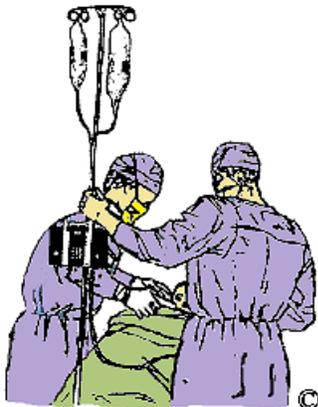


# IVNC IntraVenous Nurse Consultants Newsline

**Need Contact Hours?**  
Follow instructions to obtain contact hours by reading our newsletters and passing a short test.

IV Newsletter — Volume 5 — 2013

Provided By: Susanne Suttich RN, BSA



**IV Nurse Consultants**

## Pharmacy and Facility Requests leads IVNC to add services outside of Washington State.

As a leader in vascular access placement, I.V. Nurse Consultants (IVNC) has had multiple request to extend our services outside of the Washington State area. Starting October 2012 we are proud to provide our services to Portland, Oregon and surrounding counties of Multnomah Columbia, Washington, Clackamas Yamhill and Marion.

### WHY HAVE PHARMACIES, HOSPITALS AND CLINICS CONTRACTED WITH OUR IV TEAM?

IV NURSE CONSULTANTS (IVNC) takes pride in meeting the needs of our clients. Our IV team recognizes the importance of upholding the standards of infusion care for our patients set by Infusion Nurses Society (INS) and the Center for Disease Control and Prevention (CDC).

Our nurses are very competent and have been trained to deal with many intricacies that surround very ill people receiving advanced vascular access. Our Registered Nurses have come to us with experience “working in the trenches,” so to speak, and are intimately familiar with patients as a whole. They evaluate patient information (age, diagnosis, medical history, medications, labs, current overall condition, body habitus, etc.) and they immediately know how all of these things are going to interplay with a line placement.

The founder of IVNC has been placing lines since 1976 (approx. 37 years). Since 1996 our team has provided IV Service for over 56,553 patient calls.

*Continues on page 8.....*

**Changes with phone provider and additional phone lines lead to new phone numbers.**

### For contracting information for IVNC to provide services to your facility, call:

**Susanne Suttich RN, BSA**  
**President / Owner**  
**253-925-3300**

**Michael Goss, Dir. of Operation**  
**Main Office Line 253-269-1234**

### Already have a contract and need IV Triage Services 24/7? Call:

**1-888-655-1235**  
**253-200-4407 (WA) or**  
**541-205-4876 (OR)**

**For continuing education call:**  
**Maryhelen Eaton**  
**253-269-1269 or 888-476-6298**

Inside this issue:	
Clinical Practice Questions—INS Knowledge Center and INS Newsline	2
Midclavicular Lines Not Recommended	3
Continuous Subcutaneous Access	4
Continuing Education Clock Hours	11
Earn CE Credit	12

# Clinical Practice Questions

## From the Clinical Nursing Forum and INS Newsline

*The following questions have been taken from the Clinical Nursing Forum section of the INS Knowledge Center and INS Newsline. Answers are supplied by volunteer members of the INS Nursing Network.*

### **What is the procedure for site care once a noncoring needle is removed from an implanted port?**

Once any bleeding is controlled, apply a sterile gauze dressing to the site. Remove the dressing after 24 hours and check for drainage, redness, swelling, or pain. If there are signs of epithelial formation, no further dressing is required.

### **When medication is infusing continuously through a PICC via a pump, is it necessary to flush the catheter with saline on a routine basis (i.e., daily, at tubing change)?**

It is not necessary to flush a catheter routinely when there is a continuous infusion being administered.

### **How often does a staff RN need to prove competency in venipuncture skills? Does it need to be done annually?**

There are no data available to assess the length of time needed to train RNs in venipuncture competency or the number of venipunctures needed to maintain competency. Everyone learns and acquires expertise at different rates. Ultimately, there should be validation of competency with continued consistency of practice on an ongoing basis. Infusion competency should include ongoing appraisals of skills and knowledge associated with high-risk procedures and be built into organizational policy and procedure.

### **If a blood specimen cannot be obtained by a PICC, may a tourniquet be placed on an arm that has the PICC, and blood drawn via a peripheral venipuncture? What is the best practice in this situation?**

A tourniquet can be placed and lab work drawn below the PICC. Refer to the *Infusion Nursing Standards of Practice: Application of a tourniquet or blood pressure cuff over the PICC may result in damage to the catheter and/or vessel that is accessed.*

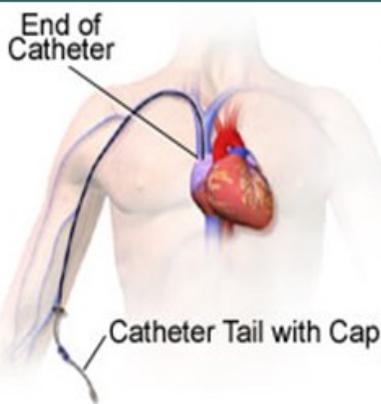
### **Can a blood specimen for coagulation studies be drawn from a dual-lumen PICC in which a heparin infusion is being administered in one of the lumens? What about a single-lumen PICC?**

Blood sampling for coagulation values should be drawn via direct venipuncture for accuracy. Current literature does not support blood sampling for coagulation levels through heparinized CVADs. If the CVAD must be used (single- or multilumen), stop the infusion and flush the device with preservative-free 0.9% sodium chloride (USP). Use the largest lumen of a multilumen device, and the one not being used for the infusion. If questionable results are obtained that necessitate an increase in medication dose, consult with the licensed independent practitioner; consider obtaining a new specimen by direct venipuncture.

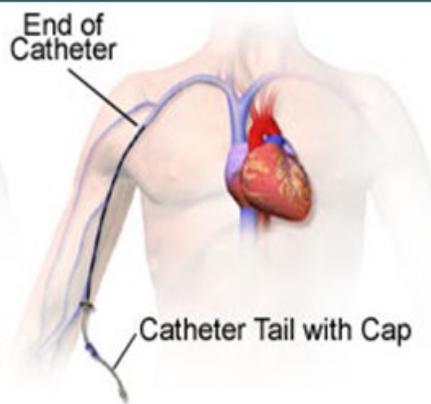
#### ***Bibliography***

Infusion Nurses Society. *Infusion Nursing Standards of Practice.*

## Midclavicular Lines Not Recommended



**PICC Catheter**



**Midline Catheter**

Infusion Nurses Society

### INFUSION NURSING

An Evidence-Based approach

Third Edition Mary Alexander  
(Saunders Elsevier) 2010

Section V, Chapter 24, Central  
Venous Access Devices: Access and Insertion

Catheter tip verification, Page  
490

Midclavicular tip placement has been used in cases where central access was not easily obtained due to anatomical difficulties, but it is not recommended since studies have shown a fourfold increased incidence of thrombosis with midclavicular tip placement (Cook, 2007). Other reasons for placing midclavicular catheters include radiographic cost savings and patient accessibility---some patients cannot be transferred to facilities where

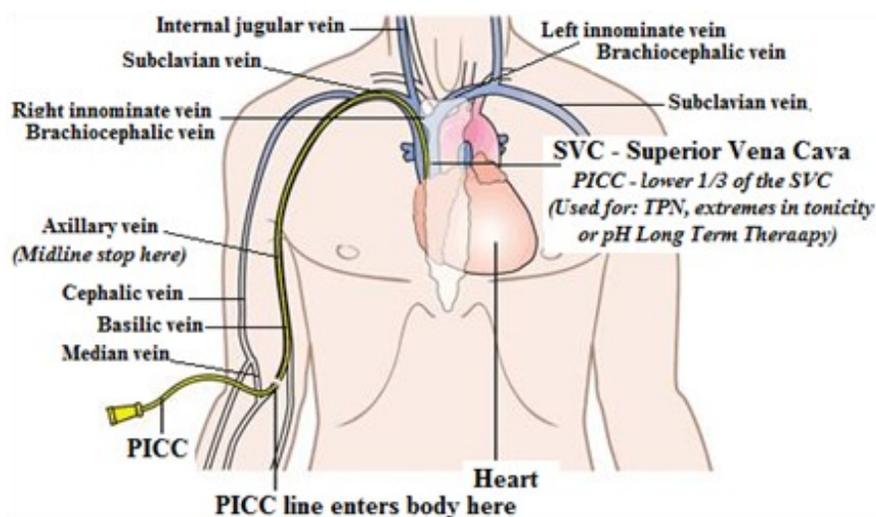
central line placement is available. With increased incidence of thrombosis in the midclavicular region, infusion therapy should indicate the need for either a peripheral catheter, a midline catheter, or a central catheter since literature does not support the use of midclavicular catheters.

### Special considerations

Certain patient populations present unique problem sets related to PICC placement. For the experienced infusion nurse, overcoming these challenges is simply a matter of progressing through the learning curve, but in response to the need, many organizations create specialized teams to handle specific issues. PICC teams specializing in placement in neonates are such an example.

### INS Standards of Practice (Revised 2011)

The standard only gives direction for PIVs, Midlines (distal to shoulder) and PICCs.



**Medications that have a pH of less than 5 or more than 9 should NOT be administered via peripheral IV, which includes the midline catheter, in any practice setting .**

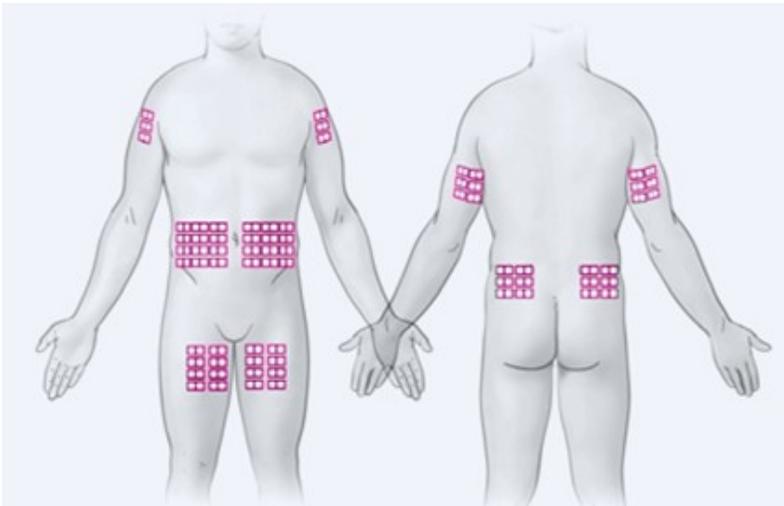
# Raising the Bar In Venous and Continuous Subcutaneous Access Education:

**IV Nurse Consultants (IVNC), is a leader in vascular access services. IVNC offers Continuing Education Hours through numerous programs for nurses and other health care professionals. We offer the traditional classroom programs either at our facility or onsite. For convenience, we are expanding in offering the option to study at your own pace by taking some of our programs online or through our newsletters.**

**This newsletter has focused on Subcutaneous Access as the topic of choice for Continuing Education Credits. Following the completion of reading this newsletter, and completing the requirements on page 11, participants will be eligible to receive Contact Hours.**

To validate the completion of our training program through our newsletter and receive Contact Hours, the candidate will: 1) Complete the provided registration form in its entirety, with all information needed to process your certificate. 2) Complete the validation program post exam, which reviews topic knowledge. There is no minimum passing grade.. 3) Complete the post course evaluation form. 4) Return each of the items listed along with your registration fee, to receive your CE certificate of earned contact hours.

## Continuous Subcutaneous Access



### Introduction

Administration of intermittent and continuous subcutaneous infusion of medicine or hydration fluids shall be initiated in accordance with a valid prescription/order and organiza-

tional policies, procedures and/or practice guidelines.

### Definitions

Hypodermoclysis is the administration of fluids via subcutaneous infusion.

### Roles and Responsibilities

Care providers placing and/or caring for a subcutaneous line must practice to the standards laid down by their Professional body.

- Must have the knowledge and skills for safe and effective

practice

- Recognize and work within the limits of your competence
- Keep knowledge and skills up-to-date

## Purpose for Subcutaneous Infusion

Infusion is indicated for maintaining:

- Short term hydration for those unable to take adequate fluids orally
- And in whom it is difficult or impractical to insert an intravenous (IV) line
- Treat mild to moderate dehydration
- Correct electrolyte imbalances
- Reduce toxic medication metabolites
- Administer certain medications when other routes are inappropriate or not available
- Provide faster therapeutic

response than the oral route can provide

Subcutaneous access is an effective method of fluid and drug administration that is particularly suited for the elderly and palliative care. Subcutaneous access can be used as an alternative for patients when fluids are unable to be given intravenously, also known as hypodermodyesis. This technique is also considered an alternate route for certain medications (eg, continuous opioid infusion, immune globulin) and solutions used to manage hydration fluids for short-term treatment of dehydration, especially in elderly and terminally ill patients, when an intravenous line is unable to be started.

Consider Subcutaneous infusion in situations where:

- There is acute inadequate oral intake (patients with Dysphagia or cognitive impairment or in terminal care)

- There is distressed symptoms of dehydration such as weakness, postural hypotension or thirst

Subcutaneous infusions should not be consider in the following situations:

- Emergency situations (shock, circulatory failure, severe dehydration)
- Obvious coagulopathy (clotting disorders)
- Fluid overload, congestive cardiac failure, marked oedema.
- Where patient requires intravenous treatment, (eg for hypercalcaemia)
- Patients on renal dialysis
- Where precise control of fluid balance is clinically important.

## Precautions

There are few, if any, contraindications for the use of Subcutaneous infusion for end-of-life care. Since absorption of drugs

## Disclaimer

The Infusion Therapy Standards of Practice is intended to reflect current knowledge and practices for the clinical specialty of infusion therapy. Clinical practice is continually evolving based on research; therefore users should complete an independent assessment on the appropriateness and applicability of a standard in any specific circumstance, and within the context of United States laws and regulations.

The risks associated with infusion therapy are complex and each situation must be judged on its own merits; readers should not simply follow instructions in the standard without proper assessment of individual circumstances.

IVNC is not responsible for any consequences that may result from decisions made upon the basis of the information given herein.

administered subcutaneously occurs mainly through lymphatic drainage, caution should be used in patients with edema (the presence of palpable swelling resulting from soft-tissue swelling due to the accumulation of interstitial fluid in the tissue).

## **Starting Subcutaneous Fluids**

Careful consideration should be given prior to starting fluids and then a review every 48 hours is recommended to review patients condition, prognosis and wishes.

Consideration of when subcutaneous fluids should be discontinued should also be discussed.

## **Dwell Time**

Subcutaneous dwell time is variable, based on the volume of the fluid and the integrity of the site. For patients receiving higher volumes associated with hydration, the site may need to be rotated every 2 days. For patients receiving low-volume medication infusions, dwell time can range from every 2 to 7 days before a rotation of sites is needed. On site assessment, if there is evidence of erythema, swelling, leaking of fluid, bruising, bleeding, burning, or pain the site should be rotated.

## **Risk Factors**

The most common complication

associated with hypodermodysis is local edema, which can be resolved by massaging the site. Risk of infection are minimal provided the indications and guidelines are respected. Side-effects depend mainly on volume, infusion flow rate and the choice of solution being infused.

Pulmonary edema or heart failure due to fluid overload is rare with isotonic solutions in volumes not exceeding 1.5 liters per infusion site and up to a maximum of 3 liters (rarely 3) per day if using 2 sites. The optimal infusion rate is unknown. Usual rate is only 1 ml per minute per site. Medicine infusion rates of 3-5 mL per hour are reported, and hydration infusion rates of up to 1500 mL over 24 hours are reported. More than 1 infusion site may be used to accomplish a larger infusion volume.

Other possible adverse reactions are: local catheter reactions, pain or discomfort at the site, cellulites and puncture of blood vessels,

Subcutaneous fluid administration is not suitable for severe dehydration, shock and the need for more than 3 liters per day.

Subcutaneous fluids should only

be infused by gravity using standard IV giving set connected to a long tube butterfly needle with a Luer lock connection.

## **Examples of Suitable Fluids**

- Most common, 0.45% or 0.9% saline chloride (normal saline)
- 5% dextrose, but watch for inflammation due to acidity of solution
- 5% dextrose and 0.9% sodium chloride (D5NS)
- 2.5% glucose, and 0.45% sodium chloride (Dextrose Saline)
- Lactated Ringer's

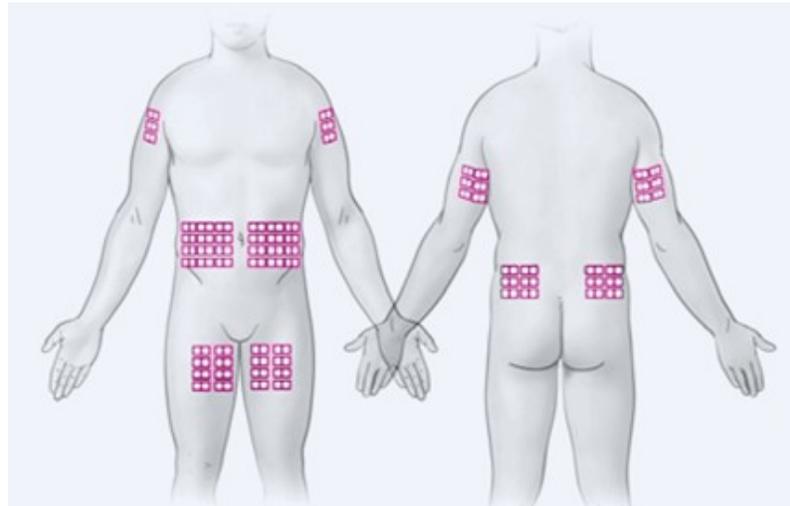
## **Unsuitable Fluids**

- Hyperosmolar solutions including dextrose 10%
- Colloids/parenteral nutrition
- Most other solutions with pH > 8.2 or < 5.3 and most drugs.

In general, formulations that are too acidic (pH <2) or too alkaline (pH > 11) increase the risk of irritation and chemical incompatibility. Also, preservatives such as sodium (e.g. benzoate) and solubilizing agents (e.g. polyethylene glycol, ethanol, propylene glycol, glycerin) can also increase the risk of local irritation.

## Selection of Device / Equipment

The smallest gauge and shortest length Subcutaneous needle should be chosen as appropriate for the individual patient. Usually 25 to 27 gauge, 1/2 inch. A standard administration set should be used and fluid must be infused by gravity. **Do not use a pump.** Fluids to be administered should be as near isotonic as possible.



## Insertion Sites

The subcutaneous infusion should be sited in a position with good lymphatic drainage to maximize absorption.

Any site with sufficient subcutaneous tissue could theoretically be used. Site consideration should be evaluated for drug absorption and also for patient mobility.

- Areas with adequate subcutaneous tissue and intact

skin

- Insertion site should be based on patient's anticipated mobility and comfort
- Sites may include: upper arm, subclavicular chest wall, abdomen, upper back, thighs

### Sites to avoid

- Infected, broken, or bruised skin
- Irradiated skin

## Insertion Procedure

- Gather supplies.
- Decontaminate the skin with an appropriate agent. (a common skin antiseptic currently being used is Chlorhexidine or Chlorhexidine with alcohol) Follow your local facility protocol.
- After initial site preparation, grasp skin between thumb and forefinger, lift up into small mound, and insert de-

## Drop Calculation Formula

$$\text{Number of drops per minute} = \frac{\text{Volume of fluid (mls)} \times \text{No. of drops per ml (giving set)}}{\text{Prescribed duration of Infusion (minutes)}}$$

The formula above may be used to calculate the required rate in drops per minute, although the number of drops per ml for the particular tubing set being used must be verified. This information may be obtained on the administration set packaging.

# Subcutaneous Access Information

*Continued from page 7.....*

- Aspirate the subcutaneous device to ascertain the absence of blood

If blood is present with aspiration, remove device, discard, and place a new device in a different site.

After insertion is completed

- Apply a sterile transparent semipermeable membrane (TSM) dressing over insertion site.

## Documentation

Documentation within the patient's permanent medical records should include evaluation of the need for a subcutaneous infusion, pa-

tient response to therapy, and the established intervals of monitoring the infusion site.

## Monitoring

Monitor for signs of complications, such as:

- Bleeding, erythema, swelling, leaking of fluid, bruising, bleeding, burning, or pain

Remove device and rotate site if present

## Sites to be avoided

- Infected, broken, or bruised skin
- Irradiated skin
- Edematous tissue (including the abdomen if ascites is

Present)

- Skin directly over a tumor
- Skin folds and breast tissue
- Skin near or over joints



*Continued from front page.....*

## **Why have pharmacies, hospitals and clinics contracted with our IV Team?**

Many things have changed over the years, but one consistency is our commitment to the community and the clients we serve. Our IV Nursing services are performed by Registered Nurses who use the nursing process to provide patient care for the restoration of optimal health.

Our IV Team has been referred to as the largest provider of IV line placement for Pharmacies and Long Term Care Facilities within the state of Washington. We also service Hospitals and Clinics. Starting in October of 2012, we will be extending into Oregon.

Although we are a busy team, our ongoing goal is to keep our turn around time for service within 2 to 4 hours of receiving a call.

Our services also expand beyond the placing of IV lines. When staff concerns come up our IV team provides troubleshooting of lines over the phone and we provide educational programs for placement, care and maintenance. We offer continuing education to meet state requirements for nursing licensing.

## **Indications for a continuous subcutaneous infusion**

<b>Route</b>	<b>Indications</b>
Oral	Nausea and vomiting Dysphagia Severe weakness Patient request (e.g. a large Number of tablets)
Rectal	Diarrhea Bowel obstruction Patient preference
Parenteral	Cachexia Fear Discomfort Infection

**SubQ injections can be given in various parts of the body where there space between skin and muscle can be easily accessed.**

1. The area of upper arm, located between the elbow and shoulder, is one of several popular subcutaneous injection sites.
2. To determine the right area, one can pinch the skin and pull. If the skin stretches more than an inch, it's a good spot for a subcutaneous injection.
3. Q small needle is typically used to deliver SubQ injections, so the amount of pain felt should be minimal.

**A commonly used area for SubQ injections is above the hipbone but below the waist.**

1. Injecting is fairly simple. Grasping the skin away from the flesh, the needle is inserted, held at a 90 degree angle if the skin can be pulled 2 inches (5.08 cm) or 45 degrees if it can only be pulled 1 inch (2.54 cm).
2. SubQ infusion can be used to deliver hydration, anti-nausea medications, and pain management medications, along with other medications, to patients in a variety of settings including hospitals, clinics, nursing

homes, and private homes.

3. In a SubQ infusion, a needle is inserted under the skin, rather than into a vein, and connected to an infusion pump which allows fluid to slowly enter the injection site.
4. SubQ infusion may be a simple as hanging a bag of fluids and allowing gravity to do the work, or a mechanized pump may be used to precisely control the dosage and to allow the patient to adjust it, if necessary.
5. The middle of the thigh is a good area for SubQ injection, anywhere between the front to the outer side, as long as there is enough skin to pinch.

## Infusion Devices

Subcutaneous infusion devices are generally electronic, battery driven devices with a syringe, cassette or reservoir to hold medications to be delivered via the Subcutaneous route to the patient.

## Procedure

1. Wash hands
2. Explain procedure to patient and gain consent
3. Clean skin using Chlorhexidine swab

4. Put on gloves
5. Pinch skin between thumb and forefinger to ensure Subcutaneous tissue is identified
6. Insert SubQ needle at a 45-degree angle. Secure insertion site with a transparent semi-permeable dressing e.g. Tegaderm.
7. If unsuccessful use another cannula. If blood appears in the cannula remove and insert a new one in another site.
8. Dispose of needle in sharps container as per policy
9. Document date, time and place of cannula insertion in nursing notes
10. Wash hands

**Site is to be checked for erythema, pain, swelling and findings are to be documents on nurses notes.**

## Removal

The subcutaneous cannula can remain in place for up to 72 hours or longer if there is no pain, swelling or erythema at the insertion site.

1. Document removal of cannula in nursing notes
2. Once the cannula is removed cover the site with a small dressing if any leakage appears.

## Sites not suitable for injection

- Skin folds and breast tissue
- Directly over tumour site
- Lymphoedematous limb or oedema—absorption may be reduced
- The abdominal wall if ascites present
- Pony prominences—little subcutaneous tissue, absorption reduced
- Previously irradiated skin—skin may be sclerosed, poor blood supply
- Sites near a joint—uncomfortable, increased risk of displacement
- Infected, broken or bruised skin

## Administering a drug that has not previously be given

- Absorption may be slower than by IM route
- Irritant drugs may cause a greater inflammatory reaction SubQ than IM
- The total volume for a bolus injection is not too great (recommended maximum is 2mls)

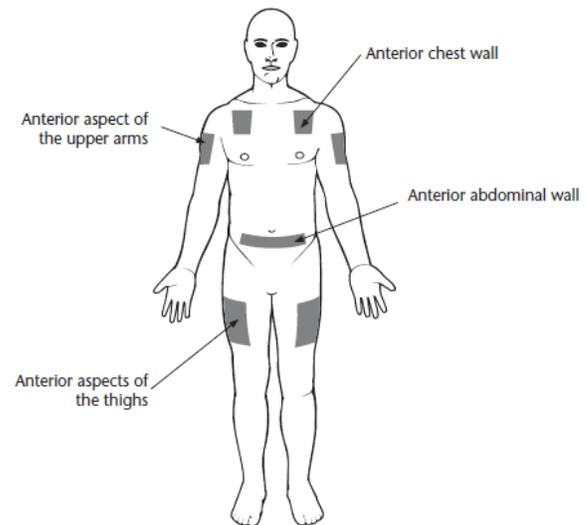
## Drugs not given by Subcutaneous route

The commonly used drugs listed below **must not** be given by SubQ route as they may cause tissue

necrosis:

- Antibiotics
- Diazepam
- Chlorpromazine
- Prochlorperazine (Stemetil)

Acceptable SC cannula insertion sites



If a local reaction occurs, the cannula should be restarted in a new location, using a fresh cannula and administration set. If this recurs, consider further diluting the drug (s).

## Advantages and disadvantages of Subcutaneous Route

### Advantages:

- Can be used when patients can no longer tolerate oral therapy due to nausea, vomiting or Dysphagia
- Increased patient comfort, avoiding the need for repeated injections

- Suitable for patients who are very drowsy, comatose or semi-comatose
- Avoids the administration of excessive tablets
- Cannula can be left in for 72 hours or longer if no redness/inflammation

### Disadvantages:

- Possible inflammation or irritation at infusion site
- Possible leakage of Subcutaneous site
- Possible allergic reaction (rare occurrence).

# I.V. Nurse Consultants Inc. & College of Medical Training

9100 Bridgeport Way SW, Lakewood, WA 98499

**Join together to meet your  
educational needs!**

**Our newsletter now offers  
Continuing Education Clock Hours**



## IV Nurse Consultants (IVNC)

We can meet your needs by providing group training, online training, customized on-site training and self study programs. For physicians, registered and licensed nurses, nurse practitioners, physician assistants, radiological technologists, and respiratory therapists.

**253-269-1269 or 888-476-6298**

***Basic/Advance IV Programs,  
Inservices & Workshops***

### IV Courses Offered:

Basic Concepts and Technology in I.V. Therapy  
Advanced Concepts and Technology  
in I.V. Therapy  
Combined Basic & Advanced Concepts and  
Technology in I.V. Therapy—Tailored to  
meet the needs of the individual group  
IV Refresher Course  
Guidelines for Administration of Selected  
Medication and Documentation  
The Essentials of IV Therapy Workshop

**The Nursing Commission has adopted continuing competency requirements. The rules went into effect January 1, 2011. The rules require completion of 531 hours of active practice and 45 hours of nursing continuing education by 2014.**

**IV Nurse Consultants &  
College of Medical Training  
Work together to provide  
continuing educational programs.**

### Additional IV Inservices & Workshops Available:

Basic IV Start Review	HIV/AIDs/BBP
IV Pumps (Various)	Catheter Occlusion
Positive pressure flushing	SQ Hydration
Mid/PICC Care & Maintenance	Central Lines
Possible complications in infusion	Site Selection
Prevention of patient pulling lines	Dressing Changes
Total Parental Nutrition (TPN)	Port Access

### **FOR MORE COURSES OFFERED**

Contact 253-269-1269 or 888-476-6298

## **IV Refresher Course (IV-R)**

**Prerequisite:** Must have completed a Basic IV Program

**Description:** This course is designed for RN's, LPN's and EMT's who have successfully completed a Basic IV Therapy course. By successfully completing this program, learners acquire the additional rule-related information/knowledge required by the state of Washington and Oregon.

This is an excellent 4 hour refresher

course designed to instill a great sense of confidence while placing IV lines. This course will include demonstration, review, skills lab and testing. This course presents the core skills needed for nurses to become recertified. It includes a review of the circulatory system, IV fluids, complications and covers a variety of venous access devices. This course is ideal for those requiring more practice or those who have not placed a line for awhile. Instructors utilize a

variety of teaching tools including visual aids, handouts, and hands on practice with life-like manikin arms.

In order to obtain IV Recertification, you will need to have verification that you have completed a Basic IV Program, complete the contents of our refresher program, reviewing handout material, IV Manikin practice, and complete an evaluation form. "**A certificate is awarded after successful completion**"

## EARN CONTINUING EDUCATION CREDIT

# CE

## Continuous Subcutaneous Access 2 CONTACT HOURS

### INSTRUCTIONS:

- On page 14 of this newsletter, record your answers in the test answer section of the CE enrollment form. Each question has one correct answer, unless otherwise stated. You may make copies of these forms.
- Complete the registration information, test and course evaluation.
- Mail the completed form and registration fee of \$28.00 to:  
**IV Nurse Consultants, 9102 Bridgeport Way SW, Lakewood, WA 98499.**
- Certificate will be mailed

within 4 to 6 weeks. For faster service, include a fax number and we will fax your certificate within 5 days of receiving your enrollment form.

- Deadline is December 31, 2014.
- You will receive your CE certificate of earned contact hours and an answer key to review your results. There is no minimum passing grade.

### PROVIDERS:

This Continuing Education (CE) activity for 2 contact hours has been provided by IV Nurse Con-

sultants and College of Medical Training (a vocational college located in Lakewood, WA.) They have joined together to meet the ongoing education needs of nurses and healthcare providers through the development of programs filled with information that presents challenging clinical concepts in a refreshingly original, easily understood format. Programs have been designed to engage nurses and healthcare providers and give them confidence.

## Test Questions

### 1. What is a subcutaneous infusion?

- a. An injection of medication into the muscle
- b. An infusion of fluid under the skin
- c. An infusion that can be used for only delivering pain medication

### 2. Where are Subcutaneous Injection Sites?

- a. Any site with sufficient subcutaneous tissue could theoretically be used
- b. Insertion sites should not

be based on patient's anticipated mobility

- c. Irradiated skin areas
- ### 3. A Subcutaneous injection is so named because?
- a. It is ran into the subcutaneous by means of a pump
  - b. The medication being delivered goes into the subcutaneous tissue, rather than a vein, muscle, or body fat
  - c. When infusing into the SubQ there is no need to consider the lymphatic absorption

### 4. What is NOT an indication for subcutaneous infusion.

- a. Persistent nausea and vomiting
- b. Decision to commence a subcutaneous infusion of medication should be made after careful assessment and review by health professionals involved in the patient's care
- c. Contraindications exist related to the drugs to be infused

5. **Each of the following is an important consideration in selecting an appropriate site EXCEPT.**
- Choosing an area with a good depth of subcutaneous tissue
  - Selecting a site that is easily accessible
  - Selecting a site that is close to a joint
6. **Key Principles when inspecting the insertion site would include all the following EXCEPT.**
- Inspecting for redness at the site
  - Inspecting for tenderness or hardness at the site
  - Ensuring the patient doesn't get out of bed while infusing medication
7. **Maintaining personal hygiene with a subcutaneous infusion can be an issue for patients . What advice would you give?**
- Don't worry, patients can have a shower because the device is waterproof
  - The infusion can be disconnected for a brief amount of time for showering
  - Patients will need to have sponge baths after the infusion is commenced
8. **Patients may become concerned that pain and other symptoms still won't be controlled as the same drugs have been tried by other routes. What reassurance would you give?**
- If there is breakthrough pain or other symptoms then extra medication can be given
  - All pain and symptoms will be managed, there will be no more problems.
  - If the subcutaneous infusion doesn't work, nothing will
9. **Your patient's infusion is not running on time, What key areas should be assessed?**
- Correct volume (more or less than required) added to reservoir at preparation
  - Failure to account for infusion volume required to prime the tubing
  - All of the above
10. **Which two of the following infusion site characteristics would indicate problems?**
- Pink skin / Absence of tenderness
  - Tenderness / redness
  - Swelling / hardness
11. **Your patient's symptoms have been well controlled however, he/she is now complaining of an exacerbation of her symptoms. Possible reasons may include:**
- Device malfunction
  - Medication requires review and/or condition is changing or deteriorating
  - All of the above
12. **You are preparing to insert a cannula for your patient, who requires a subcutaneous infusion via a syringe driver. What is generally the preferred site for insertion of the cannula?**
- Back of the hand
  - Upper Arm
  - Chest or Abdomen
13. **Your patient is distressed or agitated, and there is a risk of dislodgement, which site might be considered?**
- Scapula
  - Thigh
  - Abdomen
14. **Which of the following drug is contraindicated for subcutaneous infusion?**
- Chlorpromazine
  - Morphine
  - Fentanyl
15. **Monitor for signs of complications, such as.**
- Bleeding, erythema, swelling, bruising
  - Leaking of fluid, burning, pain
  - All of above

#### *Bibliography*

- Infusion Nurses Society. Infusion Nursing Standards of Practice.
- Elkin Perry & Potter. Nursing Interventions & Clinical Skills, 3rd Edition. Mosby

## CE ENROLLMENT FORM

### A. Registration Information:

Last Name \_\_\_\_\_ First Name \_\_\_\_\_ MI \_\_\_\_\_  
Address \_\_\_\_\_ Apt. or Space # \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
Telephone \_\_\_\_\_ Fax \_\_\_\_\_ Email \_\_\_\_\_  
( ) LPN ( ) RN ( ) NRP ( ) OTHER Are you certified ( ) Yes ( ) No  
Job Title \_\_\_\_\_ Specialty \_\_\_\_\_ Type of Facility \_\_\_\_\_  
State of License (1) \_\_\_\_\_ License# \_\_\_\_\_  
State of License (2) \_\_\_\_\_ License# \_\_\_\_\_

## Test Answers Section

A	B	C	A	B	C	A	B	C	A	B	C	A	B	C					
1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	4	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	7	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	10	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	13	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	5	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	8	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	11	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	14	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	6	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	9	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	12	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	15	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## Course Evaluation

1. Did this CE activity's learning objectives relate to its general purpose? ( ) Yes ( ) No
2. Was the Newsletter study format an effective way to present the material? ( ) Yes ( ) No
3. Was the content relevant to your nursing practice? ( ) Yes ( ) No
4. How long did it take you to complete this CE activity? \_\_\_\_\_ hours \_\_\_\_\_ minutes
5. Suggestion for future topics \_\_\_\_\_

## Two Easy Ways to Pay

( ) Check or money order enclosed (Payable to IV Nurse Consultants)

( ) Charge my ( ) MasterCard ( ) Visa

Card# \_\_\_\_\_ Exp.date \_\_\_\_\_ Code \_\_\_\_\_

Signature \_\_\_\_\_ Print \_\_\_\_\_

Mail completed test with registration fee to: IV Nurse Consultants

CE Group, 9102 Bridgeport Way SW, Lakewood, WA 98499