

# Construction of a conceptual framework for assessment of health-related quality of life in calves with respiratory disease

E.M. Bull, D.J. Bartram, B. Cock, I. Odeyemi, D.C.J. Main

*Animal* journal

**SupplementaryTable S1** *Behaviour questions and number of calves (n = 13) observed showing these behaviours in the 5 days preceding veterinary treatment for respiratory disease.*

Behaviour	Days to treatment				
	-5	-4	-3	-2	-1
	Number of calves				
Theme 1: How the calf looks					
Does it have drooping of the ears?	0	4	8	10	11
Does it have drooping of the head?	0	0	2	4	8
Theme 2: How the calf reacts					
<i>To feed</i>					
Does the calf stay at the back of the pen when others come to feed?	0	3	6	6	8
<i>To humans</i>					
Does the calf stay at the back of the pen when others come forward (no feed)	0	3	6	8	9
Does the calf avoid eye contact with humans?	0	2	4	9	11
Does the calf seem uninterested by novel objects in pen (human)?	0	6	8	9	10
Is the calf reluctant to move when approached?	0	2	4	8	9
<i>To other calves</i>					
Does the calf avoid competition at feed?	0	3	5	12	12
Does the calf withdraw from playing with other calves?	0	3	7	9	10
Is the calf involved in grooming activities?	0	0	1	2	3
Does the calf isolate itself from others?	0	4	5	7	8
Theme 3: How the calf carries out normal activities					
<i>Eating/ drinking</i>					
Does the calf drink less milk?	0	3	7	11	11
Does the calf eat less concentrate?	0	4	9	9	11
Does the calf have reduced drinking speed?	0	6	8	11	11
Does the calf play with the teat?	0	5	7	8	8
<i>Activity</i>					
Does the calf show less activity than other calves?	0	6	10	11	11
Does the calf lie down more than other calves?	0	3	3	5	8
Does the calf stand inactive?	0	0	3	4	5

**Supplementary Table S2** *The number of calves (n = 13) showing clinical respiratory scoring system (CRS) signs in the 5 days preceding veterinary treatment for respiratory disease.*

CRS	Days to treatment				
	-5	-4	-3	-2	-1
	Number of calves				
Cough					
0 - None	12	11	5	3	3
1 - Induced single cough	1	2	7	6	5
2 - Induced repeated coughs or occasional spontaneous cough	0	0	1	4	5
3 - Repeated spontaneous coughs	0	0	0	0	0
Nasal discharge					
0 - Normal serous discharge	13	12	9	9	8
1 - Small amount of unilateral cloudy discharge	0	1	4	4	5
2 - Bilateral cloudy or excessive mucus discharge	0	0	0	0	0
3 - Copious bilateral mucopurulent discharge	0	0	0	0	0
Eyes					
0 - Normal	13	12	11	8	8
1 - Small amount of ocular discharge	0	1	2	5	5
2 - Moderate amount of bilateral discharge	0	0	0	0	0
3 - Heavy ocular discharge	0	0	0	0	0
Ears					
0 - Normal	13	13	9	4	4
1 - Ear flick or head shake	0	0	4	8	5
2 - Slight unilateral droop	0	0	0	1	4
3 - Head tilt or bilateral droop	0	0	0	0	0

CRS is based on the Wisconsin calf clinical respiratory scoring system (McGuirk and Peek, 2014)