As regards cattle, preventive medicine programs are called "herd health programs." Preventive medicine can include vaccinations, control of parasites, reproductive programs, nutritional programs, and mastitis control.

General guidelines for preventive medicine, or herd health programs, can easily be formulated but each farm needs to be considered individually when formulating an exact herd health program. The program should be formulated by a cooperative group that includes the owner, veterinarian, extension experts, and any other consultants necessary to aid with specific problem areas.

The following information will present general guidelines for specific herd health programs but should not be interpreted as the "only way" to implement preventive measures.

**Vaccines**

Vaccination for respiratory diseases in northern climates is done usually in early fall to provide maximum protection during the fall and winter pneumonia season.

In beef cattle, regardless of geographic locality, respiratory disease vaccines are generally employed at least 2 weeks before shipment of animals destined for feedlots. This allows the cattle to develop protective antibodies prior to being shipped to a new location where they likely will encounter other cattle assembled from many farms.

The common respiratory diseases for which vaccines are available include IBR,
PI3, Hemophilus, and Pasteurella. Close attention should be paid to label directions and veterinary advice to ensure proper vaccination.

Vaccination against *Leptospira sp.* usually is performed once or twice yearly depending on the relative risk of this abortion-causing disease in certain geographic areas. In beef cattle and bull-bred dairy cattle herds, vaccination against Vibriosis may be necessary on a yearly basis to avoid reproductive failure due to this disease.

Vaccination against BVD is usually done in beef cattle and often done in dairy cattle that reside in infected herds or geographic areas with a high incidence of BVD. Vaccines for BVD may or may not be combined with vaccines against respiratory disease. Usually it is recommended that this vaccination be repeated yearly. The type of BVD vaccine to be used in a herd should be discussed with a veterinarian.

Vaccinations against blackleg, malignant edema, and tetanus are indicated for calves and young stock in some geographic areas. These diseases are caused by *Clostridium sp.* bacteria which are more common in some parts of the United States than in others. Veterinarians and agricultural extension agents can be consulted regarding the value of these vaccines within a given locale.

Vaccines against calf diarrhea (calf scours) were discussed previously in the chapter on *Digestive Diseases* and they are indicated primarily for herds with this specific problem.

Calfhood vaccination against brucellosis (Bang's disease) is indicated for female calves in almost all areas. The heifer calves currently are vaccinated with a reduced dosage of Strain 19 type *Brucella* between 4 and 8 months of age. This age range must be strictly adhered to in order to avoid problems with blood testing at a later age. Bull calves must not be vaccinated. In some endemic areas where test and slaughter eradication of Bang's disease has been difficult, adult cows have been vaccinated—but generally this is not indicated.

Any discussion of brucellosis and vaccination techniques for this disease must include veterinary input.

**Parasite Treatments**

Wormers or anthelmintics, directed against endoparasites, coccidia, and lungworms should be used mainly in
calves, feeder calves, and young stock of both dairy and beef breeds. In addition, where management conditions allow heavy exposure to parasites, adult cow treatment may be indicated.

Thiabendazole, levamisol, coumaphos, amprolium, monensin, and ivermectin are drugs used for various parasites. The exact choice of drug should be discussed with a veterinarian and will require consideration of age, sex, breed, and intended use of the animals. Management procedures that discourage exposure to parasites should be employed as well, and these include pasture rotation, removal of manure, and avoiding crowding where possible.

Ectoparasites such as lice, ticks, mange mites, and flies are treated by an assortment of sprays, pour-ons, dips, dust bags, pesticide additives in feeds that kill fly larvae, and ear tags. Once again the exact needs will vary from herd to herd.

Routine reproductive examinations at regular intervals are indicated in all herds to insure adequate reproductive performance. Most dairy herds have their veterinarian perform monthly reproductive checks to detect heats, determine pregnancy status, and treat problem cows that have uterine infections, fail to show heat, or have cystic ovaries. Beef herds have regular pregnancy checks to confirm pregnancies or determine open cows that might require treatment or culling.

Without a regular reproductive program, problems such as a prolonged calving interval or low calving percentage can easily develop. These problems are disastrous economically in either dairy or beef cattle systems.

**Nutrition.** Due to the tremendous diversity in feedstuffs and feeding programs in today’s cattle industry, a great deal of attention should be directed to nutritional principles such as ration balancing and ration formulation for intended use of cattle on each farm. Energy, protein, mineral content and fiber all need to be considered.

A management team consisting of owner, veterinarian, and extension consultants may be best able to handle this problem. Maximum growth or production to increase profits is the desired result of any nutritional program.

**Mastitis.** Participation in a mastitis control program will often pay large dividends for a dairy farmer. Culturing
quarters, performing regular somatic cell counts or white cell analyses, checking milking equipment regularly, teat dipping, dry cow therapy, and maintaining a clean environment for the cows are all essentials for the control of mastitis.

The veterinarian, dairyman, and State mastitis control experts are integral members of the management team when attempting to control mastitis.

Ideally, cows should be calved in a clean maternity area that can be disinfected after each use. If this is not possible, the cleanest area available should be used as a maternity area and should be well-bedded and free of mud and manure.

Newborn calves should have their navels dipped immediately with 2 percent iodine to discourage bacterial invasion of the navel. Colostrum should be provided within the first few hours after birth, and the calf should ingest colostrum equivalent to at least 10 percent of its body weight within the first 24 hours of life.

The calf’s environment should be kept as clean as practically possible for the first few days of life to minimize exposure to pathogenic organisms.

**Antibiotics in Feed**

Feed additives or antibiotics that promote growth and maximize profits are used primarily in beef cattle such as feeder calves and in feedlot operations.

These products work several ways to maintain a healthy flora of organisms in the gastrointestinal tract and thereby allow maximum conversion of feed to weight gain. The products also may prevent low grade bacterial infections such as liver abscesses (sawdust livers) and rumenitis that deter growth or result in condemnation of various organs at slaughter.

Use of feed additives and antibiotics has been watched closely by regulatory agencies to ensure wholesome meat supplies, and the current additives are deemed safe products. These additives are tremendously important in maximizing efficient growth in beef animals. Without them, commercial beef operations would be unable to raise cattle without increasing the price of beef significantly.