MEASLES

What Parents Need to Know

PHYSICIANS FOR INFORMED CONSENT

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1. WHAT IS MEASLES?

Measles is a self-limiting childhood viral infection.

- Measles symptoms include a prodromal (initial) phase of cough, runny nose, eye irritation and fever, followed by a generalized rash on days 4–10 of the illness.[1]
- Measles is contagious during the prodromal phase and for 3-4 days after rash onset.[1]
- Most measles cases are benign and not reported to health care professionals.[2]
- Before the measles mass vaccination program was introduced, nearly everyone contracted measles and obtained lifetime immunity by age 15.[1]
- In rare situations, measles can cause brain damage and death.[3,4]

Centers for Disease Control and Prevention (CDC) publishes measles case-fatality rates based on reported cases. However, nearly 90% of measles cases are benign and not reported to the CDC.[2] Calculating case-fatality rates based on reported cases (that constitute only 10% of all cases) results in a case-fatality rate that is 10 times higher than what it actually is in the general population. Data analysis herein is based on total measles cases (both reported and unreported).

2. WHAT ARE THE RISKS?

In the modern era, it is rare to suffer permanent disability or death from measles in the United States.

Between 1900 and 1963, the mortality rate of measles dropped from 13.3 per 100,000 to 0.2 per 100,000 in the population, due to advancements in living conditions, nutrition, and health care—a 98% decline (Fig. 1).[2,5]

Low vitamin A is a primary cause of over 100,000 measles deaths in underdeveloped countries, especially those with widespread poverty.[6] In the U.S. and other developed countries, 75–92% of hospitalized measles cases are low in vitamin A.[7,8]

In 1963, right before the measles mass vaccination program was introduced:

- 1 in 10,000 (0.01%) measles cases were fatal.[3]
- 1 in 20,000 (0.005%) measles cases resulted in measles encephalitis.[4]
- 1 in 80,000 (0.00125%) measles cases resulted in permanent disability.[4]
- 7 in 1,000 (0.7%) measles cases were hospitalized.[9]

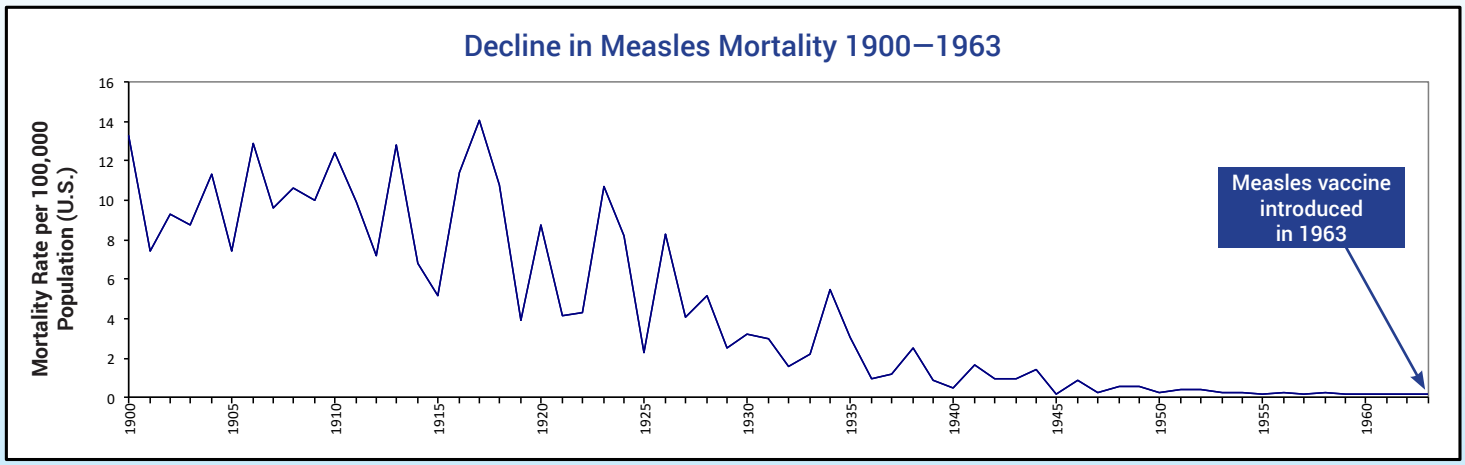

Figure 1: Measles death declined 98% from 1900 to 1963, before the measles vaccine was introduced.

3. WHAT TREATMENTS ARE AVAILABLE FOR MEASLES?

Because measles resolves on its own in almost all cases, usually only supportive treatment is necessary. As such, treatment options include the following:

- Rest
- Hydration
- High-dose vitamin A[10]
- Immunoglobulin (available for immunocompromised patients, such as those on chemotherapy)[11]

The World Health Organization (WHO) recommends that serious measles cases be treated with high-dose vitamin A, 50,000–200,000 IU, administered orally on two consecutive days.[11]

4. ARE THERE ANY BENEFITS FROM GETTING MEASLES?

There are studies that suggest a link between naturally acquired measles infection and a reduced risk of Hodgkin's and non-Hodgkin's lymphomas, as well as a reduced risk of atopic diseases such as hay fever, eczema and asthma.[12-16] In addition, measles infections are associated with a lower risk of mortality from cardiovascular disease in adulthood.[17] Moreover, infants born to mothers who have had naturally acquired measles are protected from measles via maternal immunity longer than infants born to vaccinated mothers.[18]

5. WHAT ABOUT THE MEASLES VACCINE?

The measles vaccine has been available in the United States since 1963. It has significantly reduced the incidence of measles; however, the vaccine is not capable of preventing all cases of measles, as failures have been reported.[19] The manufacturer's package insert contains information about vaccine ingredients, adverse reactions, and vaccine evaluations. For example, "M-M-R II vaccine has not been evaluated for carcinogenic or mutagenic potential, or potential to impair fertility."[20] Furthermore, the risk of permanent injury and death from the measles vaccine has not been proven to be less than that of measles (Fig. 2).[21]

Measles Mortality vs. Leading Causes of Death in Children Under Age 10 (per 100,000 Population)[21-23]

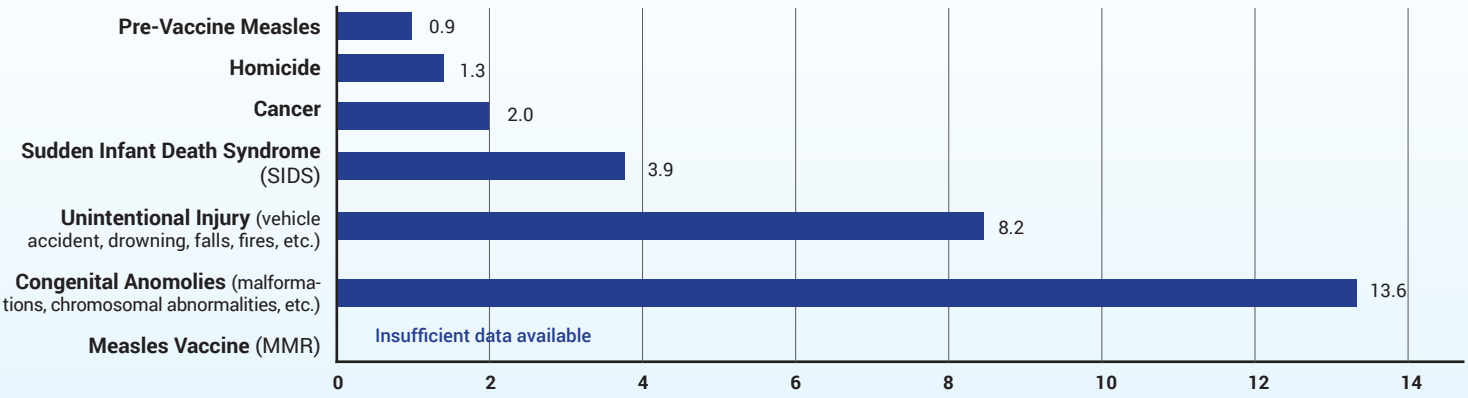

Figure 2: This graph shows the measles death rate before the vaccine was introduced, when measles was a common childhood viral infection, and compares it to the leading causes of death in children under age 10 today. Hence, in the pre-vaccine era, the measles death rate per 100,000 was 0.9 for children under age 10. In 2015, the death rate per 100,000 for homicide was 1.3, followed by cancer (2.0), SIDS (3.9), unintentional injury (8.2), and congenital anomalies (13.6). The rate of death or permanent injury from the measles vaccine (MMR) is unknown because the research studies available are not able to measure it with sufficient accuracy.[21]

All references and the Measles Vaccine Risk Statement (VRS) are available at physiciansforinformedconsent.org/measles.

References

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2. **Between 1959 and 1962, annually there were about 4 million cases, of which 440,000 (11%) were reported.**
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3. **Between 1959 and 1962, annually there were 400 measles deaths out of 4 million cases, about 1 in 10,000 cases.**
   - Same sources as reference 2.

4. **There are about half as many cases of measles encephalitis as there are measles deaths, about 1 in 20,000 cases (50% of 1 in 10,000 cases of death). Of these cases, 25% (1 in 80,000 cases) result in residual neurological injury.**
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6. **The measles mortality rate in developing countries where vitamin A deficiency is prevalent is about one in four reported cases, more than 100 times higher than in developed countries.**
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