

# **Improving post-calving udder health in heifers: effectiveness of different pre-calving treatments**

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Treatment of all cows at drying-off is recognized as an important method for controlling mastitis, whereas pre-calving treatment of heifers is less common as they are assumed not to be at risk of mastitis. After a 2012 review, the National Mastitis Council included selective pre-calving antimicrobial treatment in a list of recommendations for optimal management of heifer mastitis. As occurrence of udder problems in heifers is high in the first month after calving and has severe impacts on health and production, we determined if pre-calving treatment was beneficial to udder health in heifers by synthesizing results from 62 previous studies and compared different treatments in their effectiveness at reducing rates of clinical mastitis, udder infections and elevated somatic cell count (SCC). We were also able to determine effectiveness of different types of treatment against various pathogen types. Pre-calving treatment of any sort reduces rates of udder disease by 40%. The incidence of clinical mastitis specifically was reduced by 50%, whereas the prevalence of udder infections was reduced by 39%, and cases of high SCC occurred 70% less in treated heifers. Teat sealants and combination treatments were most effective, with post-calving udder disease reductions of 60 and 66%, respectively. Treatments also showed a lot of variability depending on the type of pathogen causing infection. Against contagious pathogens, antimicrobials, teat sealants and vaccines were the most effective (reductions of 59, 60 and 44% respectively) whereas against environmental pathogens teat sealants, and their combinations were the most effective (reductions of 73 and 75%, respectively). Antimicrobials, teat sealants, and their combinations were the only treatments consistently effective against infections with coagulase-negative staphylococci (reductions of 49, 54 and 66%).

**Implications.** By demonstrating the effectiveness of different types of prophylactic treatments and comparing them, producers will be able to make more informed decisions about mastitis management for their heifers, while balancing concerns for antibiotic overuse.