

Legionnaires' Disease Latest Worry For Baby After Water Birth



By *Jamie Wells, M.D.* — June 12, 2017



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Though pneumonia and infection are among the litany of known complications following a water birth, the Centers for Disease Control and Prevention (CDC) just reported two cases of Legionnaires' Disease in newborns in Arizona born this way at home. Upon this discovery, further investigation identified a Legionellosis death of an infant after a water birth in 2014 in Texas.

I will interpret these cases momentarily.

Yes, babies have been born healthy via water birth. However, when problems arise they are serious to catastrophic and amidst so unpredictable a journey as childbirth they occur rapidly and can be irreversible. Delay in clinical intervention is common given these births traditionally take place in a home or outside of a hospital. When oxygen deprivation is the main issue, every minute counts without proper treatment. And so on.

I recently wrote of a family who struggled for seventeen years to conceive (read [here](#) [2]). A healthy infant is a gift. Why add a risk factor? The question for expectant parents should always be: If water birth goes awry, can I live with the consequences?

It is important to learn about the risks and benefits of any therapy or procedure—of which with respect to water birth there are no proven medical benefits— before making an informed decision that is best for you and your family. Learn the facts and decide for yourself.

Among the issues babies have endured: Grade 2 & 3 Hypoxic Ischemic Encephalopathy (HIE) and perinatal asphyxia (the type of brain damage when an infant's brain does not receive adequate oxygen and blood), aspiration, radiologic findings of fresh water drowning with pulmonary edema,

respiratory distress, seizures as a result of very low sodium due to water intoxication, challenges of thermoregulation, Group B Strep (GBS) meningitis, snapped umbilical cords prompting blood loss with possible shock and need for transfusion, death etc.

Maternal risks include: loss of control of blood loss, decreased fetal monitoring, limited alternative analgesia, ineffective contractions, higher risk of infection especially with membrane rupture etc.

Having published a case of a near drowning of an infant via water birth in [Neoreviews](#) [3] and written repeatedly on the topic, I suggest you review [Just Say No to Water Birth](#) [4] for clarification as well as [Water Birth: To Breathe or Not To Breathe?](#) [5] where the focus is on the science behind water birth, reported cases of adverse events and detailing the recommendations of the American College of Obstetricians and Gynecologists and the American Academy of Pediatrics.

What is Legionnaires' Disease?

This is a serious, severe type of pneumonia caused by the bacteria *Legionella*. The lung infection can be treated by antibiotics usually in a hospital setting with the majority of people faring well. Despite that, the CDC estimates 1 in 10 who acquire [Legionnaires' Disease](#) [6] die from it. Most healthy individuals do not contract it when exposed. People at risk tend to have a higher chance of getting the disease (e.g. compromised immunity by medication or disease, over age 50, smokers). Breathing in or aspirating small droplets of *Legionella* contaminated water triggers infection. Hot tubs among other man-made water systems tend to be frequent culprits, in particular, when not properly maintained. See [here](#) [6] and [here](#) [7] to learn more about [Legionnaires' Disease](#) [8].

The [CDC's Morbidity and Mortality Weekly Report](#) [9] (MMWR) regarding these two Arizona cases, in summary:

Case #1

- Infant born at home by midwife in tub full of tap water
- Apgar scores 5/10 at 1 minute, 9/10 at 5 minutes
- DOL#1 (day of life #1, birth is DOL#0) transferred to ER for: severe respiratory distress, rapid breathing, low oxygen in blood
- At initial hospital: diagnosed with congenital heart disease, chest x-ray showed bilateral pulmonary infiltrates with possible cavitory lesions
- Had to be transferred to children's hospital: Bronchoscopy performed and sample obtained grew *Legionella pneumophila*
- Treated for 10 days with antibiotics, remained admitted for over 2 months "primarily because of the congenital heart disease"
- **CDC's main conclusion:** municipal tap water is not sterile and prior to delivery the hose was not rinsed for a sustained period to rid "stagnant water and sediment" which is optimal environment for *Legionella* to flourish.

Case #2

- Infant delivered at home in rented jetted jacuzzi hot tub by different midwife
- DOL#3 newborn with fever 101 degrees *Fahrenheit*
- DOL#4 newborn fever 102.6 degrees *Fahrenheit* when brought to ER, chest x-ray "fluffy

nodular opacities”

- Admitted for “neonatal sepsis and suspected pneumonia.” Grew *Legionella pneumophila* in testing. Treated for 10 days with antibiotics.
- **CDC's main conclusion:** Used rented hot tub— as opposed to disposable birthing tub— and let municipal tap water fill the tub and sit for a week up until after birth.

What does this mean?

The [CDC investigation](#) [9] detected many gaps in infection protocols for both cases. They offer ways to minimize this occurrence should a family opt for water birth, but maintain “the risk for *Legionella* infection cannot be eliminated because of the need for warm tap water to fill the tub.”

They also indicate “no aspiration by the infant was noted” in either case. This is not interchangeable with no aspiration took place. Proponents of water birth rely on claims that a protective primitive reflex prevents such aspiration by the infant until the umbilical cord is cut. Evidence has shown that that reflex can be overridden. Given that both cases experienced Legionnaires’ Disease, this theory gets further undermined. It takes very little volume at that age and size to cause problems. [For example](#) [3], a mere 1-2 ml/kg (a few teaspoons) of fluid can cause pulmonary edema from drowning.

The first case even demonstrates a low APGAR score at 1 minute. Apgar scoring is a valuable tool determined at 1, 5 and sometimes 10 minutes (if particularly concerned) after birth to give an overall, quick assessment of the infant’s clinical status and need for support. A ten is the highest. Points are subtracted when there is impairment in respiration (breathing rate and effort), pulse (heart rate), appearance (e.g. skin color blue vs. pink), grimace response (reflexes) and activity (muscle tone). Poor color reflects poor perfusion, oxygenation. Rapid breathing is concerning for distress. And so forth. Underlying heart disease and adverse effects from water birth can influence these values.

Signs of water intoxication, aspiration or infection are typically progressive over time. In the newborn period, for instance, a fever of 100.4 or above is considered pathologic. The second case demonstrated exceeding this by day three and entered the hospital on day four. The admitting diagnosis of neonatal sepsis means there was worry the infant had overwhelming infection.

Babies this young have difficulty localizing infection, so are at higher risk for generalized spread of disease. Additionally, they have a less robust immune system using mom’s passive antibodies while they slowly make their own. The nature of the congenital heart disease of case #1 was not disclosed, but certainly puts a patient at greater risk of complications from infection and pneumonia.

Fortunately, these infants did well. The same cannot be said for the 2014 incident in Texas. Unfortunately, they were unnecessarily exposed to aggressive interventions and potential other risks by being hospitalized and contracting the illness.

Source URL: <https://www.acsh.org/news/2017/06/12/legionnaires-disease-latest-worry-baby-after-water-birth-11410>

Links

[1] <https://www.shutterstock.com>

[2] <http://www.acsh.org/news/2017/05/26/after-sextuplets-are-born-11335>

[3]

http://neoreviews.aappublications.org/content/7/4/e208?sso=1&sso_redirect_count=1&nfstatus=401&nfstatusdescription=ERROR%3a+No+local+token

[4] <http://www.acsh.org/news/2017/05/16/just-say-no-water-birth-11282>

[5] <http://www.acsh.org/news/2016/09/20/water-birth-breathe-or-not-breathe-10183>

[6] <https://www.cdc.gov/legionella/about/index.html>

[7] <https://www.cdc.gov/legionella/index.html>

[8] <https://www.cdc.gov/legionella/downloads/fs-legionnaires.pdf>

[9] <https://www.cdc.gov/mmwr/volumes/66/wr/mm6622a4.htm>