

**Risk of recurrent cases of bacteria specific clinical mastitis in dairy cows**

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The objective of this study was to estimate the risk of a first case and subsequent cases of bacteria specific clinical mastitis (CM) in Holstein dairy cows. The pathogens we studied were *Streptococcus* spp., *Staphylococcus aureus*, *Staphylococcus* spp., *Escherichia coli*, *Klebsiella* spp., and *Arcanobacterium pyogenes*. We analyzed 40,864 lactations (9,873 cows) of which 17,265 were primiparous and 23,599 were multiparous lactations, in 5 large, high milk producing dairy herds in New York State. There were 12,725 first cases, 4,535 second cases and 1,798 third cases of CM. Generalized linear mixed models with a Poisson error distribution were used to study the effects of parity, calving diseases, previous milk yield, season, number of cases of CM in the previous lactation and previous cases of bacteria specific CM within the lactation on the risk of a first case and the conditional risks for second and third cases of bacteria specific CM. The first 2 weeks in milk (wim) and  $wim \geq 3$  were analyzed separately as the former analysis focused on calving diseases as a risk factor and previous milk yield was not included. For first case analyses, among primipara,  $wim \geq 3$ , cows with metritis and or displaced abomasum in their current wim were at higher risk of *Streptococcus* spp. There was higher risk of *Staphylococcus* spp. and *Klebsiella* spp. during the summer months. Among multipara,  $wim \geq 3$ , as parity increased from 2 to  $\geq 4$ , risk of bacteria specific CM increased. Cows that had 3 cases, compared to a single case of CM in their previous lactation had a greater risk of a first case of bacteria specific CM in their subsequent lactation. Cows with a higher previous milk yield were generally at greater risk of bacteria specific CM. The risks of second and third bacteria specific CM cases will be reported, as well.