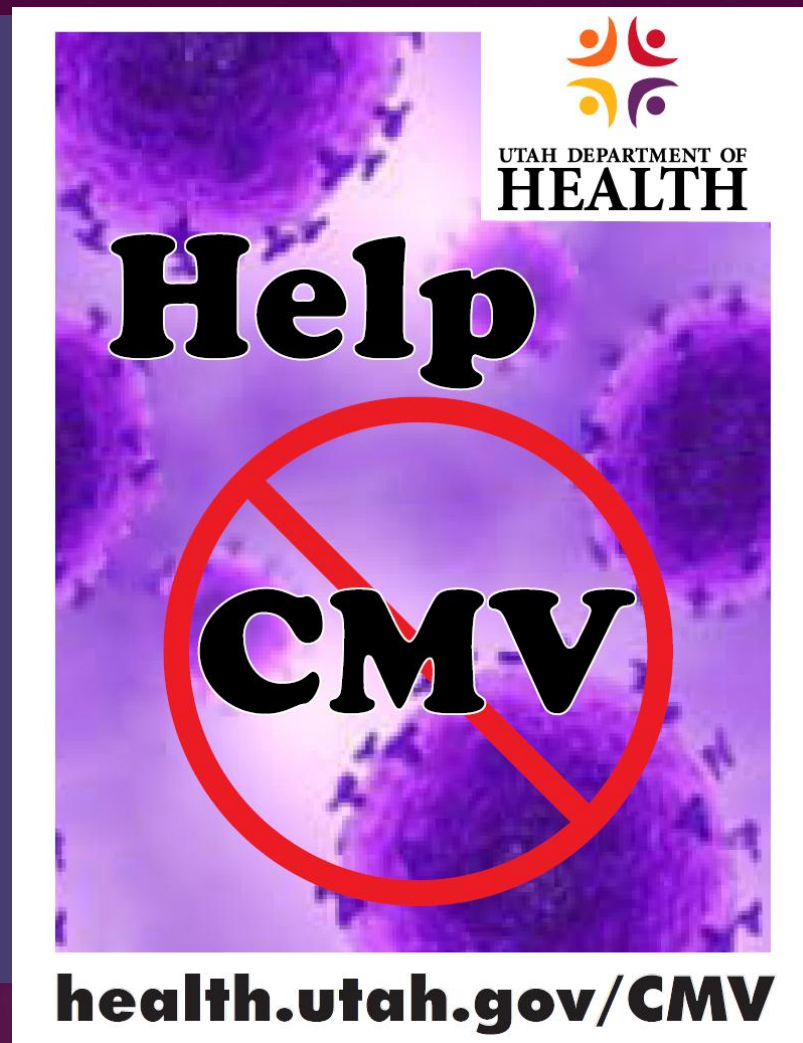


CONGENITAL CYTOMEGALOVIRUS (CMV): The Leading Viral Cause of Developmental Disabilities

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WHAT IS CMV?

- Cytomegalovirus (sy toe MEG a low vy rus), or CMV, is a common herpesvirus that affects people of all ages. More than half of Americans have been infected with CMV by the time they are 40 years old.
- Most CMV infections are “silent”, meaning most *healthy* people who are infected with CMV have no signs or symptoms; however some may have mono-like symptoms or feel like they have the flu, such as fever, sore throat, fatigue, or swollen glands.. CMV can be very serious for individuals with weak immune systems or in developing fetuses.
- When CMV occurs during a woman’s pregnancy, the baby can become infected before birth. CMV infection before birth is known as “Congenital CMV” or cCMV.
- CMV is the most common cause of congenital infection in the world. It is the leading cause of birth defects and developmental delays in the United States, disabling one child every hour.

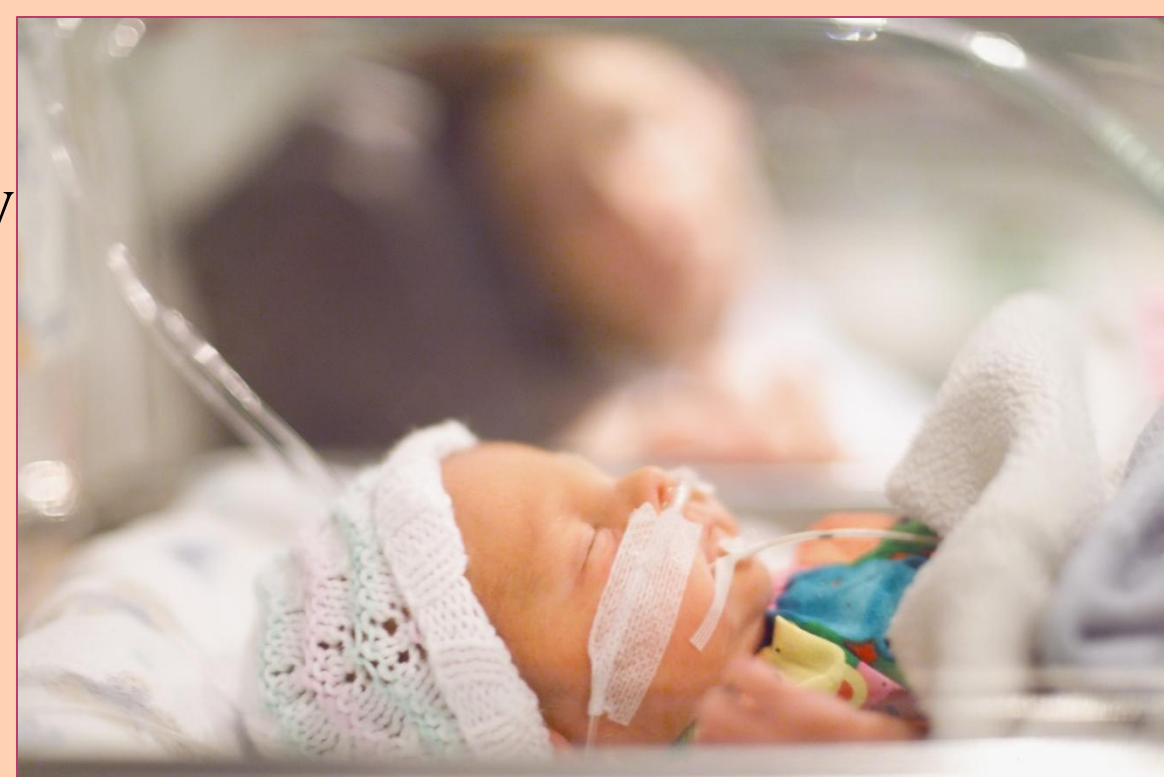
**In the United States, about 1 in 150 children is born with cCMV
= more than 30,000 infants each year in America.**

cCMV OUTCOMES

One of every five children born with cCMV will develop permanent problems due to the infection.

Permanent health problems or disabilities due to congenital CMV include:

- ❖ Hearing loss
- ❖ Vision loss
- ❖ Developmental Disability
- ❖ Cognitive Impairment
- ❖ Cerebral Palsy
- ❖ Lack of Coordination
- ❖ Small head size
- ❖ Seizures



90% of infants infected with cCMV infection appear healthy at birth. Disabilities or problems may appear as the child grows. In fact, 50% of hearing losses due to cCMV will be late-onset, i.e. develop after birth.

**Congenital CMV is the leading non-genetic cause
of childhood hearing loss.**

cCMV MYTHBUSTER:

Mothers who are CMV seropositive (had CMV in the past) prior to pregnancy can still develop a second(ary) infection while pregnant – either from a reactivation of the virus or reinfection with a different viral strain.

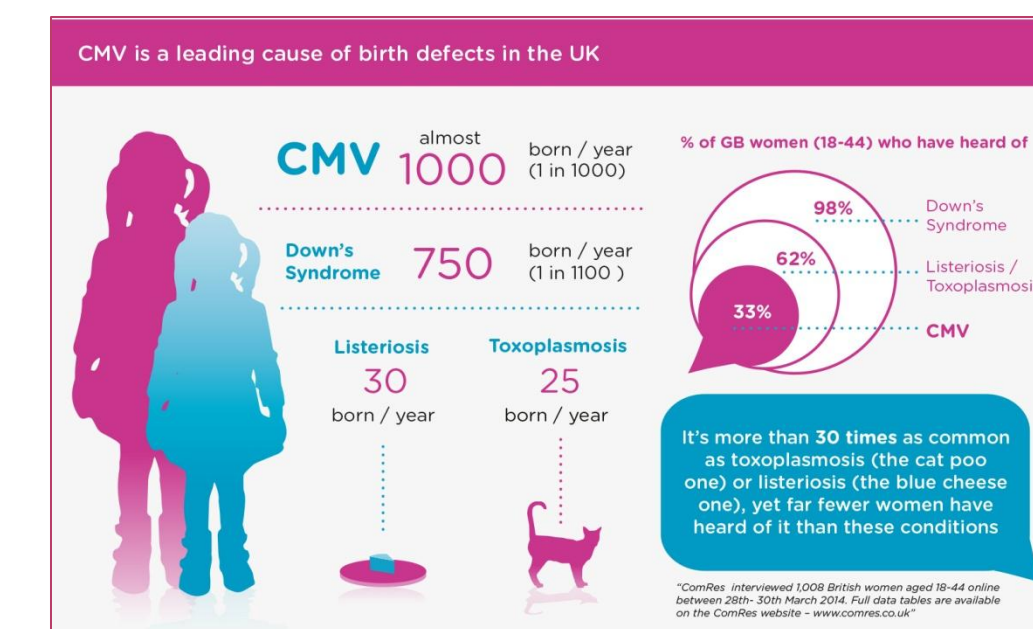
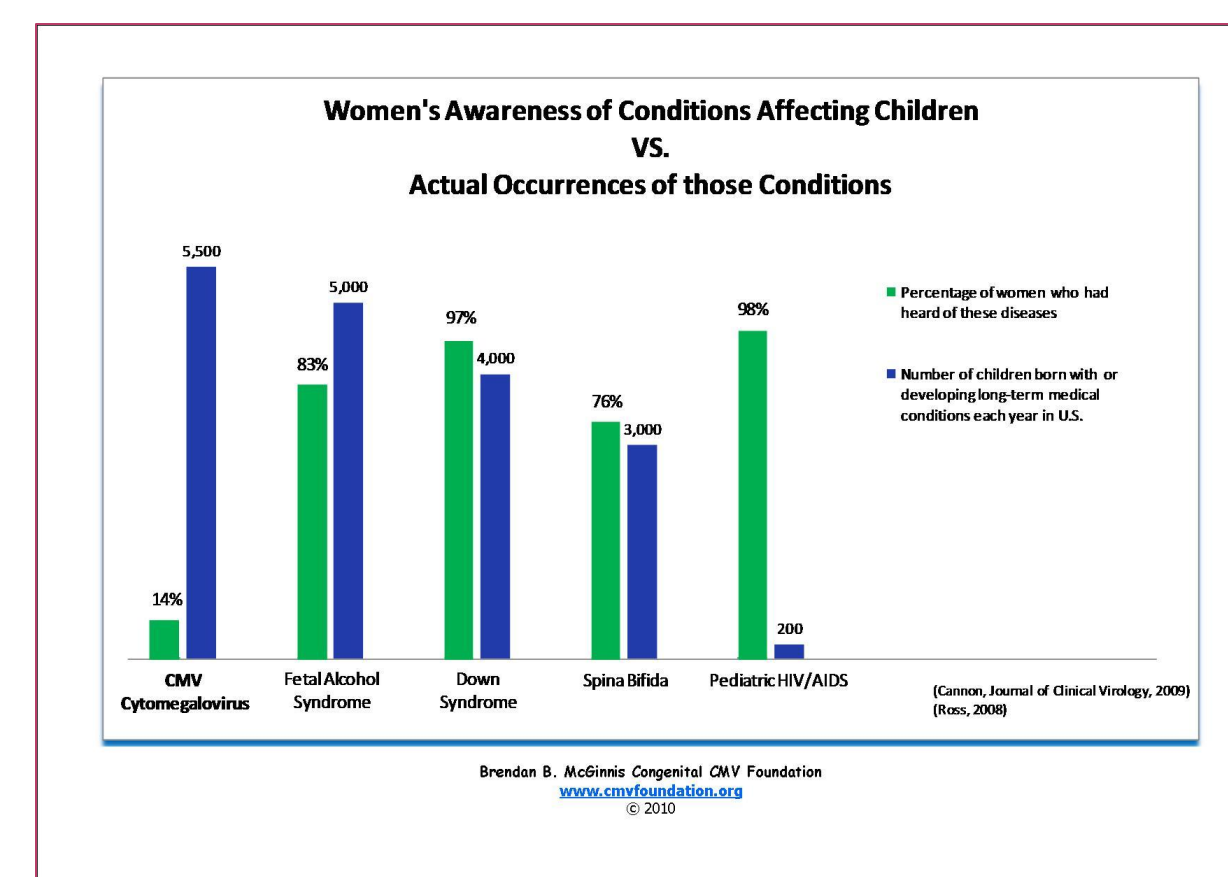
CMV TRANSMISSION and AWARENESS

Transmission

CMV is transmitted through direct contact with body fluids, such as saliva, mucous, urine, or tears. CMV can also be transmitted via sexual contact, blood transfusions and organ transplantation. It is believed that the most common way a pregnant woman gets CMV is through saliva or urine of a young child.

Awareness

Research has shown that there is a disconnect between the prevalence of congenital CMV and women’s awareness of the dangers of CMV during pregnancy. See images below from research conducted in the United States and the United Kingdom.



Risk group	Summary annual seroconversion rate (%)	95% confidence interval (%)
Pregnant women	2.2	2.1 - 2.4
Parents with child aged 0-5	2.1	0.3 - 6.8
Healthcare workers	2.7	2.3 - 3.2
Day care providers	8.5	6.1 - 11.6
Women attending STD clinics	1.8	1.0 - 3.7
Parents with child shedding CMV	24	18 - 30

• Annual infection rate of less 25% in this high risk group implies that CMV is not easily transmitted.

Hopfl, New Med Virus, 2010

CMV PREVENTION

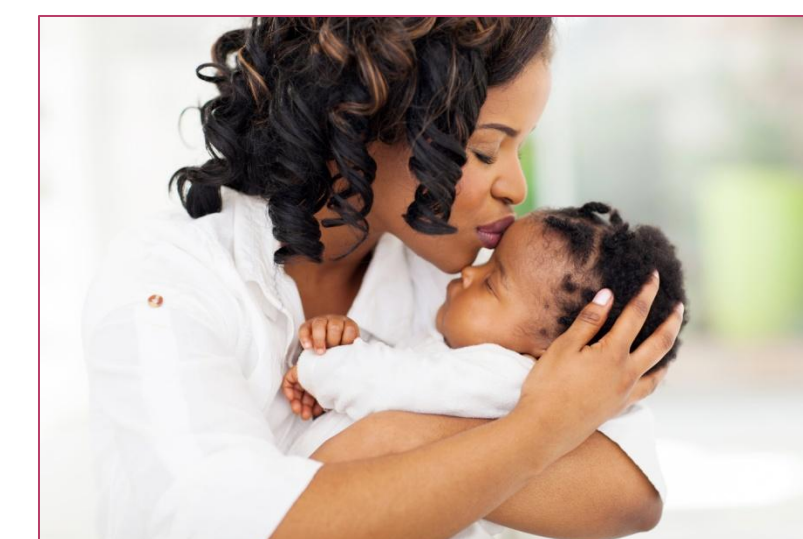
Prevention

In 1999, the Institute of Medicine reported in *Vaccines for the 21st Century: A Tool for Decision Making*, that development of a CMV vaccine was of the utmost priority. Today, although vaccines are actively being researched for the prevention of CMV, a vaccination is still not available.

Behavioral Strategies

The best way for a woman to protect herself from CMV when trying to become pregnant, or while pregnant, is through the avoidance of high risk behaviors. In particular, for those around young children, the following strategies are recommended:

- 1) When kissing a young child, try to avoid contact with saliva. For example, you might kiss on the forehead rather than the lips or cheeks.
- 2) Try not to put things in your mouth that have just been in a child’s mouth.
For example:
 - Cups
 - Forks or Spoons
 - Pacifiers
- 3) Try not to share food, drinks, or a toothbrush with a child.
- 4) Wash your hands after touching a child’s saliva or urine, especially after:
 - ✓ Wiping a child’s nose, mouth or tears
 - ✓ Changing diapers
- 5) Use soap and water or a disinfectant to clean toys, countertops, and other surfaces that may have a child’s saliva or urine on them.



UTAH CMV MANDATE

UCA 26-10-10 Cytomegalovirus Public Education & Testing Law

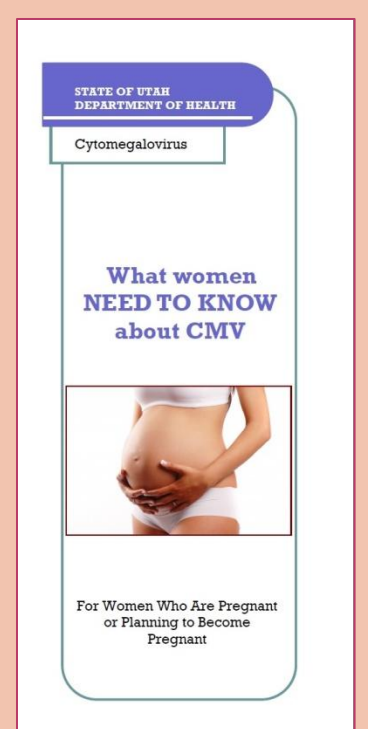
On July 1, 2013, Utah became the first state in the nation to mandate:

1. Education on the risks of CMV during pregnancy and
2. Testing on infants who fail newborn hearing screening(s) for CMV.



The law directs the Utah Department of Health (UDOH) to create a public education program to inform pregnant women and women who may become pregnant about:

- The occurrence of CMV
- The transmission of CMV
- The birth defects that CMV can cause
- Methods of CMV diagnosis, and
- Available preventative measures.



The law requires UDOH to provide this information to:

- Childcare Programs and their employees
- School Nurses
- Health Educators
- Health Care Providers offering care to pregnant women and infants
- Religious Organizations offering children’s programs as a component of worship services.

The law also directs Medical Practitioners to test infants, who fail the newborn hearing screening test(s), for CMV and inform the parents of those infants about the possible birth defects that CMV can cause and the available treatment methods.



Acknowledgements & Resources

In addition to those already noted, Adler et al (*J Pediatr*:2004;145:485-91), Fowler et al (*N Engl J Med*:1992;332:663-667), Johnson et al (*Clin Obstet Gynecol* 2012;55(2):521-530), Swanson & Schleiss (*Pediatr Clin North Am*:2013;60(2), Michael J. Cannon et al, CDC.

Utah Department of Health (health.utah.gov/CMV)
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