

INSTRUCTION MANUAL

S401.100

ADVANCED INTRAVENOUS TRAINING ARM

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INTRODUCTION

The simulator is an effective training tool for infusion, blood collection, intravenous injection, intramuscular injection, and subcutaneous injection exercises. It is to be used only as part of an approved program for patient care.

The simulator is supplied in a carrying bag. The carrying bag contains the training arm and hand mounted on a Lucite[®] base, a blood dispensing bag attached to a metal stand, synthetic blood concentrate, and a spare arm skin. The arm and hand contain anatomically-located venous grooves, which are fitted with soft latex tubes that closely simulate the consistency of the vein. An opaque, pliable vinyl skin, which is removable and washable, is stretched over the venous structure, simulating the normal adult arm.

This training arm features the following:

1. Subcutaneous injection areas on the volar side of the forearm and the lateral side of the upper arm
2. An intramuscular injection site in the deltoid area
3. Three veins in the dorsum of the hand for additional intravenous training techniques.
4. Intradermal injection areas on the inside of the left forearm and the left posterior upper arm.

In addition, the training arm contains simulated cephalic, basilic, antecubital, radial and ulnar veins. Simulated blood may be placed in the dispensing bag, which is equipped with a squeeze bulb. Applying pressure via the squeeze bulb permits the veins to stand out, simulating a clenched fist or tourniquet situation. Release of pressure simulates collapsed veins. Use of the squeeze bulb permits the palpability of the veins to be varied, as seen in routine hospital or emergency situations.

INSTRUCTIONS FOR USE

SUMMARY:

1. Place the simulator on a level surface and raise the vinyl bag into position.
2. Close the white "click valve" at the outlet and fill the system with water initially. Once you are familiar with the simulator, use the blood concentrate.
3. Open the outlet and allow any air bubbles to escape.
4. Close the outlet
5. Perform the intravenous, subcutaneous, or intramuscular procedures. See the following detailed instructions
6. Note that use of needles larger than 22 gauge will reduce the skin/vein life.
7. The skin and veins are designed to show even minute leakage when an eccentric puncture is performed. A "perfect" stick will show little or no leakage.
8. When the training session is completed, open the outlet and drain the fluid.
9. Clean with water. See detailed instructions
10. Contact Customer Service at 1-800-882-6655 to place orders for additional skins, veins, and other replacement parts.

IV EXERCISES

Setting up an IV line is an invasive procedure requiring an aseptic technique. The nominal procedure for setting up an IV line using the simulator is as follows:

1. Apply the desired pressure to the veins via the squeeze bulb.
2. Select the appropriate vein site and clean the skin with alcohol. Avoid use of providone-iodine, as this will cause the vinyl skin to become discolored and brittle.
3. Apply the tourniquet 4-6 inches above the selected site.
4. Simulate anesthetization of the skin if needed.

5. Select a 14-18 gauge cannula and a 19 gauge needle for infusing large amounts of fluid, or a 20 gauge cannula and a 21 gauge needle for general infusion, or a 22 gauge cannula and a 23 gauge needle for a child.
6. Apply finger pressure to the vein distal to the puncture site.
7. Puncture the skin and the underlying vein with needle. The bevel of the needle should be up, and the needle should be angled at a 20-30 degree angle. You will feel a pop as the needle enters the vein and you will be able to note blood return.
8. Stabilize the entry site as desired.
9. If instructed, a catheter may be advanced over or through the needle. Remove the needle and attach the infusion tubing to the catheter.
10. Apply ointment and dressing and remove the tourniquet.

SUBCUTANEOUS AND INTRA-MUSCULAR INJECTIONS

An injection is an invasive procedure requiring an aseptic technique. Absorption of drugs is somewhat slower in subcutaneous injection as compared with intramuscular injections. The needle size for subcutaneous injections is usually 25-27 gauge, and $\frac{1}{2}$ to $\frac{7}{8}$ inches long. For intramuscular injections, the needle size is 20-23 gauge and is usually $\frac{5}{8}$ to $1\frac{1}{2}$ inches long. A nominal procedure is as follows:

1. Select the injection site.
2. Palpate the area for tenderness, masses or edema.
3. Clean the site with an antiseptic.
4. For subcutaneous injections, spread/stretch the skin across the site, or pinch the skin. Inject the needle quickly into the skin at a 45 degree angle and release the skin.
5. For intramuscular injections, spread/stretch the skin across the site and inject the needle into the skin quickly at a 90 degree angle.
6. After administering the injection, withdraw the needle quickly and swab the area with antiseptic.

INTRADERMAL INJECTIONS

A small amount of purified protein derivative (PPD) Tuberculin is administered by the Mantoux technique, which is an injection placed under the top layer of skin on the inside of the forearm.

1. Clean the site with an antiseptic
2. With a very small, disposable 26 gauge needle and syringe, directly under the the skin, inject a small amount of tuberculin. The needle bevel should be facing upward to produce a discrete, pale elevation of the skin approximately 6 mm to 10 mm in diameter.
3. Do not cover with a bandage.
4. Do not rub arm dry after washing.

48 - 72 hours later, the injected area is checked for any type of skin test reaction, by a trained health care worker. If the patient neglects to show up within this time period, results which are positive can still be measurable up to one week after testing.

ASSEMBLY OF THE SIMULATOR

1. Place the arm on a table or other flat surface.
2. Lift the hinged metal stand supporting the blood dispenser. and move the metal stand into position until it rests on the Lucite base. Check that the tubing is not kinked.
3. The veins of this simulator are designed to leak a small amount of fluid if the needle is not inserted correctly, simulating the response of the human body. Therefore, it is suggested that clean water be used in the system while students are learning correct venipuncture techniques.
4. Once a basic skill level is achieved, follow the instructions for preparing artificial blood, as shown on the jar enclosed. Pour the blood into a dispenser using a small funnel.
5. Remove entrapped air in the veins by locating a small cutoff valve near the shoulder of the arm. This valve is normally closed to prevent leakage. Release this valve and you will be able to observe the flow of fluid. As soon as the bubbles stop, the lines are completely filled with fluid. "Click" the valve closed, and the simulator is ready for use.

DISASSEMBLY AND RE-ASSEMBLY

1. Starting at the top of the arm, remove the skin by rolling it down and over the wrist. This will expose the veins. Use talcum powder to ease movement.
2. Remove the veins from the grooves in the arm.
3. Replace the veins as required.
4. Assemble in reverse order

CLEANING AND REPAIR

1. The skin of this training arm can be cleaned with a mild detergent, or soap and water. After drying the arm, lightly dust it with talcum powder. This will keep the training arm supple and easy to use.
2. If the venous system is blocked, first check that the tubes are not kinked. If the blockage persists, remove from the shoulder and flush veins with water.
3. Indelible marks made with ballpoint pens, ink or magic markers will remain.
4. Improper storage may damage this training arm. Store in a cool area in the box provided by Gaumard. Do not stack or keep heavy materials on the box.

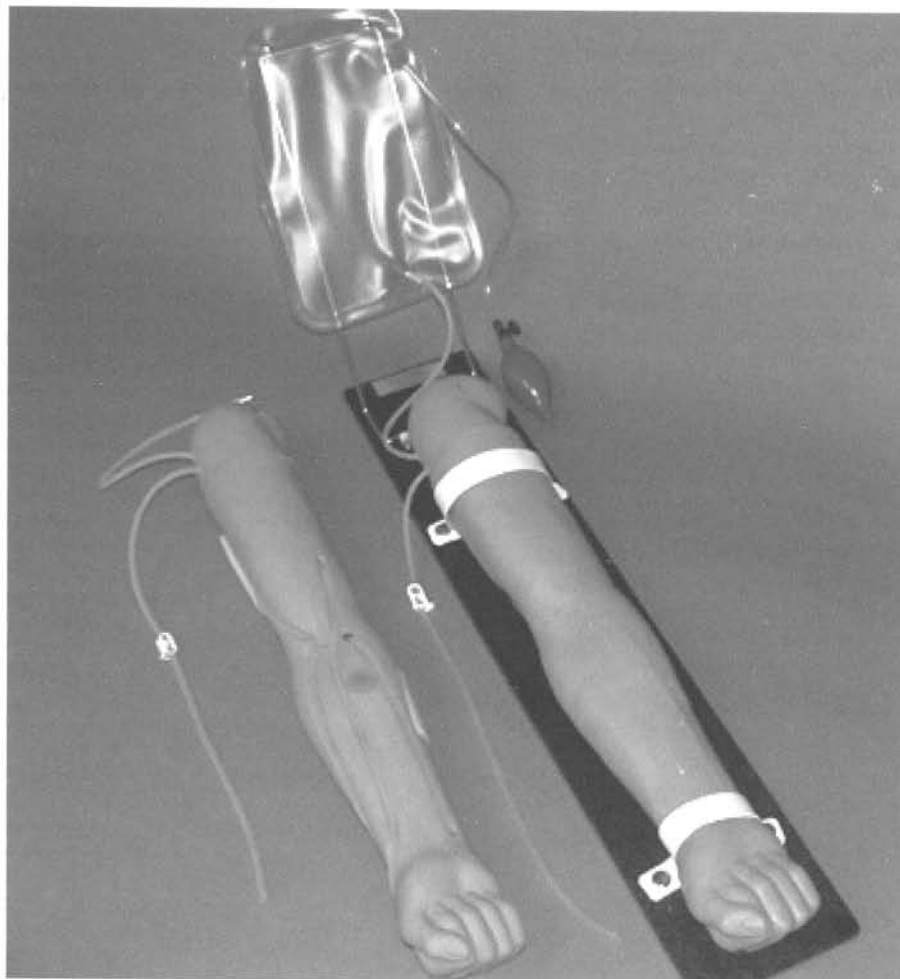
SHOULD YOU HAVE ANY QUESTIONS AFTER READING THIS INSTRUCTION MANUAL, PLEASE CONTACT OUR CUSTOMER SERVICE DEPARTMENT FOR FURTHER ASSISTANCE:

800-882-6655 USA
305-971-3790 Worldwide
305-667-6085 Fax

e-mail: sima@gaumard.com

Internet Catalog: www.gaumard.com

Injection and Infusion Trainer Pictured With and Without Outer Skin



Gaumard simulators are available for IV, IM, subcutaneous, intradermal, and arterial exercises

Simulators produced before January 2001 were provided with a blood bag having one inlet and four outlet tubes. Since January 2001, the number of outlet tubes was reduced from four to one. The functionality of each simulator has not changed

Features

- Single inlet and outlet improves performance and eases vein replacement
- "200" series arms attach directly to Gaumard® simulators
- "400" series arms are stand alone task trainers

Product No#	IV	IM	SubQ	Intradermal	Arterial	Skin Type
261	✓					Latex
262	✓	✓	✓			Latex
262.100	✓	✓	✓	✓		Vinyl
263	✓	✓	✓	✓	✓	Vinyl
400	✓					Latex
401	✓	✓	✓			Latex
401.100	✓	✓	✓	✓		Vinyl
402	✓	✓	✓	✓	✓	Vinyl



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