Introduction
Expanding your dairy business can improve both your profits and your lifestyle. It could also put you out of business and ruin your personal relationships. The objectives of this module are to help you consider various factors that may influence the success of your business expansion, and to formulate an expansion plan most appropriate for your goals and resources.

Biological risks encountered by an expanding dairy business include both infectious diseases (Johne’s, BVD, pneumonia, mastitis, foot warts) and non-infectious problems (adaptations to new facilities and feeds). Your management team, along with input from a NYSCHAP certified or state veterinarian, can devise a plan within the constraints of your facilities, timeline, and finances that will still help to minimize the biological risks associated with a livestock expansion.

Financial and management considerations
Are you really ready to expand? Are your financial, management, land, and water resources adequately developed and up to the strain of increased cow numbers? Review the Farm Business Performance Analysis Worksheet with your dairy’s advisory team. This worksheet is available as a separate paper from your NYSCHAP certified planner or your state veterinarian. Are there areas of your business that should be improved prior to the expansion that will make it more successful or prevent a disaster?

Most dairy owners are surprised how much their roles change as their business expands. As cow numbers increase owners spend more time managing people, and less directly working with the cows. Quality labor is one of the keys to success in expanding businesses. Many dairy operators have benefited from training in human resource management. Extension educators, farm business management consultants, and others can help you find materials and courses that will fit your needs and schedule.

More animal units (one animal unit = 1000 lb. BW) generally mean a greater land base will be needed to spread out the manure. “Acceptable” animal units per acre range from 1 to 2 depending on crop rotation, soil type, and manure treatment/export options. Review the anticipated expansion and nutrient management plan with your crop advisor early in the planning process.

Minimizing your risk
Many dairies have broken all the rules when they expanded their herds, and still had very few problems. Others broke only one or a few, and lost the majority of their new additions and in some cases many of the original herd. How much risk can you financially tolerate? The less financial flexibility in your business, the more that you must adhere to a risk management plan. Developing a sound expansion plan, from facility design to calving of herd additions, is really the same as developing a sound risk management plan. Time spent on designing and implementing this plan is time very profitably spent.
Source and type of herd additions

The safest approach to expanding your herd is doing so with your own animals. This can be accomplished by minimizing calf losses, reducing age at first calving, increasing aggressiveness of the breeding program, and decreasing your involuntary culling rate. For example, a herd with a 20% culling rate and 22 month age at first calving, with normal reproductive performance and calf losses, only needs 40 total heifers to maintain herd size (Table 1). Beyond that, the herd should be naturally expanding. If it isn’t, determine why and fix the problem before the expansion starts.

Table 1. The total number of heifers needed to maintain herd size in a 100 cow herd with a 10% heifer loss and varying Cull Rate and Age at First Calving.

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Many business owners do not want to wait the extra time it takes to expand from within, and they must buy additional animals. The next safest approach would be to buy heifers from a local dairy that has the ability to expand from within, but not the desire. When visiting the dairy that is selling animals, pay particular attention to the management of newborn calves. Does it look like Johne’s disease has much opportunity to infect young calves? Request permission from the owner to speak with the herd veterinarian. Ask both the owner and the herd veterinarian if there is any known or suspected history of diseases (contagious mastitis organisms, Johne’s, Salmonella) in the herd. If there have been some known or suspected disease problems, ask how management practices were changed to address the problem, and when these changes occurred.

A heifer grower with a stringent biosecurity plan may also be a relatively safe replacement source. The level of risk in this situation will vary, mainly due to variation in how calves were managed in the maternity area and prior to delivery to the heifer grower.

Purchasing herd additions from cattle buyers increases risk because the number of herds represented increases as well. Finally, the riskiest approach is to simply purchase animals at an auction yard. The odds of disease exposure are high, while the opportunities for disease prevention (e.g. vaccinations) are low.

Inspect potential replacements for indications of their general health, body condition score, foot and leg health, and udder appearance. Consider pregnancy checking, measuring heights and weights, and administering vaccines and deworming/delicating medications if possible and necessary. New additions need to become accustomed to their new housing, herdmates, feeds, feedbunks, and a host of other stressful encounters. Providing time...
for this prior to calving helps to reduce overall stress levels at calving. Short-bred (4-5 months) heifers present much less risk than springing heifers. Heifers generally present less risk than cows, because there is time for adaptation prior to calving, and they are less likely to be harboring contagious mastitis organisms. Conversely, lactating cows reduce potential strain on the calving facilities, and there is one less calving to expose the cow and herdsmen to.

Vaccination Programs
Most expansions that experience a high mortality rate have a deficient vaccination program for either the resident herd or the new additions. It takes at least 7-14 days before an animal fully responds to a vaccine. Ideally, new additions would be vaccinated approximately 4-6 and 2-3 weeks before transport. Do not vaccinate for approximately 4-7 days post-transport, nor within 7 days of calving. At the minimum, animals should be vaccinated against IBR, BVD, BRSV, and PI3. Additional vaccines to consider using include those providing protection against Gram-negative endotoxins, Leptospirosis, Pasteurella, Clostridium, and Hemophilus.

It is equally important that the resident herd is properly vaccinated. Remember when using killed vaccines animals must receive two doses approximately 2-4 weeks apart when they are initially vaccinated with that vaccine. Consider boosting resident animals prior to the entry of new additions. Be sure to closely follow label directions, and to properly store and administer all vaccines. Vaccine administered to cattle stressed by poor nutrition or high environmental temperatures will not develop adequate protection. Review the associated checklist on the proper use of vaccines. Develop and review your vaccination program with your veterinarian and the people responsible for administering it.

Testing and Herd History
Introducing animals allows for the introduction of disease into your dairy. Infectious mastitis organisms, BVD, Johne’s disease, and Bovine Leukosis Virus are all infectious organisms for which tests exist. Consult with your veterinarian about which tests you should run on your cattle and the new additions. Be forewarned that more than two-thirds of herds selling out in New York in 2000 that were surveyed by Quality Milk Promotion Services had either Strepptococcus agalactiae or Mycoplasma – two highly contagious organisms. These results are consistent with recent surveys done in other parts of the country. The bulk tank of a sale herd would ideally be cultured three times over several days. Somatic cell counts should also be run on these samples. At the bare minimum, the tank should be cultured once. All cows and heifers entering your herd must be cultured upon freshening. Be certain to request both the standard and optional Mycoplasma culture. The costs for these tests are trivial compared to either the cost of eradicating a bigger problem from your herd, or living with the disease. Animals should be kept separate from the main herd, or at least milked with a separate unit, until the culture results are obtained.

Animals infected with BVD frequently have reproductive problems, such as abortions or early embryonic death. The disease also causes immunosuppression, which increases the risk of mastitis and respiratory infections. The test for BVD that should be used is one designed to detect animals persistently infected (PI) with the virus. These animals should be immediately sold for beef. Although the BVD PI test will detect infections in the dam, it will not detect an infected fetus. Consequently, calves born from herd additions need to be tested for their PI status. Until their test status is determined, they should be kept separate from pregnant cows and heifers. The BVD bulk tank test can also be used to evaluate the PI status of lactating cows. The test has the capability of detecting one PI animal out of...
of approximately 400 cows. The BVD bulk tank test does not, of course, provide any information regarding the PI status of nonlactating animals or fetuses.

Johne’s disease causes a chronic malabsorptive disease of the small intestine. The Johne’s status of an animal can be evaluated with either a blood ELISA test that measures antibodies to Mycobacterium, or with a fecal culture. Unfortunately, both tests are inaccurate for detection of early stages of infection in animals less than 2 years old. These tests work best at the herd level rather than at the individual cow level unless an animal is showing signs of disease, such as wasting or persistent diarrhea. The fecal culture is approximately 2-3 times more sensitive than ELISA for detecting infection in cows showing no signs of infection; however, it takes at least two and up to seven weeks before results are available from the fecal culture. Due to these testing problems, the best approach is to assume that replacements are positive. If testing is done, it would be best to test the entire source herd or 10% with a minimum of 30 cows selected from cows in 2nd lactation or greater. Work with your NYSCHAP team to develop your herd’s control program for Johne’s disease.

Bovine Leukosis Virus is the most common cause of cancer in cattle; it also is the leading reason for carcass condemnation at slaughter. Additionally, many countries require that animals imported into their country be BLV negative. A blood test is used to determine an animal’s Leukosis status.

**Transport**

Transportation, including loading and unloading, can affect animal stress level, disease exposure, and injury. Stress levels increase with the distance transported; this can lead to immune suppression and increased disease risk. Transport vehicles can harbor disease organisms. Ideally, transportation time would be short. At the least, animals must be watered frequently and kept cool. Livestock trucks should be thoroughly cleaned, disinfected, and well-bedded to avoid introducing diseases from manure on the truck and causing animal injuries. This is routinely done in other livestock industries.

**Farm arrival**

Animals should arrive at a relatively remote site on the dairy. They should be segregated for 2-3 weeks following arrival. If an acute disease outbreak is going to occur, it will most likely happen within this time frame. Segregation facilities should be comfortable and appropriately ventilated. Outdoor lots are sufficient for many months of the year. However, catch and restraint facilities will also need to be adequate or constructed before arrival. Segregation also provides time for any additional on-farm testing (mastitis cultures), booster vaccinations (if needed), and additional foot-treatments (foot baths). It is also helpful during this time period to feed a diet containing more effective fiber than the level typical of rations fed to high-producing cows. Animals with healthy rumens are less likely to get sick with many of the infectious diseases. Some added hay or straw, or possibly haylage or corn silage, can accomplish this objective. Consider what forages and rations have been fed to the new animals, and what feed will be given to them once they fully enter the herd. Strive for a gradual transition to the final ration during the segregation period.

Many fresh cow health problems result from overcrowding in the prefresh and fresh cow groups. Don’t forget to expand or at least build flexibility into the facilities for these groups of animals as well as for the lactating cows. Strive to have a minimum of at least 100 ft² of resting space if calving on a group pack, and at least 80 ft² of group pack space if animals are going to be moved to a boxstall to calve. Remember that a large number of cows freshening at the same time will begin a freshening peak approximately every 13 months. Ideally, this
can be coordinated to occur at a low stress time of the year. At the least, management will need to gear-up and become innovative in developing ways to properly handle the freshening bulge. Consider also that additional calf and heifer space will soon be needed.

**Conclusion**
Carefully review your expansion plans with your dairy’s team of NYSCHAP advisors to ensure that the plan integrates with the Core herd health plan. A sound expansion plan that is correctly followed can vastly improve the success of your expansion and future.

**How to Enroll in NYSCHAP**
To enroll in NYSCHAP, contact your herd veterinarian and ask him or her to make arrangements with the regional field veterinarian from the NYS Department of Agriculture and Markets. For additional information, contact one of the sources below:

Enrolling or contacting a state field veterinarian: NYS Division of Animal Industry, 518-457-3502

For Diagnostic testing services or information: NYS Diagnostic Laboratory – at Cornell University, 607 – 253-3900 or 607-253-3931.

For Mastitis testing or information :Quality Milk Promotion Services, 607-255-8202
Additional NYSCHAP Information:
NYSCHAP Coordinator, 607-255-8202

Visit the NYSCHAP web site at http://nyschap.vet.cornell.edu.