A. When it comes to calving problems, an ounce of prevention is worth about a hundred pounds of cure! Not all obstetrical problems can be prevented but if calving difficulties and stillborn calves are a problem on the farm, a careful investigation and some management changes could provide real relief. Here are some things to consider.

a. Typically, most calving problems on dairy farms occur in first-calf heifers. On many farms, between 1/3 and 1/2 of first-calf heifer deliveries are assisted. The majority of these are simply the result of a calf that is too large for the heifer to deliver easily. These calves are at greatly increased risk for stillbirth as well as illness or death before weaning. What can you do?

   i. Make sure your heifers are well-fed and growing as planned, measure – don’t guess!
   ii. Use calving-ease sires
   iii. Consider using sexed semen to produce heifer calves as they tend to be smaller than bull calves

b. Your transition program affects calving performance as well as the next lactation. Avoid overcrowding in the close-up group. Provide at least 30 inches of bunk space and 1 stall per cow.

c. Ideally, cows would spend no more than 2 days in the actual maternity facility to avoid social stresses associated with frequent introduction of new cows. Most cows should calve unassisted within 1-4 hours of the onset of labor. Heifers may take a bit longer.

d. Provide skilled and timely assistance when needed.

   i. Knowing when to assist a cow in labor is a judgment call that requires years of experience and the realization that you will still make mistakes. Most recommendations boil down to these two points:

      Don’t rush the cow but……
      Don’t wait too long.

      Good advice but pretty hard to translate into a workable plan for managing the cow in labor.

   ii. I recommend you examine the cow or heifer when first-stage labor has lasted more than 6 hours or when second-stage labor lasts more than 2 hours. It is often difficult to pinpoint the start of first or second stage labor so a more practical approach is based on the fact that most cows that deliver without assistance will have their calf within 60-70 minutes after the amniotic sac or hooves appear at the vulva. If your cow goes beyond this time frame, she should be examined. Also examine her when there is excessive hemorrhage, an abnormal odor or appearance of the calf or fetal membranes, and when there is excessive straining with no visible progress being made. Cows delivering normally will usually make
obvious progress during a 15-minute observation period. If she
doesn’t, you should find out why.

iii. This means the maternity facility must be observed at least once
every hour throughout the day. This may not be possible on many
farms.

B. Basic on-farm obstetrical equipment and supplies
   a. Required
      i. Knowledgeable team leader and a competent assistant with a good
         back (this should readily provide 150-300 lbs. of pull, keep in mind
         that more than 400 lbs. of force can fracture a calf’s leg)
      ii. Clean bucket, warm water, soap and towels
      iii. OB chains and handles (OB straps or ropes may be substituted but
           they are harder to clean)

iv. Fetal extractor (1000 lbs. of pull so must be used with care)

v. Lubricant
vi. OB sleeves
b. Optional (usually reserved for veterinary use)
   i. Head snare

   ![Head snare](image1)

   ii. Detorsion rod

   ![Detorsion rod](image2)

   iii. Fetotome and accessories

   ![Fetotome and accessories](image3)

   iv. Buhner needle and umbilical tape
   v. Equipment and drugs for epidural anesthesia
   vi. Surgical supplies for caesarean section
   vii. Equipment and oxygen for resuscitation of calf

C. Options for delivering the calf
   a. Assisted Vaginal Delivery: This is, by far, the most common form of calving assistance provided to cattle. To safely and effectively assist with delivery you must be familiar with the following processes and procedures.
i. Ability to distinguish normal from abnormal calving
ii. Method for sanitizing and lubricating the cow and operator arms
iii. Ability to assess calf size and position to determine appropriate intervention
iv. Technique for distinguishing fore and hind limbs
v. Technique for applying OB chains or ropes
vi. Traction technique for reducing effective shoulder/chest circumference
vii. Traction techniques for maintaining proper head position
viii. Mutation techniques that avoid uterine lacerations or perforation
ix. Extraction technique for avoiding hip-lock
x. Safe use of the fetal extractor or “calf jack”
xi. Basic calf resuscitation techniques (see D below)

b. Fetotomy and caesarian delivery of the fetus are procedures that should only be performed by a skilled veterinary practitioner. A partial fetotomy will generally suffice to relieve a specific postural defect, such as a flexed limb. A complete fetotomy may be required in cases of relative fetal oversize or a grossly deformed fetus. Successful fetotomy requires the right equipment, capable assistance and a skilled clinician. A complete fetotomy is technically and physically challenging. It is important that one not be begun as a last resort after you are already exhausted and the cow is traumatized and swollen from efforts to deliver the calf by forced extraction.

i. Before attempting a fetotomy, the cow should be restrained in an area with adequate room behind for manipulation and sawing. An epidural anesthetic is usually required but manipulation is generally easier if the cow remains standing. Required equipment includes a hardened steel, double-barreled fetotome, wire, wire threader, wire cutter, wire handles, wire introducer, Krey hook, fetotomy knife, OB chains and handles, obstetrical lubricant, stomach tube and pump.

ii. Caesarian Section is the optimal method for delivery of the live calf that cannot be extracted per vagina. This is a complicated surgical procedure and should only be performed by a skilled veterinary practitioner.

c. Uterine Torsion is a special type of obstetrical problem that is relatively common in dairy cattle. For most farmers, correction of a uterine torsion should be limited to rotating the calf per vagina until the torsion is relieved.

i. In some cases the operator may not be able to correct the torsion without assistance. Another option for correcting a torsion where the calf’s limbs are accessible is to place chain loops in combination with a detorsion rod around the calf’s limbs in the pattern illustrated above and rotate the calf until the torsion is corrected. I recommend veterinary assistance for uterine torsions that require mechanical or surgical assistance.
ii. If the cervix is closed or the degree of torsion is so great that you cannot gain access to the fetal limbs, the calf will either need to be delivered by c-section or by rolling the cow to correct the torsion. An illustration of rope placement for casting a cow is shown. The bowline knot is recommended for the loop around the neck to avoid choking the cow during the procedure.

D. Calf Resuscitation
In a normal calving, the rupture of the umbilical cord causes oxygen deprivation in the calf and initiates the gasping reflex that will fill the lungs with air and complete the cardiovascular alterations necessary for life outside the uterus. Calves born with assistance are much more likely to require further help adjusting to this new life.

a. Establish an airway
   i. Place calf in sternal recumbency
   ii. Clear fluid from nose and mouth (suction or brief suspension by hind limbs)

b. Stimulate respiration
   i. Vigorous rubbing with towels or bedding
   ii. Clean straw in nose, finger in nose or mouth
iii. Positive pressure ventilation with or w/o oxygen supplementation is sometimes recommended but hard to do on the farm

c. Assess for injury or septicemia and manage navel with mild disinfectant, tie off only if needed to control hemorrhage
d. Keep calf warm and dry, provide heat if necessary to maintain normal body temperature
e. Provide adequate colostrum
f. Calves requiring cardiac resuscitation are unlikely to survive

The reality is that most farms compromise on monitoring frequency for the maternity pen. The good news is that cows seldom strain hard enough to injure themselves and that calves often survive a lengthy delay in delivery. We usually think of calving problems as an emergency situation but there is generally no need to rush. Take your time, be clean and careful, and remember, your veterinarian is always just a phone call away.