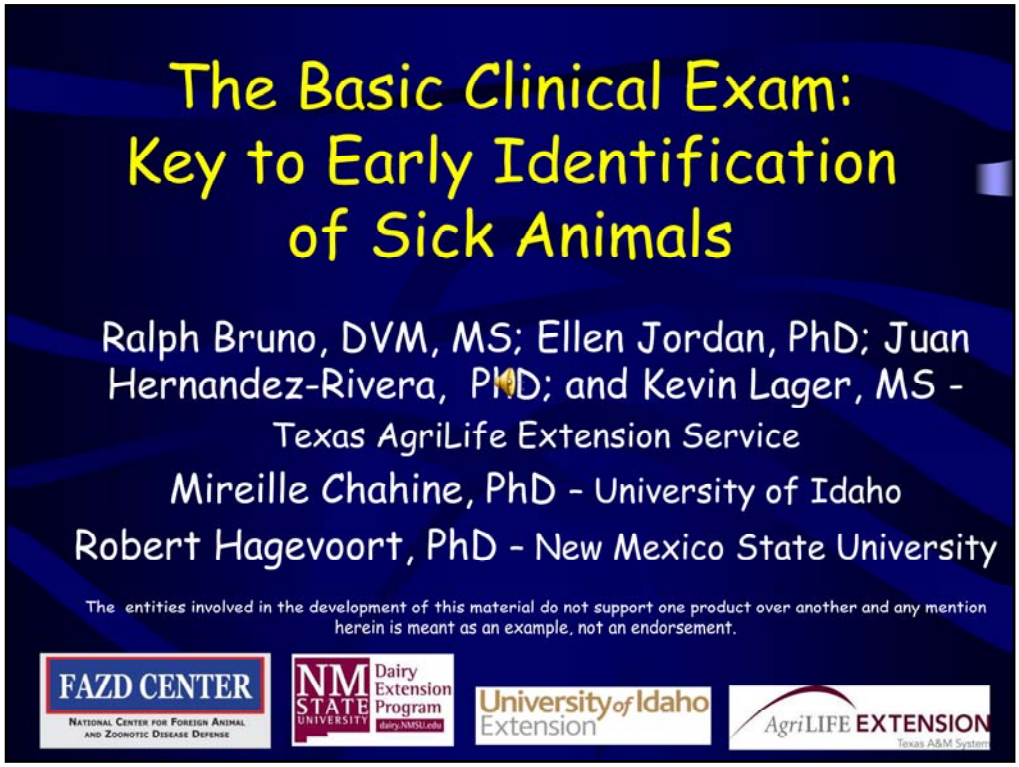
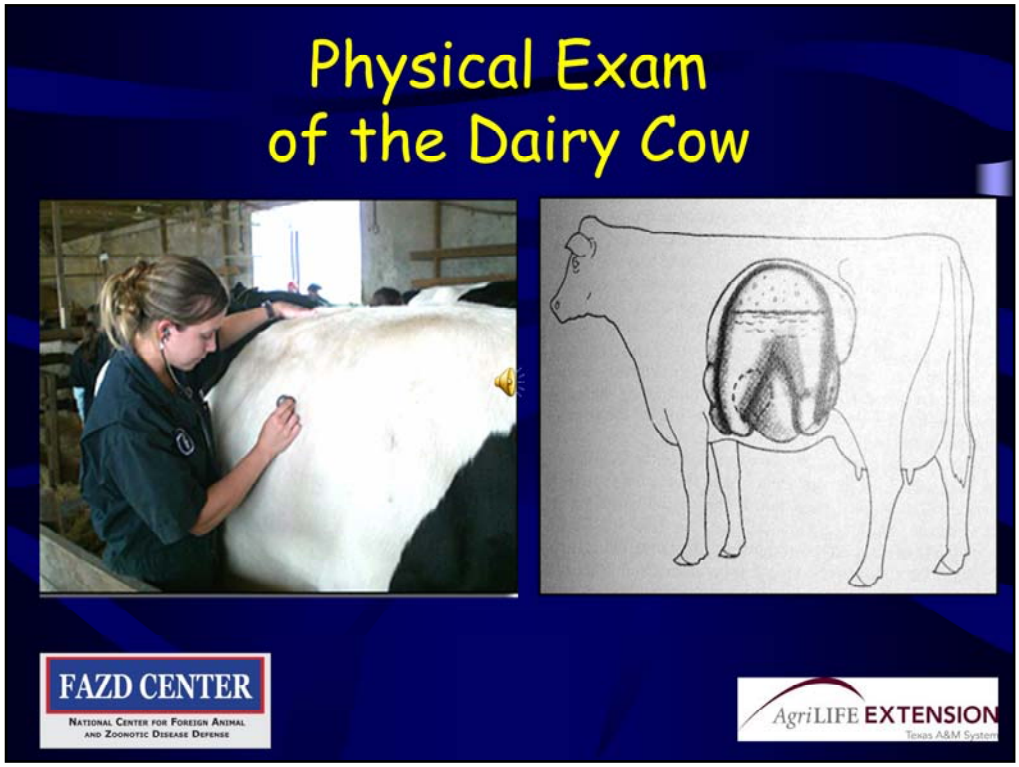
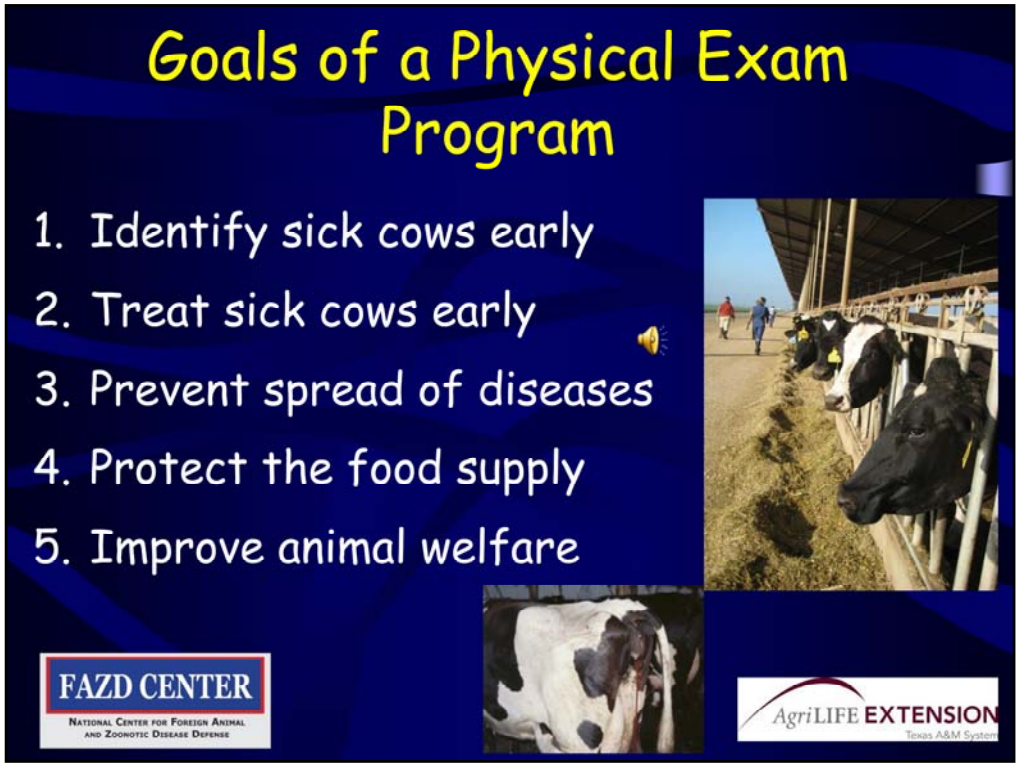


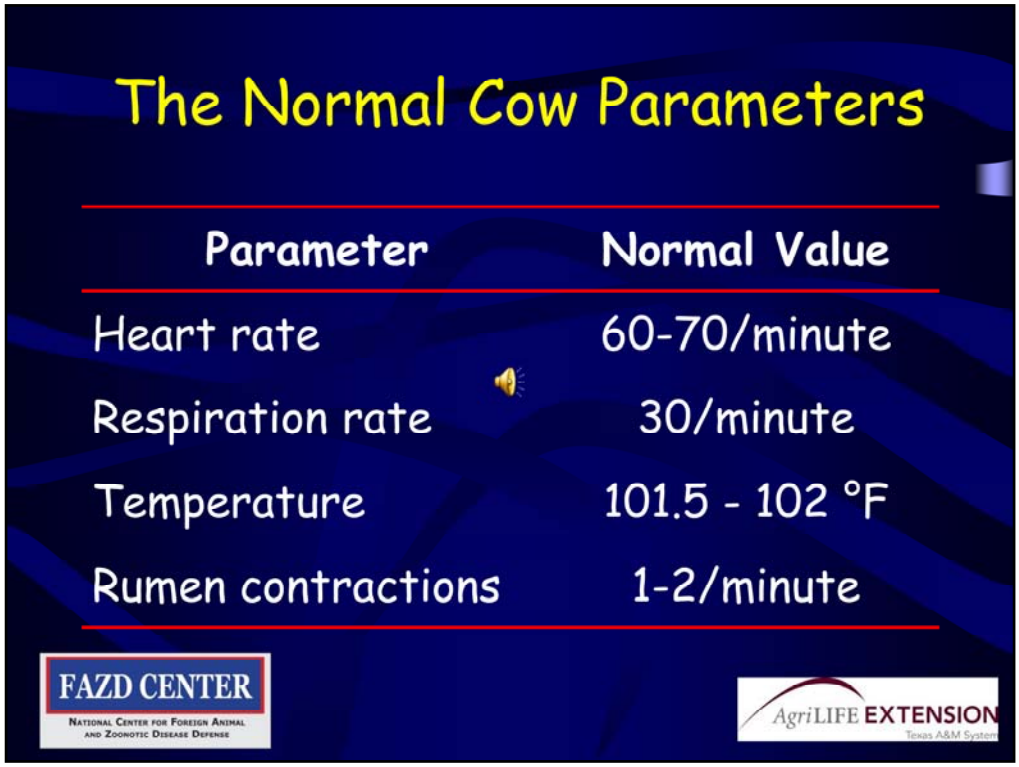
Finding and treating sick animals early is the key to maintaining a safe, nutritious food supply. On dairies, this begins with a basic physical exam of the cow.



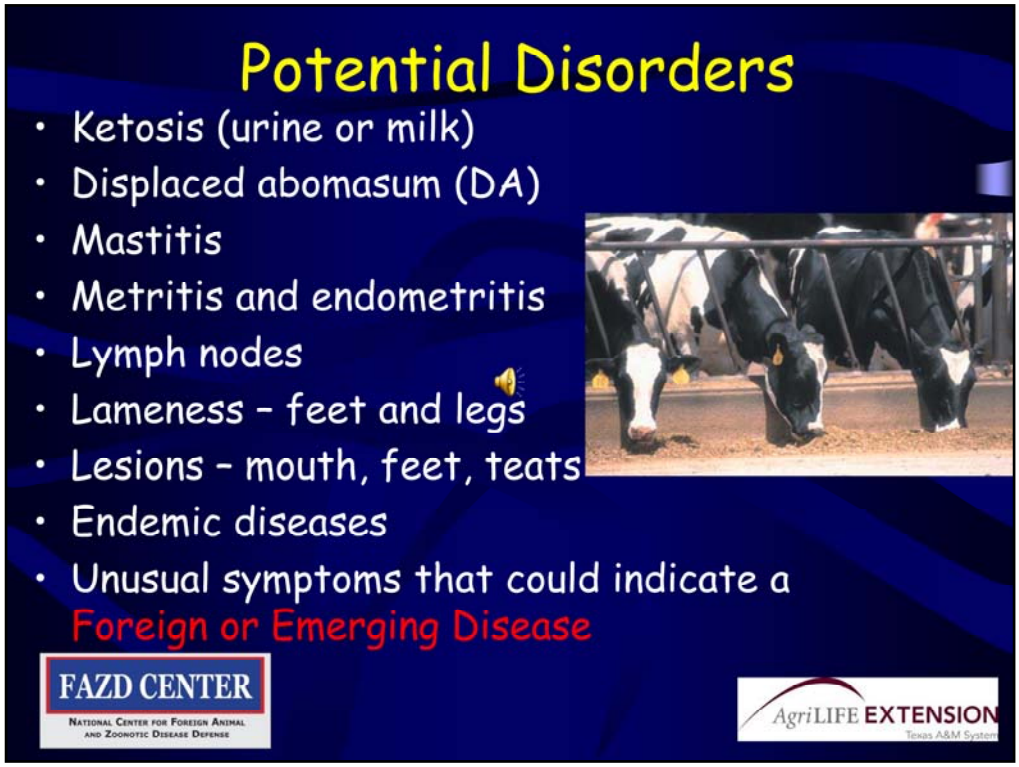
Frequently a staff member, trained by the herd veterinarian, identifies cows that appear abnormal and conducts a basic exam.



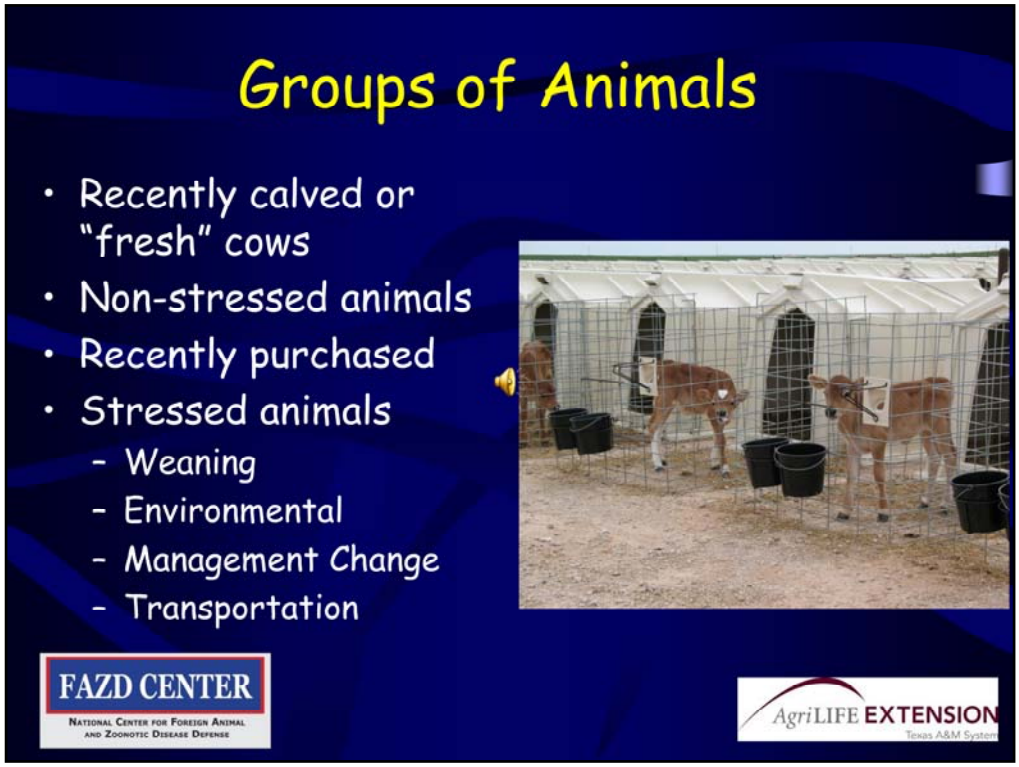
The goals of a ***Physical Exam Program*** include:
Identify sick cows early,
Treat sick cows early,
Prevent spread of diseases,
Protect the food supply, and
Improve animal welfare.
Besides these common goals, dairy employees may be the first to see abnormal symptoms that may indicate a foreign or emerging disease. Anytime unfamiliar symptoms are seen, the herd owner, veterinarian or manager should be notified.



To conduct a basic physical exam, learn the normal characteristics of a cow. For example, the cow's normal heart rate is 60-70 beats per minute; respiration rate is 30 breaths per minute; temperature is 101.5 to 102 °F; and rumen contractions occur once or twice per minute.



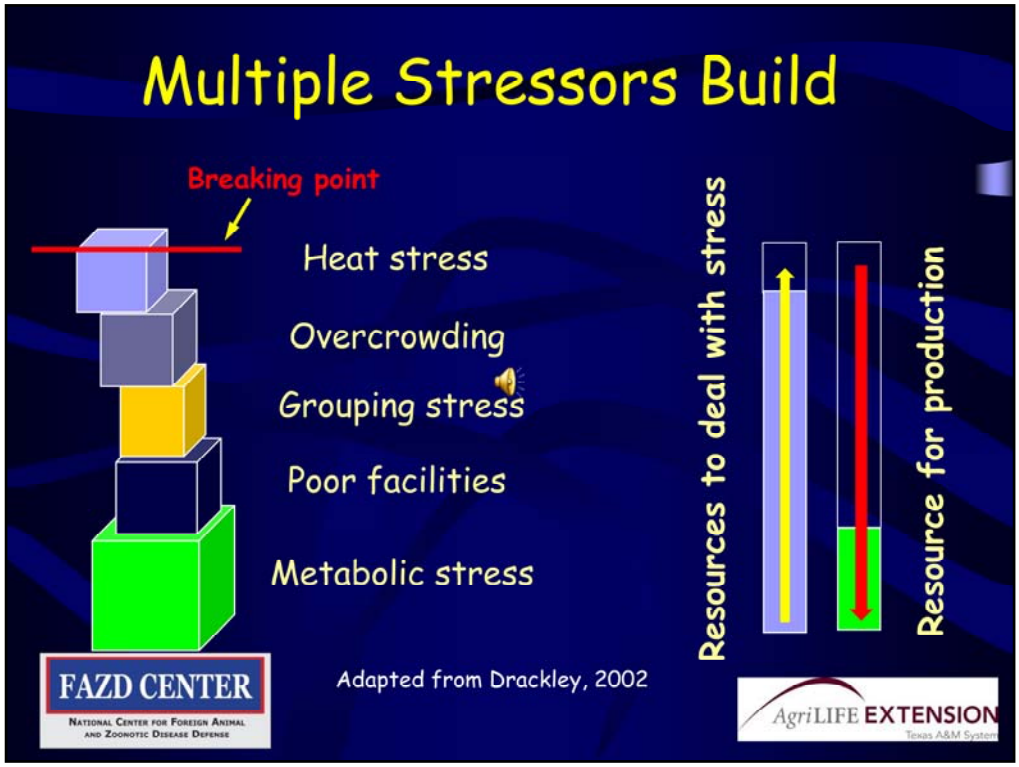
Once you determine that a cow is “abnormal”, use your powers of observation to determine what the problem is. Some potential disorders include: ketosis (urine or milk analysis), displaced abomasum (DA), mastitis, metritis and endometritis, lameness (feet and legs), lesions (mouth, feet, or teats), other common diseases (IBR, BVD, leptosporosis, PI_3, etc.), and unusual symptoms that could indicate foreign or new diseases.



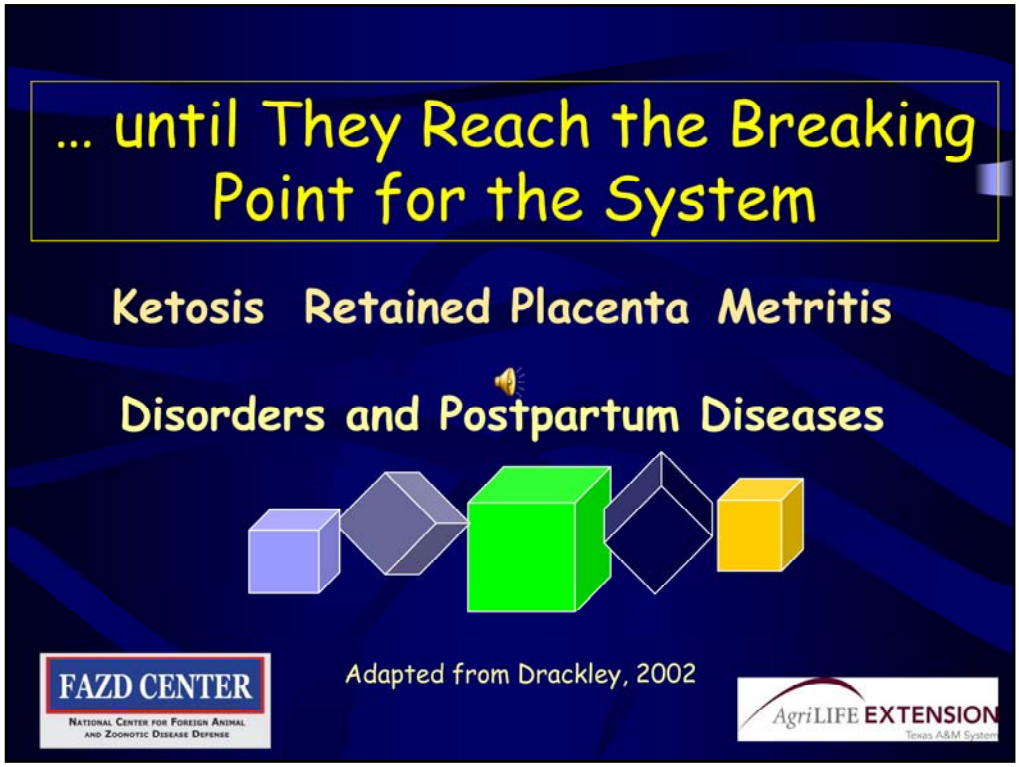
Depending upon the dairy there are a number of different groups of animals that require differing amounts of attention. Typically, calving and recently calved or "fresh" cows receive the most attention on dairies. Today many dairies conduct a brief physical exam on every cow for the first ten days after they calve.

After the initial intense observation, most animals enter the lactating pens, where they continue to be observed on a daily basis for abnormal behavior. If any abnormal signs are detected, these "non-stressed" animals will then be evaluated further.

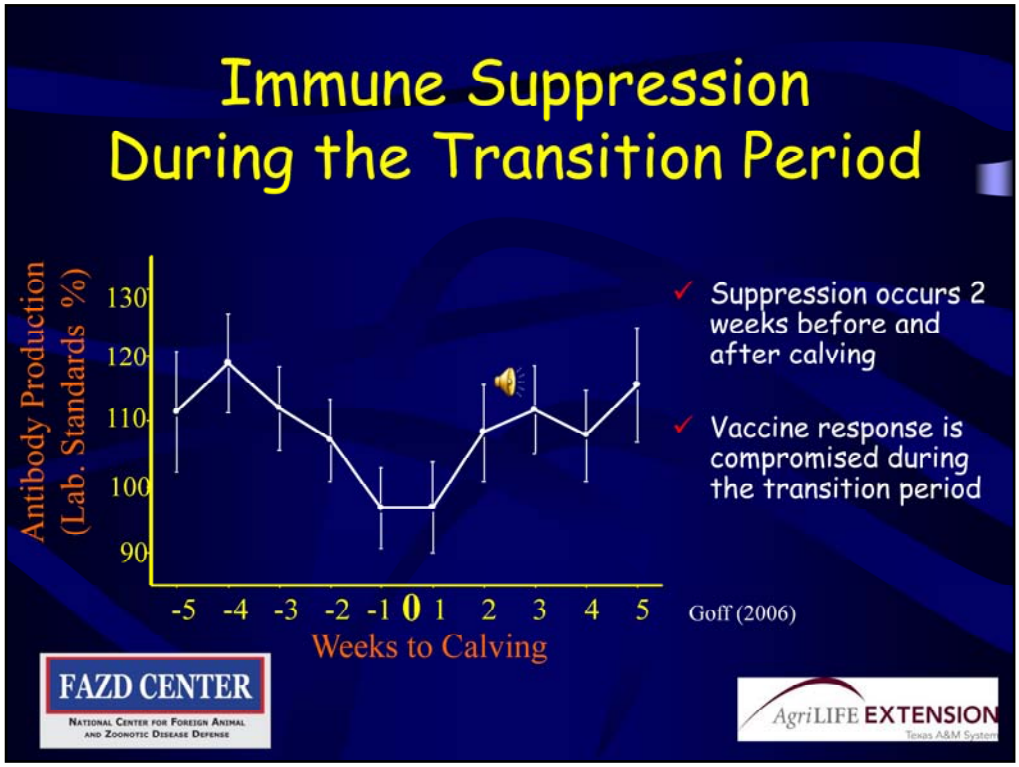
Each dairy has its own guidelines for isolating and monitoring recently purchased animals as well as those that have undergone some type of stress. Increased monitoring and evaluation are indicated whenever an animal is subject to a stressor. Some common stressors include: weaning, weather changes, pen moves, and other management changes.



Whether the stress comes from metabolic stress, grouping changes, heat stress, overcrowding or unsanitary conditions; the cow uses more and more of her resources to deal with the stress. As a result there are decreasing resources for her to use for production.

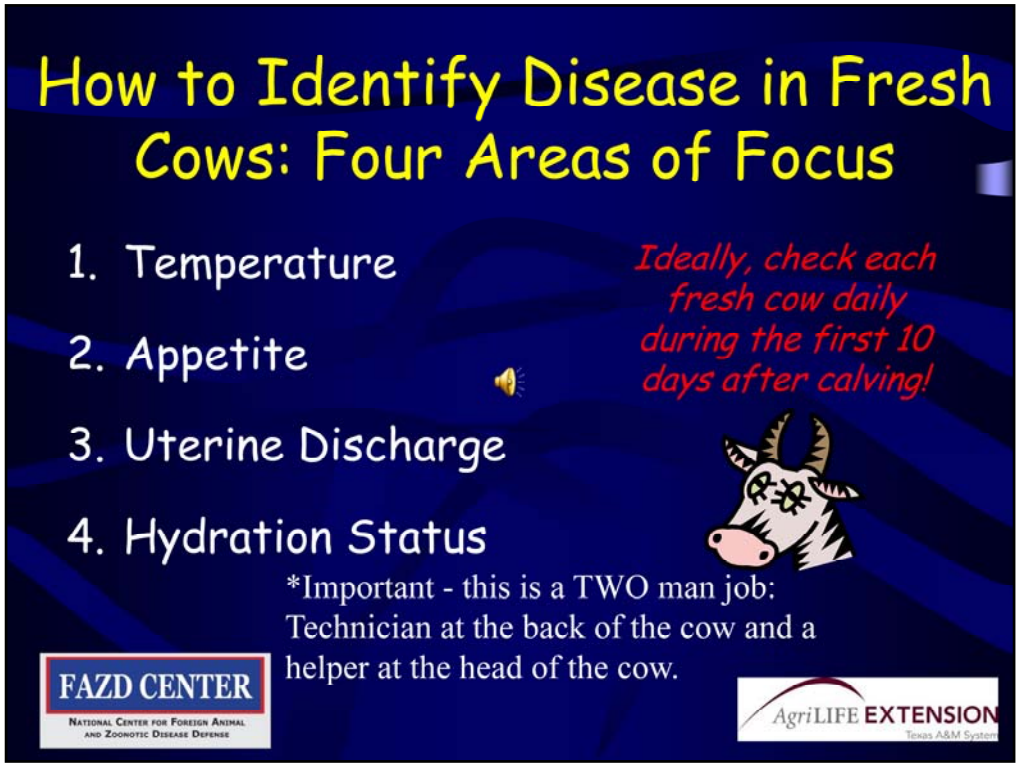


As these multiple stressors are stacked upon each other, the cow finally reaches a breaking point where she becomes ill.

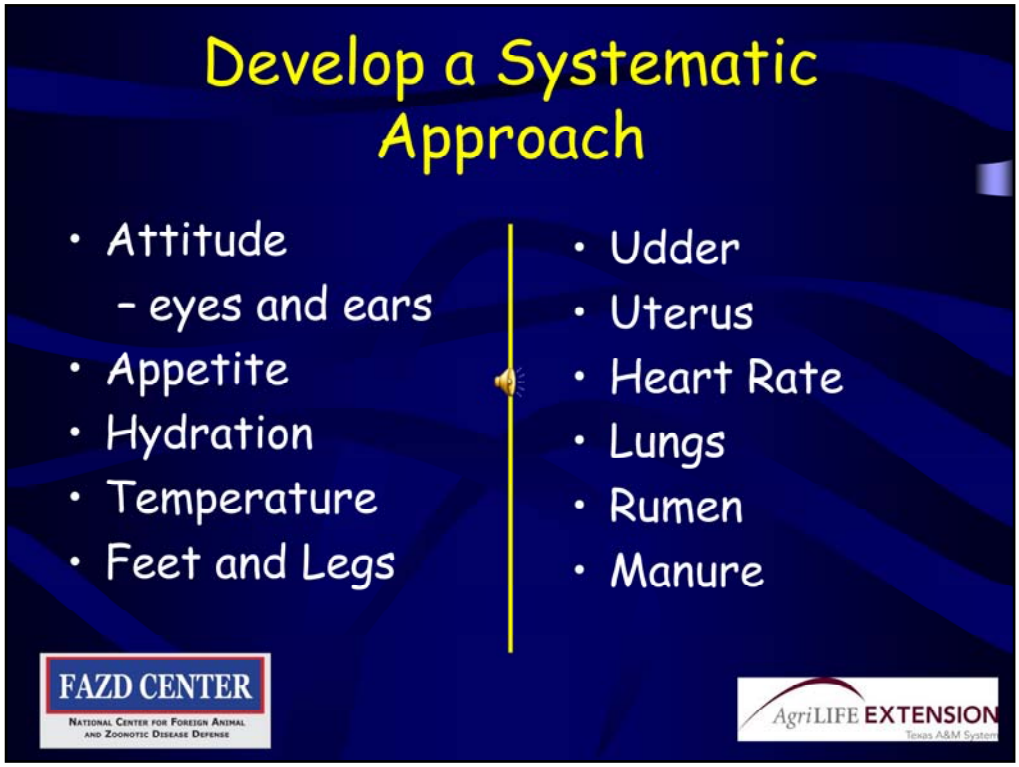


Fresh cows are even more susceptible to disease because their immune system is depressed. Immune suppression starts two weeks before and continues for two weeks after calving. This is the reason we need to take extra care in designing vaccination programs around this time. Immune compromised cows do not respond as well to vaccination.

Immune suppression around calving makes these cows more likely to be infected by disease causing organisms such as salmonella, clostridium, and pneumonia.

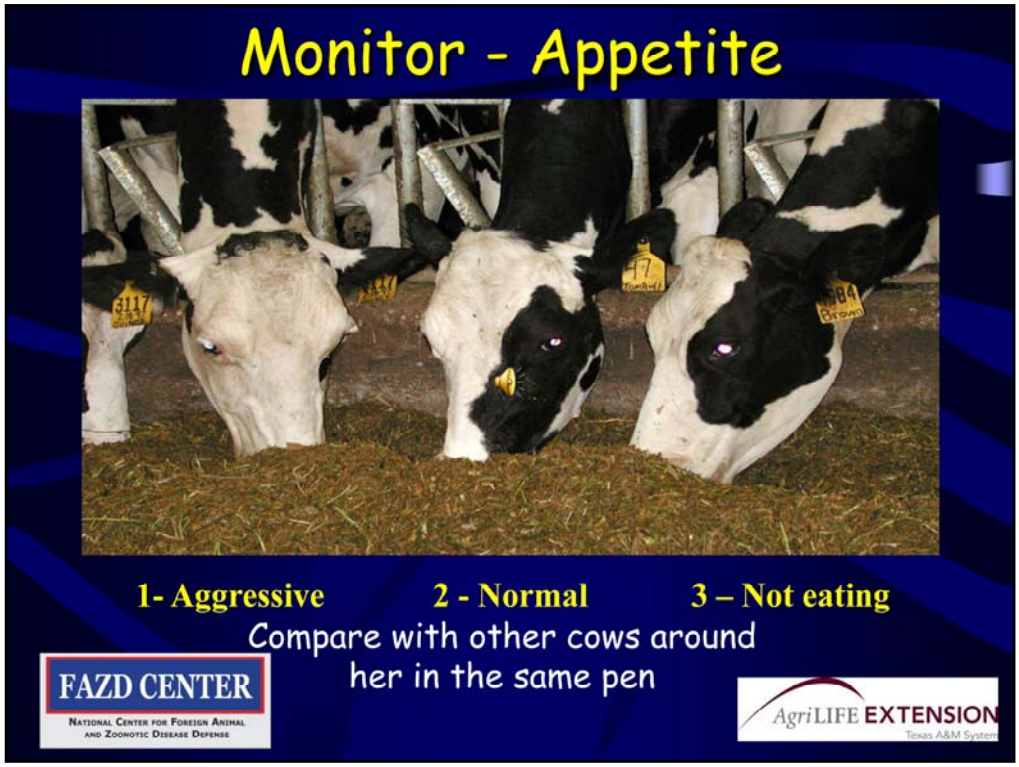


For daily monitoring, focus your attention on four main areas:
Temperature,
Appetite,
Uterine discharge (particularly fresh cows), and
Hydration status.



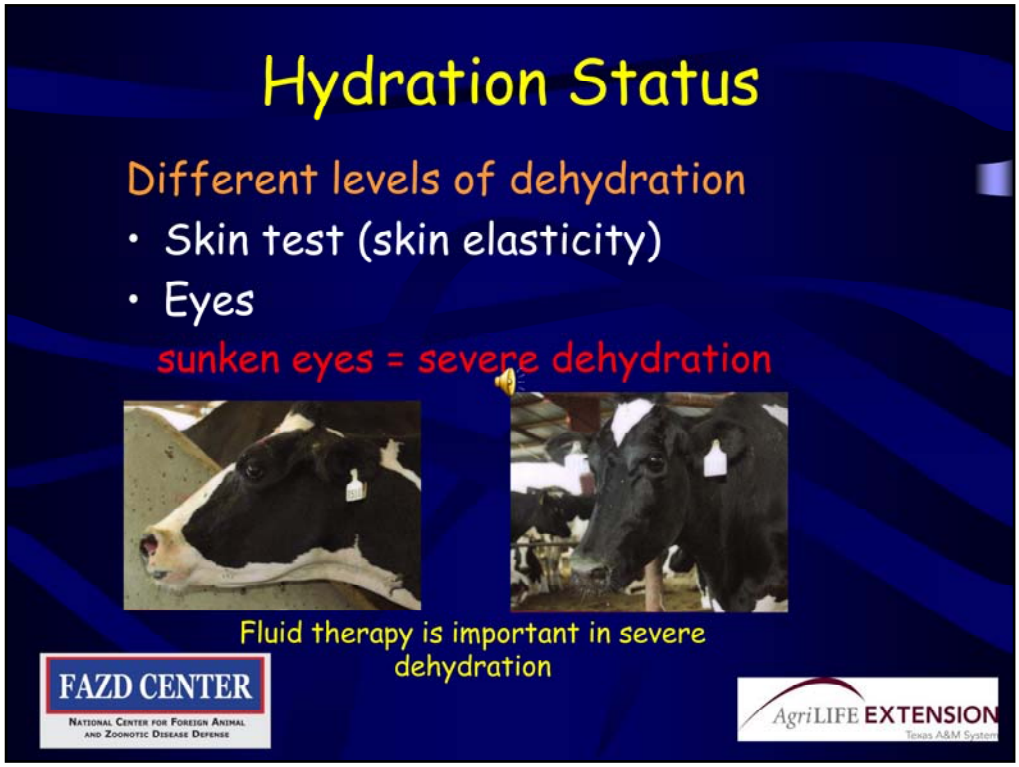
Develop a systematic approach to check the cow from one end to the other. Develop your own routine. Observe attitude, appetite, hydration, and temperature. Systematically check eyes and ears, feet and legs, udder, uterus, heart rate, lungs, rumen and manure. By using one order consistently you will be less likely to miss something.

Start with the cow's attitude - Look at her eyes and ears. Sunken eyes and droopy ears indicate a sign of something wrong. Sick cows typically seek solitude, lie down in corners of the corral and move slower with less energy than healthy cows. Grade her as alert, mildly depressed, or depressed. For those cows that are mildly depressed or depressed, start looking for other symptoms to figure out why.



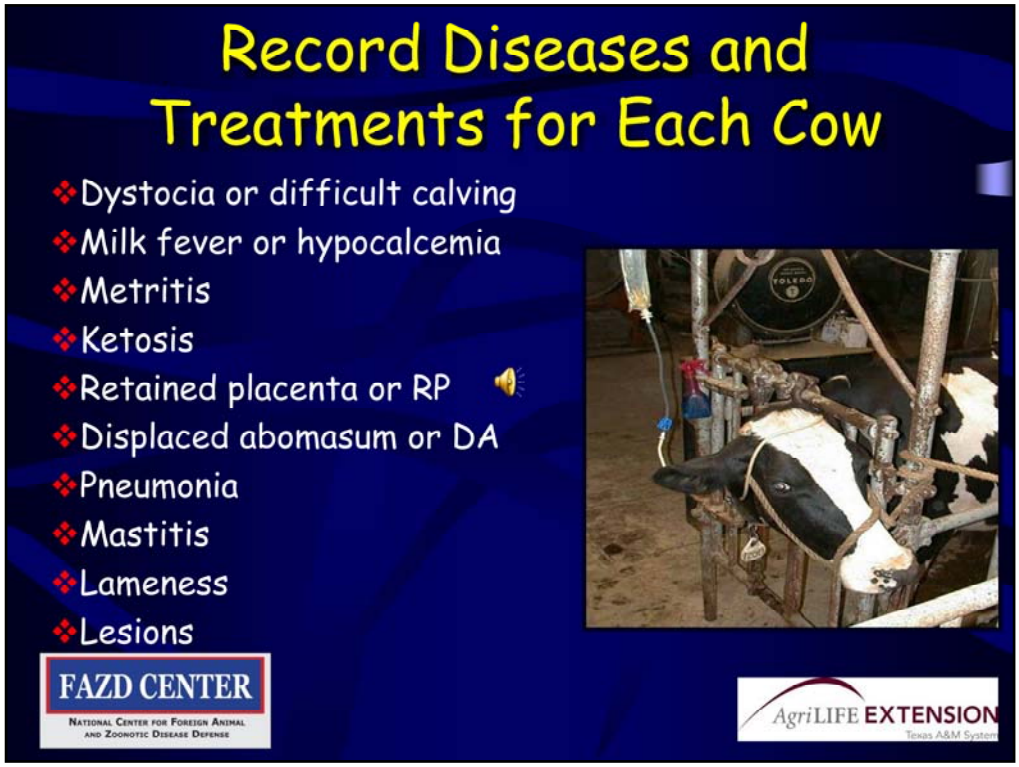
Watch for cows that don't come up to the feed bunk to eat. Look at how much of the feed in front of a cow was eaten. Compare her with other cows around her in the same pen. - Grade her appetite as aggressive, normal or not eating. If she is not eating that means you need to find out why.

Panting and excessive salivation can be signs the animal isn't feeling well. Again compare her behavior to other animals in the same pen.

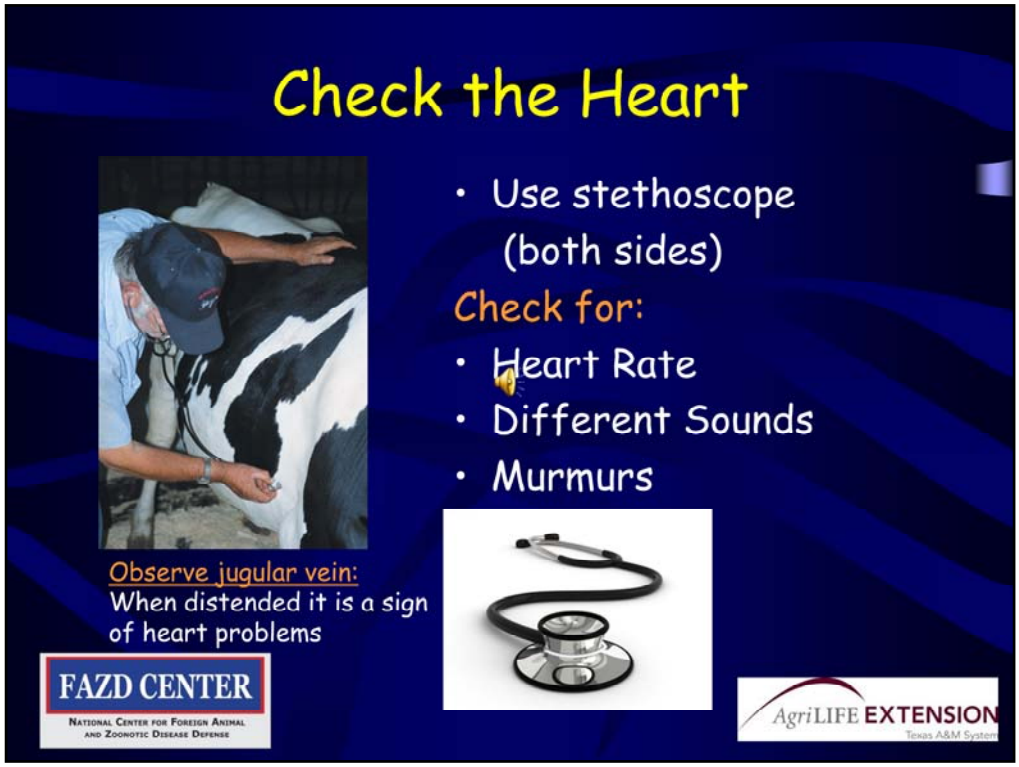


Use a skin test to check for hydration. Normally when you pinch a fold of skin in a cow's neck between your fingers it flattens out immediately upon release. In a cow that is dehydrated, it will stay "tented" or raised for a period of time. The longer it remains tented the more dehydrated the cow. Look at her eyes, if they are sunken she may be suffering from severe dehydration. It is very important to provide fluid therapy to cows that are in severe dehydration.

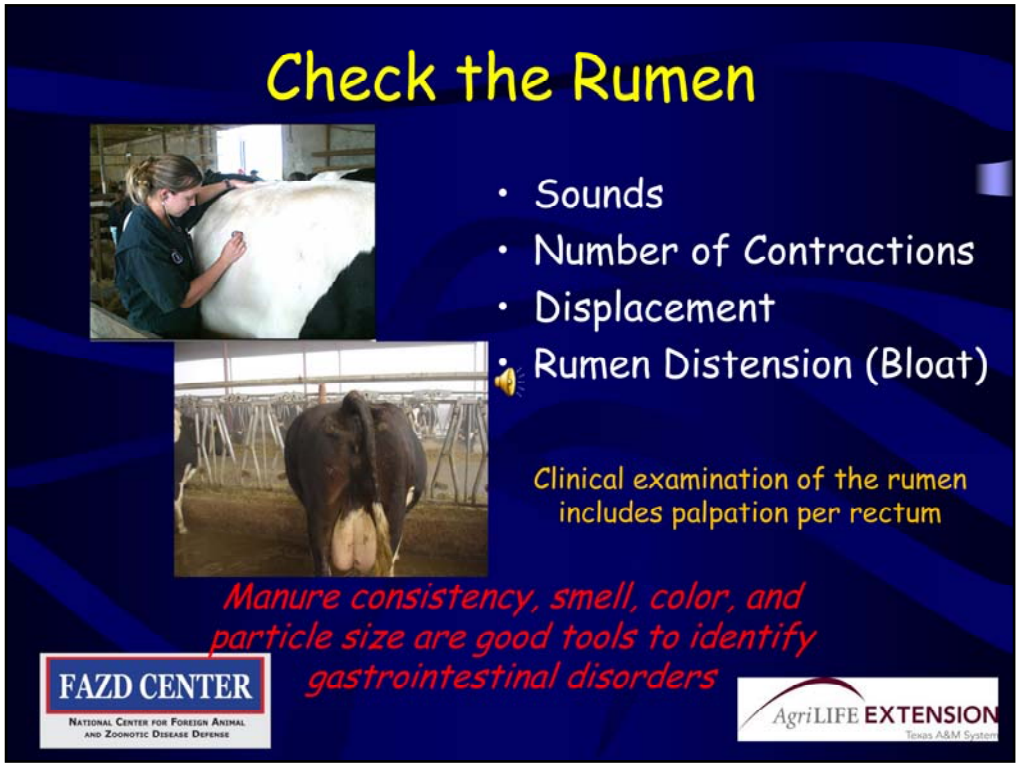
Even normal looking cows must be monitored to catch early symptoms. When cows retain their placenta or the fetal membranes, abort, twin or have difficulty calving they are more likely to have problems later. Spending a little extra time checking those cows that had problems earlier can lead to early identification of other problems. Cows with low calcium levels or milk fever may not be able to get up. These cows need extra attention as well.



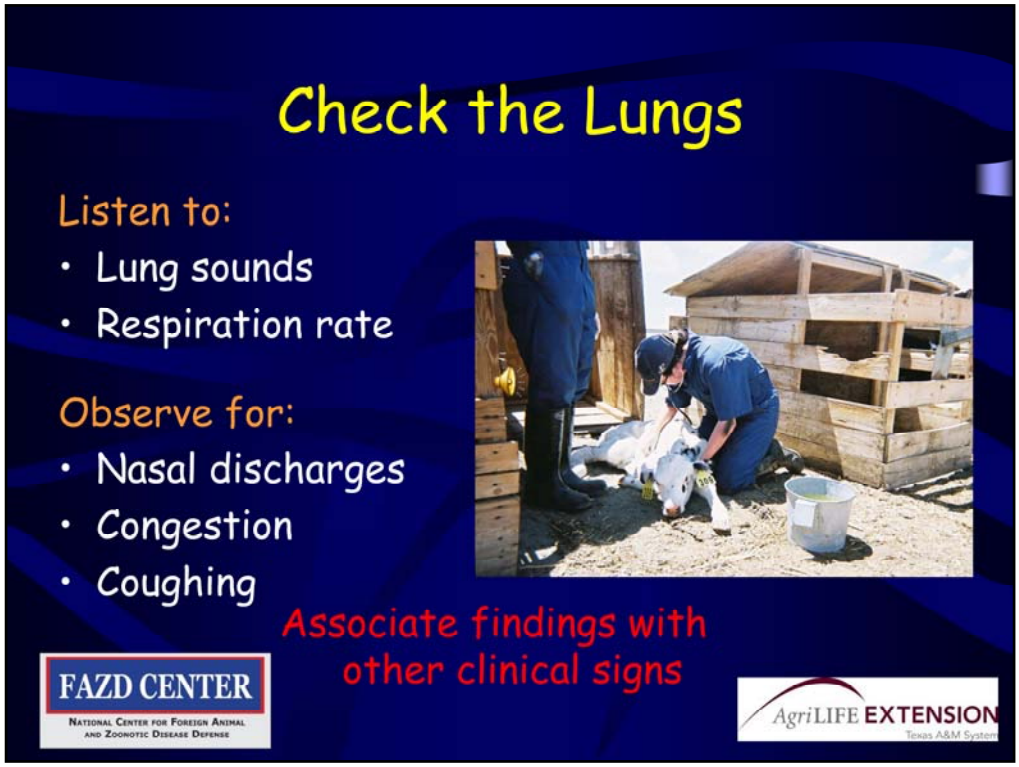
Here is a list of some of the possible diseases you might find on a large dairy depending upon your training . Record the disease diagnosis and treatment for each cow. At a minimum these records should include the date, cow identification, symptoms, diagnosis, and treatment. Follow set protocols for treatment developed by the herd veterinarian. If antibiotics are necessary, follow withdrawal times for both milk and meat. If you are unsure about something, contact your herd owner or veterinarian to get help.



Determine the heart rate by using a stethoscope. Check both sides and listen for sounds that could indicate a heart murmur.



Also use your stethoscope to check the rumen. Listen to the sounds and decide if they are normal. Determine the number of contractions per minute. Check for a ping that might tell you that the cow has a displaced abomassum. Look for abdominal distension or bloating. A true clinical exam of the rumen also includes palpation through the rectum. Finally look at the manure for consistency, smell, color, and particle size. When these differ from herd mates, a gastrointestinal disorder may be the cause.



Check the lungs. Determine the respiration rate and listen for signs of congestion that might indicate the cow has pneumonia. Observe for nasal discharges, congestion, or coughing. Associate the finding with other clinical signs such as fever, dehydration, lack of appetite, etc. to determine if the cow has an illness or disorder.

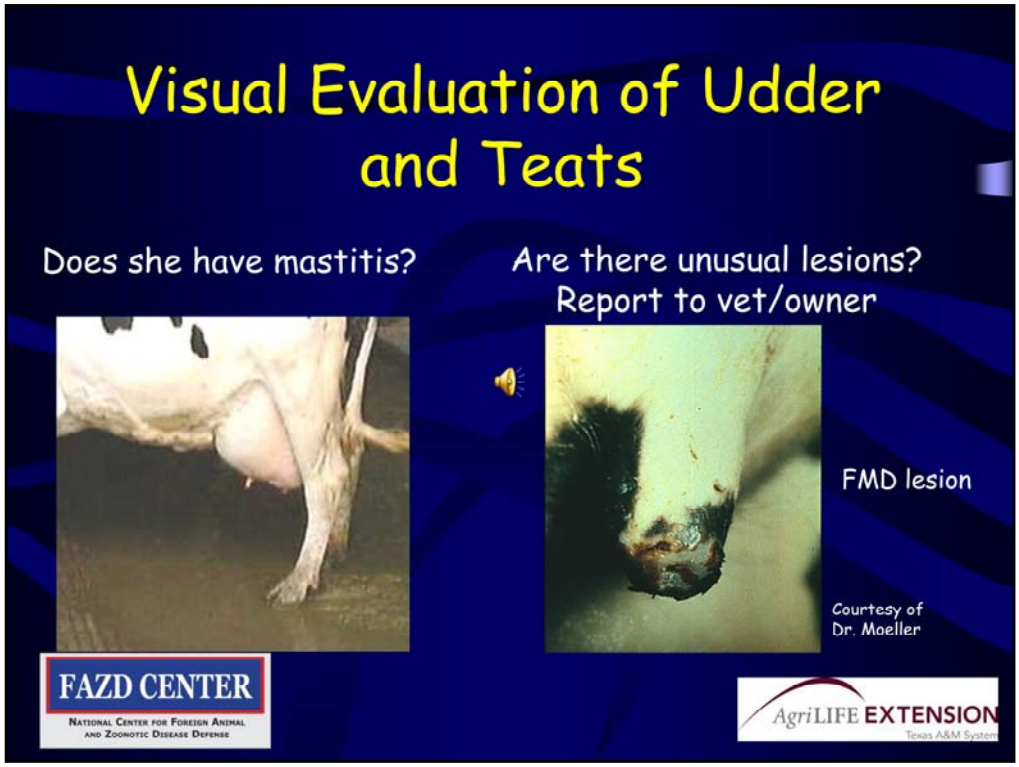
When checking a herd, you should always watch for symptoms beyond what you are used to seeing each day. Many dairy employees are immigrants and may travel out of the U.S. In addition there is more and more international travel by citizens from around the globe. This increases the potential to bring in foreign animal diseases. One example of a foreign animal disease we don't find in the U.S. is foot and mouth disease. Early detection of any disease, including foreign animal diseases, can prevent its spread and minimizes the impact on the herd.

Foot and Mouth Disease is an example of a disease we don't usually see in the U.S. Foot and Mouth Disease is caused by a virus. It impacts cows, sheep, pigs, deer and other cloven hoofed animals. It is a very contagious virus. Animals may have a fever and blister-like lesions on teats, tongue, lips, and between hooves. Milk production decreases dramatically in dairy cows.

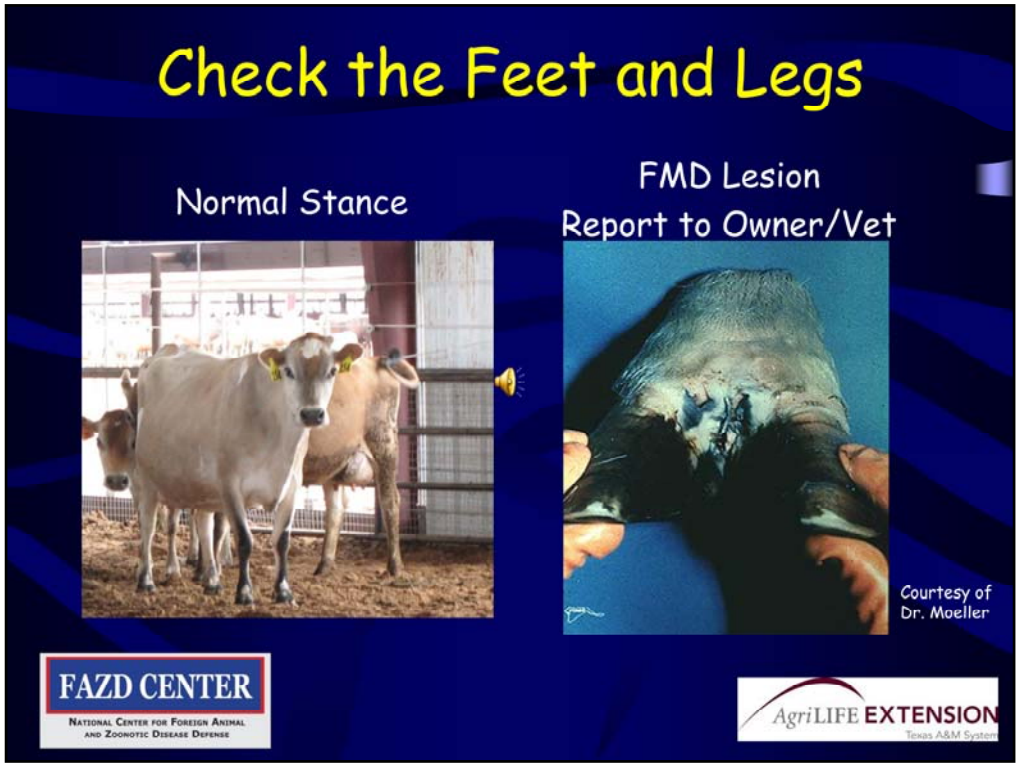
Foot and Mouth Disease was last reported in the United States in 1929, Canada in 1952 and Mexico in 1954. It is still found in South America and parts of Asia, Europe, and Africa. Everyone in agriculture as well as our border security must work together to prevent the reintroduction of Foot and Mouth Disease.

Although the United Kingdom had been free of FMD for a number of years, in 2001 a major outbreak occurred there. In all, 6 million animals were slaughtered at an estimated cost of 17 billion dollars before the country was declared FMD free again.

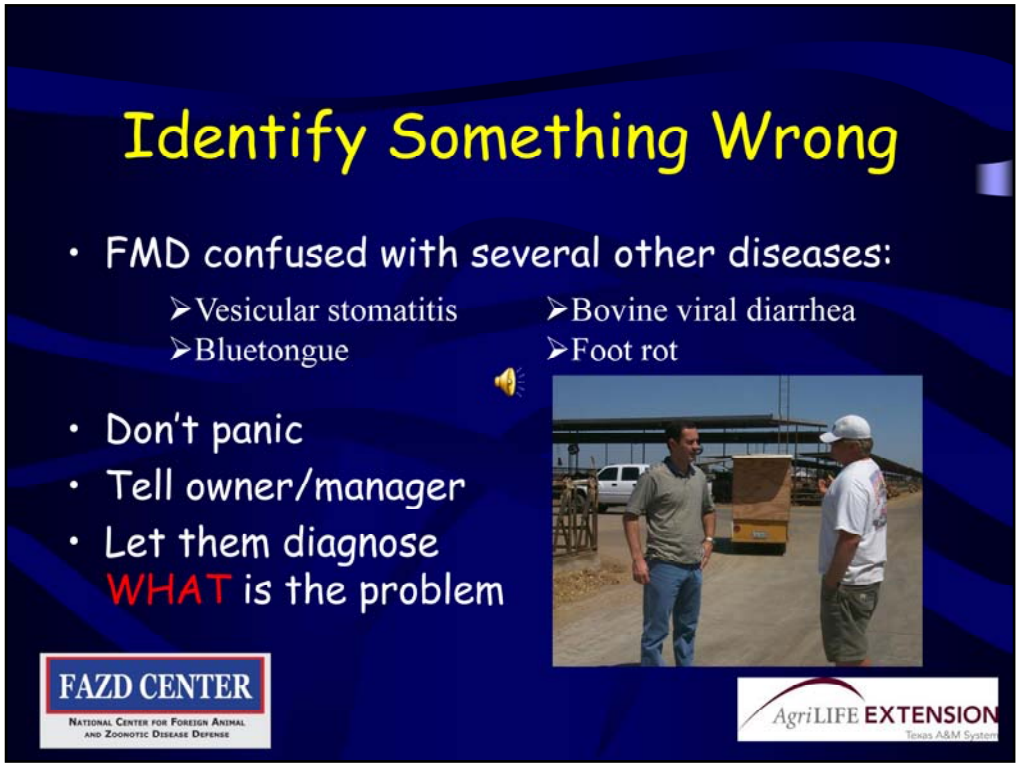
The tremendous losses resulted because the disease is very contagious so many animals were affected. Currently eradication programs are based on slaughter and destroying carcasses. In addition, the United Kingdom lost their markets both nationally, because people reduced meat consumption, and internationally because other countries banned importation of meat or milk from the United Kingdom to protect their livestock.



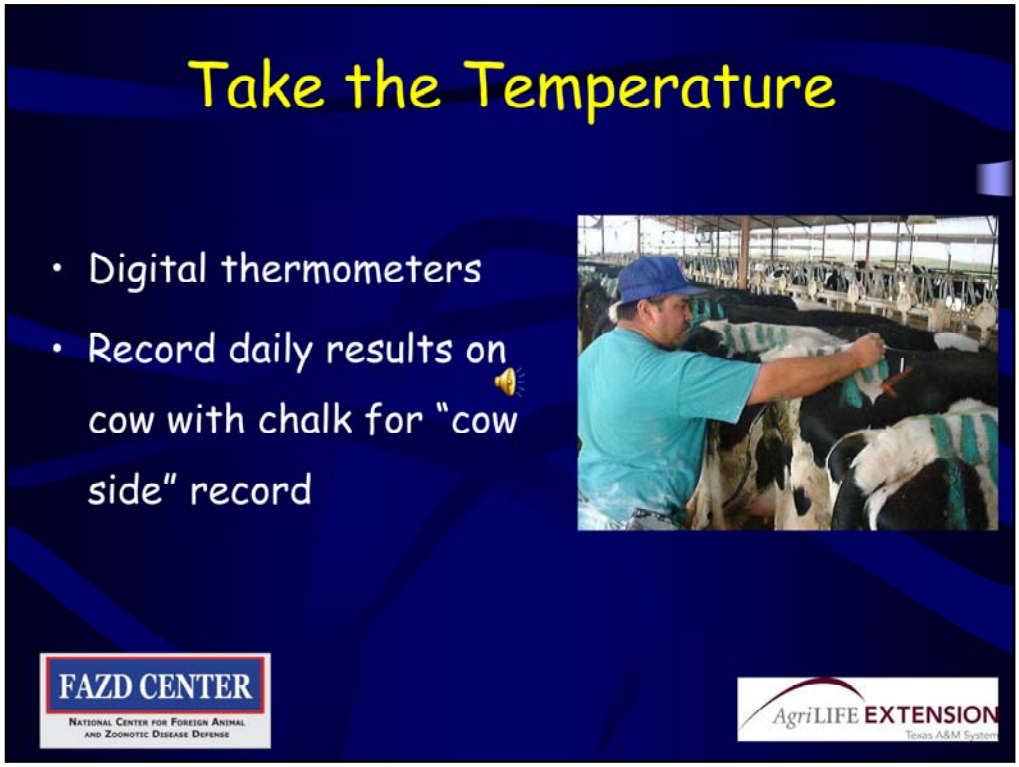
We must always look for signs of disease in our animals. When you are out in the herd visually evaluating an udder, consider whether the abnormal signs are mastitis, from trauma, or something you don't recognize. If there are unusual lesions on the teat, is it frost bite or something you don't recognize? Early identification is the key to preventing the spread of any disease, whether it is an unusual foreign animal disease such as foot and mouth disease or a more common disease like BVD. Whenever there are unusual symptoms report them to the owner, manager, or veterinarian.



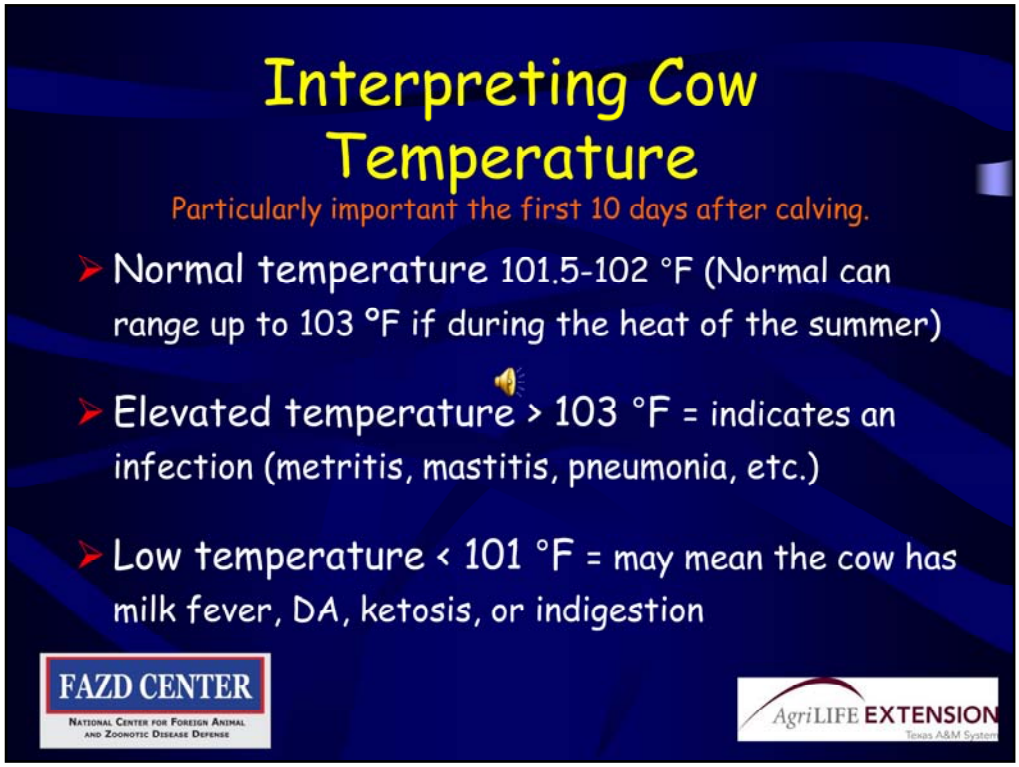
Whether working with the herd in the parlor or in pens, check the feet and legs. Are the cows walking and standing normally or have a number of cows gotten “lame” and you see some lesions between the toes. Whenever you see something you don’t recognize or have a lot of animals come down with something at once, report it at once to the farm manager, owner, or veterinarian.



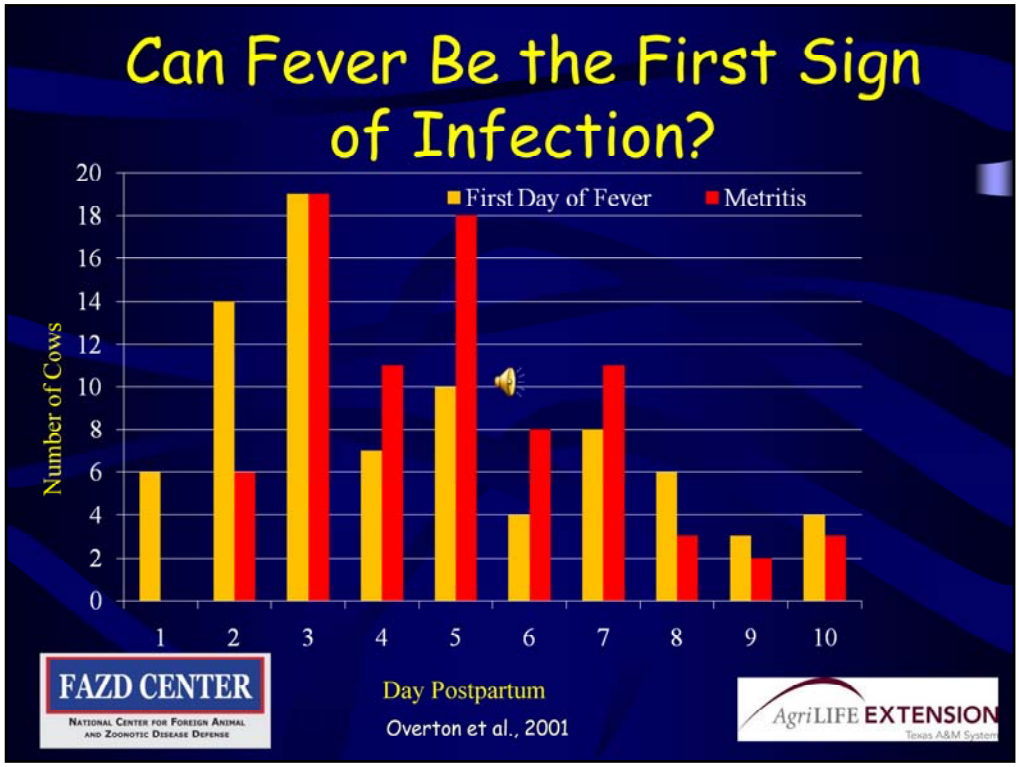
Foot and Mouth Disease can be confused with other diseases that we do have in this country such as vesicular stomatitis, bovine viral diarrhea, foot rot or blue tongue. Do NOT panic if you don't recognize something, tell the owner, manager, or veterinarian so they can diagnose the problem. Again, early identification is the key to treating and preventing the spread of any disease.



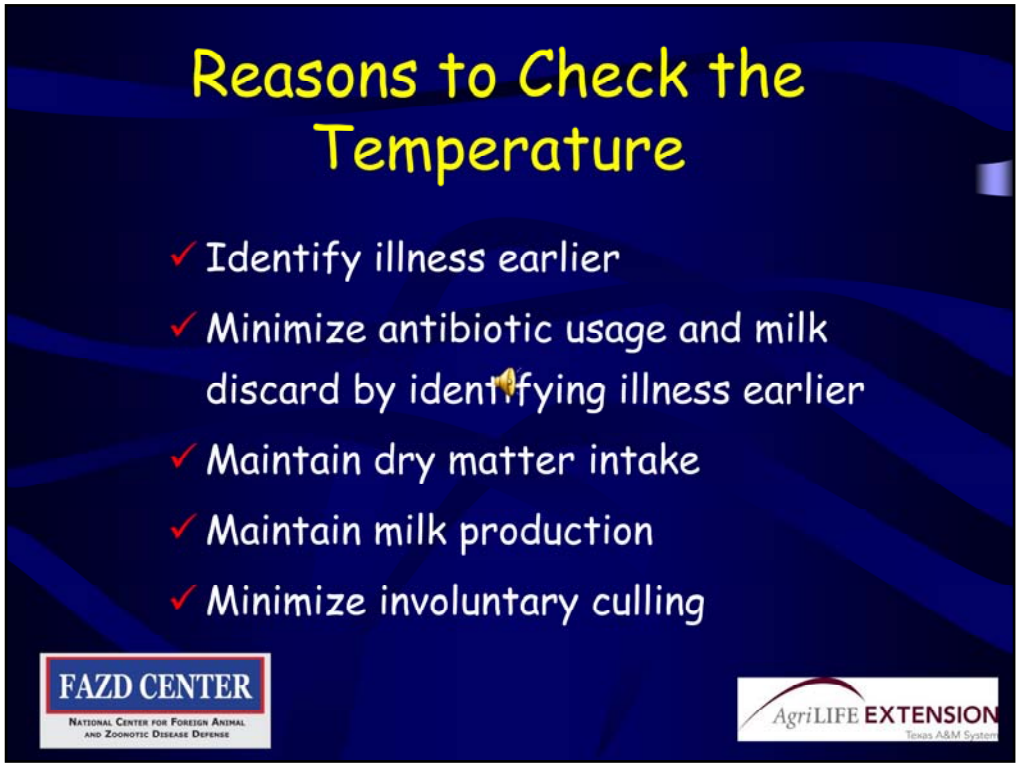
Digital thermometers provide rapid readings. Some herds develop a method for recording daily results of temperature readings and treatments directly on the cow between the hooks and pins. There may be different colors for normal and high, as well as a means to indicate treatment. These "cow side" records supplement the written record. Keeping a written record is also important so proper meat and milk withdrawal times can be followed. In addition, written records can be used to identify whether treatments are working.



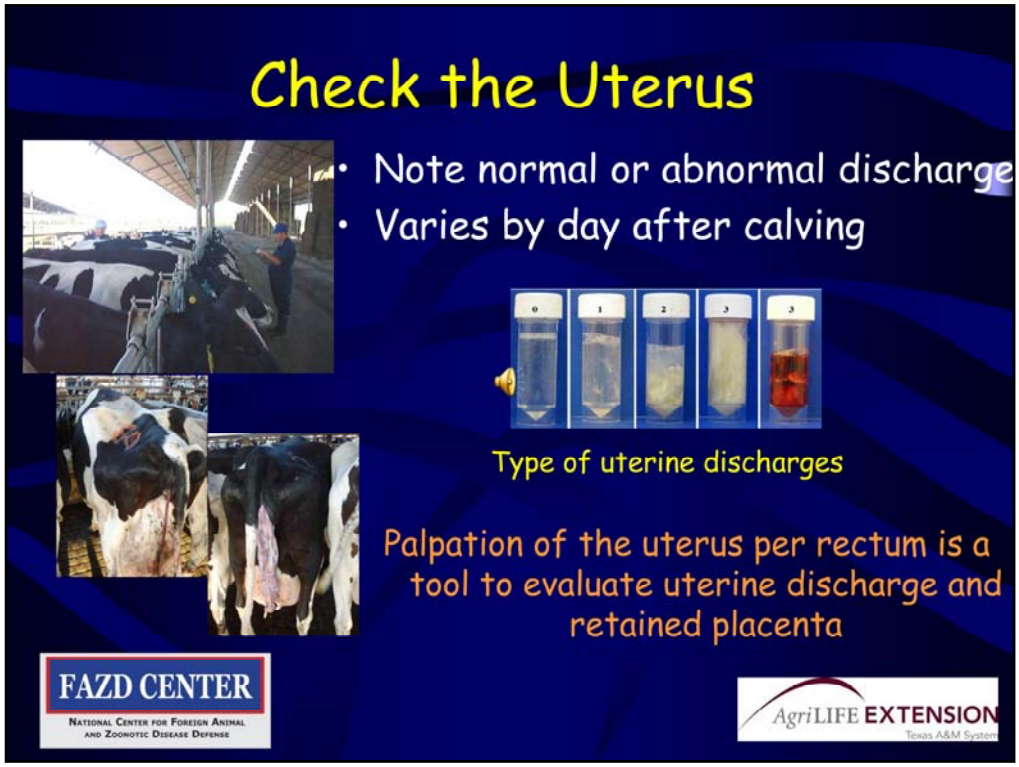
In most herds, body temperatures between 101.5 and 102 °F are considered normal. Temperatures less than 101 °F are too low and over 103 °F are too high. These values may be adjusted in consultation with the herd owner and veterinarian for particular conditions, such as summer heat stress. The first 10 days after calving is particularly critical. Frequently, temperatures are taken daily for this group of animals.



Temperature increases can be the first sign of illness such as metritis, mastitis, or pneumonia. Cows with milk fever, DA, ketosis, or indigestion may have abnormally low temperatures. It is important to continue monitoring cows for 10 days after calving. Frequently fever is the first sign of an illness. Temperature frequently increases 12-24 hours before other symptoms of a disease such as metritis are observed.

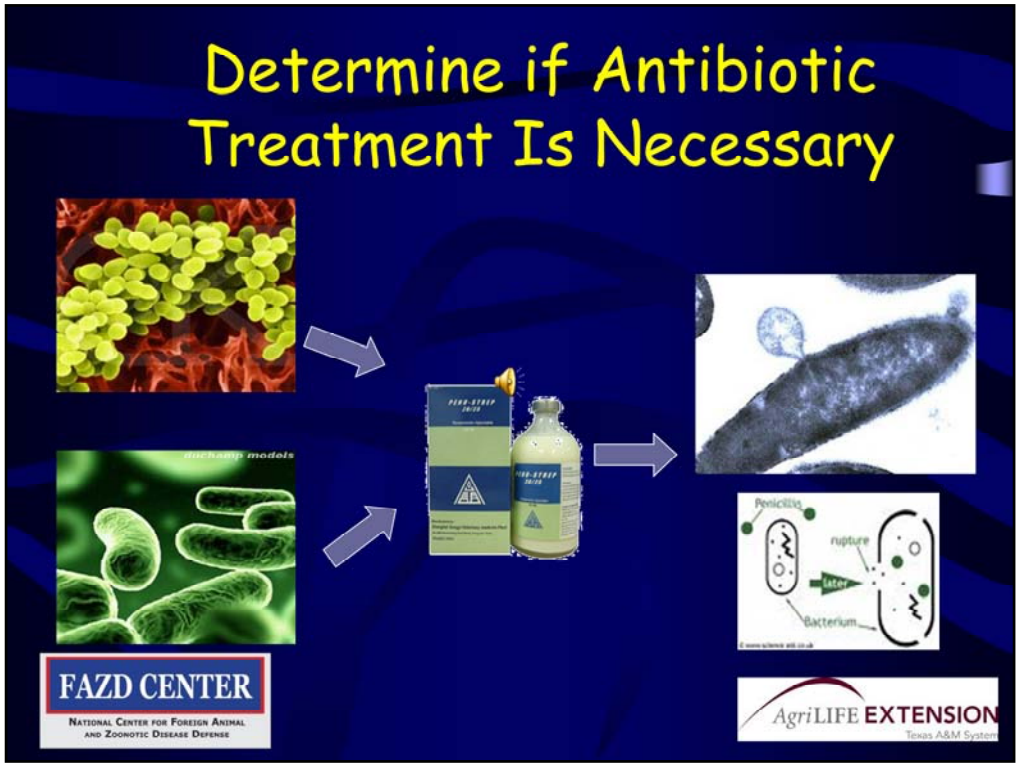


There are many reasons to check the temperature of a cow. First we may be able to identify illness 12-24 hours earlier. Early diagnosis and treatment can reduce the amount of treatment required, minimizing antibiotic use and milk discard. Early treatment can help keep the animal eating if it prevents her from getting as sick. By maintaining feed intake, the cow is more likely to continue producing more milk. Early treatment may also result in less involuntary culling by improving treatment success.

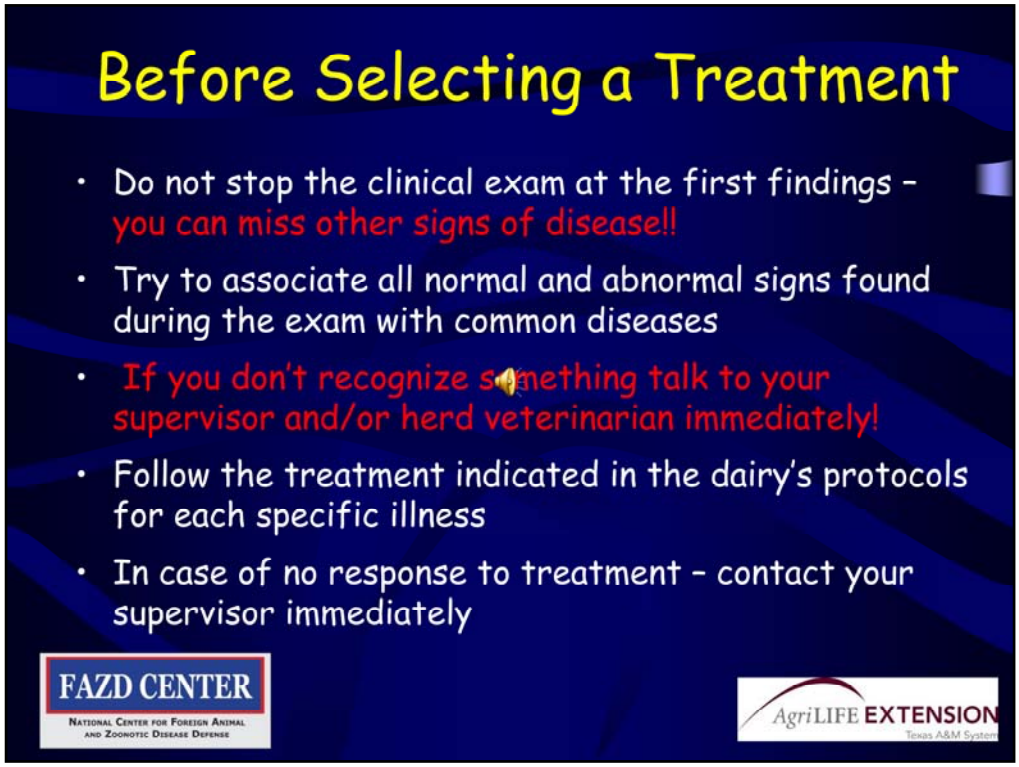


Particularly for fresh cows, check to see if there are visible signs of discharge. Some discharge, called lochia, is common immediately after calving. Clear mucus is what is desirable. A cloudy mucus is an abnormal discharge and may require further action. When palpating the uterus through the rectum, observe the discharge color and odor as an aid in determining whether a cow has metritis. Investigate the cause of any foul smelling discharge which may indicate a problem. Follow standard protocols for cows with abnormal discharge.

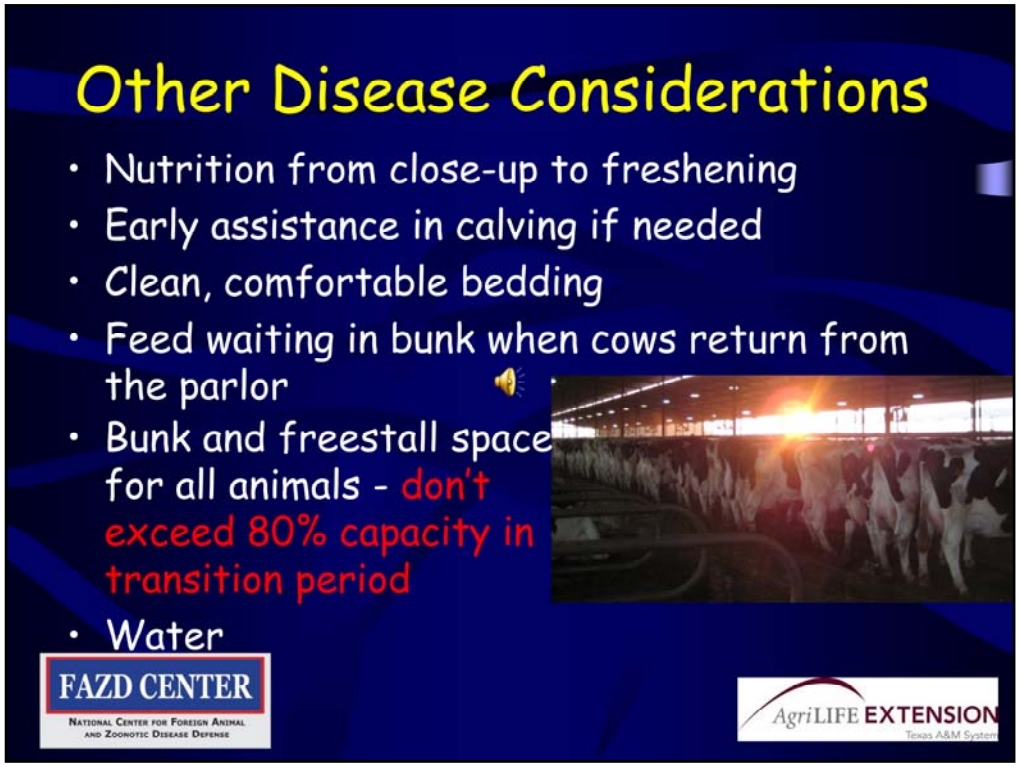
Record the disease diagnosis and treatment for each cow. At a minimum these records should include the date, cow identification, symptoms, diagnosis, treatment and withdrawal times for meat and milk. Follow set protocols for treatment developed with the herd veterinarian.



If antibiotics are necessary to treat a bacterial infection, follow withdrawal times for both milk and meat.



Before selecting a treatment complete all steps of the exam. Do not stop the clinical exam at the first findings since you can miss other signs of the disease. Consider all of the normal and abnormal signs found during the exam and compare them to what you know about the symptoms of common diseases. IF YOU DON'T RECOGNIZE SOMETHING, TALK TO YOUR SUPERVISOR AND OR HERD VETERINARIAN IMMEDIATELY. Follow the treatment indicated in the dairy's protocols for each specific illness. If a cow doesn't respond to the treatment – again contact your supervisor immediately.



Keeping cows healthy goes beyond routine physical exams. Proper nutrition throughout the animal's life is needed to maintain her immune system. Nutrition from the close-up period immediately before calving through early lactation is particularly important. Providing early assistance in calving, if needed, is critical. Also providing a clean, comfortable environment helps minimize disease. Keeping cows standing for at least 30 minutes after milking by providing fresh feed can reduce mastitis by allowing time for the teat sphincter to close. Routine evaluation of the cows in a herd with the basic physical exam helps identify sick animals early so that they can be treated. When treatment is needed, follow herd specific protocols and adhere to the label for meat and milk withdrawal periods.

Abnormal symptoms, which could indicate a new disease in the herd, should be reported to the herd owner, veterinarian, or manager immediately. These new diseases could be a foreign or emerging disease. Rapid identification is the key to preventing spread of these diseases.

Completing the basic physical exam is one step in keeping cows healthy so that they can provide milk that is highly nutritious and safe so the consumer is protected against food borne diseases.

This project was a collaborative effort of Texas AgriLife Extension Service, New Mexico State University and the University of Idaho. Funding was provided by the National Center for Foreign Animal and Zoonotic Disease Defense Center. The entities involved in the development of this material do not support one product over another and any mention herein is meant as an example, not an endorsement.