

FLOW CYTOMETER USED IN STEM CELL ENUMERATION

Avera McKennan laboratory has recently begun enumeration of adult stem cells (CD34) using a Coulter Epics XL four-color flow cytometer. The enumeration of adult stem cells is utilized by the Bone Marrow Transplant team in the evaluation of apheresis products collected on Bone Marrow Transplant donors. As a result of the decreased turn around time patients should not require as many apheresis collections as were typical in the past. ♦

TIDBITS

Diagnosis Information: Diagnostic information must be submitted in order to establish the medical necessity of diagnostic testing. It is required that information to be submitted through the use of ICD-9 codes. Codes for signs and symptoms must be used when a definitive diagnosis has not been established. ♦

PSA SCREEN DIAGNOSIS INFORMATION: ICD-9CM CODE THAT MUST BE ORDERED WHEN ORDERING A PSA SCREEN

Screen for malignant neoplasm-prostate V76.44
Do not use the general screening code V 82.9 for the PSA Screen or the testing will be denied by Medicare
If you only provide descriptive diagnosis information you must include the full description- do not just state "screen." ♦

Avera Laboratory Network *Lab News* is published every other month to provide the latest updates on services from labs of the Avera Laboratory Network.

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VOLUME 2 NUMBER 1

JANUARY/FEBRUARY 2002

NEGOTIATED RULE RELATING TO NATIONAL COVERAGE FOR LABORATORY TESTING

The Negotiated Rulemaking Committee under the direction of the Balanced Budget Act of 1997 has developed policies relating to national coverage of laboratory tests. The Centers for Medicare and Medicaid published the final rule in the Federal Register: 42 CFR Part 410; November 23, 2001 establishing national coverage decisions for laboratory tests. This rule applies to all Medicare contractors processing Medicare Part B claims including fiscal intermediaries. This rule serves a two-fold purpose. The first part establishes national coverage decisions for commonly used clinical laboratory test. The second part establishes and clarifies several administrative policies.

The following provisions of the rule will become effective February 21, 2002:

- Administrative policies and National Coverage Decisions apply to all clinical diagnostic tests payable under Medicare Part B regardless of whether the setting is hospital or clinic.
- Clarifies that CPT codes which have a descriptor such as "screening" or "screen" do not necessarily describe the test ordered in the absence of sign, symptom, disease or illness.
- The physician signature does not have to be on the laboratory requisition.
- The use of modifier codes to indicate multiple services that are medically necessary to diagnose or treat a patient.
- Appropriate diagnosis codes may be used assigned to a narrative even if the narrative and code descriptor of the ICD-9-CM code do not match exactly.
- If the Medicare contractor's will not use a frequency screen that could result in a frequency denial unless the contractor has published information concerning frequency of the service or unless the Center for Medicare and Medicaid (CMS) has published frequently limits in the national coverage decision.

The following provisions become effective November 25, 2002:

- Date and service requirements
- Use of consistent remittance messages
- Requirements for maintenance and submission of documentation
- National Coverage Decisions which include the following tests:

| | | |
|---------------------|---------------------|--------------------|
| Urine Cultures | Thyroid testing | CA15-3 |
| HIV testing | Collagen Crosslinks | CA 27.29 |
| Blood Counts | Lipid testing | CA 19-9 |
| APTT | Digoxin | Total PSA |
| Prothrombin Time | AFP | GGT |
| Iron studies | CEA | Hepatitis Panel |
| Blood Glucose | HCG | Fecal Occult Blood |
| Glycated Hemoglobin | CA 125 | |

The National Coverage Decisions (NCD) will be used nationwide and will replace the present Local Medical Review Polices. ♦

GLASS VS. PLASTIC TUBES: WHAT DO WE DO??

Are you considering switching from glass to tubes to plastic tubes? Many of us are being asked to look at this issue. There are many things to consider when performing and evaluating these studies. You will also need to consider what an inspector will be looking for regarding your process of selection.

The typical CAP inspector looks for a scientifically valid study, such as parallel testing or a collection of patient samples in both glass and plastic tubes. The data collected need to be statistically evaluated to demonstrate that results are consistent, regardless of whether glass or plastic collection tubes are used. The study conducted needs to assess not only the results obtained relatively soon after collection but also the results after storage to determine if precision and accuracy are affected.

Each laboratory should determine the parameters of its study, taking into account the laboratory's instrumentation and methodologies as well as the stability of the analyte being tested, and challenge any known interferences or biases introduced by the use of plastic tubes as documented in the literature. At a minimum, the number of samples should be statistically valid ($n \geq 30$) and should cover the reportable range for each analyte. Precision studies require replicate testing (at least 10 repetitions) at one or more points. Several NCCLS documents would be helpful in developing such a study: EP5-A, "Evaluation of Precision Performance of Clinical Chemistry Devices"; EP7-P, "Interference Testing in Clinical Chemistry"; EP9-A, "Method Comparison and Bias Estimation Using Patient Samples"; and EP14-A, "Evaluation of Matrix Effects." (These evaluation protocols can be ordered online at www.nccls.org or by calling 877-477-1888.)

The Laboratory Accreditation Program's Laboratory General checklist contains one question, GEN.40942, that specifically relates to specimen containers. It says: "Has the laboratory evaluated its specimen containers to ensure that they do not contribute to analytic interference in the assays to be performed?" A note accompanying the question allows the combination of

direct testing by the laboratory, review of clinical literature, and evaluation of information from manufacturers, but it does not require exhaustive testing by each laboratory. Performance data listed in the manufacturer's information are calculated from samples collected in glass. Limited data are available for samples collected in plastic.

More extensive studies should be considered in the cases of tests with known problems when plastic tubes are used. Plastic is permeable by air, which, for coagulation testing, can cause a drop in pH and affect results. Plastic also has been shown to absorb drugs, such as cyclosporins, and heavy metals.

Glass activates clotting (plastic does not), forcing tube manufacturers to add a clot activator in red top tubes. The clot activator has been shown to cause positive interference in lithium results. DNA has been shown to denature if stored in plastic microtubes; similar results can be anticipated if polymerase chain reaction specimens are collected in plastic. Clot tubes have a silicone-coated interior; silicone-coated tubes have not been approved by the Food and Drug Administration for blood banking.

The use of glass has come into focus with the 1999 release of an FDA/NIOSH/OSHA joint safety advisory on the potential risks of using glass capillary tubes and the modification to the OSHA bloodborne pathogen standard through the Needlestick Safety and Prevention Act.

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- Jean L. Tenuta, MS, MBA, MT(ASCP)DLM, CLC(AMT) Technical Specialist, Laboratory Accreditation Programs College of American Pathologists. Taken from CAP Today, November 2001. ♦

(*Needlestick Safety continued from page 3...*)

Exposure Control Plan: New requirements for exposure control plans include an annual review and update to reflect changes in the technology that reduce or eliminate exposure to bloodborne pathogens. The employer must:

- take into account innovations in medical procedures and technological developments that reduce the risk of exposure
- document the consideration and use of appropriate, commercially available, and effective safety devices

If a safer option for a device is not available, employers are not required to introduce any new products or practices. However, via an annual review of safety device options, employers must inquire about new or potentially safer products, and they must document their efforts in the exposure control plan.

Employee Input: Employers must solicit input from non-managerial employees responsible for direct patient care. Employers are required to document in the exposure control plan how they received input from the employees. OSHA does not specifically state how the input should be obtained, as participation strategies will vary by institution. Small facilities such as a dental office can use a less formal method such as periodic conversations about products while a larger hospital may require a more formal approach such as a written survey. According to OSHA, the obligation can be met by:

- list of employees involved and describe process
- present other documentation such as minutes from meetings, copies of documents used to request employee participation, the number of received responses, etc.

OSHA will check for compliance during inspections by questioning a representative number of employees to determine if and how their input was requested.

Recordkeeping: The amendments to recordkeeping apply to employers who are already required to maintain a log of occupational injuries and illnesses under existing regulations (employers with ten or more employees). The revised standard now requires that a log of sharps injuries is kept and must contain at a minimum:

- type and brand of device involved
- the work area where the incident occurred
- an explanation of how the incident occurred

Any incidents involving contaminated sharps are now reported on an OSHA 300 Log of Work-Related Injuries and Illnesses and the OSHA 301 Injury and Illness Incident Report. ♦

MEDICAL NECESSITY

Only tests that are medically necessary for the diagnosis or treatment of the patient will be reimbursed. Medicare may deny payment where there is insufficient documentation in the medical record to support the medical necessity of ordering the test(s). Local Medical Review Policy (LMRP) is an administrative and educational tool to assist providers, physicians, and suppliers in submitting correct claims for payment. In order to assure services and tests under Local Medical Review Policy are covered, providers need to include the diagnosis for which the service or test is being ordered. When a covered diagnosis is not present for the service or test being performed, the patient is to receive an Advance Beneficiary Notice (ABN) that advises patients they are responsible for payment. When tests under Local Medical Review Policy are being performed as a screening, patients need to be advised that the test is being performed for screening purposes and that they will be fully responsible for the charges. ♦

CLIENT SERVICE SPOTLIGHT



Tonya Klingaman has worked for Avera Queen of Peace for 5½ years as a Medical Laboratory Technician. She attended SDSU and Mitchell Technical Institute, where she completed her MLT

program, and interned at Avera Queen of Peace. Tonya works in various capacities at Avera Queen of Peace and is also a reporter for the Avera Laboratory Network Newsletter. Her favorite part of her job is always being busy and learning new things each day.

Tonya and her husband, Kleve, have 3 sons. Chase is 6 and in Kindergarten, Andy is 4, and Alex is 3. Kleve owns North Central Seed Company in Mitchell. Tonya enjoys cooking, sewing, shopping, reading, aerobics and weight training. She enjoys spending time with her family and friends on her days off. She feels time with family is one of the most important things in her life. ♦

MANAGERS FOCUSING ON AGE-SPECIFIC COMPETENCIES

Age-specific competencies are the latest buzzwords in discussions on skills assessment. At the behest of the Joint Commission on the Accreditation of Health Care Organizations (JCAHO), phlebotomy supervisors and laboratory managers are being challenged to make sure their phlebotomists are not only proficient at phlebotomy, but proficient with all age groups. As a result, the evaluation protocol for phlebotomists is becoming increasingly involved and complex.

Assessing skills at multiple age levels makes great strides toward assessing overall competence. Without observing a venipuncture on a geriatric patient, it is difficult to determine if the phlebotomist is capable of selecting the appropriate needle and collection system or of modifying his technique to accommodate the unique challenge that are specific to geriatric patients. Likewise for pediatric draws. Without age-specific competency assessments, it cannot be determined if one's technique to perform a heelstick for newborn screening is proper or if a child is approached with the proper compassion.

Typical of the approach many managers are taking, phlebotomists at one Midwestern hospital are evaluated on their ability to draw blood successfully from representatives of 5 age groups. Assessors observe live punctures performed on newborns, young children, juveniles, adults, and geriatric patients and check off the proper performance of 13 steps involved in the procedure. Other managers are more comprehensive and assess the performance of more steps and/or include a written or verbal test of knowledge.

The inclusion of an exam is also seen as an increasingly useful tool to assess proficiency. Because the observation of a routine phlebotomy—even if it involves age specific skills assessments—can fail to assess judgment, critical thinking, or knowledge of appropriate reactions to hypothetical situations, verbal or written tests can provide insights into the phlebotomist's ability to act in accordance with the standards for the procedure in otherwise irreproducible scenarios. For example, in its current standard on venipunctures (Standard H3-A4), NCCLS limits the acceptable extent of needle manipulation to a forward or backward relocation of the needle. Unless questioned, a phlebotomist may pass a skills assessment based only on a routine observation, yet routinely perform side-to-side needle manipulation on patients when veins are not immediately accessed. Should an injury to the patient result and it becomes clear that side-to-side manipulation occurred, it can be argued that the facility failed to assure that its

phlebotomists operate within the standard of care.

Not only does the failure to detect lapses in one's knowledge risk liability for injuries, more importantly, it puts patients at risk of injury from phlebotomists whose skills are only partially assessed. Damage to the median antebrachial cutaneous nerve is one of the most common permanent injuries patients suffer at the hands of the unskilled. A phlebotomist's potential to commit errors in technique such as manipulating the needle excessively, selecting high-risk venipuncture sites and employing excessive angle of insertion is difficult to determine with only a routine observation. With a properly prepared list of questions to augment the observation, a more comprehensive assessment is possible.

It is clear that managing phlebotomists is becoming increasingly complex. As phlebotomists continue to gain the attention of government and regulatory agencies and the public, the interest in enforcing and reinforcing sound phlebotomy skills is emerging as the newest item on the national healthcare agenda. ♦

Ref: Phlebotomy.com/Newsletter Oct 2001

RETHINKING THE ORDER OF DRAW

According to the National Committee for Clinical Laboratory Standards (NCCLS) document H3-A4, "Procedures for the Collection of Diagnostic Blood Specimens by Venipuncture," the order in which tubes should be filled is as follows:

- 1) blood culture tube (yellow top or blood culture bottles)
- 2) plain tube, non-additive (red top)
- 3) coagulation tube (blue top)
- 4) gel separator tube (speckled or "tiger" top)
- 5) heparin tube (green top)
- 6) EDTA tube (lavender top)
- 7) Oxalate/fluoride tube (gray top)

However, because of the safety risks that accompany glass specimen tubes, infection control and epidemiology experts are urging facilities to switch to plastic tubes. Two manufacturers of specimen collection tubes offer a full line of plastic tubes including sodium citrate tubes for coagulation testing: Greiner Bio-One (www.vacurette.com) and Sarstedt (800-257-5101). BD offers a plastic version of their complete line with the exception of sodium citrate tubes (blue tops) for coagulation and Tyco/Kendall offers a plastic gel separator tube (Corvac(r)). However, since plastic does not activate clotting like glass does, red-top tubes must contain a clot activator if they are to be used for serum testing. As a result, the order in which tubes are collected must take into consideration that plastic red tops, which contain clot

activators, are tubes with an additive and should not occupy the same place in the order of draw as glass red tops without clot activators.

The risk of drawing plastic red tops first in the order is that, during tube exchange, the clot activator can carry over into the next tube. If the next tube is a sodium citrate tube (blue top) for coagulation testing, the clot activator can alter the results. Therefore, if your facility is using plastic tubes, the red top should be drawn after the blue top. If no blue top is drawn, the plastic red top can precede a heparin (green top) or EDTA (lavender top) tube without concern for carryover. The current thinking is that any carryover of the clot activator into tubes other than blue tops is irrelevant. It is thought that the minute amount of clot activator will be consumed by the excess heparin or EDTA and will not compromise their ability to anticoagulate the specimen. By contrast, carryover of a clot activator into a sodium citrate tube (blue top) can consume clotting factors and result in prolonged clotting times even though the specimen will still be anticoagulated.

As a reminder, NCCLS no longer recommends that a discard tube be drawn prior to a blue top if the blue top is being used for routine coagulation testing, i.e., protime or PTT. However, if factor assays are to be tested, a discard tube is recommended. Therefore, if the physician orders routine chemistries, coagulation studies, and a CBC, the order of draw if using a plastic red top is as follows:

- 1) blue top
- 2) red top
- 3) lavender top.

If the facility uses glass red top, the order is:

- 1) red top
- 2) blue top
- 3) lavender top

Finally, heparinized tubes (green tops) should never be filled immediately after an EDTA tube (lavender top) if the heparin tube will be tested for potassium. Because EDTA contains potassium salts, any carryover of EDTA into a heparin tube can result in falsely elevated levels of potassium.

NCCLS bases the order of draw on well-researched evidence. Yet it remains phlebotomy's best-kept secret. By reinforcing the principles of sound blood collection practices through repetition and education, however, phlebotomists and their supervisors can minimize this frequently committed preanalytical error and maintain the specimen integrity that is essential to accurate result and quality care. ♦

Ref: Phlebotomy.com/newsletter Oct 2001

WORLD LEADERS IN ENDOCRINOLOGY CALL FOR NEW DIABETES GUIDELINES

Doctors Lower Screening Guidelines to Age 30 for High-Risk Groups

The American College of Endocrinology (ACE) and the American Association of Clinical Endocrinologists (AACE) announced in August 2001, their recommendations for new diabetes screening and management guidelines. The group, comprised of world diabetes experts, urged more stringent treatment standards and a lower screening age for people at high-risk for this disease, particularly among ethnic populations.

"Diabetes has reached epidemic proportions in this country, affecting more than 16 million Americans," said Dr. Helena W. Rodbard, president of ACE. "It is crucial to empower patients to manage their disease more effectively thereby avoiding complications, such as kidney failure, blindness and amputations and premature heart attacks."

This first-ever ACE consensus conference gathered to review research from current international studies on diabetes in an effort to translate the data into practical guidelines that will result in more effective management of this disease. "Currently, diabetes guidelines in the United States are not consistent with world-wide standards," said Dr. Rhoda Cobin, president of AACE. "We need more aggressive, complete and cohesive standards."

In response to recent diabetes findings, the ACE Diabetes Mellitus Consensus Conference has made the following recommendations:

Age Of Diabetes Screening Lowered To Age 30

The panel agreed that current guidelines for diabetes screening be reduced from 45 years of age to 30 for high-risk groups. Recent statistics from the Centers for Disease Control and Prevention (CDC) have shown that diabetes has increased 33 percent from 1990 to 1998, with an alarming increase (76 %) among people aged 30 to 39. In addition, diabetes occurs at a younger age in high-risk groups, which are developing the disease at alarming rates.

"Ethnic populations account for nearly half of all newly-diagnosed diabetes cases," said Dr. Jaime Davidson, endocrinologist at Medical City Dallas Hospital and co-chair of the conference. "In fact, one in four Latinos are diagnosed with diabetes by the age of 45 and African-American children as young as age five are exhibiting symptoms of insulin resistance - the beginning stage of diabetes. Because of these alarming statistics, ethnic populations need be screened at an earlier age," said Dr. Davidson.

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A1C Blood Sugar Test Lowered To 6.5%

The panel has lowered the target for diabetes control to 6.5%, thereby bringing United States standards in concert with world-wide guidelines. A1C levels under 6% are normal for people without the disease. The A1C test is a simple blood test given to patients with diabetes to determine how well their blood sugar has been controlled over a three-month period.

"The conference reinforced that 'A1C' is the best test and term to use in determining how well a patient's diabetes is controlled over time," said Dr. Claesa Levetan, director of Diabetes Education at Medstar Clinical Research Center in Washington, DC, and conference co-chair. "It is critical that patients know their A1C level and their goals so that they are able to prevent diabetes-related complications," said Dr. Levetan.

Post-Prandial Blood Sugar Levels Lowered

The risk of diabetes comes from tissues that are exposed to abnormally high blood sugar levels both before and after meals. Therefore, the panel recommends lowering target levels of blood sugar to 110 before eating (pre-prandial) and to 140 after eating (two hour post-prandial). "Addressing the post-prandial levels is significant not only because it will reduce tissue damage for patients but also because it alerts them to a problem previously unaddressed in blood sugar monitoring," said Dr. Cobin.

Senator Susan M. Collins (D-ME), chair of the Senate Diabetes Caucus, addressed the conference noting, "I'm convinced that we're on the verge of substantial breakthroughs in the field of diabetes management and prevention." Sen. Collins pledged to continue her support of diabetes research funding. A more detailed explanation of these and other conference findings are available in a White Paper issued from the conference.

ACE is the scientific arm of AACE with the mission of providing and promoting education, research, and communication in the art and science of clinical endocrinology and to provide appropriate recognition of advances and achievements relating to clinical endocrinology. For further information on diabetes and other endocrine disorders or AACE guidelines visit the AACE web site at <http://www.aace.com>. ♦

COAG NOTE:

In Pennsylvania, there was an incident where the wrong INR's were reported because the ISI was not changed in the calculation with the new lot number of reagent. To help prevent the likelihood of this incident repeating itself, it has been suggested to post on your storage refrigerator and on your coagulation analyzer, the lot number and ISI of the coagulation reagents currently in use. This would help to alert everyone to be more conscious of looking at lot numbers and hopefully preventing this type of error. ♦

FEBRUARY IS...

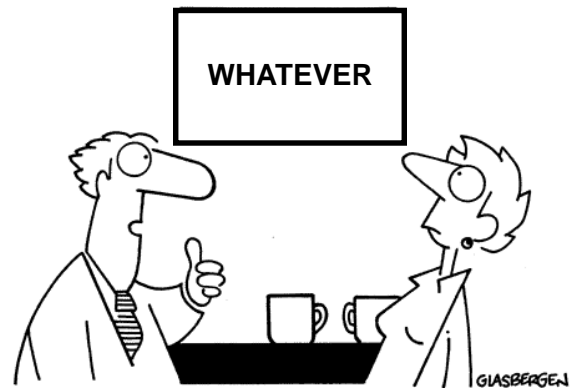
American Heart, American History, Canned Food, Children's Dental Health, America Loves Kids, Community College, Humpback Whales, International Embroidery, Cat Health, Creative Romance, Presidents, Potato lovers, National Cruise Vacation, Macadamia Nut, Weddings, Black History, Cherry, Return your Shopping Carts, & Snack Food Month.

Important Weeks and Trivia

Did you know... Someone in the US steals a supermarket shopping cart every minute and a half? 40 Carts are stolen every hour. Each cart costs \$125. This costs grocers \$44,000,000 per year!

- Feb. 1 First armored car (1920)
- Feb. 1 First Auto Insurance Policy (1898)
- Feb. 1 First Children's music Book (1831)
- Feb. 1 First Motion Picture Censorship Board appointed (1914)
- Feb. 2 First Lie Detector test (1935)
- Feb. 3 The day that Music Died - (1959) Buddy Holly, Richie Valens, and the Big Bopper died in an airplane crash outside Clear Lake, Iowa.
- Feb. 3 First Paper money issued in America
- Feb. 3 The flush toilet was invented by Thomas Crapper (1837)
- Feb. 8 Birth of a Nation Debuts (1914)
- Feb. 10 Styrofoam cooler was invented (1957)
- Feb. 11 Beatles record 1st Album (1963)
- Feb. 13 First public school in America opened (1635) The Boston Latin School.
- Feb. 15 First adhesive postage stamps in the US (1842)
- Feb. 17 Newsweek magazine first published (1933)
- Feb. 28 Final episode of M*A*S*H (1983)

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"That's our mission statement. We wrote it the same day we switched to decaf."

NEEDLESTICK SAFETY AND PREVENTION ACT OF 2001

In 1991 the Occupational Safety and Health Administration published the Occupational Exposure to Bloodborne Pathogens Standard. The standard requires that employers implement an exposure control plan with detailed employee protection measures. It requires employers to adopt engineering and work practice controls that would eliminate or minimize exposure to bloodborne pathogens. The standard applies to all employers who have at least one worker with reasonably anticipated occupational exposure to blood or other potentially infectious materials.

OSHA estimates that 5.6 million workers in the health care industry and other related occupations are at risk of exposure to bloodborne pathogens. The CDC estimates that nearly 600,000 injuries involving contaminated sharps occur every year in health care, the majority of which occur in the nursing field. In the ten years that have passed since the 1991 standard was put into effect, many different medical devices have been developed to reduce the risk of needlesticks and other sharps injuries. It is also estimated by the CDC that 62-88% of sharps injuries can potentially be prevented by the use of safer medical devices.

In light of estimates such as these, and also due to the evolution of safer technology in the last decade, Congress passed the Needlestick Safety and Prevention Act on November 6, 2000. The revision was published in the January 18, 2001 Federal Register. This act required OSHA to revise the 1991 bloodborne pathogens standard. The legislation exempted OSHA from certain rulemaking requirements so that the revised standard could be adopted quickly. The revisions became effective on April 18, 2001 but 90 days were allowed after that date to provide education and outreach programs for both the

OSHA staff and the regulated public before beginning enforcement on July 17, 2001.

The new needlestick safety revisions are broken down into four main areas:

- 1) modification of definitions relating to engineering controls
- 2) revision and updating of exposure control plans
- 3) solicitation of employee input
- 4) recordkeeping

Engineering Controls: Engineering controls include all control measures that isolate or remove a hazard from the workplace such as sharps disposal containers and self-sheathing needles. The 2001 revision calls for specifying in greater detail the new requirements as they apply to engineering controls. The revised standard now states that "safer medical devices, such as sharps with engineered sharps injury protections and needleless systems" constitute an effective engineering control, and must be used wherever feasible. "Sharps with engineered sharps safety protection" is a new term which includes non-needle sharps or needle devices containing built-in safety features such as:

- syringes with sliding sheaths that shield the needles after use
- needles that retract into the syringe
- shielded or retracted catheters
- IV medication delivery systems that use a catheter port without a housed needle

"Needleless systems" is defined as devices which provide an alternative to needles for various procedures such as:

- IV medication systems where the catheter port uses a non-needle connection
- jet injection systems which deliver medication under the skin or into a muscle

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EDITOR'S NOTE

February is here and although it's been a mild winter in comparison to other years, you know there are still some bone-chilling cold days to come.

Here are some ideas to prevent those winter blues from affecting you.

1. So what if it's cold- bundle up and go outside for a short walk.
2. Get some use out of the board games you have stored in the closet - play with your family or invite some friends over for a few hours. We love UNO attack!
3. Invite some friends over for a card game of rummy or pitch (my favorite).

4. Get caught up on the photo albums or scrap books.
5. Read a book.
6. Rent a movie.
7. And if none of these help you, book a vacation down south!

Coping with weather like this is just a little price to pay for living in the wonder Upper Midwest.

FYI: The next Management Advisory Counsel Meeting will be held in March in Tyler, MN. The date and time will be announced later. Happy Valentine's Day! ♦

- Pam Hegge