

# Evaluating the timing of bovine respiratory disease morbidity and mortality in feedlot cattle by first treatment, fatal disease onset, and days from first treatment to death

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## Introduction

Little research has evaluated risk factors influencing the timing of bovine respiratory disease (BRD); the main focus of previous BRD research has been on environmental and demographic factors influencing disease frequency. The study objective was to descriptively evaluate typical BRD temporal patterns for cattle in U.S. Great Plains feedyard systems.

## Materials and methods

Individual animal records for first BRD treatment (n = 301,721) or BRD mortality (n = 19,332) were received from 25 feedyards. To account for multiple biological interactions based on demographic factors, data were split into subsets by known risk modifiers such as weight class at arrival, sex and quarter of arrival. The timing of first pull for BRD morbidity, time of fatal disease onset (days from feedlot arrival to first pull for an animal that subsequently died), and DOF from first pull for BRD until death attributed to BRD were graphically compared for steers and heifers that arrived in the 700-800 lb weight category across the quarters of the year (1, Jan-March; 2, April-June; 3, July-Sept; 4, Oct-Dec). A graphical, descriptive approach was utilized because means and medians do not adequately describe potential differences in timing of disease onset and death occurrences.

## Results

Results indicated the pattern of disease varied by time of arrival with cattle arriving in Q3 and Q4 having more BRD initial cases early compared to cattle arriving in Q2. In general, heifers and cattle arriving in Q2 had a descriptively later BRD patterns. Days from BRD pull to death were similar across groups with the exception for being greater for cattle arriving in Q2.

## Significance

Overall results illustrate the temporal pattern of disease varies by animal demographics and understanding these differences allows animal health managers to appropriately evaluate new events. Further understanding of typical patterns could lead to the ability to modify prevention or intervention techniques to improve cattle health.

