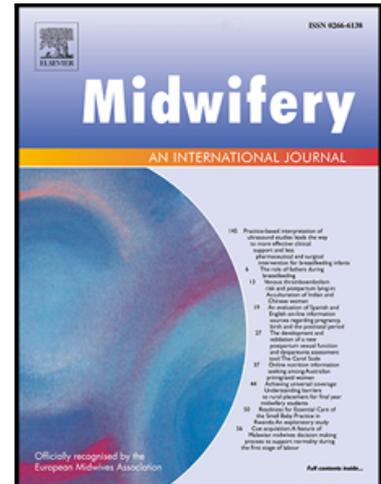


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The impact of the Coronavirus (COVID-19) pandemic on maternity care in Europe

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Title:

The impact of the Coronavirus (COVID-19) pandemic on maternity care in Europe

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KC conceptualised the editorial and wrote the original draft; CFT, LK, BG, LB, MM and AS contributed to writing, review and editing.

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This month, Europe remembers the end of the second world war and reflects on 75 years of peace, and also celebrates the bicentenary of Florence Nightingale's birth on 12th May 1820. The World Health Organisation designated 2020 the International Year of the Nurse and Midwife to mark Florence Nightingale's birth; Florence Nightingale's legacy is extensive, but she is perhaps most often associated with improvements in sanitation and infection control during her work in the Crimean war, and in gathering and using evidence, and those insights remain with us as we work to provide safe, high quality maternity care in the era of COVID-19.

Amist these anniversaries, 2020 has also seen the rapid and unpredictable spread of COVID-19 across Europe. Although the evidence to date would suggest that pregnancy does not increase the likelihood of developing COVID-19 complications compared to non-pregnant population (Docherty et al 2020), and that vertical transmission appears to be unusual (Knight et al 2020), the clinical picture remains uncertain, and much more evidence is needed before we can be confident about these early indications. However, what is clear that the burden of morbidity and death does not fall equitably. There is mounting evidence that COVID-19 disproportionately affects those from Black, Asian and Minority Ethnic backgrounds; a recent UK Obstetric Surveillance System (UKOSS) study (Knight et al., 2020) of pregnant women hospitalised with COVID-19 found a clear association between hospitalisation and black and other minority ethnicity (aOR 4.49, 95%CI 3.37-6.00), and also that older women or those with raised BMI or other comorbidities were more likely to be hospitalised and require critical care. This observation, also seen in other countries which gather and report case ethnicity (Khunti et al., 2020), has shocked many; the reasons are not fully understood, but it is clear that people with BAME ethnicity, whether they are pregnant women, members of the public, essential workers or health care providers, need to be pro-actively protected from contracting COVID-19.

A recent UKOSS report (Knight et al 2020) also revealed that five pregnant women in UK have died with or from COVID-19, although it is not yet known whether COVID-19 was the direct cause of death in these cases, and that 4.9 women per 1000 maternities were admitted to hospital with COVID-19, of whom 9% required respiratory support. Italy has also reported a maternal death with COVID-19; to date, other EU countries have not, but as many women remain hospitalised, this situation may change.

In this editorial, we consider the impact that COVID-19 has had on maternity care in Europe, and examine how those countries most affected have had similar or different responses. The purpose of this is to share these experiences, show commonalities and differences where these exist, and to reflect on the impact of COVID-19 on maternity care in Europe, now and in the coming months. We acknowledge of course that the greatest burden of COVID-19 care provision, morbidity and death has fallen on those working in medicine, social care and nursing, in community care provision, in care homes, in mental health settings and in prisons; by comparison, midwives often care for healthy women at home or in low-acuity settings, and most pregnant women who contract COVID-19 have only mild disease (Knight et al 2020). Yet women and midwives remain very much affected; care during pregnancy, birth and the postnatal weeks has changed radically and fast, and basic elements of the midwife-woman relationship such as meeting in person and providing a comforting touch have been upended in an attempt to maintain distance and reduce cross-infection. Women who have complex medical and obstetric conditions have had access to 'face to face' care reduced, whilst being encouraged to keep attending hospitals even as these are being recognised coronavirus 'hot spots'. At the moment, we have no idea of the impact these necessary adjustments will have on women and babies' wellbeing, or on women's experiences of birth.

Outside USA, European countries have had the highest number of COVID-19 cases and deaths; UK, Italy, Spain, France, Belgium and Netherlands are all amongst the top ten affected countries in the world (John Hopkins University 2020). In this context, concern about what constitutes safe care of

pregnant women and newborns has increased, and in many settings, risk averse decisions have been taken in maternity care provision which, it is argued, may increase unnecessary medical interventions, put women at risk of being infected with COVID-19 by reducing provision of community or home based care, and reduce or reverse progression towards high quality maternity care (Renfrew et al 2020, forthcoming).

Whilst it is very difficult to make comparisons between countries at this early stage, information about maternity care, and about the way that the pandemic has progressed in different regions, seems to show some common themes. We discuss these below, drawing on first-hand accounts from colleagues and clinicians in some of the affected countries. Commonalities include concerns around supply of PPE, high numbers of healthcare staff affected by the virus, and steps taken to reduce pregnant women's exposure to health settings by switching to online and telephone consultations where possible. Differences emerge in how labour care and choice of place of birth has been planned, the reductions in antenatal and postnatal 'face to face' care provision and in promotion of skin to skin contact and breastfeeding for COVID-19 positive women following birth.

Changes to working practices in maternity care.

Most EU countries moved to expand their healthcare workforces as the COVID-19 pandemic developed. Common responses were to invite recently retired staff back into general medical practice (reported in UK, Italy Netherlands, France and Spain) or to arrange for near-qualified students to start working in the health service as has happened in UK. In Spain, recently qualified medics have been deployed early into public healthcare before specialising, but have mainly undertaken administrative and non-patient facing work to release the wider workforce. In Spanish hospitals with open maternity units, midwives have stayed in maternity care, but staff in smaller hospitals which may have discharged lots of patients were redeployed elsewhere. Concerns about midwives being moved to medical wards in UK were addressed by the Royal College of Midwives, which made a strong case for maintaining maternity services in a context of staff shortage where

many staff were self-isolating, sick or could not access child care cover for shifts. In the Netherlands, midwives' training does not equip them to work in general medicine, and although retired midwives have been invited to return to practice, they have not been required to do so to date.

Antenatal care

Affected EU countries report similar changes to the care provided to pregnant women and their families since the COVID pandemic. It is worth reflecting that these changes have often been wholesale and widespread, occurring very suddenly and impacting on women already pregnant who had no advance warning that the care would change almost overnight. In the Netherlands, an initial online or phone consultation was followed by an initial visit to the midwife at 10-12 weeks for blood tests and early ultrasound. Subsequent appointments were by phone or online but with regular growth assessment and BP checks. Partners are not allowed to attend these face to face meetings. France and UK have also stopped most face to face consultations and replaced these with online and telephone consultations. In some areas of the UK, women have been provided with blood pressure machines and urinalysis sticks to undertake their own antenatal checks, and those with known or pre-existing hypertension were often already self-monitoring and using online apps to inform healthcare providers of their readings. In Italy, the Ministry of Health produced guidance for pregnancy but care still varied; some hospitals reduced antenatal clinics and used phone consultations, whilst face to face clinic appointments and home visits continued in others. In Spain, this has again varied, with some clinics continuing, and other hospitals moving to phone consultations.

The changes to care are all designed to reduce the COVID-19 infection risk for pregnant women and staff, and whilst phone and online consultations can be acceptable and valued by women as an interim measure, these may also reduce the sense of genuine communication between women and midwives. They may create problems with care access for women with language problems or who lack IT resources and skills and could provide fewer opportunities to identify issues such as domestic

violence. There are fewer opportunities to hear the fetal heartbeat, which can increase anxiety for women, especially those with complex pregnancies; other women may be disproportionately affected by additional anxiety due to language issues, mental health problems or learning disabilities. Whilst many women will be well throughout pregnancy, these changes are experimental and the effect on outcomes is unknown; cases of pre-eclampsia and other antenatal complications could be missed, and anxiety about entering acute hospital settings might deter women from seeking additional care during pregnancy.

Choice of place of birth, home birth and Midwife-Led Units

In UK, where women have choice of place of birth, difficult decisions have had to be made about support for home births in areas severely affected by COVID-19. These have included re-allocation of midwifery-led birth centres to triage centres for pregnant women who present with symptoms of COVID-19. Some areas initially reduced and restricted home birth services or midwife-led care in birth centres, due to reduced staffing, or limited access to ambulance transfer. Others sought to maintain these in an effort to reduce unnecessary hospitalisation, and developed new protocols for transfer using, for example, private cars where the transfer is not clinically urgent. In April, NHS England (2020) released guidance that supported continued choice of place of birth and reiterated that home birth or midwife-led settings are safest for women at low risk of complications, noting that more women were requesting home birth as an alternative to hospital admission. The UK's move to providing continuity of midwifery care appears to have been affected by COVID-19 however. The Dutch midwifery association (KNOV 2020) published guidance which continued to emphasise that home birth was safe and that birth in outpatient settings should be considered where feasible, to reduce infection risk, enhance continuity models of midwifery to reduce number of caregivers in contact with women and babies, and report that women were choosing home births. Unused hotels were identified as potential birth settings as midwives may not be able to access community outpatient settings, but these have not been needed yet. In Italy, France and Spain,

home birth and midwife led units are less common, and often provided privately, so most women have continued to give birth in hospitals.

Care during birth and postnatal care

Maternity providers have often severely limited visiting, and as in other EU countries, some UK hospitals have stopped allowing birth partners to be present, except during 'active' labour, although others have continued to support partner presence during labour and on the postnatal wards. There are also reports of even more stringent restrictions (such as partner visits limited to the birth itself and an hour following birth). This has also affected bereavement care as women are sent home more quickly after a miscarriage or stillbirth, and accounts of bereavement rooms being re-allocated to the care of women who have COVID-19.

These changes have led to concerns about women's rights to partner support during labour and after birth, access to pain relief and access to water birth, and the UK *Birthrights* organisation responded with guidance for women in relation to their rights during coronavirus (Birthrights, 2020). In the Netherlands, only one person can be present during labour, and partners could attend even if they have symptoms of COVID-19, as long as PPE was available and symptomatic partners maintained their distance. In France, partners can be present but are asked to wear a face mask, and in Spain, government guidance supports one supporter being present with women during labour, but practice varies between hospitals. In Italy, epidural services were withdrawn at times in the most affected regions, as anaesthetists were redeployed to urgent care for coronavirus patients and other EU countries have certainly prepared guidance for this scenario. This is clearly something which would only occur *in extremis*, but the anxiety this may cause to women, partners and midwives caring for them is clear.

Another area of variation is postnatal care. World Health Organisation (WHO, 2020) COVID-19 guidance has consistently promoted continued skin to skin contact and breastfeeding, and most EU countries appear to have followed this approach, only separating women and babies if the baby

requires NICU care. As the current evidence suggests that women who are hospitalised with COVID-19 are more likely to have preterm births (Knight et al 2020), this will be a more common outcome than usual. Breastfeeding and skin to skin contact have continued in most EU countries but women are being advised to wear face masks and take hygiene precautions to reduce the risk of transmission to babies, which is consistent with current WHO guidance. In Spain, some hospitals have isolated COVID-19 positive women from their babies, with no skin to skin contact or breastfeeding until the mother tests negative, whilst others have kept COVID-19 positive and symptomatic women with their babies, encouraging usual skin to skin and breastfeeding care; in cases where symptomatic women have been separated because the woman's condition requires it, they have been supported to express breast milk or to breastfeed. These measures are undertaken in the context of uncertainty about risks to the neonate, and it appears that separation occurred more often in the early days of the pandemic, but recent research is reassuring; it appears that few babies acquire COVID-19 either by vertical transmission or by infection following birth, and that those babies who have acquired COVID-19 are likely to have mild disease (Knight et al 2020). On the other hand, the observed higher proportion of preterm births amongst women hospitalised with COVID-19 suggests that these babies may be at risk from the many complications of prematurity and that skin to skin contact and promotion of breastfeeding remain essential elements of care, although it remains unclear whether COVID-19 itself or other conditions are leading to the observed increase in prematurity in these cohorts.

The situation for staff providing care to pregnant women and their families

The changes detailed above were instigated to reduce risk to pregnant women and to health care workers, by expanding online consultations and limiting face to face contact, and visits to health care settings, as far as possible. In UK, Italy and Spain, health systems struggled to provide sufficient PPE to staff, especially in the earlier days of the COVID-19 pandemic. Some European countries, including France and Netherlands, seem to have had better supply of PPE in hospitals, but in France, UK, Italy

and Spain there are reports of community staff being left unprotected for longer, leading to midwives and General Practitioners seeing pregnant women without PPE. The provision of PPE for community midwives in the Netherlands started slowly; midwives had to compile their own PPE packages and received supplies from the community, such as from nail salons and veterinarians. In severely affected countries, including UK, Spain and Italy, midwives and other health clinicians describe feeling pressured to continue caring for hospitalised COVID-19 patients without basic PPE. A common experience has been frequent, fast changes to guidance and rapid cultural shifts; in early April, midwives in different UK Trusts anecdotally reported being criticised for ‘scaremongering’ by electing to wear surgical masks, and yet were called ‘irresponsible’ a few days later if they were not wearing masks for all contacts.

The evidence informing effective use of PPE and the capacity of PPE to prevent transmission of respiratory disease is acknowledged to be incomplete, and to contain uncertainties (Verbeek et al 2020). There have been reports that health workers have been more likely to be infected than the general public, but it is not yet clear whether this is the case, or whether they are more likely to be tested. In Europe, testing of staff and public has been notoriously variable and slow in places. Where staff have been tested, results appear variable – in the Netherlands, Cable News Network (CNN) reported that 26% of reported COVID-19 cases were amongst healthcare staff, whilst a prevalence study conducted amongst staff based in a hospital in Barcelona, Spain found that around 11% of staff had been infected by COVID-19 (Garcia-Basteiro et al., 2020). A similar UK study found 24.4% seroconversion amongst staff in a Birmingham hospital (Shields et al 2020), and both studies reported that some staff seroconverted without experiencing symptoms of COVID-19. Although these reported rates reflect that health workers have access to testing when the public does not, the situation remains uncertain and this picture is certainly complicated by the lack of PPE protection provided in the early weeks of the pandemic. It raises the question of whether PPE can effectively prevent transmission of COVID-19, given human factors, supply issues and problems maintaining protocols in emergencies. Not surprisingly, some health care workers feel they may be unsafe even

with PPE and infection control measures, and remain concerned that they may transmit the virus to women, and to their own families and colleagues. Elsewhere in the world, the apparent ability of South Korea, Japan and China to reduce spread and limit mortality has been attributed to both proactive testing and tracing, access to PPE and widespread use and acceptance of facemasks amongst the public, although it is difficult to draw conclusions from cross-country comparisons at this point.

Deaths amongst midwives and healthcare workers

The UK has reported deaths of three working midwives from COVID-19, two midwives have died in Italy. Over a hundred healthcare staff have died from COVID-19 in both UK and in Italy, and in UK there is clear evidence that, as in the general population, staff from BAME backgrounds are disproportionately affected, with deaths amongst BAME staff 2-3 times higher than would be expected based on the ethnicity profile of the workforce (Cook et al., 2020). None of the other EU countries have reported deaths amongst working midwives. It is unclear why other countries severely affected by COVID-19 including France, Spain (and US), have not experienced similar levels of death amongst healthcare workers, but it appears that rates of staff deaths vary widely, with UK and Italy reporting the highest rates at present. Inevitably, this leads to questions about the extent to which staff were effectively protected, by PPE provision and training or by proactive withdrawal from frontline or 'face to face' work for those at increased risk, and these questions need to be raised within nations and at the global health level, and addressed through rapid and transparent enquiry.

Looking to the future

COVID-19 will affect maternity care for the foreseeable future, and as COVID-19 rates are increasing in the Americas, most EU countries are now attempting to adjust to a 'new normal'; shops and schools are opening, and cafes, restaurants and hotels will follow, bringing concerns about second or third waves of infection. Health service providers across Europe struggle with the same set of related

problems; staff shortages as children's schools and nurseries have closed, healthcare workers who have needed to self-isolate, or self-shield during the third trimester of pregnancy, problems accessing PPE or effective testing, sickness and even death in the workforce and huge organisational restructures to their services affecting midwives, doctors, GPs, and the student workforce. What do future maternity services look like in Europe, for midwives and for women and their families, as they seek to accommodate and anticipate the possibility of further waves of COVID-19?

We have seen moves to return to face to face healthcare services, although with 'social distancing' and expectations that women wear masks, and midwives wear PPE, but this has implications for communication and relationship formation. In the Netherlands, midwives have mainly returned to providing normal care, with more 'face to face' appointments and partners welcome to attend USS scans. Nevertheless, midwives across Europe may find it difficult to work as they may have family members who need to be shielded from COVID-19, and they may themselves be at increased risk. Some UK hospital services have moved staff from black and minority ethnic groups and those with chronic health conditions away from 'frontline' services, and redeployed them to provide telephone or online care, but it is unclear what will happen as services revert to face to face provision. Women, midwives and employers across Europe will need to consider how best to keep each other safe.

The immediate concerns are perhaps also clinical in nature; we need research and information sharing to understand the impact of the COVID-19 era on pregnant women. How do we support and reassure the majority of pregnant women who are healthy and well? How should we prevent perinatal mental health problems whilst we advise women to self-isolate in the third trimester, and ensure that women at risk of domestic violence are protected? How much online and telephone support is enough, and how many women are missing out? How are women who experience perinatal loss being supported? How are women managing after giving birth with reduced visits and online breastfeeding support? How do we ensure we remain alert for new and developing problems or trends? At a time of great concern about rising interventions during birth, how do we continue to

support women to have a positive pregnancy and birth in the context of sustained COVID-19 anxiety? Whilst current evidence suggests that pregnant women are not at increased risk of COVID-19 complications, they remain, as Buerkens et al (2020) argue, vulnerable to social risks and risks related to socio-economic and gender inequalities.

We have a thriving research community in Europe and beyond, and midwives across the world are rising to the challenge of finding new ways of working, based on useful, applicable evidence.

Midwifery journal is planning a special issue to bring together research on COVID-19 in pregnancy, and we know that rapid dissemination of good evidence will help; we also know that we should not be complacent, and that we need to maintain vigilance and speak up for staff safety and for the safe, high quality care for women and families during the COVID-19 era.

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