



Bovine Health Handbook



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On-Farm Services



We are more than happy to provide veterinary services on-farm when and where we can. Some services must be performed in-clinic for safety reasons, but we do our best to be able to offer most services on-farm to save you the time and trouble of having to haul your stock in to the clinic. We are able to provide the following services:

- Veterinary Client Patient Relationship (VCPR) Visits
- Bovine Ultrasound Pregnancy Evaluations
- Bovine Breeding Soundness Evaluations (Semen testing)
- Bovine Insurance Exams
- Bovine Surgical Procedures
 - Cancer eye removal
 - Minor surgical procedures (lacerations)
 - Castrations (up to a certain age and weight)
- Equine Dental Floatations
- Equine Castrations
- Equine Health Exams
- Equine Ultrasound Pregnancy Evaluations
- Ram Breeding Soundness Evaluations
- Canine & Feline Examinations & Vaccines *we are unable to offer small animal surgeries on farm*

The above services are weather dependent, unless indoor facilities are available. If you have any questions regarding procedures not listed above, please ask us. Other procedures may be available upon request.

All on-farm procedures must be performed in a safe manner with proper equipment to properly restrain the animal. This is for the protection of the animal, yourself, and the veterinary team.

We also ask that you respect our time and have your animals caught and ready for services to be performed. This helps us stay on schedule and reduces waiting time for other clients.



Breeding Soundness Evaluations

Before every season, all of your bulls should receive breeding soundness evaluations. The fertility of your bull is an important factor in the profitability of your operation. Don't waste your time turning out a bull that won't perform and results in you having to feed open cows through the winter.

During a breeding soundness evaluation your veterinarian will first look at your bull's overall physical soundness - including their feet, legs, and physical condition. The scrotum will be measured and the size, shape, and consistency of the testicles, sheath, and penis will be examined.

A sperm sample is collected and checked microscopically for satisfactory motility (how the sperm move) and the density (the number of sperm). Stain is then applied to part of the sample for easier detection of defects and to determine the number of sperm that are alive.

HINTS & TIPS:

- bulls do not test well when the weather is cold and/or windy
- if bulls have been breeding during the past 24hrs they may be difficult to get a sample from and will often produce a dilute sample - remove the bull from cows at least 48hrs prior to evaluating
- if bulls have not been around cows in a few months (ex. over the winter months) move a cow, preferably ones that may be in heat, beside the bull pen.
- the optimal time to test yearling bulls is when they are over 13 months of age. A large percentage of yearlings are not mature enough to pass evaluations until that time.

Up to 30% of yearling bulls fail to meet the minimum Breeding Soundness Evaluation standards



Ultrasound Pregnancy Checking

As with palpation, the ultrasound probe still goes into the rectum, but less manipulation of the uterus is needed to confirm pregnancy. There is also less stress to the cow and the fetus, and less physically demanding on Dr. McCracken. Ultrasound preg checking is also considerably quicker than manual palpation: Dr. McCracken should be able to pregnancy check at least 50 head per hour, and with optimal handling system up to 100 head per hour. Any cows diagnosed with the ultrasound to be open will be double-checked by palpation - later stage pregnancies may be farther down than the ultrasound can detect.

The optimal time to preg check your herd is between 90-120 days after bulls have been removed from the herd. Earlier pregnancies can be detected, but it will take longer to find the fetus.

Reasons to Preg Check

- cull open cows to sell at peak market prices and reduce feeding costs through the winter. The cost of having to feed an open cow through winter compared to the cost of preg checking makes pregnancy checking quickly pay for itself
- monitor herd health and reproductive status
 - finding more open cows than usual can signal disease problems (infectious bovine rhinotracheitis, bovine viral diarrhea, or sexually transmitted diseases that cause abortion).
 - nutritional deficiencies in a herd can prevent cows from becoming pregnant
- determine when cows will calve, which allows a producer to sort them into early and late calving groups. However if cows are beyond 6 months pregnant, we cannot determine when they will calve.



One thing to keep in mind is that even if a cow has been diagnosed as pregnant, regardless of whether it was by ultrasound or manual palpation, some cows may abort or resorb a pregnancy before calving time. Abortions occur normally in 2-3% of cattle due to genetic defects, infectious causes, twinning or trauma.

Vaccination Protocols



Why Vaccinate?

Vaccines are an important part of your overall herd health program. The goal of a vaccination program is to prevent or reduce the incidence or severity of diseases that pose a risk to the animals on your operation.

Diseases We Vaccinate For

IBR - Infectious Bovine Rhinotracheitis (virus)

- abortion
- respiratory diseases
- ocular disease
- mild renereal infection
- early embryonic death
- brain infection in calves

BVD - Bovine Viras Diarrhea Types 1 & 2 (virus)

- early embryonic death
- abortion
- birth defects
- persistently infected (PI) calves
 - infection between day 30-150 of pregnancy results in a calf whose immune system is unable to respond to the BVD infection. These calves harbor large numbers of the virus and are the main source of infection in a herd. They may not outwardly show any symptoms.
- diarrhea
- respiratory disease
- immunosuppression (increased susceptibility to other infections)

BRSV - Bovine Respiratory Syncytial Virus

- respiratory disease, more common in young stock

PI3 - Parainfluenza (virus)

- respiratory disease

Mannheimia Haemolytica (bacteria)

- pneumonia secondary to viral infection/stress

Pasteurella Multocida (bacteria)

- pneumonia secondary to viral infection



Histophilus Somni/Haemophilus Somnus (bacteria)

- pneumonia
- arthritis
- meningitis
- myocardial abscess (heart muscle)



Leptospirosis (bacteria)

- abortions
- stillbirths
- weak born calves
- this vaccine is optional, consult Dr. McCracken to assess your risk level

Vibriosis/Campylobacter (bacteria)

- early embryonic death
- infertility
- this vaccine is optional, consult Dr. McCracken to assess your risk level. This is a sexually transmitted disease with an increased risk for animals going to community pastures

Clostridial Diseases (bacteria/toxins)

- sudden death, most often seen in young stock
- black leg, tetanus, redwater
- not all vaccines contain tetanus or redwater
- tetanus is more of a concern in older bull calves that are castrated, especially those castrated with bands

Scours

- most commonly caused by E. coli, coronavirus, rotavirus, clostridium perfringens Type C. but there are many other causes
- the vaccine is given to the cow/heifer pre-calving to pass on the protection to the calf in the colostrum



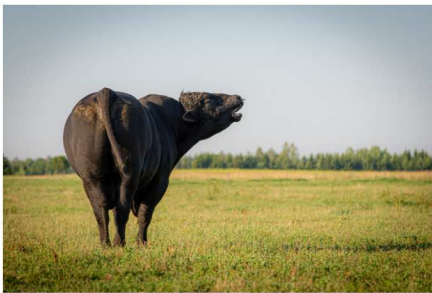
Types of Vaccines

MODIFIED LIVE (MLV)

- microbes are alive (viruses & bacteria) but altered so as not to cause disease
- the powder and liquid component need to be mixed prior to use
- usually only requires a single dose when starting animals on a vaccination program
- stimulates a stronger immunity, and usually with a longer duration than killed vaccines
- need to be careful when administering to pregnant animals or to calves nursing pregnant animals as there is a risk of abortion. If the animals have been vaccinated previously with a MLV vaccine according to the label, some vaccines may be administered to pregnant animals or calves nursing pregnant animals

KILLED OR INACTIVATED VACCINES

- microbes are killed (bacteria) or inactivated (viruses & toxins)
- usually no need to mix (exception, CattleMaster vaccines)
- requires at least two initial doses, 3-4 weeks apart, when starting on a vaccination program
- protection not as good as MLV, especially for preventing PI calves due to BVD virus
- safe to use on pregnant animals or calves nursing pregnant animals regardless of previous vaccination history
- certain diseases only have killed/inactivated vaccines (ex. clostridial 7- or 8-way vaccines)



Timing of Vaccination

The goal of vaccination is to reduce the likelihood that a disease outbreak will occur, or if it does occur, to reduce the impact of the disease in the herd. Immunity requires that the animal's immune system responds to the vaccine (the animal should not be sick or stressed in order to maximize the immune response). The immune response takes approximately 10-14 days to achieve protective levels. Therefore, vaccination should take place before the disease is likely to occur.

- prior to breeding for cows and heifers to prevent abortion/infection of the unborn calf
- prior to pasture turnout for calves to prevent pneumonia and sudden death on pasture
- prior to weaning for calves to prevent pneumonia

Vaccine Handling Instructions



KILLED OR INACTIVATED VACCINES

These products will always need to be refrigerated. Once a bottle has been punctured it can only be kept in the refrigerator for a maximum of 1 week, and **ONLY** if a new sterile needle was used to puncture the bottle each time. If a needle used on an animal enters the vial the remainder of the vaccine vial should be discarded.

MODIFIED LIVE VACCINES

Only mix enough vaccine that can be used in 1 hour after mixing. The "live" component of the vaccine starts to die after 1 hour - meaning your vaccine will no longer be useful. Treat the bottles very gently - **DO NOT SHAKE** vigorously as it will cause the vaccine to foam, making dosing inaccurate. Keep the mixed vaccine cool and out of the sun as much as possible. This includes what you have drawn up in your vaccine gun. Excess heat will kill the "live" component, so be careful when using heat lamps in the winter to prevent the vaccines from freezing.

STORAGE TIPS

Vaccines are required to be refrigerated at all times. Do not store them next to the freezer component (where they can get too cold) or in the fridge door (where they can get too warm). Place them on the center shelf and use a high-low thermometer that will alarm if your refrigerator fails.

Pay attention to the expiry dates! Do not use a vaccine if it has expired - the efficacy of the vaccine diminishes and you are not protecting your herd.

CLEANING VACCINE GUNS

DO NOT USE ANY DISINFECTANT SOAPS! These will actually stay as a residue inside the gun and kill your vaccine once drawn up. You should either rinse them very well and boil them to sterilize them.



Vaccination Protocol



Class of animal	Timing	Diseases/microbes	Vaccines
Cows	Pre-breeding [‡] <small>4 weeks prior</small>	IBR, BVD (1+2), BRSV, PI3 ± Leptospirosis ± Vibriosis	Express [®] FP 5 Express [®] FP 10 [‡] Express [®] FP 5-VL5
	Pre-calving ^{**}	Scours (E. coli, Coronavirus, Rotavirus, Cl. Perfringens)	Scour Bos [™]
Replacement Heifers	Weaning [‡]	IBR, BVD (1+2), BRSV, PI3 ± Mannheimia Clostridials ± Histophilus	Pyramid [®] FP 5 or Express [®] FP 5 Pyramid [®] FP 5 + Presponse [®] SQ 7 or 8 way Fermicon 7/Somnugen [®]
	Pre-breeding	IBR, BVD (1+2), BRSV, PI3 ± Leptospirosis ± Vibriosis Clostridials ± Histophilus	Express [®] FP 5 Express [®] FP 10 Express [®] FP 5-VL5 7 or 8 way Fermicon 7/Somnugen [®]
	Pre-calving	Scours (E. coli, Coronavirus, Rotavirus, Cl. Perfringens)	Scour Bos [™]
Calves	Spring processing	Clostridials ± Histophilus ± IBR, BVD (1+2), BRSV, PI3 ± Mannheimia	7 or 8 way Fermicon 7/Somnugen [®] Pyramid [®] FP 5 Pyramid [®] FP 5 + Presponse [®] SQ
	Weaning	IBR, BVD (1+2), BRSV, PI3 ± Mannheimia Clostridials ± Histophilus	Pyramid [®] FP 5 Pyramid [®] FP 5 + Presponse [®] SQ 7 or 8 way Fermicon 7/Somnugen [®]
Breeding Bulls	Pre-Breeding	IBR, BVD (1+2), BRSV, PI3 ± Vibriosis	Express [®] FP 5 Express [®] FP 5-VL5

‡ Pre-breeding – If this is the first-time animals have received a MLV vaccine, one should give it 30-60 days pre-breeding to prevent fertility issues with the first estrous cycle after vaccination. We recommend a minimum of 2 weeks prior to bull turn out in adult cattle. Ideally 4 weeks prior.

‡ Express[®] FP 10 and Express[®] FP 5-VL5 require a booster 2-4 weeks after the initial vaccination for the Leptospira and Vibrio components of the vaccine, followed by a single vaccination annually after that

‡ Weaning – Ideally animals should be vaccinated 2-4 weeks prior to weaning in order to provide adequate protection at the time of weaning, when stress will be high

‡ Scour vaccination – Replacement Heifers and Adult cattle who have never been vaccinated require an initial injection 16 weeks prior to calving start date. These animals need to receive a booster again 8-10 weeks prior to calving. Next year these animals only need a booster at 8-10 weeks annually after the first year; **note that the vaccines require two doses pre-calving when animals are vaccinated for the first time, followed by a single vaccination annually after that**

Pharmaceuticals

As of December 2019, Health Canada mandates that all antimicrobials used in animals must be under the oversight of a veterinarian and requires a prescription. This legislation requires that producers work closely with a veterinarian to establish a Veterinarian-Client-Patient-Relationship (VCPR). This VCPR is required before any prescription product may be purchased.

All veterinarians are audited to ensure that the new Antimicrobial legislation is being adhered to, therefore, documentation is required to prove that a VCPR has been established. This documentation includes information on your herd, including the type and number of animals you have (cattle, sheep, pigs, horses, etc), the purpose of your herd (beef, dairy, hobby, 4H etc), what diseases you typically see, your vaccination and deworming protocol, and your typical management practices.

A VCPR must be renewed annually with Dr. McCracken. However, when we visit your farm to perform services (ex. semen testing, preg checking), we "reset" the annual visit. If we do not attend your farm for services, a visit specifically to renew the VCPR must be arranged annually.

The creation of a VCPR does not give a producer free access to any requested pharmaceutical. A discussion needs to be had with Dr. McCracken to ensure that the appropriate treatment protocols are being followed for specific medical conditions.

Please also note, that only a veterinarian can approve the dispensing of a pharmaceutical. If Dr. McCracken is not in-clinic, or if she is away and a Registered Veterinary Technologist is unable to communicate with her, pharmaceuticals CANNOT be dispensed to any client.

For more information and to gain a better understanding of the reason why these federal regulations have come into play, please visit the below website. Veterinarians, producers and pet owners all have a role to play in the responsible use of antimicrobials.

<https://www.canadianveterinarians.net/policy-advocacy/the-bigger-picture>



Administering Injections

Regardless of what you are administering, injections should always be administered properly to reduce the risk of reactions and side effects. It is very important to read labels - even if it is a product that you have used before. Pharmaceutical companies regularly update their labels.

There are 3 methods of injection: intramuscular (IM), subcutaneous (SQ), or intravenous (IV). It is recommended that IM & SQ injections be given in the neck.

If you are interested in learning how to administer IV injections, please ask Dr. McCracken. We are always happy to spend some time teaching our clients new things!



There is always a risk of reaction when injecting an animal. To minimize that risk, always use proper restraint to reduce animal movement, proper needle size, and proper technique.



Needle Gauge Size

It is important that you select the appropriate needle gauge and length for each product. A larger gauge needle (16g) is preferred for mature cattle - this will decrease the risk of bending or breaking the needle in their thicker hides. An 18g needle is more appropriate for the thinner hide of calves. If the needle gauge is larger than necessary, this causes more pain and increases the chance of product leaking back out through the needle hole.

If the product you are administering is thicker, a larger needle is preferred so that the injection doesn't take too long or cause the needle to separate from the syringe from applying too much pressure.

Needle length will depend on injection method and location. Longer needles are required for IM injections; while shorter needles are required for SQ injections to decrease the chance that the product will be injected into the muscle.

Location & Dosage

If a product label advises to administer the dosage in multiple injection sites (such as oxytetracycline), space each injection several inches apart or on different sides of the neck. These products are often slower-absorbing and/or may have an increased risk of tissue residue. If you inject these products in a single location they may not be fully absorbed and you can have more incidences of tissue reaction.

It is not recommended to administer injections in the rump; this can create problems with tissue damage and abscesses in the best cuts of meat, which could affect your bottom line with excessive trims or condemned carcasses. In addition, never inject through a dirty hide. Make sure your site is clean and dry, do not inject through mud or manure.

If you are using a multi-dose syringe, pay attention to ensure that it is giving an accurate dose each time; especially if you are administering a small dose from a large syringe. You should also change your needles often - no more than 5 animals injected per needle.

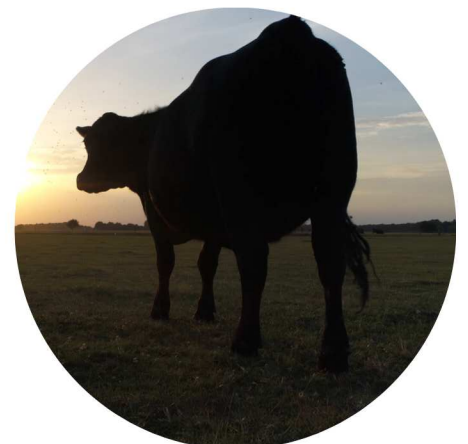
Keep records of where you give injections. If you consistently give product A in the left side of the neck, and product B in the right side, it will help you determine what product may be associated with a reaction, should one occur.

Metacam

Metacam is a non-steroidal (NSAID) anti-inflammatory and pain control product. Use metacam along with the antibiotic prescribed in your protocols for treating health conditions

You will see a difference when you use metacam for:

- branding
- castration
- dehorning
- cows after assisted calvings
- calves after difficult calvings
- sick cattle (including scours, foot rot, navel ill, etc.)
- vaccinations (which can make calves feel feverish and shivery)
- any procedure that is invasive or that could cause discomfort



Common Conditions & Treatments

Foot Rot

Foot rot is an infection caused when bacteria gains entry often through a nick in the skin between the two claws. The infection causes swelling, heat and inflammation, resulting in severe lameness. The first line of defense is to treat with an oxytetracycline.

If treatment does not resolve the lameness, you may need to consult Dr. McCracken to confirm the diagnosis because the animal may be lame for some other reason. You may need to have a good look at the hoof to see if something else is going on - bringing the animal into the chute, tying the hoof up and cleaning it out may be in order.

Long-standing hoof rot cases sometimes spread into the surrounding tissues and may get into the tendon, joint, or bone. The signs of lameness could all look the same, but you could be dealing with a hoof abscess, joint infection, or even a broken bone. In severe cases a claw amputation may be used as a salvage strategy. - these animals will usually do remarkably well.

Pneumonia

Symptoms of pneumonia include a high temperature, rapid, shallow breathing, nasal discharge, coughing, depression and reduced food intake.

It is better to treat early and with the appropriate anti-microbial agent, as the bacteria can quickly damage the lungs resulting in lesions which will eventually become untreatable.

Animals with pneumonia should be separated immediately from other animals, and ensure that they are not sharing a water source.

Calves that do not receive enough colostrum at birth are at an increased risk of pneumonia and scours. One of the most important steps of a health-management program is ensuring that your calves receive colostrum. If you are unsure about whether or not your calf has received the adequate amount of colostrum, it is best to supplement them.



Retained Placenta

Retained placentas - when the placenta does not expell after 24 hours - is a common health problem seen by producers. The resulting uterine infection may lead to infertility in cows. Retained placentas are commonly caused by nutritional deficiencies (vitamin A, selenium, calcium, and phosphorous) or the cows physical condition (either too fat or too thin).

A common symptom of retained placenta is a decrease in milk production. Under NO circumstances should you manually remove a retained placenta. If a uterine infection results, a cow will be fevered and extremely sick. There will be a watery and foul-smelling uterine discharge. Monitor your cows after they have calved to ensure they expell their placenta, and watch them for signs of fever and illness. If the placenta is not fully expelled and it is dragging on the ground, tie it up in knots to prevent it from ripping off.

Treatment involves the use of a combination of hormonal therapy (oxytocin) and antibiotic therapy. Penicillin is advised. If a uterine infection is involved, flushing the uterus may be required by Dr. McCracken. If you have a cow with a past history of retention, oxytocin can be administered every 30 minutes within 3 hours of calving.

Pink Eye

Pink eye in cattle is caused by a bacterial infection, which is often spread by flies, which causes irritation and tearing. The first clinical sign is usually squinting, followed soon after by cornea clouding and eventually the cornea becomes completely white. An ulcer may form on the cornea, and if not treated, will result in permanent blindness. In severe cases, the eye itself may protrude and/or rupture.

Pink eye is contagious and should be treated as quickly as possible with antibiotics, such as oxytetracycline. If treated promptly, the cornea will clear up and sight will return.



Calving

Supplies to Have On-Hand

For Calving Emergencies:

- Pail & Disinfectant Soap: for cleaning vaginal area prior to exploration. This helps prevent uterine infections and retained placentas after calving
- Calving Chains & D-Handles
- Calving Jack
- Rectal Sleeves
- After Calf Bolus - for those difficult calvings. Place 2 tablets deep in the uterus once the calf has been expelled

For Processing Your Calves:

- Management ID tags
- CCIA tags
- Elastrator Rings - replace your rings annually as they do degrade overtime. They can be stored in the refrigerator to keep them fresh.
- Vaccines

THINGS TO THINK ABOUT

- Is your maternity pen and headgate ready to use? There's nothing like fighting with snow removal or a rusty panel when you are in a hurry and trying to get a cow moved
- Is your stock trailer ready to use if you need to haul a caesarian section into the vet?

Supplements

- Fluid Feeders - replace annually; have at LEAST 2 on hand - one strictly for newborns. DO NOT use a feeder on a newborn that has been used on a sick calf. Make sure feeders are cleaned after each use.
- Vitamin AD - make sure that your cows are supplemented with A & D in the mineral block to reduce your need for supplementing your calves
- Selenium - for prevention of white muscle disease; our soils in this area are selenium deficient
- Milk Replacer: is always good to have on hand - you never know when you wil have a dry cow, a cow die, or sometimes for twins.



Colostrum

- If you cannot guarantee that a calf received colostrum from their dam within the first 6-8hrs of life, they should be supplemented with at least 2 doses of colostrum.
- Ideally, you can collect colostrum from your own herd and freeze it in 500ml or 1 litre ziploc bags. NEVER microwave them to thaw them as it will destroy the immune portion of the colostrum. Always thaw them out in warm water. The immune component will degrade overtime so dispose of colostrum once calving season is over.
- Dairy Colostrum is not an ideal colostrum replacer - it is too dilute and you will need a much larger volume (meaning more frequent feedings) to provide adequate immunity to the calf. In addition, if the dairy colostrum is from outside of your herd, there is always the potential of inadvertently introducing new disease to your herd.
- Dried Colostrum Supplements are a huge help to ensuring your calf received the necessary immunities. The same rules apply to dried colostrum that apply to the fresh colostrum -once it has been mixed it can be frozen, but always thaw in warm water.



Electrolytes

- Anytime a calf is ill you will see them nursing less frequently which can lead to dehydration. Supplementing calves that are ill from any disease process is essential. The weaker a calf gets, the harder it is for them to recover.
- Electrolytes are also essential for scouring calves as the resulting diarrhea will quickly dehydrate them.
- a calf that has diarrhea and is still bright should still receive 1 or 2 doses (2 litres each) daily.
 - a calf that is wobbly should be isolated, warmed, and receive 2 litres of electrolytes orally by tube or bottle every 4-6 hours. If there is no improvement, call the clinic.
 - a calf that is unable to stand needs IV fluids and you should call the clinic immediately.



Calving

Every producer should be prepared to encounter problems during the calving process. The better prepared a producer is, the more easily these problems can be solved.

Stages of Labor

Stage 1 - Relaxation: To facilitate the passage of a calf the ligaments of the pelvis and associated structures relax and become more elastic. The ligaments around the tail relax, the vulva becomes swollen, and a clear mucous discharge appears. The animal will appear restless, may separate herself from the herd, may look or kick at her flank, and will frequently lie down. This process can take between 3 hours (cows) to 3 days (first-time calvers). It is NOT recommended that any producer interference occurs because the cervix is not fully dilated and damage can be caused.

Stage 2 - Active Labor: once contractions begin and the calf enters the birth canal and the cow will begin to push. Most animals will lie down as soon as straining commences. This process can take between 30-60 minutes (cows) to 3 hours (first-time calvers). A cow or heifer should be given no more than 1 hour after the water bag appears before being checked to see if she requires assistance.

Stage 3 - Involution: after the calf has been delivered the expulsion of the placenta and the involution of the uterus. The placenta should be expelled within a six hours of birth, but the uterine fluids may discharge for up to two weeks. Involution of the uterus (return to its normal size & tone) may take up to 40 days after calving.



Calving Problems

Uterine Inertia: there is a loss of activity of the uterus. Cows who showed early signs of labor, and then fail to enter active labor may be experiencing uterine inertia. This may be caused by poor nutrition, over-condition (too fat), an abortion, or an underlying disease such as mastitis. In case of uterine inertia, consult Dr. McCracken

Non-dilation of the Cervix: the cervix membrane does not soften and does not enlarge to allow passage of the calf. You will only be able to insert 2 or 3 fingers through the cervix. The signs of a non-dilated cervix are similar to uterine inertia. DO NOT attempt to physically force the passage of the calf, as this could result in irreparable or fatal damage to the cow. In case of non-dilation, consult Dr. McCracken

Uterine Torsion: when the uterus is twisted over on itself. Your hand may seem to turn when you reach in and you will be able to feel the calf. Veterinary intervention is required.

Assisting with Calving

1. Know when to Intervene: knowing when to intervene is important because you don't want to intervene too early and risk damaging the cow while trying to remove the calf, but you also don't want to delay intervention and risk the chance of delivering a dead calf. As a general rule of thumb, if a cow has been actively in labor for 30 minutes without any progress, or if a heifer has been actively in labor for more than an hour, intervention may be necessary.
2. Epinephrine: Administer 10ml of epinephrine in the muscle. This relaxes the uterine muscles and gives you a little extra room to reposition that calf.
3. Be Clean!: keeping the cow clean reduces the chances of uterine infections. Use clean chains that have been boiled or soaked in isopropyl alcohol. Wash the exterior of the cows genitalia with a mild disinfectant and lukewarm water. If the cow defecates while you are assisting to deliver, stop, and clean up again.
4. Be GENTLE: having a knowledge of the shape and contours of the cow's internal structure can help assist you in delivering the calf. Bear in mind that you are dealing with a live animal whose internal anatomy can be damaged. While strength is often needed, keep in mind that you also don't want to pull so hard that you cause damage to the uterus or vagina.
5. Ensure the Calf is in the Correct Position Before Pulling: in the case of a calf being delivered head first, ensure that you have both legs and the head in the birth canal. If the calf is delivering backward, ensure that both hind legs and the tail are in the birth canal. If you are missing these parts, re-position the calf as necessary.
6. Know Your Legs: know the difference between the front legs and the back legs - the front legs have a fetlock and knee that flex in the same direction. The joints on the back legs bend in opposite directions. You need to ensure you are pulling on either the front, or the back legs, certainly not one of each! This is especially true of twins - ensure you have the legs of only 1 calf.
7. Know Your Limitations: this comes largely with experience. In order to reduce the risks to the cow and the calf, know your limits. and contact Dr. McCracken when a caesarian may be in order.
8. Don't Wait Too Long: if obvious progress hasn't been made within 10 or 20 minutes, contact Dr. McCracken. Loss of time means an exhausted cow, swelling of the vagina, which decreases the amount of space to work in, loss of lubricating fluid, increased difficulty in correcting the problem, and reduced viability of the calf.
9. Make sure that the calf gets at least 2 litres of colostrum as soon after delivery as possible.



Calving Tips

- pull one leg at a time gently in time with the cow's contractions. This mimics the normal birth movements. By pulling on both legs at the same time you increase the diameter of the calf
- if the birth canal is getting dry, use a lubricant such as lard, vegetable oil, or an obstetrical lubricant
- if the legs are coming out crossed, this normally signals an oversized calf. The feet will cross as the shoulders and elbows try to fit through the pelvis. It is likely wise to call Dr. McCracken
- if the calf becomes hiplocked, introduce a lubricant, and try to twist the calf on its side to rotate the hips
- be aware that calf chains or calf pullers can supply enough torsion to kill a calf or rip the birth canal. Ensure that you are not using them with too much torsion
- with a backwards delivery, consider assisting the cow with the delivery. The umbilical cord may be broken sooner than normal, which leaves the calf requiring oxygen. Because the calf's head is the last thing to leave the birth canal, the calf may drown.
- with a backwards delivery, once the hips are through, pull the calf horizontally to prevent the calf's ribs from hooking on the pelvis. Ensure that the tail is coming out with the feet - if not, it will take up much needed space in the birth canal
- DO NOT hang a calf in an attempt to drain amniotic fluid from the lungs. While this method is commonly used by producers, it is actually the fluid from the stomach, not the lungs, that will start to drain out of the mouth. In these instances, lay the calf on it's stomach, with all 4 legs facing forward
- Don't wait. The longer you wait and struggle with delivery, the less fluid there is in the uterus for lubricant, the uterus swells around the calf, and decreases the chance of a live calf

Epidurals: epidurals are an effective tool for producers to help reduce straining which will help you reposition a calf or while trying to replace a prolapse. Be sure to use a clean needle every time. Also, if you do not prepare the area as described in the video, you must soak the area in alcohol.

<http://iloveveterinary.com/blog/epidural-anesthesia-cattle/>

Dr. McCracken would be happy to show you how as well on your next farm visit.

After-calving Problems

- **Vaginal Tears:** these are usually not too serious but watch for signs of infection. Deep lacerations may require veterinary attention
- **Uterine Tears:** if bright red blood is seen coming from the anus or vagina, a uterine tear may have occurred and requires immediate veterinary attention.
- **Prolapsed Uterus:** occurs when a cow continues to push after calving. The uterus is forced out of the vagina inside out. It will hang down **SEEK IMMEDIATE VETERINARY ATTENTION**. If possible, wrap the uterus in moist sheets to keep it from drying out. **IT IS ILLEGAL** to transport an animal with a prolapsed uterus.

Mastitis

Mastitis is inflammation of the mammary gland, usually resulting from bacteria introduced either during the milking process or from environmental contamination. The typical mastitis involves an enlarged quarter, with the cow sometimes showing signs of depression, and a hungry bawling calf because he's not getting enough milk. Chronic cases of mastitis may involve an abscess that bursts out the side of the udder.

Before treatment is administered, stripping (hand milking) out the infected quarter is recommended. A broad-spectrum intramammary antibiotic can be used, such as SpectraMast or Special Formula to treat the infection. Ensure that you wear gloves and wash the udder prior to milking and administering treatment; this will prevent further introduction of bacteria to the quarter. Generally, two treatments should be administered to the affected quarter. The use of a non-steroidal anti-inflammatory (NSAID) such as Metacam will help reduce inflammation and fever.

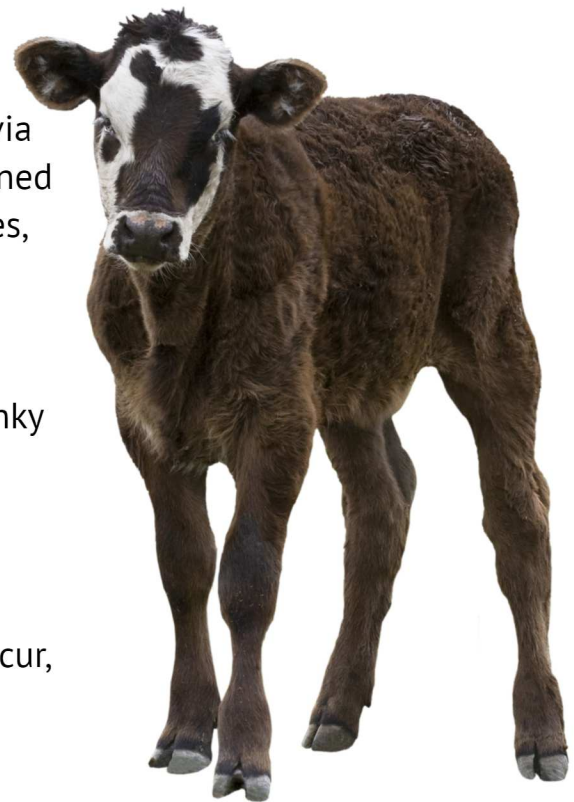
If the cow still has a calf at her side keep an eye on them to ensure that the calf is still able to nurse. Calves will usually stay away from the infected quarter, but you should still watch for signs of infection in the calf just in case. In some instances they may need to be supplemented if the cow's milk production drops dramatically or dries up totally.

Navel & Joint ILL

Navel ill is an infection which results when bacteria enters via the umbilical cord at birth. In Navel ill, the infection is confined to the navel which will be swollen and painful. In some cases, an abscess may develop and burst. If left untreated, the infection often spreads to the joints. Less commonly, the infection will spread to the heart, brain, or liver. A normal navel should be soft and no bigger in diameter than your pinky finger. Calves with navel or joint ill will have a high temperature, depression, and reduced appetite.

Early treatment with Nuflor and Metacam is necessary to prevent the spread of infection. In cases where abscesses occur, the abscess may need to be drained and the infected tissue removed.

Prevention is as easy as ensuring that your calves are in a clean environment, which will significantly reduce the risk of navel and joint ill. Because of their anatomy, bull calves are more at risk than heifer calves since the navel tends to dry slower.



Supplies Available through MVC

BOVINE SUPPLIES

- Weaver Leather Show & Grooming Supplies **great for the 4-Her or Cowboy/Cowgirl in the family*
- Fencing Supplies (electric fence generators, fencing tape/wire, insulators etc.)
- Calving Supplies (OB chains, calving jacks, elastrator rings, banding pliers, sorting canes, vaccine guns, fluid feeders, taggers, etc)
- CCIA/RFID tags
- Herd Management tags, including custom printing
- Electric & Fire Branding irons
- Farm & Ranch supplies (waterers & de-icers, etc.)
- Livestock Handling Supplies



EQUINE SUPPLIES

- Weaver Leather Tack & Grooming Supplies **great for the 4-Her or Cowboy/Cowgirl in the family*
- Equine Supplements
- Back on Track therapeutic apparel



CHICKEN SUPPLIES

- Feeders & Waterers
- Incubators
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GOAT/SHEEP SUPPLIES

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- Lambing/kidding supplies
- Identification including custom printing



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- Sorting Panels
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After-hours drop-offs and pick-ups available upon request.