

International Water-Birth Practices With Recommendations During a Global Pandemic

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ABSTRACT

The number of hospitals globally that offer water birth has increased exponentially during the past 10 years. This article examines some of the reasons for this increase as well as the objections to water birth by The American College of Obstetricians and Gynecologists, raised in their 2014 and 2016 opinion statements. The amount of research has also increased as more hospitals are keeping track of their data and publishing both prospective studies and retrospective analyses. The effects of water birth on the neonate are discussed through three meta-analyses from 2015, 2016, and 2018. The challenges and recommendations on continuing the use of water during labor and birth as a nonpharmacologic comfort measure even during a global pandemic are highlighted and supported by the best available evidence.

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INTRODUCTION

The COVID-19 pandemic year of 2020, had a great impact on maternity care practices throughout the world. The previous year had required the most travel to hospitals and medical schools that I had ever done. I was teaching at conferences, helping hospitals safely integrate water immersion into their maternity care offerings, training staff members, certifying physicians and midwives, working with engineers, architects, construction managers, and supervising actual water births on site in many hospitals across the globe. As 2020 began, I planned to cut back on my travel by only going to 17 countries in 1 year, instead of 19. In March of 2020, everything stopped. The world locked down and we all found ourselves wondering how safe it would be to continue to facilitate water birth in hospitals that were

treating COVID-19 cases. The mothers who were planning water births in major medical centers throughout North America were suddenly questioning if going to the hospital to birth their babies was still safe. The care providers who attended those women began calling and emailing with questions about water quality, transmissibility, and the safety of using water immersion for labor and birth during a global pandemic. Was it safe for the baby, the provider, the birthing person?

Continued Questions of Safety

These questions were nothing new. The infection identified as SARS-v-2 virus was unique, but the status of using water and answering questions about infection and safety has remained the same since Waterbirth International began collecting data and

reviewing research publications in 1988. Water birth became part of mainstream midwifery care in the late 1980s in the United Kingdom, Europe, and in U.S. hospitals in the 1990s. I gave birth to my second child at home in water in 1984, after traveling to France to meet with Dr. Frederick Leboyer and to visit the Hospital Generale, in Pithiviers, which was a 90-minute drive south of Paris. The hospital was where Dr. Michel Odent, and the midwives, had introduced the use of water to ease labor and facilitate the birth of the baby in the late 70s. The first modern article about the results of water assisted labor and birth was written by Dr. Michel Odent and published in the *Lancet* in 1983 (Odent, 1983). I could only find one other scientific article about birth in water prior to the publication by Dr. Odent. Surprisingly, it had been published in France in a maternity journal in 1803!

Water Birth Global Adaptation

In the years prior to COVID-19 lock down and all the new questions about the safety of giving birth in water, there was a definite increase in the number of facilities offering water birth because the number of families desiring this option had exponentially increased. For over 20 years Waterbirth International teams have worked in many locations around the world. I started teaching in Mexico in 1995 and almost every year thereafter. We have issued Waterbirth Certifications to hundreds of obstetricians, midwives, and pediatricians in Mexico and the number of hospitals that offer water birth has grown each year. In 2018, Argentina hosted their first certification workshop at the University of Austral, in Buenos Aires. Following the training, water birth started in several hospitals in Argentina, including the Sanatorio Otamendi, one of the oldest maternity hospitals in Buenos Aires. Trainings have taken place in hospitals in Spain, Turkey, Egypt, Saudi Arabia, United Arab Emirates, Israel, India, Hungary, the Czech Republic, Vietnam, Malaysia, Philippines, Chile, Canada, Hong Kong, Taiwan and in dozens of cities in mainland China. The very first training in China was in 2005, in Shanghai, with over 200 doctors and midwives in attendance. The sheer numbers of births taking place in China increased the numbers of global water birth cases very quickly. The hospital in Shanghai where we started water birth in 2005 has now facilitated more than 15,000 births in water. Every year since then, until 2020, I spent at least two months in China offering training in private and public hospitals.

With the explosion of hospitals outside of northern Europe and the United Kingdom using water immersion for comfort and to facilitate birth, the amount of research being published increased, especially after The American College of Obstetricians and Gynecologists (ACOG) came out with an opinion against water birth in April of 2014 (Committee on Obstetric Practice & American Academy of Pediatrics, 2014). They stressed in this statement that water immersion during birth should only be used as part of a randomized controlled clinical trial (RCT), after informed consent. The validity of doing RCTs was discussed in the literature and many hospitals in the United States and Canada chose to analyze their outcomes and publish their retrospective data and other facilities established prospective studies. Clinical practice guidelines have been available from the UK Royal College of Midwives from the early 90s with the most recent updated guidelines published in 2012 (Royal College of Midwives, 2012). Waterbirth International created and distributed sample protocols, informed consents, and competency check lists to hundreds of hospitals worldwide. Just because ACOG did not like birth in water and advised against it, that did not stop hospitals from integrating this non-pharmacological comfort measure. Finally, in 2016, ACOG revised their committee opinion and published a new statement (ACOG, 2016).

ACOG Recommendations Stress Education

Even though they were still not in favor of birth in water, they did acknowledge the efficacy of using water during labor for increasing comfort, lowering intervention rates, and shortening labor duration, outcomes which are all mirrored in more recent published research (Cluett et al., 2018; Henderson et al., 2014; Bailey et al., 2020).

I was encouraged by this updated opinion for several reasons. Even though the previous 2014 statement warned of dire consequences for newborns, the current opinion reflected some of the available research that was not examined in the 2014 opinion. They looked at two meta-analyses published in 2015 and 2016, both of which concluded that birth in water posed no risk for babies born to low-risk women, stating that there is largely reassuring data on newborns and that there is no difference in neonatal morbidity or mortality (Davies et al., 2015; Taylor et al., 2016). When data between the two groups of babies were compared in Vanderlaan et al. (2018) meta-analysis and systematic review,

the bath group experienced fewer neonatal intensive care unit (NICU) admissions, respiratory issues, and infections and had better 5-minute Apgar scores.

What was also different about the 2016 ACOG opinion are the recommendations for practice, which acknowledge that water birth does take place in hospitals in the United States. The two most frequent questions Waterbirth International receives daily from parents and providers are, “Where can I go to have a water birth” or “Can you help me get water birth started at my hospital?” There are hospitals in the United States that offer water birth and more are starting every day. The ACOG suggests that if a woman asks to give birth in water, she should be informed that “the benefits and risks of this choice have not been studied sufficiently to either support or discourage her request.” Women can review the literature themselves and make an informed choice.

ACOG acknowledges that hospitals and birth centers are offering water birth and will continue to offer water birth. They bullet point this suggestion: “Facilities that plan to offer immersion during labor and birth need to establish rigorous protocols for candidate selection; maintenance and cleaning of tubs and pools; infection control procedures, including standard precautions and personal protective equipment for health-care personnel; monitoring of women and fetuses at appropriate intervals while immersed; and moving women from tubs if urgent maternal or fetal concerns or complications develop.” Every hospital that has ever worked with or contacted Waterbirth International either before starting a water birth program, or after one begins, receives detailed instructions on how to create all the policies and procedures that are necessary to safely conduct water birth and training for the entire staff (Harper, 2014). The first year that both the American College of Obstetricians and the American College of Nurse Midwives approved Continuing Medical Education and Continuing Education Units for Water birth Certification, 2007, laid the groundwork for continued professional education.

Out of Hospital Water Birth Options

When water birth is not offered in a particular hospital many women in that area will seek care at a birth centers or stay at home. The 2016 publication of Midwives Alliance of North America Statistic Project, 2004–2009 Cohort, revealed 6,534 (34%) water births took place out of hospital, including 13 sets of twins, and concluded, “...results are

congruent with findings from studies in other settings, and contrary to the recently published ACOG/American Academy of Pediatrics clinical guidelines, suggest that water birth is a reasonably safe option for use in low-risk, low-intervention births” (Bovbjerg et al., 2016).

The American Association of Birth Centers published results in 2020, from the Perinatal Data Registry, using 5 years of collected data from 2012 to 2017, revealing that 38% (10,252) of cases among 26,684 birth center births took place in the water (Snapp et al., 2020). The findings from this observational study support increasing access to warm water immersion during labor and including water assisted birth. This study, along with many previously published research papers, also reported equivalent maternal and newborn outcomes making the use of water an effective nonpharmacologic comfort measure that can be routinely offered to women of low medical risk who especially wish to avoid epidural anesthesia (Ulfsdottir et al., 2018; Lathrop et al., 2018; Nutter et al., 2014; Shaw-Battista, 2017).

Pandemic Challenges

Water immersion for labor and water assisted birth never stopped during the pandemic in many places around the world. Too many women had benefited from the use of water to warrant suspension of the practice. The United States was one of the more cautious places, yet there were many hospitals that continued water birth and adjusted their use of personal protective equipment, COVID-19 testing, and limitations on people who could accompany birthing women.

Safety concerns about water birth and COVID-19 were first raised in March 2020, by a joint paper from The Royal College of Midwives and the Royal College of Obstetricians and Gynecologists revealing research that the virus had been found in feces. This led to a statement suggesting water use should stop due to fear of fecal contamination. This took everyone by surprise and our email was soon full of messages from midwives and doctors who support the use of water in labor and saw no reason to stop even with contaminated feces in the water. After all, the solution to pollution is dilution. Waterbirth International addressed these concerns early in 2020 with a blog post, an article in Midwifery Today Magazine, and a YouTube video presentation with UK Midwife, Dianne Garland, addressing the relevant safety issues for birth professionals and

highlighting the ever-evolving research (Harper, 2020a, 2020b; Harper & Garland, 2020). The Royal College of Midwives (2020) have amended their guidelines but remain cautious in suspected and confirmed COVID-19 cases.

COVID-19 is not a waterborne virus. It has been confirmed to be transmitted through air, via droplets from coughing, sneezing, or breathing. It may also be transmitted from surfaces that may be contaminated by those droplets (World Health Organization, 2020). Immersing in warm water during labor and/or birth is not likely to increase the risk of transmission, instead it may reduce the risk of transmission (Royal College of Midwives, 2021).

The most common question from care providers has been how much personal protection equipment (PPE) was appropriate. PPE recommendations vary from country to country, but a base would be fluid resistant surgical mask, eye protection, fluid resistant gown, one size smaller gloves, long gloves, or gauntlet covers.

Hospitals as well as home-birth practitioners asked about adding something to the water to “kill” the virus. Tap water in most countries is chlorinated, which is likely to mitigate any potential transmission of COVID-19, and most, if not all bacterial and viral infections. There have been no known or recorded cases of the virus being transmitted via feces and no recorded cases of oral-fecal transmission (Centers for Disease Control and Prevention [CDC], 2020b). The CDC (2020c) states: “There is no evidence that COVID-19 can be spread to humans using pools or hot tubs. Proper operation, maintenance, and disinfection of pools and hot tubs should remove or inactivate the virus that causes COVID-19.”

COVID-19 Positive Mothers

Testing has been a significant stumbling block to confirming a safe environment. At first, tests were only given to people with symptoms. Policies have now been initiated to test everyone on admission to labor wards. Initially, there was no testing for staff. This created unnecessary anxiety for everyone.

There is universal consensus that if a mother tests positive and has symptoms including cough, fever, or body aches, it is not advised to offer the use of water. Fever in any woman is an absolute contraindication to labor or birth in water in every country. An elevated temperature is usually an indication of an existing infection and allowing her to go into water puts her at further risk.

COVID-19 can cause a rapid deterioration in a patient’s condition, requiring extra monitoring. However, as wider testing is now occurring the challenge with all maternity care is how to sustain the use of water for mothers who are asymptomatic and test positive. We recognize the desire to prioritize the safety of health-care workers. However, we encourage hospitals to act in accordance with clinical evidence, even if that evidence is limited.

Birth pools cause more humidity in labor rooms. Research published in 2020 with data from China and Australia suggest that more humidity decreases the transmission of the SARS-CoV-2 virus by attaching to the water droplets and falling rather than being suspended in air for longer periods of time (Ward et al., 2020).

Availability and Choice

One year into the pandemic and our knowledge of transmission, length of illness, and how mothers and babies respond has expanded. Guidelines should always be informed by high-quality evidence, but rapid responses have not been possible for every situation.

Women need accurate and updated information to make shared decisions with their providers. That said, the paucity of explicit maternity related data is still lacking. It is a challenge to balance these issues.

While I was researching COVID-19 policies and precautions in hospitals, midwifery, and obstetric practices around the world, I requested photos of births that took place in mid-2020. I received hundreds of photos. Hospitals in many places that were cautious to use the pools have reinstated practices and many hospitals are beginning to use water immersion for labor and birth for the first time. Requests for workshops and trainings have increased. Shaare Zedek Medical Center in Jerusalem, one of the largest hospitals in Israel, facilitates over 25,000 births each year. They started their water birth program during the height of the pandemic, in July of 2020, and have already had a follow-up online workshop to ask questions after over 300 births in water and many more labors.

The RCM has continued to issue briefing papers about COVID-19 and water births, which changed several previous recommendations (Royal College of Midwives [RCM], 2021). New briefings and blogs are issued regularly. Waterbirth International and our global associates and contacts are keeping track of the research, practices, and fears, so that

water labor and birth in all settings can be sustained, improved, and taught throughout the world.

Summary of Shared Experiences, Global Approaches, and Recommendations

1. Water immersion is safe for birth mothers
 - Water can be safely offered to all women for labor and birth who meet the selection criteria and are asymptomatic and who test negative. Women who test positive and remain asymptomatic may also use the water for labor and birth, with the provider dressed in full PPE (RCM, 2021).
 - Birth pools may be the safest places for birth due to physical distancing (RCM, 2021).
2. Water is safe for babies
 - Even before the global pandemic, a meta-analysis showing the safety of water for newborns being as good as or even better than land births. In research comparisons, infection rates in neonates are less after water than on the bed (Vanderlaan et al., 2018; Davies et al., 2015).
 - Fetal heart rate auscultation can safely be undertaken. Change gloves after each time you put your hands in the water. If there are still concerns about submerging the Doppler probe, hand it to the mother or her companion to hold in place.
 - Water in most countries is chlorinated which is suggested to mitigate transfer of viruses (CDC, 2020a).
3. Water is safe for birth providers
 - Choose the PPE which conforms with national and local guidelines and make it accessible to all providers attending women in water.
 - Physiological third stage may be conducted safely in the water (Royal College of Midwives [RCM], 2020).
 - Clinical care should ensure appropriate maternal, midwife, and birth companion hydration.
 - Record and document maternal, water, and room temperature hourly (Garland, 2017).
4. Equipment is safe to use for water immersion
 - Follow manufacturers' guidelines when cleaning all pools. Liners must be single-use only. Good hygiene with proper cleaning will

increase safety (Waterbirth International, n.d.).

- All equipment, used during water labor or birth, needs to be cleanable or disposable.

Water is safe to use with necessary PPE. Babies benefit from being born in water. There is no separation of mothers and babies and optimal cord clamping are all shown to increase the safety of birth and the well-being of mother and baby (Mercer, 2001; Walker et al., 2020).

Water is a benefit to women and babies. Water birth is safe when providers are educated, experienced, and confident. There is something that researchers have difficulty quantifying and that is the healing and mind-altering effects of laboring and giving birth in water. Water interrupts the Fear-Tension-Pain cycle with CPR (Calm, Peace and Relaxation). Marine biologist, Wallace Nichols (2014), writes and talks about the impact of water in his book, *Blue Mind: The Surprising Science That Shows How Being Near, In, On, or Under Water Can Make You Happier, Healthier, More Connected, and Better at What You Do*. "Water is the medium of consciousness." The mother's internal environment takes on new meaning within these discoveries. The water aids and enhances the mother's ability to focus on the birth process, connect with her baby and remain in a blissful state. I believe the introduction of water into clinical settings changes the way we see birth. It teaches us to be patient, observant, calm and it changes our consciousness at the same time.

Dr. Florence Hortel (personal communication, Zoom interview, March 27, 2021) in LaPlata, Argentina, described her attendance at a water birth as "being part of the audience," providing protection and safety by being a master of inactivity and knowing what normal birth looks like and knowing how to respond when it does not appear to be normal. The challenges and obstacles to water birth that the reaction to a global pandemic produced are all being met with ingenuity, courage, and concern for the health and safety of mothers, their families and the care givers who diligently assist with loving service. Fear and love cannot coexist. However, they can be consciously created and intentionally changed. How can we increase the normalcy of birth? Just add water.



Ottawa Birth Centre, Ottawa, Canada: Midwife Ola Levitan with full PPE, August 2020.



Ottawa Birth Centre, Ottawa, Canada: Midwife Ola Levitan with full PPE, August 2020.

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