

2006 N.Y. State Senior Dairy Quiz Bowl Contest

Senior Packet 1, Phase A

- 1) What is the most important factor in stimulating how well a calf's immune system can fight off diseases providing the dry cows have a good vaccination program?
 - Getting 1 gallon of good colostrum into a calf within the first six hours of birth (DHM, 6/05, pg. 15)

- 2) In New York, what governmental entity would you contact to become registered in the national animal identification system?
 - New York State Agriculture and Markets (HD, 12/05, pg. 814)

- 3) What metabolic disorder has an increased risk with high potassium forage diets?
 - Milk Fever

- 4) When a cow's dry period is shortened to 40 days, does the colostrum quality increase, decrease or stay the same?
 - Stay the same (NEDB, 12/05, pg. 24)

Senior Packet 1, Phase B

- 1) What are the 3 phases of the National Identification System?
 - Premise identification
 - Animal identification
 - Animal tracking (NEDB, 9/05, pg. 21)

- 2) Name the 4 steps of rumination
 - Regurgitation
 - Remastication
 - Swallowing
 - Eructation

- 3) When trying to determine which milk replacer product to use, what are 4 items you might compare?
 - Crude protein
 - Fat content
 - Ingredients
 - Feeding instructions
 - Cost
 - Availability (HD, 2/06)

- 4) Name 3 management practices that can be used on farms that consistently show results in lower bulk tank somatic cell counts.
 - Clean cows & waterers
 - Removal of udder hair/ synging udders
 - Clean free stalls/tie stall/ cow beds
 - Clean calving area
 - Clean milking equipment/parlors
 - Regular maintenance of milking systems
 - Post milking teat dip
 - Good dry cow program
 - Proper milking procedures
 - Wearing milker gloves

Senior Packet 1, Phase C

- 1) How many pounds per day is the average daily gain for heifers from 2 months to puberty?
 - 1.75 lbs. (HD, 1/06, 2006)
- 2) Cooperatives Working together (CWT) is a dairy farmer funded program with what main purpose?
 - Stabilizing milk prices (HD, pg. 604)
- 3) Which nutrient is lost the most when hay is sun bleached?
 - Vitamins
- 4) In reproduction, what time frame does day's open refer to?
 - The number of days from calving to conception
- 5) Which acid is most prevalent in properly fermented silage?
 - Lactic acid (HD, pg. 220)
- 6) What is the largest cost in milk production?
 - Feed (2006 Virginia 4-H DQBM)
- 7) What do you call the muscular movement that passes food down the esophagus?
 - Peristalsis
- 8) Protein that escapes rumen fermentation is called what?
 - Undegraded or bypass protein
- 9) According to the Northeast Dairy Business Magazine, after being moved to a new pen, about how long does it take for a cow to adjust to the social situation?
 - 3-days
- 10) On the average, cows have a flight zone of how many feet?
 - 5 feet

- 11) What is the best way to monitor for mycoplasma bovis mastitis on your farm?
- Take a bulk tank sample and culture for it (DHM, 3/05, pg. 44-46)
- 12) What state has had the largest percent increase in milk production?
- Idaho (DHM, 7/05, pg. 32)
- 13) What would you use copper sulfate for on a farm?
- For use in a foot bath
- 14) Name the potentially deadly manure gas characterized by a rotten egg smell?
- Hydrogen sulfide
- 15) In the Federal Milk Marketing Order (FMMO) system, milk and milk products are divided into how many classes?
- 4 classes
- 16) When working in the area of financial management, what is the statement used to measure the profitability of the business by measuring all sales receipts and expenses used?
- Income statement (2006 4-5 DB business mgt. Materials)
- 17) Why is it a good management practice to rotate between different herbicides used on your fields?
- To reduce weed resistance
- 18) If your cows are showing low butterfat test, it may be an indicator of what deficiency in the cow's diet?
- Effective Fiber
- 19) A combined accessory gland of fluid and sperm are called what?
- Semen
- 20) What disease should you vaccinate for when you dock tails?
- Tetanus

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Senior Packet 2, Phase A

- 1) While air emission laws do not regulate odor, excessive levels of dust and certain manure gases are subject to federal air laws. What do the initials CAA stands for in reference to this law?
 - Clean Air Act

- 2) By feeding less of this type of feed nutrient, ammonia emissions are reduced. What is the feed nutrient?
 - Protein (HD, Sept/Oct 05, pg. 696)

- 3) Mechanical manure solids separators come in several types. Most of them fall into 2 types of separators. What is the name of one of the 2 most common types?
 - Static Screen or Screw press (NEDB, 5/05, pg.23)

- 4) The Concentrated Animal Feeding Operation, CAFO, is regulated by what organization in New York State?
 - N. Y. State DEC (Department of Environmental Conservation) (2006 4-H DB Business Mgt. Materials)

Senior Packet 2, Phase B

- 1) List 5 important qualities to look for in potential employees?
 - Positive attitude
 - Willingness to learn
 - A beginner's mind
 - Coachable
 - Motivated
 - Willingness to work on a team
 - Get along well with others
 - Open to change
 - Leadership skills
 - Cleanliness or appearance (DHM, 10/05)

- 2) Name 3 factors that can affect a herd's Internal Herd Growth.
 - Cull rate
 - Death rate
 - Calf mortality rate
 - Age at first calving
 - Calving interval
 - Reproduction
 - Calf & heifer raising practices
 - Sexed semen vs conventional semen (NEDB, 12/05, pg. 63)

- 3) Name 2 changes in milk packaging that has helped increase milk sales.
 - Distinctive packaging (example; hour glass shape)
 - Resealable containers
 - Colorful labeling
 - Plastic containers
 - Packaging in vending machines (DHM, 3/05, pg. 12)

- 4) Which two elements found in fertilizers and manure are responsible for surface and ground water contamination?
 - Nitrogen and phosphorus (2006 Virginia 4-H DQB materials)

Senior Packet 2, Phase C

- 1) The release of which hormone can block a cow's milk let down?
 - Adrenaline (HD, pg. 317)
- 2) Beef producers pay a \$1 per head check off for each animal sold at market. How much do dairy producers pay when sending cull cows to slaughter?
 - \$1.00
- 3) What is the primary benefit from crossbreeding two different breeds of dairy cattle?
 - Hybrid vigor or heterosis (DHM, 3/05, pg. 54)
- 4) The CME has daily block cheese prices. What does CME stand for?
 - Chicago Mercantile Exchange (DHM, 7/05, pg. 30)
- 5) The rumen biohydrogenation theory is used to explain what milk fat challenge?
 - Milk fat depression (NEDB, 12/05, pg. 58)
- 6) What is the estimated cost of a retained placenta?
 - \$285 (DHM, 11/05)
- 7) What can be used to treat Listeria in dairy cattle?
 - High doses of penicillin or oxytetracycline (HD, 9/05, pg. 646)
- 8) The term primiparous refers to what group of lactating cows?
 - First lactation cows
- 9) What organization publishes the Nutrients Requirement for Dairy Cattle, the guide for feeding dairy cattle?
 - National Research Council
- 10) There are several reasons for deductions in a farm's milk check. The cost to haul milk from the farm to the milk processing plant is called what?
 - Hauling charge (2006 4-H DB Business mgt. Materials)

- 11) What is the technical name for aspirin?
- Acetylsalicylic Acid
- 12) What is the genetic makeup of an individual referred to?
- Genotype
- 13) What is the major symptom of winter dysentery?
- Diarrhea
- 14) What is the process used to kill bacteria in milk?
- Pasteurization
- 15) When measuring a dairy farms competitiveness and business management, an important tool for evaluating the productivity of workers and cattle is measured by what?
- Pounds of milk sold per worker
- 16) When analyzing somatic cell counts and milk quality, a linear score below 4 is considered good. What Somatic cell count does a linear score of 4 correlate to?
- 200,000
- 17) What hormone keeps the uterus in perfect condition for the developing fetus?
- Progesterone
- 18) What is the name of the contractile tissue that forces milk out of the alveoli upon action of oxytocin?
- Myoepithelium (2006 Virginia Dairy Quiz Bowl Study Materials, pg. 13)
- 19) If you are utilizing the increase frequency of milking for your fresh cows, how long should you milk them 6x before dropping them back to 3x to see the full benefit?
- 42 days
- 20) What is the best measure of total fiber in a cow ration?
- NDF or neutral detergent fiber

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Senior Packet 3, Phase A

- 1) Rumensin was recently approved for lactating cows. Why would you feed rumensin?
 - To increase feed efficiency
- 2) The presynch and ovsynch breeding program refer to what type of breeding program?
 - Controlled or synchronized breeding programs (HD, pg. 22)
- 3) In talking about hot weather vaccination tips for calves; heat and direct sunlight will do what to modified live vaccines very rapidly?
 - Inactivate it (DHM, 9/05, pg. 27)
- 4) In a grazing-based dairy, describe the management practice of mob-feeding calves.
 - When calves are raised in a group in a pasture and are supplied milk in a group container that all the calves in that group have access to. (HD, 11/05, pg. 780)

Senior Packet 3, Phase B

- 1) Name 2 effects yeast additives in a cow's ration will have on the cow's rumen.
 - Improved dry matter and fiber digestion
 - Stabilizing rumen pH
 - Faster rate of fiber digestion (HD, 4/05, pg. 276)

- 2) List 4 examples of assets on a farm.
 - Cows
 - Land
 - Equipment
 - Tractors
 - Buildings
 - Cash
 - Feed
 - Lumber
 - Stocks and bonds
 - Co-op equity

- 3) Too much stress can limit calves' growth. What are 5 factors that can minimize stress at weaning?
 - Calves should be eating 2 lbs of starter a day
 - Offer plenty of fresh water
 - Move calves into small transition groups first
 - Wait at least one week after weaning before moving into group pen
 - Spread out stressful events like vaccinations, dehorning and changing housing. Vaccinating just prior to moving-vaccination should be done 10 days to 2 weeks prior to moving
 - Don't move calves in extremely cold or hot weather
 - Provide good ventilation
 - Keep on the same diet at least 1 week after a move
 - Group by size
 - Provide adequate bunk space and don't overcrowd
 - Rough handling of calves during the moving process (DHM, 10/05, pg. 30)

- 4) To improve overall farm security, list 3 things that can be done.
 - Limit entry to your farm to one route
 - Develop a visitor policy
 - Lock all tractors and equipment (DHM, 10/05)
 - Lock all perimeter gates, install and lock all perimeter gates
 - Have employees be aware of people and things happening around them

Senior Packet 3, Phase C

- 1) What is the main reason to add water to a TMR mix?
 - To prevent the cows from sorting the feed
- 2) What is inbreeding?
 - Mating of two animals that are related to each other
- 3) Pregnancy rate is a function of heat detection rate times what?
 - Conception rate (HD, 1/05, pg. 66)
- 4) What is the term used mostly in the dairy scientist world that describes cows that have calved more than once?
 - Multiparous
- 5) Most attention paid to DCAD has been focused on close-up cows management. What does DCAD stand for?
 - Dietary Cation-Anion Difference
- 6) The % return of equity measures what?
 - The rate of return the family made on their investment in the business
- 7) What acid is produced in the abomasum?
 - Hydrochloric acid
- 8) What genetic recessive trait is known as syndactylism?
 - Mulefoot
- 9) The longest gestation period is seen in which breed of dairy cows?
 - Brown Swiss
- 10) What term describes the swelling of the udder or teats caused by the accumulation of fluid under the skin?
 - Edema

- 11) If a serving of milk is 8 ounces, how many servings are there in a gallon of milk?
- 16 servings
- 12) Where is oxytocin produced in a cow?
- Pituitary Gland (HD, 2/06)
- 13) In order to get into a calf's bloodstream, antibodies in colostrum are absorbed through the wall of what organ?
- Intestine wall
- 14) What is the percentage of death loss of calves due to scours according to the National Animal Health Monitoring System?
- 60% (HD, 1/06, pg. 50)
- 15) What is the income statement defined as the reduction in the value of a fixed asset due to use or the passage of time?
- Depreciation
- 16) What does neutral detergent fiber measure?
- The amount of hemicellulose in feed (HD, 1/06, pg. 28)
- 17) What instrument is used to measure blood protein in calves?
- Refractometer
- 18) Volunteers read the book Extra Cheese, Please! Mozzarella's Journey from Cow to Pizza to 1st, 2nd, & 3rd graders as part of a special day recently, what was the special day?
- Ag Literacy Day or National Ag day
- 19) What is a cryoscope used for?
- An instrument used to test the freezing point of milk to determine if water has been added
- 20) What type of accounting records expenses as they are incurred and records income as it is made and is the most accurate measure of profitability?
- Accrual Accounting (AEM 302 notes, Dr. W Knoblauch)

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Senior Packet 4, Phase A

- 1) If you are lactose intolerant, what does this mean?
 - You do not have enough lactase in your system and you cannot digest the lactose from milk products.

- 2) What scoring system is based on the observation of cows standing and walking (gait) with special emphasis in the back posture and is used for early detection of hoof problems or lameness?
 - Locomotion scoring (Zinpro Corp)

- 3) Define what a freemartin is.
 - An animal that is born twin to a bull and will not conceive a pregnancy

- 4) Why is it important to calibrate your manure spreader?
 - Correct application rates or uniform application (DHM, 3/05, pg. 29)

Senior Packet 4, Phase B

1) Name 3 advantages for the dairy producer who uses a custom dairy heifer rearing program.

- Decrease in labor requirement
- Increased milk herd management
- Increased facility capacity for milking cows
- Herd expansion without capital investment with the use of existing facilities
- Increased feed inventory for milking cows
- Possibly better replacement heifers (2006 Virginia DQB materials)

2) Name 2 things you can do to safely transport equipment and supplies on roads shared with non-farm public.

- Pull over whenever possible to let motorist pass
- Avoid traveling during rush hour and bad weather
- Keep slow moving-vehicle emblems clean and visible
- Use pilot vehicles in front and back of farm equipment if traveling long distances (DHM, 6/05, pg. 21)

3) The National Johne's Education Initiative has three main objectives. What are they?

- Reduce the possibility of introducing Johne's disease into uninfected herds
- Minimize the impact of Johne's disease in herds already infected
- Control existing cases (DT, 2/06)

4) How many classes of milk and milk products are there and what products are in each class?

- Class I –fluid milk
- Class II- Ice cream, yogurt, cream cheese and other soft products
- Class III- Hard Cheese
- Class IV- Butter and non-fat dried milk (2006 4-H DB Business mgt materials)

Senior Packet 4, Phase C

- 1) A snapshot look of a business's financial situation can be seen from using what?
 - Balance sheet
- 2) About how many cows in a group of 100 should be lying down if we have good cow comfort?
 - 85 or 85% of the cows in a group
- 3) Why is it common to see more mastitis in the summer than in the winter months?
 - Bacteria grow best in a warm, humid environment
- 4) What would be the main reason for choosing a BMR corn variety?
 - Increased digestibility
- 5) In the area of farm finance what do the letters IRA stand for?
 - Individual Retirement Account
- 6) What is the hands-on tool used on the farm in analyzing the amounts of effective fiber in your cow's ration?
 - Particle separator
- 7) What is the name of the new product used for the control of E.coli mastitis?
 - Spectramast LC (DHM, 7/05, pg. 37)
- 8) What major food retailer has switched to using all "case ready" packaging in their retail meat case?
 - Wal-Mart (DHM, 7/05, pg. 8)
- 9) The majority of the dairy cow's blood glucose is produced in what organ?
 - Liver
- 10) The series of steps taken to prevent or reduce infectious disease introduction into a herd or onto a farm is described by what general term?
 - Biosecurity

- 11) What is the high-energy, low protein feed called that is a good source of calcium and a by-product of cheese making?
- Whey
- 12) What is the term for the amount of mineral present in feed?
- Ash
- 13) What is the primary digestive activity that occurs in the large intestine?
- Absorption of water
- 14) What are extra teats called?
- Supernumerary teats
- 15) How does a cow effectively lose body heat during hot weather?
- Evaporation by sweating or panting
- 16) Senator Hilary Clinton told US News & World Report that she loves any ice cream produced by this dairy store in Boonville, NY?
- Mercer's Dairy
- 17) Alfalfa stands will come back year after year with the proper cropping techniques. How many years after seeding will yields begin to decline?
- Three or the third year (HD, 3/05, pg. 219)
- 18) When using body-conditioning score, what score is ideal for a cow when she freshens?
- 3 to 3.5
- 19) When compared to normal corn silage, brown-midrib corn silage has more energy and higher digestibility. This is due largely to its lower content of what?
- Lignin
- 20) To estimate a cow's production for a single lactation, you would multiple the cow's peak production by what factor?
- 225

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Senior Packet 5, Phase A

- 1) Why would you consider shortening a mature cow's dry period?
 - Increase total milk production or to help ease the transition into lactation from the dry period (DHM, 8/05, pg. 8)
- 2) What do we call a rapid chemical test that measures a portion of the total supply of nutrients in the soil?
 - Soil tests (CCE Crop guide, Pg.33)
- 3) What symptom of scours in calves causes the most critical concern?
 - Dehydration
- 4) What is the Milk Income Loss Contract (MILC) program for?
 - To aid dairy farmers when milk prices are low

Senior Packet 5, Phase B

- 1) Forage testing is the most reliable way of knowing the nutrient content of forages. What are the two forage testing methods?
 - Wet Chemistry
 - NIR (near infrared reflectants)

- 2) When it comes to expanding your dairy, a team approach works best. Name 3 people who should be included on your expansion team.
 - Nutritionist
 - Veterinarian
 - Dairy extension specialist
 - Milking equipment manufacturer
 - Financial Advisor
 - Consulting engineer
 - Farm partners
 - Key employees (DHM 6/05, pg. 17)

- 3) Name 3 measures to prevent or manage environmental mastitis.
 - Practice sanitary milking procedures
 - Forestrip
 - Keep udders clean and dry
 - Feed for health
 - Vaccinate
 - Identify pathogens
 - Treat infections accordingly
 - Dry treat
 - Keep stall beds clean (DHM, 10/05, pg.50)

- 4) What 4 steps does Cornell University recommend you do for a manure spill?
 - Call 911
 - Eliminate the source
 - Contain the spill
 - Clean-up
 - Call appropriate people who need to be involved (NEDB, 9/05)

Senior Packet 5, Phase C

- 1) What milk quality test indicates the presence of psychrotrophic bacteria?
 - The preliminary incubation or P.I. Test (HD, 4/05, pg 260)
- 2) Which milk product is made as a result of removing water from pasteurized skim milk?
 - Non-fat dry milk
- 3) The main reason antibiotics are not allowed in milk is because why?
 - Some people are allergic to antibiotics
- 4) What is the chemical compound that suppresses the immune system and is called the stress hormone?
 - Cortisol (NEDB, 9/05, pg. 30)
- 5) What health disorder characterized by lack of coordination in hind legs and having problems walking, shows its first sign in Brown Swiss heifers at 5 to 8 months of age?
 - Weavers
- 6) With the increasing number of Spanish speaking laborers in the dairy industry, understanding the Spanish language has become important. What is the Spanish word for cow?
 - Vaca (can be pronounced "baca")
- 7) What is the common name for M paratuberculosis?
 - Johne's
- 8) The risk of teat frostbite increases when the air temperature is below 5 degree F and when what other critical environmental condition exists?
 - When there is wind (5mph or greater usually)(HD, 12/05, pg. 808)
- 9) For optimal yields, how many alfalfa stems per square foot would you want in your fields?
 - 55 per square foot

- 10) My haylage bunk smells like vinegar and if I was to send it away for a fermentation analysis, what could I expect the result to be?
- High acetic acid levels
- 11) Cows will usually show more standing heats on what type of surface?
- Dirt
- 12) What state leads the country with more than 22 percent of total organic milk cows?
- Wisconsin
- 13) If calves are weaned too early or moved with lots of stress, what type of disease are they most susceptible to?
- Respiratory illness (DHM, 4/05, pg. 26)
- 14) Many people feed waste milk to their calves. What is waste milk?
- Milk that cannot be sold for human food because the cow has been treated with antibiotics (DHM, 3/05, pg. 15)
- 15) The teat condition hyperkeratosis is a result of what?
- Over milking
- 16) Monensin was recently approved for lactating cows, what is monensin's trade name?
- Rumensin
- 17) What are the two most limiting amino acids in a dairy cattle ration?
- Lysine and Methionine (2006 Virginia 4-H Dairy Quiz Bowl Materials,
- 18) When the hormones called estrogens make a cow receptive to the male, this time is called what?
- Estrus or heat period
- 19) What general type of mastitis do we see the most production loss?
- Subclinical
- 20) At what age does the calf generally have a fully developed rumen?
- 4 months

**2006 N.Y. State Senior
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Extra questions**

Phase A or C

- 1) As casein levels in milk rise, does the taste of milk improve or deteriorate?
 - Improve
- 2) What are the two gases that are associated with the condition of bloat?
 - Carbon dioxide and methane
- 3) The vast majority of Streptococcus agalactiae (strep ag.) infections are caused by what poor management practice?
 - Poor milking procedures or introduction of infected cows
- 4) In reference to hereditary defects, please describe what the defects of mulefoot look like?
 - Only one toe on affected feet and they become sore and cause lameness
- 5) What are the three elements of carbohydrates?
 - Carbon, hydrogen, nitrogen
- 6) In relation to dairy nutrition, what does ADF stand for?
 - Acid detergent fiber
- 7) What type of accounting records expenses as they are incurred and records income as it is made and is the most accurate measure of profitability?
 - Accrual Accounting (AEM 302 notes, Dr. W Knoblauch)
- 8) What occurs when a cow's heat load is greater than her capacity to lose heat?
 - Heat Stress (An Sc 250 notes, Fall '03)
- 9) What is a mission statement for a business?
 - A few sentences that sum up the core values and goals of the business.

10) Why is a cryoprotectant such as milk, glycerol or egg yolk added to semen?

- Protects sperm from freezing

11) A dry period of how many days is most common on US dairy farms?

- 60 days (HD, 4/05, pg.)

12) Nitrogen fixing bacteria are associated with growing what type of plant?

- Legumes (V 4-h DQB study materials)

13) What do we call milk showing clinical symptoms of mastitis characterized by strings of white blood cells?

- Ropy milk (V 4-H DQB study materials)

14) In the Net Merit value calculated by USDA, what component carries the highest weight in the formula?

- Protein (pounds)

15) According to state labor laws, in general, what is the minimum age someone can perform any job declared hazardous?

- 16 years old

16) Who is known as the animal welfare expert?

- Temple Grandin

17) Approximately how much land is required per cow?

- 1 acre per cow, based on soil type (NEDB, pp.23)

18) What tool has helped veterinarians and dairy producers detect pregnancy much earlier than ever before?

- Ultrasound

19) We commonly feed our cows soybean meal and distillers grains, what are these a good source of?

- Protein

20) What is the name of the land grant university in New York?

- Cornell University

Phase B

- 1) Johne's disease cannot be treated or cured. What management techniques can reduce the transmission of the disease within your herd?
 - Using milk replacer
 - Prevent manure contamination
 - Frequent testing
 - Separating cows and calves

- 2) Name four reasons why the dairy industry needs to minimize lameness in cows.
 - Consumer concern
 - Animal husbandry practices/regulations
 - Reduced animal performance
 - Reduced profitability

- 3) Tuberculosis is a contagious disease in both animals and humans. What are 3 types of bacteria that cause it?
 - a. Mycobacterium bovis
 - b. Mycobacterium avium
 - c. Mycobacterium tuberculosis (DHM, 7/05, pg. 42)

- 4) What are your options to treat a cow with a left DA?
 - d. Surgery
 - e. Roll and toggle
 - f. Market the cow
 - g. Pump stomach and treat symptoms

- 5) Nutrients are substances that provide nourishment to the body. What are the seven classes of nutrients that are essential to every living animal for survival?
 1. Water
 2. Energy
 3. Protein
 4. Carbohydrates
 5. Fats/ lipids
 6. Vitamins
 7. Minerals

(World of Dairy Cattle Nutrition, pg. 5)

6) Lactose is the sugar that gives milk its sweet flavor. What are the two simple sugars that make up lactose?

Glucose
Galactose

7) Name 4 important management practices you can contribute to better, more successful employee management.

- A written job description for every role on the dairy that describes clear expectations and a quick reference of responsibilities for the employees
- Clear and open communication
- Training, time with a mentor and time to practice the new skills
- A system of accountability and measurement of job performance
- Standard operating procedures (NEDB, 2/06)

