

1 Problem

What When	Problem(s)	Infant died from legionellosis
	Date	January 22, 2014
	Time	?
Where	Different, unusual, unique	Recreational jetted tub used for water birth
	Facility, site	Family home
	Unit, area, equipment	Recreational jetted tub
	Task being performed	Water birth

Impact to the Goals

Patient Safety	Death of infant
Employee Safety	?
Environmental	Tub used for water birth not properly disinfected
Compliance	Use of non-approved tub
Patient Services	Infant infected with Legionellosis
Schedule/ Operations	?
Property/ Equipment	?
Labor/ Time	?

Frequency	Another case of legionellosis in an infant from a birthing pool in the UK in June 2014
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The birthing tub in this particular case was filled with private well water two days prior to the birth. Upon filling, enzyme-based, non-FDA-approved water purifying drops were added to the water and the water was kept warm and circulated in the tub until the delivery. The tub used was a recreational-grade, jetted tub with internal tubing that is not approved for use as medical equipment and is particularly difficult to disinfect.

There were no procedures provided by the midwifery center that discussed required steps before and during the water birth, though this is not uncommon. The study found that, although most certified nursing midwives supported water birth, only 30% had received training.

Shortly after the infant's death, the American Academy of Pediatrics and the American College of Obstetricians and Gynecologists issued a joint statement saying that water births should be avoided because the infant may drown or obtain an infection from a water birth.

Over the summer, another infant developed legionellosis from a birthing pool in England, and the National Health Service banned the use of home birthing pools with built-in heaters and recirculation pumps. Internationally, there were no other cases of infants developing legionellosis from water births since the late 1990s.

3 Solutions

Though water births or the use of specific types of birthing equipment have not been banned in the US, birthing in a tub is discouraged. The CDC study recommends that procedures and training about cleaning and disinfection required before and during water births be developed and disseminated through the midwifery community and potential clients. While legionellosis in infants is rare, it is believed that additional cases may be discovered with better surveillance.

WATER BIRTH LEADS TO INFANT'S DEATH

Cause Map

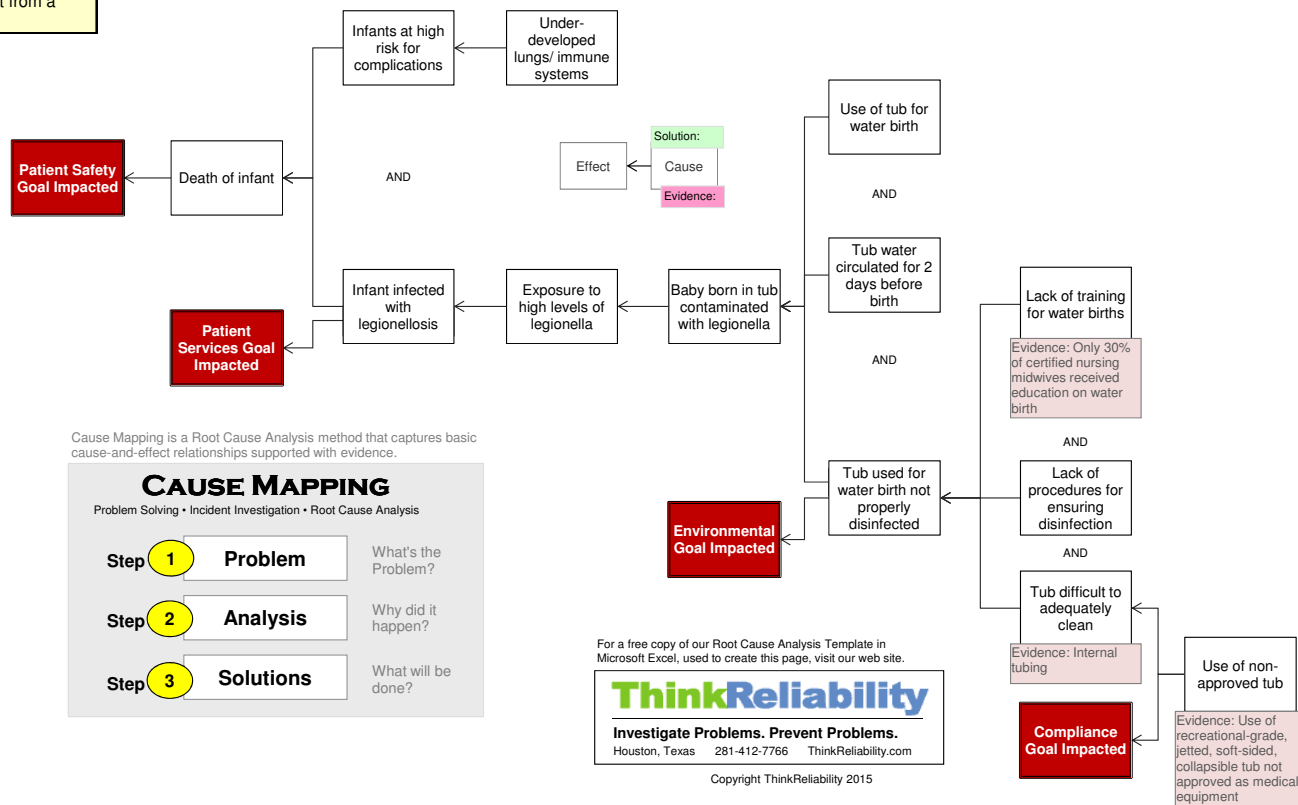
Legionnaire's Disease Infection Believed to be Transmitted by Improperly Disinfected Hot Tub

"Findings from this investigation revealed a gap in the standardization and implementation of infection control practices for midwives during home water births. Recommendation was also made that recreational tubs unable to be cleaned and disinfected according to these protocols should not be used. The TDSHS strongly encouraged documentation of birthing tub maintenance, including appropriate chemicals and quantities used for disinfection, as well as monitoring of pH and temperature. Additional recommendations included use of standard written procedures for employees and clients before, during, and after the water birth. These procedural documents were suggested to outline proper timing of tub filling to reduce proliferation of microorganisms, documentation of client awareness of possible risks when deviating from written procedures, and laboratory testing procedures to be followed when birthing tubs are suspected of being contaminated with Legionella or other pathogens."

- Fritschel E, Sanyal K, Threadgill H, Cervantes D. Fatal legionellosis after water birth, Texas, USA, 2014. Emerg Infect Dis [Internet].

2 Analysis

Detailed Cause Map - Add detail as information becomes available.



Cause Mapping is a Root Cause Analysis method that captures basic cause-and-effect relationships supported with evidence.

CAUSE MAPPING
Problem Solving • Incident Investigation • Root Cause Analysis

Step 1	Problem	What's the Problem?
Step 2	Analysis	Why did it happen?
Step 3	Solutions	What will be done?

For a free copy of our Root Cause Analysis Template in Microsoft Excel, used to create this page, visit our web site.

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