

**Explanation of Category E****Mississippi State University****FY 2019**

**For Category E procedures, explain why pain-relieving drugs or other ameliorative treatments cannot be used to alleviate pain/distress.**

The purpose of this research is to test a new and novel vaccine strategy by experimental challenge after vaccination. In order to tell if there is a significant and clinically important protection afforded by any of the 3 vaccines, as compared to no vaccination, the research team must assess the clinical signs following experimental challenge for 5 - 14 days following challenge. Cattle were monitored closely, with careful attention to a clinical scoring system provided in the approved IACUC protocol. The PI was prepared to quickly euthanize any that developed signs consistent with described endpoints. This was not necessary as the respiratory disease that developed was considered mild-moderate. However, it was necessary to let signs of respiratory disease progress without anti-inflammatory or antimicrobial treatment in order to accurately determine whether any of the vaccines were useful.