



# Mill Creek Veterinary Services

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## Herd Health Tips

### Why Do Vaccines Fail?

Vaccination is the process of exposing a host (cow, human, etc..) to a disease agent such as a virus or bacteria. The vaccine itself is a weakened, killed, or “part” of the disease agent. Exposure of the animal to vaccine will not cause serious disease, rather it should “train” the immune system to be better prepared when exposed to a real infection.

Vaccination is a key part of a preventative program to control infectious disease in a dairy herd. A vaccination program for a herd can vary depending on many factors. It is best to develop a vaccination plan with the advice of your herd veterinarian. Many diseases affecting cows are well identified, yet results in terms of protection can sometimes appear less than adequate. How the immune system responds to a vaccine is very complex, and the failure of just one small step in the many interactions can result in poor immunity. Listed are some possible reasons a disease may still occur even if the herd is vaccinated:

1. The vaccine actually offered some protection, however it wasn't complete protection. Disease may still occur but at a reduced mortality and economic loss than if the herd was not vaccinated. Protection can also vary greatly between the many vaccine brands/types.
2. The “wild” (disease causing) pathogen is a version not presented in the vaccine. Some vaccines will not protect completely against new wild type pathogens.
3. The vaccine was not stored properly, had expired, or was not administered according to directions.
4. The vaccine was mixed with another drug or vaccine. Also, if more than one vaccine is given at a time, use separate injection sites and syringes.
5. The cow's immune system wasn't competent, or “ready” to respond to the vaccination. Administer vaccines at the proper time in the animal's life cycle according to label. For example, vaccination near the time of calving or during health disturbances/stress should be avoided.
6. The cows were given too many vaccines at one time. It may not be most effective to give multiple different vaccines at the same time.
7. The outbreak of disease was not caused by the pathogen in the vaccine: “wrong diagnosis”. Work with your veterinarian to determine the exact pathogen(s) causing problems when developing your vaccination program.

There are many factors to consider when vaccinating your herd. Always work with your herd veterinarian when designing and implementing a vaccination program to ensure optimal protection.