birt.12361.

Knight, M. et al. (2020) *Characteristics and outcomes of pregnant women hospitalised with confirmed SARS-CoV-2 infection in the UK: a national cohort study using the UK Obstetric Surveillance System (UKOSS)*. Available at: <https://www.npeu.ox.ac.uk/downloads/files/ukoss/annual-reports/UKOSS COVID-19 Paper pre-print draft 11-05-20.pdf> (Accessed: 11 May 2020).

Lavender, T. et al. (2020) *Labour and birth companionship in a pandemic: rapid analytic review*. Available at: <https://www.rcm.org.uk/media/3951/birth-companionship-in-a-pandemic-master-27-04-2020-002.pdf>.

Lehane, E. et al. (2019) 'Evidence-based practice education for healthcare professions: An expert view', *BMJ Evidence-Based Medicine*. BMJ Publishing Group, pp. 103–108. doi: 10.1136/bmjebm-2018-111019.

Maternal Mental Health Alliance (2020) *Coronavirus and maternal mental health guidance from MMHA members, Resource page*. Available at: <https://maternalmentalhealthalliance.org/news/mmha-members-offer-reassurance-amid-coronavirus-outbreak/> (Accessed: 29 April 2020).

McFadden, A. et al. (2017) 'Support for healthy breastfeeding mothers with healthy term babies', *Cochrane Database of Systematic Reviews*. John Wiley and Sons Ltd. doi: 10.1002/14651858.CD001141.pub5.

Miller, S. et al. (2016) 'Beyond too little, too late and too much, too soon: a pathway towards evidence-based, respectful maternity care worldwide', *The Lancet*. Lancet Publishing Group, pp. 2176–2192. doi: 10.1016/S0140-6736(16)31472-6.

Moore, E. R. et al. (2016) 'Early skin-to-skin contact for mothers and their healthy newborn infants', *Cochrane Database of Systematic Reviews*. John Wiley and Sons Ltd. doi: 10.1002/14651858.CD003519.pub4.

Nacoti, M. et al. (2020) 'At the Epicenter of the Covid-19 Pandemic and Humanitarian Crises in Italy: Changing Perspectives on Preparation and Mitigation'. doi: 10.1056/CAT.20.0080.

NHS England (2016) *BETTER BIRTHS Improving outcomes of maternity services in England A Five Year Forward View for maternity care NATIONAL MATERNITY REVIEW*. Available at: <https://www.england.nhs.uk/wp-content/uploads/2016/02/national-maternity-review-report.pdf> (Accessed: 29 April 2020).

NHS England (2020) *Speciality guides for patient management during the coronavirus pandemic*. Available at: <https://www.england.nhs.uk/coronavirus/wp-content/uploads/sites/52/2020/04/C0241-specialty-guide-intrapartum-maternity-care-9-april-2020.pdf> (Accessed: 29 April 2020).

Nursing and Midwifery Council (2019) *Standards of proficiency for midwives*. Available at: www.nmc.org.uk/StandardsOfProficiencyForMidwives1 (Accessed: 30 April 2020).

O'Connell, M. et al. (2020) 'Midwives in a pandemic: A call for solidarity and compassion', *Women and Birth*. Elsevier. pp. 205–206. doi: 10.1016/j.wombi.2020.03.008.

Oddy, W. H. et al. (2010) 'The Long-Term Effects of Breastfeeding on Child and Adolescent

Mental Health: A Pregnancy Cohort Study Followed for 14 Years', *Journal of Pediatrics*. Elsevier, 156(4), pp. 568–574. doi: 10.1016/j.jpeds.2009.10.020.

Poon, L. C. et al. (2020) 'Global interim guidance on coronavirus disease 2019 (COVID-19) during pregnancy and puerperium from FIGO and allied partners: Information for healthcare professionals', *International Journal of Gynecology & Obstetrics*. NLM (Medline). doi: 10.1002/ijgo.13156.

Renfrew, M. J. et al. (2008) 'Developing evidence-based recommendations in public health - Incorporating the views of practitioners, service users and user representatives', *Health Expectations*. Wiley, 11(1), pp. 3–15. doi: 10.1111/j.1369-7625.2007.00471.x.

Renfrew, M. J. et al. (2014) 'Midwifery and quality care: Findings from a new evidence-informed framework for maternal and newborn care', *The Lancet*. Lancet Publishing Group, pp. 1129–1145. doi: 10.1016/S0140-6736(14)60789-3.

Renfrew, M. J. et al. (2020) *Optimising maternity services and maternal and newborn outcomes in a pandemic A rapid analytic scoping review*. Available at: <https://www.rcm.org.uk/media/3869/rapid-review-optimising-maternity-services-for-rcm-v4-8-april.pdf> (Accessed: 30 April 2020).

Rocca-Ihenacho, L. and Alonso, C. (2020) 'Where do women birth during a pandemic? Changing perspectives on Safe Motherhood during the COVID-19 pandemic', *Journal of Global Health Science*. Korean Society of Global Health, 2. doi: 10.35500/jghs.2020.2.e4.

Royal College of Midwives (2020a) *Clinical briefing: water birth-COVID-19*. Available at: <https://www.rcm.org.uk/media/3903/rcm-professional-briefing-on-waterbirth-in-the-time-of-covid-23-april-v41.pdf> (Accessed: 30 April 2020).

Royal College of Midwives (2020b) *Clinical Guidance Briefing: Perinatal Mental Health Care During Covid-19*. Available at: <https://smalltimemum1.wordpress.com/2020/03/31/support-when-mums-need-it-most-perinatal-mental-health-> (Accessed: 30 April 2020).

Royal College of Midwives (2020c) *RCM plea: Help us deliver safe care for pregnant women*. Available at: <https://www.rcm.org.uk/media-releases/2020/march/rcm-plea-help-us-deliver-safe-care-for-pregnant-women/> (Accessed: 28 April 2020).

Royal College of Midwives (2020d) *Royal College of Midwives NHS Pay Review Body Evidence 2020*. Available at: <https://www.rcm.org.uk/media/3704/rcm-nhs-pay-review-body-evidence-2020-002.pdf> (Accessed: 30 April 2020).

Royal College of Midwives and Royal College of Obstetricians and Gynaecologists (2020a) *Information for healthcare professionals: Coronavirus (COVID-19) Infection in Pregnancy 2*.

Royal College of Midwives and Royal College of Obstetricians and Gynaecologists (2020b) *Information for healthcare professionals: Guidance for antenatal and postnatal services in the evolving coronavirus (COVID-19) pandemic 2*. Available at: <https://www.rcm.org.uk/media/3837/guidance-for-antenatal-and-postnatal-services-in-the-evolving-coronavirus-pandemic-rcm-and-rcog.pdf> (Accessed: 28 April 2020).

Royal College of Midwives and Royal College of Obstetricians and Gynaecologists (2020c) *Information for healthcare professionals: Guidance for provision of midwife-led settings and home birth in the evolving coronavirus (COVID-19) pandemic*. Available at: <https://www.rcm.org.uk/media/3893/2020-04-17-guidance-for-provision-of-midwife-led-settings.pdf> (Accessed: 28 April 2020).

Royal College of Obstetricians and Gynaecologists (2020) *Information for pregnant women and their families*. Available at: <https://www.rcog.org.uk/en/guidelines-research-services/guidelines/coronavirus-pregnancy/covid-19-virus-infection-and-pregnancy/> (Accessed 6th May 2020).

Sandall, J. *et al.* (2016) 'Midwife-led continuity models versus other models of care for childbearing women', *Cochrane Database of Systematic Reviews*. John Wiley and Sons Ltd. doi: 10.1002/14651858.CD004667.pub5.

South Warwickshire NHS Foundation Trust (2020) *Maternity: Covid-19. Key messages*. Available at: <https://www.swft.nhs.uk/our-services/adult-hospital-services/maternity> (Accessed: 30 April 2020).

Stuebe, A. (2020) 'Should Infants Be Separated from Mothers with COVID-19? First, Do No Harm'. *Breastfeeding Medicine*. doi: 10.1089/bfm.2020.29153.ams.

Summers, H. (2020) 'Expectant mothers turn to freebirthing after home births cancelled' *The Guardian: Life and Style*. Available at: <https://www.theguardian.com/lifeandstyle/2020/apr/05/expectant-mothers-turn-to-freebirthing-after-home-births-cancelled> (Accessed: 29 April 2020).

Tull, A. (2020) 'Pregnancy and birth during the coronavirus pandemic' *Channel 4 News*, 2020. Available at: <https://www.channel4.com/news/pregnancy-and-birth-during-the-coronavirus-pandemic> (Accessed: 28 April 2020).

Turnbull, D. *et al.* (1996) 'Randomised, controlled trial of efficacy of midwife-managed care', *Lancet*. Lancet Publishing Group, 348(9022), pp. 213–218. doi: 10.1016/S0140-6736(95)11207-3.

US Food and Drug Administration (2020) *Enforcement Policy for Non-Invasive Fetal and Maternal Monitoring Devices Used to Support Patient Monitoring During the Coronavirus Disease 2019 (COVID-19) Public Health Emergency. Final Guidance Document*. Available at: <https://www.fda.gov/regulatory-information/search-fda-guidance-documents/enforcement-policy-non-invasive-fetal-and-maternal-monitoring-devices-used-support-patient> (Accessed: 29 April 2020).

Van Den Heuvel, J. F. M. *et al.* (2020) 'Home-based telemonitoring versus hospital admission in high risk pregnancies: A qualitative study on women's experiences', *BMC Pregnancy and Childbirth*. BioMed Central Ltd., 20(1). doi: 10.1186/s12884-020-2779-4.

Vogel, G. (2020) 'New coronavirus leaves pregnant women with wrenching choices—but little data to guide them', *Science*. American Association for the Advancement of Science (AAAS). doi: 10.1126/science.abb9197.

World Health Organisation (2016) *WHO recommendations on antenatal care for a positive pregnancy experience*. Geneva. Available at: <https://apps.who.int/iris/bitstream/handle/10665/250796/9789241549912-eng.pdf?sequence=1> (Accessed: 29 April 2020).

World Health Organisation (2018a) *Intrapartum care for a positive childbirth experience WHO recommendations*. Available at: <http://apps.who.int/bookorders>. (Accessed: 29 April 2020).

World Health Organisation (2018b) *WHO recommendations for non-clinical interventions to*

reduce unnecessary caesarean sections. Geneva. Available at: <https://apps.who.int/iris/bitstream/handle/10665/275377/9789241550338-eng.pdf?ua=1> (Accessed: 29 April 2020).

World Health Organisation (2020a) *Breastfeeding and COVID-19 for health workers: frequently asked questions*. Available at: www.who.int/publications-detail/clinical-management-of-severe-acute- (Accessed: 30 April 2020).

World Health Organisation (2020b) *COVID-19 and breastfeeding: position paper*. Available at: http://www.euro.who.int/__data/assets/pdf_file/0010/437788/breastfeeding-COVID-19.pdf?ua=1 (Accessed: 28 April 2020).

World Health Organisation (2020c) 'Operational guidance for maintaining essential health services during an outbreak', (March), pp. 1–14. Geneva.