

 University of British Columbia Centre for Dairy Education and Research	Document Number	SOP-Cow-009
	Revision Number	000
	Effective Date	October 26, 2020
COW CARE: CALVING INTERVENTION		

1. PURPOSE

This Standard Operating Procedure is provided for informational purposes only. It provides both farm staff and students with information on the normal birthing procedure, the proper methods of assisting with calving, and when it may be necessary to call for help.

2. SCOPE

This document is a guideline describing the methods and procedures used for assisting a cow/heifer with the process of calving. It is intended for informational purposes only.

3. RESPONSIBILITY

- 3.1. The Operations Manager is responsible for reviewing and updating this document as required.
- 3.2. The Operations Manager is responsible for ensuring all staff are aware of what a normal calving looks like, and when it may be necessary to call for assistance.
- 3.3. Personnel who do night check shifts (see SOP on Night Checks), and work with pregnant cows are responsible for reading and understanding the information presented in this SOP.
- 3.4. Only farm workers who have been assessed as competent by the Operations Manager are to intervene with a calving. Students and less experienced workers should always call a Farm Worker II or the Operations Manager if the calving does not appear to be proceeding normally.
- 3.5. Farm Worker IIs, the Operations Manager, and the herd veterinarian are the only persons who should intervene with a calving.

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4. TRAINING

- 4.1. Training will include SOP overview, and animal handling.

5. DEFINITIONS

- 5.1. *Dystocia*- Calving difficulty resulting from prolonged calving or prolonged assisted extraction. Examples and causes of dystocia can include, calf malposition, large calf size and weight, and maternal pelvic size. (Mee, 2008)
- 5.2. *Uterine inertia*- The condition where the uterine expulsive forces fail to deliver a fetus (Mekonnen and Moges, 2016).

6. SAFETY PRECAUTIONS

- 6.1. Personnel handling animals and equipment will follow routine health and safety procedures to protect against human and animal injury.
- 6.2. All personnel assisting with calving need to wear dedicated facility footwear, coveralls, and gloves.
- 6.3. For human and animal safety, assisting in the calving process should only be done when absolutely necessary and then only by trained experienced personnel.
- 6.4. Hands should be thoroughly washed with hot soap and water when leaving the barn facility.

7. GENERAL

- 7.1. Calving interventions are an infrequent occurrence at the UBC Dairy. Approximately 4 out of every three hundred calvings require some kind of assistance.
- 7.2. The calving pens have been moved to a quieter area of the barn which seems to have reduced the need to intervene with calvings. See reference entitled “Maternity Pen Design and Management From the Cow’s Perspective”.
- 7.3. The UBC Dairy uses sexed semen (for female calves), and select sires known to have smaller calves. Having smaller calves hopefully results in less calving difficulties, especially in the heifers who are calving for the first time.
- 7.4. If personnel find a cow calving, do not intervene. If at night, and you think a cow may need assistance, consult an experienced student first. If he/she thinks there is

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no progress being made, then call in a Farm Worker II or Operations Manager who will decide if intervention is required.

8. MATERIALS AND EQUIPMENT

- 8.1. “Repro” bucket with prepodyne solution
- 8.2. Paper towels
- 8.3. Breeding gloves
- 8.4. OB chains
- 8.5. Lube

9. STAGES OF LABOUR

Labour is divided into 3 stages:

1. Stage 1. – Preparatory stage. This stage will last 2-3 hours in a cow, and up to 72 hours in a first time heifer. The animal is obviously uncomfortable as contractions begin and over time the contractions will become more intense and frequent. The cow or heifer will get up and down often. This stage ends with the emergence of fetal membranes or water bag.
2. Stage 2 – Delivery. Contractions are very strong, and the cow or heifer is usually lying on her side. The fetal membranes, and then the calf, enter the birth canal. With a normal presentation, both front feet emerge first (see Figures 1 & 2). The feet will often go in and out several times before the head emerges. Continuous progress should be made during this stage, and it should last no longer than a half-hour to an hour in cows, less than two hours in heifers. If labour lasts longer than that, the cow should be checked to see if she needs some assistance.
3. Stage 3. Expelling the placenta. The uterus continues to contract, and the placenta is usually passed within three to eight hours. If the placenta isn't passed within 24 hours, it's considered to be retained.

Normal Stages of Labour	Events
Stage 1	<ol style="list-style-type: none"> 1. Calf moves into position as the cervix and birth canal dilate. 2. Cow/heifer may show signs that include restless behavior, frequent transition from lying to standing, raised tailhead, vocalization, increased urination and defecation, full udder and/or mucus discharge.



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Stage 2	<ol style="list-style-type: none">1. Cow/heifer has fully dilated cervix and the calf moves through the birth canal.2. Water sac appears first, followed by the calf (front hooves and headfirst, see Figure 1.)3. Calf delivery is completed.
Stage 3	<ol style="list-style-type: none">1. Uterine contractions expel fetal membranes.

Diagram 1. (Senger, 2003)

FIGURE 1. CORRECT POSITION.

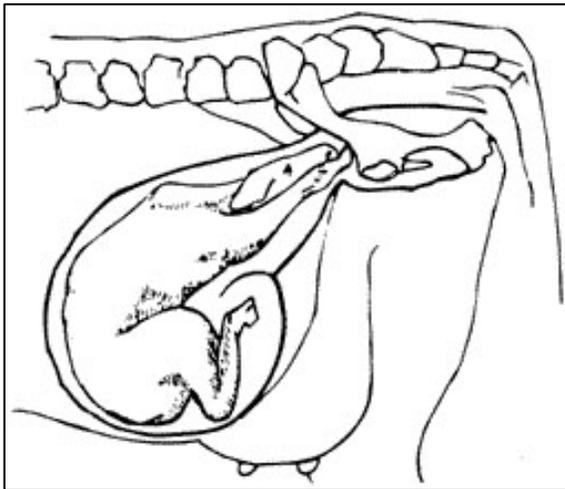
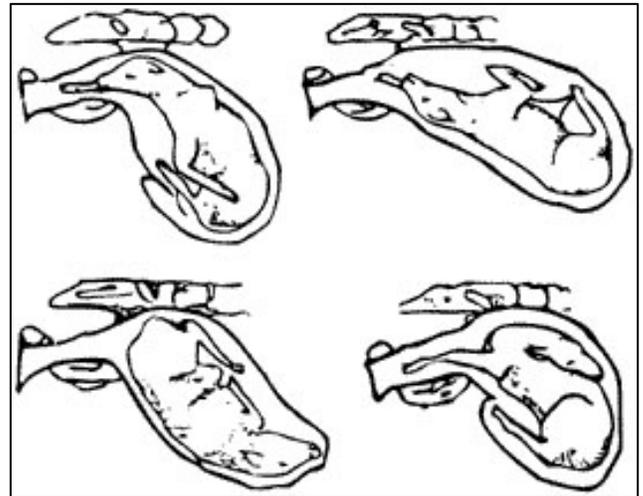


FIGURE 2. INCORRECT POSITIONS



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10. DELAYED/NO INTERVENTION

10.1. Delay intervention if the birth canal is not relaxed and open, it's an oversized calf, birthing is progressing, or if the calf's muzzle has not emerged and fetlocks are not visible.

11. EARLY INTERVENTION-TRAINED STAFF ONLY

Early intervention may be required if the calf is in the incorrect position (**Figure 2**), uterine inertia is occurring, or if there are twins. Refer to **Section 9 above** for a description of the normal stages of labour

12. CHECKING THE POSITION OF THE CALF – TRAINED STAFF ONLY

12.1. Restrain the cow using a headlock or behind a gate.

12.2. Clean manure off the cow's vulva with a clean paper towel.

12.3. Wipe the vulva with a paper towel soaked in the prepodyne solution to clean the area.

12.4. Put on the breeding sleeve and place hand/arm in the prepodyne solution.

12.4.1. Lube up glove

12.5. Gently insert your hand into the cow's vulva and feel for the position of the calf. The calf should be felt near the caudal part of the birth canal.

12.5.1. With a correctly positioned calf, both front legs and calf's head should be felt.

12.6. If the calf is not felt immediately or is in an incorrect position (refer to **Figure 1 & 2**), contact an experienced person immediately to assist.

13. HOW TO INTERVENE WITH CALVING-TRAINED STAFF ONLY

13.1. Leave the cow lying down.

13.2. Ensure calf is correctly positioned (refer to **Figure 1**)

13.3. Place chains above both fetlocks on the calf (**Figure 3**)



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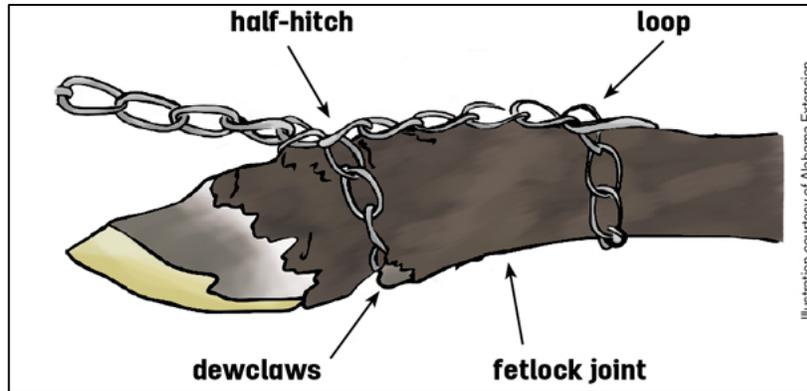


Figure 3. Positioning chains

- 13.4. Pull with even force when the cow pushes. Relax the tension when the cow stops pushing.
- 13.5. Once the calf's chest has emerged, traction should be 45° down toward the cow's hocks.
- 13.6. For malpresentations where intervention is required, call another Farm Worker or the Operations Manager to assist. Veterinary assistance may be required in some cases.

14. POST INTERVENTION CARE

- 14.1. Ensure calf is breathing. If the calf is not breathing, rub sides vigorously with straw, tickle nose with a straw and/or clear the nostrils of any mucus. Place calf on its sternum with its front legs splayed out in front, and its rear legs 'froggy' style.
- 14.2. Leave the calf in the straw pack with dam to be licked clean.
 - 14.2.1. After the calf is cleaned by the dam it will be moved to the calf barn and treated under the Newborn Calf Care SOP (SOP-Calf-001)
- 14.3. Ensure cow has access to water and fresh feed.
- 14.4. Depending upon the level of intervention that was used, analgesics and antibiotics may be recommended by the veterinarian.

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15. REFERENCES

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- 15.2. CCAC Guidelines on the care and use of farm animals in research, teaching and testing. CCAC. 2009. www.ccac.ca/Documents/Standards/Guidelines/Farm_Animals.pdf
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- 15.4. Mee, J.F. 2008. Prevalence and risk factors for dystocia in dairy cattle: A review. The Veterinary Journal. 176: 93-101.
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16. REFERENCE SOPS

SOP-Calf-001 Newborn Calf Care

SOP-Cow-015 Night Check

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17. APPROVAL AND REVISION HISTORY

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