



Publish date: June 21

## RCM Clinical Briefing Sheet – Waterbirth during the COVID-19 Pandemic

### Topic

This briefing explores the current evidence about the safety of waterbirth during the current COVID-19 pandemic.

As new evidence evolves this briefing will continue to be revised in line with emerging evidence.

### Potential impact of COVID-19 in this topic area

In the early days of the COVID-19 pandemic, knowledge about how the virus was transmitted was very limited. Our knowledge has continued to grow since then.

The PregCOV-19 systematic review has so far included over 64,000 pregnant women worldwide with suspected or confirmed COVID-19 (reported prior to 29 November 2020). In this review, the most common symptoms of COVID-19 in pregnant women were cough (41%) and fever (40%). Less frequent symptoms were dyspnoea (21%), myalgia (19%), loss of sense of taste (14%) and diarrhoea (8%). Pregnant women with COVID-19 were less likely to have fever or myalgia than non-pregnant women of the same age. The PRIORITY (Pregnancy CoRonavirus Outcomes RegIsTry) study, an ongoing prospective cohort study of pregnant women from the United States, found the most prevalent first symptoms in infected women were cough (20%), sore throat (16%), myalgia (12%) and fever (12%). In this group of 594 symptomatic women, one quarter had persistent symptoms 8 or more weeks after onset.

As the virus had been found in two studies in a faecal stool sample, there is an identified potential risk of transmission through faeces (Wang et al, 2020; Zhang et al, 2020). As women often pass stools during the later stages of labour and birth, there is a theoretical risk that a woman could pass the virus to her baby or her attending midwife during the birth process, if infected stools led to the water in the birth pool becoming contaminated. Consequently, in March 2020, the RCM and RCOG took the precautionary approach of advising that women with suspected or confirmed COVID-19 should be advised against the use of a birthing pool during labour.

In the intervening months since the publication of our first waterbirth briefing in April 2020, more information has emerged about the virus and how it is transmitted. This includes that:

- there have been no known or recorded cases of the virus being transmitted via faeces and no recorded cases of oral-faecal transmission (WHO, 2020)
- transmission appears to be more frequently through droplet or aerosol transmission from the respiratory system of a carrier to the respiratory system of a recipient, than through fomite transmission (CDC, 2020)
- research indicates that the virus SARS-CoV-2 that causes COVID-19 is extremely unlikely to survive and remain active in clean drinking water supplies, although it has been found in wastewater supplies and sewage systems (Kitajima et al, 2020). It is not clear whether the virus can be transmitted via wastewater (Carducci et al, 2020)
- more research through 2020 identified that humidity and air temperature have an impact on the virus. With warmer more humid environments making it more difficult for the virus to survive. It has been found that the virus lives for longer in low temperatures (a half-life of more than 24 hours at 10°C compared to 1 ½ hours at 27°C) and in lower humidity (more

than 24 hours in relative humidity of 40%, just 1 ½ hours at relative humidity level of 65%) (Morawska and Milton, 2020; Morris et al 2020; Xu et al 2020; Wu et al 2020).

During April 2020 and January 2021, there were several developments in systems and services:

- A significant proportion of women across the UK are being offered a test for SARS-CoV-2 in early labour, though the results are not always known during the labour
- There are no current reported concerns about the supply of PPE for midwives in the UK caring for women in community or hospital settings in water or on dry land. All midwives can access and are advised to wear PPE when caring for women in active labour regardless of the woman's COVID-19 status.

## **Current key guidance for this topic – clinical care and advice for women**

### **Birthing pools, water and infection prevention and control**

Good hygiene with proper cleaning, as is always the case with the use of birthing pools, will increase the safety of water immersion. For inflatable birthing pools, it is essential to use a new disposable liner for each use. Advice and guidance on infection control and cleaning procedures for birth pools, at home and in hospitals, have been developed and repeatedly revised in response to any emerging concerns and case studies and should be rigorous enough to prevent risks of cross contamination between use (Public Health England (PHE), 2014).

The US Centers for Disease Control and Prevention (CDC) states, *“There is no evidence that COVID-19 can be spread to humans through the use of pools and hot tubs. Proper operation, maintenance, and disinfection...of pools and hot tubs should remove or inactivate the virus that causes COVID-19”* (CDC, 2020). In the UK DEFRA are currently coordinating work on this.

### **Safety of midwives caring for women labouring in birthing pools**

Midwives must be familiar with the current UK wide infection prevention and control guidance and have access to the appropriate PPE when providing care (PHE, 2020a). The recommended PPE includes single use disposable gloves, a plastic apron, a gown, a fluid resistant surgical mask and eye/face protection. It is recommended that this PPE would be used for a water or land labour and birth.

The RCM (2020a) and PHE (2020b) produced infographic guidance on the use of PPE for health professionals providing care with possible or suspected COVID-19 during labour and birth. These have been adopted across the UK and can be viewed here:

RCM (2020) PPE: what to

wear <https://www.rcm.org.uk/infographics/> and PHE (2020b) [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/881362/Table 2. Recommended PPE for primary outpatient community and social care.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/881362/Table_2_Recommended_PPE_for_primary_outpatient_community_and_social_care.pdf)

### **RCM/RCOG Guidance**

The current RCM and RCOG overall COVID-19 pregnancy guidance [2021-02-19-coronavirus-covid-19-infection-in-pregnancy-v13.pdf \(rcm.org.uk\)](https://www.rcm.org.uk/infographics/) the following:

- Water birth is not contraindicated for women who are asymptomatic of COVID-19 and presumed or confirmed SARS-CoV-2 swab negative, providing adequate PPE can be worn by those providing care.
- For women who are symptomatic of COVID-19 with a cough, fever or feeling unwell, labour and birth in water is not recommended.

- For women who are asymptomatic of COVID-19 but test positive for SARS-CoV-2, there is inadequate evidence about the risk of transmission of the virus in water.
- Healthcare providers should be aware that the integrity of PPE, such as a face mask, could be compromised when it becomes wet.

**Summary of evidence and rationale for joint RCM RCOG overall guidance:**

Labour and birth in water may confer benefits to women at low risk of complications during birth. However a lack of evidence about the risks of transmission of the virus in water exists. There is evidence that COVID-19 RNA may be present in faeces, but no evidence to support that this has resulted in faecal–oral spread. However, there is a small theoretical risk that water contaminated with faeces or other maternal secretions could pose an infection risk to the baby or the staff caring for a woman birthing in water. There is, therefore, insufficient evidence for or against the use of water in labour or birth for asymptomatic women and staff caring for them; this risk also applies when caring for a woman during labour out of water.

The UK Infection Prevention and Control Cell have reviewed the evidence and recommend that women who, within 10 days of birth, test positive for, or have symptoms of, COVID-19 should be advised not to give birth in water. However, once ten days has elapsed since a positive test and the woman is asymptomatic, she can return to a normal pathway for intrapartum care, including the use of water if she wishes.

In addition to the joint guidance quoted above, the RCM suggests:

- Midwives providing care for women in water should reduce the risk of transmission to them through careful infection prevention and control practices, including wearing appropriate PPE (waterproof and splash proof gowns and gloves, which may include long gauntlet gloves), and through the implementation of adapted care practices to reduce their risk of coming into contact with faeces.
- In the absence of evidence, for women who are asymptomatic but test positive for SARS-CoV-2, an individual risk assessment and discussion should take place, considering both the views of the woman and the midwife providing care.

**Key considerations:**

- Practice should continue to be guided by all emerging evidence through the pandemic. As any new evidence emerges, practice and guidance may require to be amended.
- The current evidence does not indicate a need for the cessation of the use of water in labour or waterbirth for all women during the COVID-19 pandemic.
- The current evidence remains inconclusive about whether asymptomatic women who test positive for the virus should always be advised not to use water during labour and birth. Individualised risk assessment about the appropriateness of providing labour or birth care in the pool room should be undertaken for each woman by the midwifery team in discussion with the woman, based on the woman’s individual presentation and the pool environment within the labour setting. The decision will be based on a range of factors including the size of the labour room (enabling or otherwise physical distancing) and the ventilation available in the room. If a woman has current symptoms of diarrhoea, she should be advised that the use of the pool would not be appropriate, as this brings a higher risk of the pool water becoming contaminated.
- Midwives already make professional judgements about their own safety and the safety of the women they care for and they should continue to use the same decision-making process flexibly. ‘The Health & Safety at Work Act’ (H&SAWA) 1974, puts a legal duty on employers to conduct risk assessments based on both the environment in which a worker operates and the tasks they undertake. They also have a duty to tell workers about the risks and the preventative measures they are taking. Whatever the circumstances, though, the employer has a responsibility to assess the risks and mitigate them (UK Public General Acts, 2020).

- It has been suggested that the nature of labouring in a birth pool can assist with establishing social distancing during labour as the woman is contained in her own space (Burns et al, 2020).
- The guidance for women with current symptoms of COVID-19 remains that they are advised not to labour and birth in water. Women with a pyrexia should not labour in water, as this may lead to an increase in their temperature and it may be necessary to undertake continuous electronic fetal monitoring. Women with a cough and any breathing difficulties should be provided with regular oxygen saturation monitoring and may require oxygen support during labour. Such care and monitoring cannot practically be provided in a pool.

**Practical approaches to reduce potential risks:**

- Screen all women in early labour for symptoms of COVID-19; ask about symptoms including high temperature and new and persistent cough; take the woman's temperature, respiration rate and pulse on admission.
- Where women describe symptoms or have a current pyrexia or cough, or have current diarrhoea, they should be advised that the recommendation is that they do not use water during the labour and birth, due to the potential small risk of infection to their baby and their care team.
- Normal risk assessment of women for labour and birth in the pool should be undertaken.
- Ensure that the pool room is well ventilated. This may include having the door or window open, with curtains or a screen across the door. Consideration should be given to reducing this ventilation at the time of birth and to the needs of maintaining thermoregulation of the newborn by reducing drafts.
- The midwife should wear PPE and adhere to appropriate physical distancing for as much of the care as possible – unless needing to provide hands on care.
- Long gauntlet gloves or wearing ordinary gloves one size too small to improve the seal may be worn by the midwife when providing hands on care in the water (Burns et al, 2020).
- The midwife wearing PPE is likely to become very warm in a pool room and should have access to fluids to drink and regular breaks (NHS Employers, 2020) and to change their mask if it becomes damp or wet.
- Approaches can be used to reduce the number of times that the midwife places their hands into the water. The woman may be asked to raise her abdomen above the water to have the fetal heart rate auscultated or the woman or her partner can be instructed how and where to place the handheld monitoring device on the abdomen to assist auscultation.
- Where a woman passes a stool into the pool, the midwife will need to assess whether the water is likely to have become contaminated. If it is not considered possible to effectively remove the stool, it may be necessary to ask the woman to leave the pool to enable it to be emptied and cleaned before returning.
- It may be beneficial to have a second member of the team in the room to write notes to enable the midwife to maintain infection control measures, particularly during the second stage of labour.
- Reduce procedures that involve the midwife placing her hands and arms into the pool – for example, the use of mirrors and digital examination.
- Discuss with the woman and her partner in early labour on how to lift their baby to the water's surface after birth, with the midwife's instruction. The midwife is close at hand to physically assist should any difficulties arise at the time of birth.
- It can be possible for a woman to remain in the pool for a physiological third stage. The third stage should be non-touch, without oxytocin and the mother guided with supported not directed pushing. Once the placenta delivers it can be "caught" by using a plastic sieve, which reduces the need for the midwife to put her hands under the water.

- If the woman wishes or requires an actively managed third stage using oxytocin, it will be necessary for her to leave the pool for the third stage.

## References and Current Evidence base

With thanks to Dianne Garland, FRCM SRN RM ADM PGCEA MSc, freelance midwife, and RCM Fellow, for her support in developing this updated guidance.

Carducci, A., Federigi, I., Liu, D., et al (2020) Making waves: coronavirus detection, presence and persistence in the water environment: state of the art and knowledge needs for public health *Water Research*, vol 179, no 115907, July

Center for Disease Control and Prevention (2020) How COVID spreads June <https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/how-covid-spreads.html>

Department for Environment, Food & Rural Affairs and Environment Agency (2020) New working group includes a range of water companies and experts across the

UK June <https://www.gov.uk/government/news/group-to-measure-for-coronavirus-prevalence-in-waste-water>

Jayaweera, M., Pererab, H., Gunawardana, B., et al (2020) Transmission of COVID-19 virus by droplets and aerosols: A critical review on the unresolved dichotomy, *Environmental Research*, vol 188,

September <https://www.sciencedirect.com/science/article/pii/S0013935120307143>

Kitajima, M. Ahmen, W., Bibby, K., et al (2020) SARS-CoV-2 in wastewater: state of knowledge and research needs, *Science of the total environment*; vol 739,

October <https://www.sciencedirect.com/science/article/pii/S0048969720325936>

Morris, D. H., Yinda, C. K., Gamble, A., et al (2020) The effect of temperature and humidity on the stability of SARS-CoV-2 and other enveloped viruses October Available

at <https://www.biorxiv.org/content/10.1101/2020.10.16.341883v1.full.pdf>

Morawska, L., Milton, D., (2020) It is Time to address airborne transmission of COVID-19 *Clinical Infectious Diseases* July Available at <https://academic.oup.com/cid/article/doi/10.1093/cid/ciaa939/5867798>

NHS Employers (2020) Maintaining good health May <https://www.nhsemployers.org/covid19/health-safety-and-wellbeing/maintaining-good-health>

Public Health England (2014) <https://www.gov.uk/government/news/public-health-england-advice-on-home-birthing-pools>

Public Health England (2020a) <https://www.gov.uk/government/publications/wuhan-novel-coronavirus-infection-prevention-and-control>

PHE (2020b) Recommended PPE for primary, outpatient, community and social care by setting, NHS and independent sector Available

at [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/881362/Table\\_2\\_Recommended\\_PPE\\_for\\_primary\\_outpatient\\_community\\_and\\_social\\_care.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/881362/Table_2_Recommended_PPE_for_primary_outpatient_community_and_social_care.pdf)

Qi, H., Xiao, S., Shi, R., Ward, M. P., Chen, Y., et al, 2020, COVID-19 transmission in Mainland China is associated with temperature and humidity: A time-series analysis *Science of the total environment* vol: 728 <https://www.sciencedirect.com/science/article/pii/S0048969720322956>

Royal College of Midwives & Royal College of Obstetricians and Gynaecologists (2020) Coronavirus (COVID-19) Infection in pregnancy: Information for health care professionals Version 13 February 19

[2021-02-19-coronavirus-covid-19-infection-in-pregnancy-v13.pdf \(rcm.org.uk\)](https://www.rcm.org.uk/2021-02-19-coronavirus-covid-19-infection-in-pregnancy-v13.pdf)

UK Public General Acts (2020) Health, Safety and Welfare in connection with Work, and Control of Dangerous Substances and Certain Emissions into the Atmosphere 1974 Legislation.gov.uk Amended July

<https://www.legislation.gov.uk/ukpga/1974/37/contents>

Wang, J., Tang, K., Feng, K., et al, 2020, High Temperature and High Humidity Reduce the Transmission of COVID-19 [https://papers.ssrn.com/sol3/Papers.cfm?abstract\\_id=3551767](https://papers.ssrn.com/sol3/Papers.cfm?abstract_id=3551767)

Wang, D., Hu, B., Hu, C., et al (2020a) Clinical characteristics of 138 hospitalized patients with 2019 novel coronavirus-infected pneumonia in Wuhan, China; JAMA American Medical Association 323(11) pp 1061-1069 Published online <https://jamanetwork.com/journals/jama/fullarticle/2761044>

Wu, Y., Jing, W., Liu, J., et al (2020) Effects of temperature and humidity on the daily new cases and new deaths of COVID-19 in 166 countries *The science of the total environment* vol 10, no 729, April, 139051; <https://doi.org/10.1016/j.scitotenv.2020.139051>

World Health Organization (2020) COVID questions and answers hub <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/question-and-answers-hub/q-a-detail/q-a-coronaviruses>

Xu, R., Rahmandad, H., Gupta M, et al (2020) The Modest Impact of Weather and Air Pollution on COVID-19 Transmission May Available at <https://dx.doi.org/10.2139/ssrn.3593879>

Zhang, Y., Chen, C., Zhu, S., Wang, D., Song, J., et al (2020) Isolation of 2019-nCoV from a stool specimen of a laboratory-confirmed case of the coronavirus disease 2019 (COVID-19), China CDC Weekly, 2 (8) pp. 123-124 <http://weekly.chinacdc.cn/en/article/id/ffa97a96-db2a-4715-9dfb-ef662660e89d>

#### Bibliography and links to online and virtual support and guidance

Bovbjerg, M., Cheyney, M., Everson, C., (2016). Maternal and newborn outcomes following waterbirth: The Midwives Alliance of North America Statistics Project, 2004 to 2009 Cohort *Journal of Midwifery and Women's Health* vol 61, no 1, January/February 2016 pp 11-20

Cluett, E. R., Burns, E., Cuthbert, A., (2018). Immersion in water during labour and birth (Cochrane Review). *The Cochrane Database of Systematic Reviews*, Issue 5, 16 May 2018.

Geissbuehler, V., Stein, S.; Eberhard J, (2004) Waterbirths compared with land births: an observational study of nine years *Journal of Perinatal Medicine*, vol 32, no 4 pp 308-314.

MIDIRS (2020) Water birth and disease transmission search April

Otigbah, C. M., Dhanjal, M. K., Harmsworth, G., et al (July 2000). A retrospective comparison of water births and conventional vaginal deliveries. *European Journal of Obstetrics and Gynecology and Reproductive Biology*, July(91) no 1 pp 15-20.

Public Health England (2017) Pre-heated birthing pools and risk of Legionnaires' disease. Public Health England, 2017182 July <https://www.gov.uk/government/publications/legionnaires-disease-risks-of-pre-heated-birthing-pools>

RCM (2018) Royal College of Midwives. Midwifery Care in Labour guidance for all women in all settings Blue top Guidelines November RCM <https://www.rcm.org.uk/media/2539/professionals-blue-top-guidance.pdf>

Taylor, H., Kleine, I., Bewley, S., et al (2016) Neonatal outcomes of waterbirth: a systematic review and meta-analysis. *Archives of Disease in Childhood: Fetal and Neonatal Edition* vol 101, no 4, July pp F357-F365.

Vanderlaan, J., Hall, P. J., Lewitt, M., (2018). Neonatal outcomes with water birth: a systematic review and meta-analysis. *Midwifery* vol 59, April 2018, pp 27-38.

Zanetti-Dallenbach, R., Lapaire, O., Maertens, A., et al (2006) Water birth, more than a trendy alternative: a prospective, observational study. *Archives of Gynecology and Obstetrics* vol 274, no 6 October pp 355-365.

Zanetti-Daellenbach, R. A., Tschudin, S., Zhong, X. Y., et al (2007) Maternal and neonatal infections and obstetrical outcome in water birth. *European Journal of Obstetrics and Gynecology and Reproductive Biology*, vol 134, no 1, September pp 37-43.

Zhang, J., Wang, Y., Chen, L., et al. (2003) Clinical analysis of pregnancy in second and third trimesters complicated severe acute respiratory syndrome. *Zhonghua Fu Chan Ke Za Zhi* August 38:516-20 PubMed.gov