



## Parental Perception of Severity of Childhood Infections: The Case of Measles

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While the rate of immunization in the United States continues to remain high, many parents still decline vaccines for a variety of reasons.<sup>1,2,3</sup> Some are worried about side effects of specific vaccines; others are skeptical of vaccines in general and the government that requires them, the companies that make them and the providers that administer them. Unfortunately, the unimmunized children of these parents tend to cluster geographically so “..vaccine-preventable disease can still occur where unvaccinated persons cluster in schools and communities.”<sup>1</sup> Other parents wonder why we give vaccines for diseases that no longer are seen. These folks forget that the germs that cause illnesses, like measles, pertussis and chicken pox, are still here and are, as they say, just a plane ride away.

One additional reason vaccines are under so much suspicion today is due to misinformation about the severity of these illnesses in the pre-vaccine era. This is often found in various blogs and posts by those who are anti-vaccine individuals. They may grant that in the under-developed countries where malnutrition is common, vaccine-preventable diseases may be dangerous, but in the U.S.A. they are not. From one recent blog<sup>4</sup>, Megan Heimer wrote, “Measles itself is unpleasant but there are rarely complications unless you consider diarrhea and ear infections (both side effects of the vaccine) “complications”. [What??] She goes on to state, “Sure your child could get pneumonia, brain encephalitis [there is another kind?] or die but these side effects are extremely rare in a developed country and are also side effects of the vaccine. We haven’t had a confirmed death from measles in over 10 years.” - Not counting the reported death from measles in Washington State earlier this year.

So let’s look at an experience with measles and see if she is right.

I had the misfortune to be working at Children’s Hospital Los Angeles (CHLA) in 1990 when the last large measles epidemic occurred in this country. You may recall there were over 45,000 cases of measles nation-wide in 1989-1990<sup>5</sup>. In 1990, the peak year of the epidemic, there were 27,632 cases and for the first time the number of cases in children < 5 years old was greater than school aged children. There were 89 deaths with a death to reported case ratio of 3.2 deaths per 1000 reported cases. Complications

were reported in 23% of cases, diarrhea (9%) being the most common due to the relatively young age of patients. Over 50% of the deaths were in children < 5 years old.<sup>5</sup>

We retrospectively reviewed all the cases, in patient and out-patient, seen there between January 1, 1990 and June 30, 1990.<sup>6</sup> A total of 440 cases were seen of which over 90% were < 5 years old. Hospitalization for measles complications occurred in 44.3%, 82% for pneumonia or croup and 13% for dehydration. Three children died of pulmonary complications. One of these, an 8 year old, was on chemotherapy for medulloblastoma. The other 2 deaths were in children < 2 years of age.

Croup proved to be an especially severe complication in our experience.<sup>7</sup> Of the 440 patients 82 (18.6%) had croup of which 75 (91.5%) required hospitalization. Of the admitted children 13 required intensive care and 11 were intubated for ventilator support.

In deference to Ms. Heimer, slightly over 60% had acute otitis media. In view of all the other complications, we considered it part of the disease.

Now as I recall, malnutrition was not particularly rampant in 1990 and most children were not in poverty. And yet we saw children with life threatening complications and, yes even deaths, in our cohort. So much for measles just being an “unpleasant” disease.

The point of this retrospective look at a once common disease is to reinforce how terrible these vaccine-preventable diseases were. All were in some way life threatening, even rotavirus infection, and vaccines for them were readily accepted. This is important to impress upon parents who are reluctant to vaccinate their children. In fact a recent study published in the Proceedings of the National Academy of Sciences reported that by focusing on the dangers of vaccine preventable diseases they were three times more likely to change parent’s attitudes toward vaccination than focusing on refuting vaccination myths.<sup>8</sup> Another approach might be to have grandparents or even great grandparents come to visits when vaccines are to be given. They remember!

## References

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