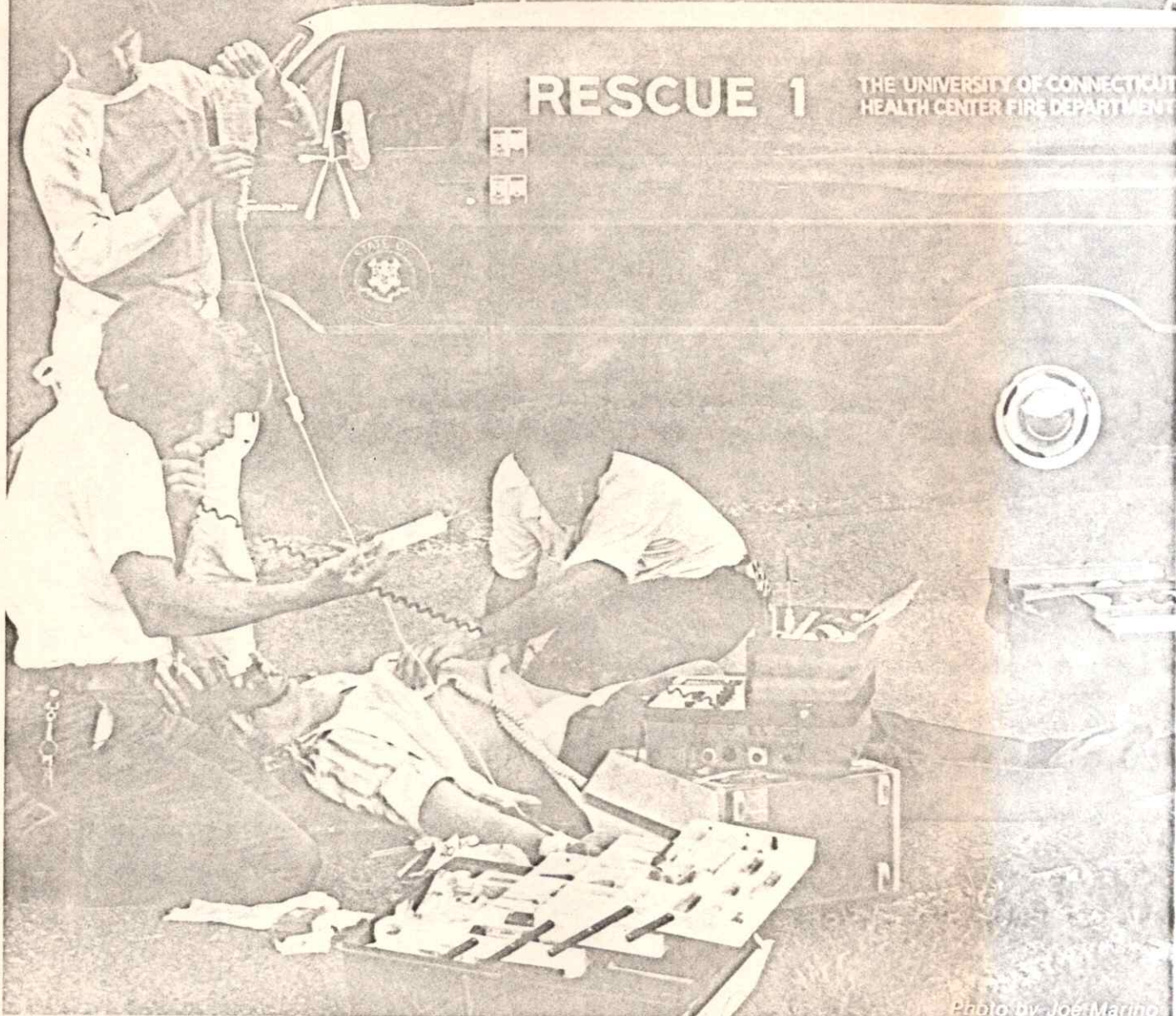


Learning Correct IV Therapy



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INTRAVENOUS THERAPY is a major procedure and should not be attempted until one has been thoroughly trained by an experienced practitioner to insert the needle or catheter. The individual starting the IV,

if not capable, could seriously harm the patient.

SAFETY OF THE EQUIPMENT

When opening the fluid container, it is important to inspect it for any defects in the glass bottle or plastic bag. It is also necessary to check the fluid inside the container. If using a glass bottle, hold the bottle at eye level and rotate the bottle looking for a quick flash of light which would indicate a razor thin crack in the glass. This could

result in contaminated fluid as pathogens could enter the container through this crack. Most IV solutions should be colorless unless otherwise indicated by the manufacturer. As you rotate the bottle, look at the solution color and observe if there are any particles floating in the solution. If so, do not use.

When opening an open unit glass bottle with an external airway, you will notice as you remove the rubber lid, that there will be a bubbling in the
EMERGENCY

bottle and a swishing sound. This is caused by the air rushing in to fill the void created by the release of the vacuum in the container. If this is not present, do not use the bottle.

If using a closed unit bottle which has no external airway, note that when you insert the drip chamber, there will be an external airway on the drip chamber. As you insert the spike a bubbling should occur in the bottle. If none occurs do not use the bottle.

When using a plastic bag, after removing the protective cover, hold the bag up to eye level and squeeze the bag together, first from one end, then the other end and observe for holes. If there is a hole in the bag, it may not leak in the IV administration position, but the fluid will squirt out when pressure is applied to the bag. If this occurs, because of the possibility of pathogens entering through the hole, do not use the bag. Remember not to discard any defective equipment; always save it and return it to the manufacturer.

Before using the plastic catheter, always check for defects. Be sure that the label on the container states that the catheter is sterile, nonpyrogenic and radiopaque. Confirm that the length of the catheter is the same as stated on the label. If using a catheter over a metal cannula, be sure the bevel of the metal needle extends farther than the tip of the plastic catheter.

SELECTING THE VEIN

Before attempting to insert a cannula into a vein, always confirm that the blood vessel is a vein. This is done by placing your finger over it and pressing gently. If you feel a pulse, do not use the vessel as it probably is an artery. Veins do not pulsate. Coldness constricts blood vessels, so be sure to warm the patient and make him as comfortable and relaxed as possible. This should dilate the vein and make it easier for introduction of a cannula. Pain also has a tendency to constrict the blood vessels. When selecting a vein try to select a distal vein with an ample blood supply. Make sure that the cannula of the needle is smaller than the lumen of the vein. Aseptic technique is of the utmost importance; do not use any equipment unless it is sterile.

DILATING THE VEIN

While attempting to insert a cannula, be sure the extremity is always lower than the heart. It is usually best to have the patient in a supine position. You will notice that when the extremity is lowered below the level of the heart, veins have a tendency to dilate, making it easier to introduce the cannula. If the

extremity is raised above the level of the heart, the blood drains away and the veins will then constrict. Tourniquets are used to dilate veins. If a rubber tourniquet is used and the patient's blood pressure is normal for him, then place the tourniquet about six inches above the injection site. If it is still difficult to dilate the vein, place a warm towel or cloth over the entire length of the vein and if possible leave it for 10 minutes.

CANNULATING THE VEIN

Remember to keep the extremity below the heart. Check the equipment for defects and irregularities. Shave the IV site area as needed and prep the site with an antiseptic, preferably one which contains iodine. Enter the vein at about a 30° or 40° angle depending on the amount of adipose tissue the patient has. Enter with the bevel of the needle up and gently push the bevel of the needle through the epidermis, dermis, subcutaneous tissue, and the three layers of the vein.

As the bevel of the needle enters the vein, there will be a flashback of blood into the flash chamber or syringe. When this occurs lower the catheter as close to the skin as possible and thread the cannula to the desired length. Place a piece of tape over the catheter securing it to the skin. Remove the metal cannula from the inside of the plastic catheter. Connect to the hub of the catheter. The IV tubing which has been previously filled with solution according to a physician's orders. Next tape the catheter hub in the chevron manner. This prevents the catheter from moving inside the lumen of the vein, which could result in a phlebitis or thrombus.

If a patient is in shock or has an extremely low blood pressure it is better to insert the cannula with bevel down. This method will lift up the top of the vein in the tissue with the tip of the needle. As this occurs the posterior part of the vein will drop down. When the IV tubing is connected to the hub of the cannula and the IV is running, the fluid pressure will have a tendency to dilate the vein, facilitating insertion of the catheter to the desired length in the vein. Whether the catheter is inserted bevel up or down, take a small piece of tape and join the hub of the catheter to the IV tubing. This will prevent the IV tubing from slipping out of the hub of the needle. It is always best to place the tape in a horizontal position on the catheter and IV tubing. Apply a dry sterile dressing over the injection site. Secure with tape and label with the date, time, gauge, length of the catheter, and your name. Now recheck the IV flow rate to be sure it has not

changed during manipulation. Label the IV container with the patient's name, date, time, solution contents, flow rate and your name.

TERMINATING THE IV

When terminating an IV, it is essential that the catheter be removed intact. Before discontinuing the IV, make sure there are no more IV orders. Explain to the patient what you are going to do. Always try to elicit your patient's assistance. Patient cooperation will facilitate this procedure and decrease complications.

Shut off the IV flow clamp, then gently remove the adhesive tape. Place a sterile gauze over the injection site, making sure not to place any pressure over the cannula of the catheter while in the vein. Quickly grab the hub of the catheter and pull straight back with one motion. Do not raise the catheter until it is completely out of the skin. Avoid twisting the catheter when removing as this may traumatize the vein and result in injury to the lumen of the vein.

Immediately check the length of the catheter to determine that you have removed the entire cannula. Now press on the gauze over the injection site to prevent bleeding into the subcutaneous tissues. You may raise the arm above the level of the heart which will drain away the blood. This will prevent a hematoma.

CHARTING

It is extremely important to chart accurately the treatment given to the patient. Remember this is the only record of what has been done. If complications occur later on, the only way to verify what transpired is by checking the notes made during the procedures. In charting, timing is of prime importance. Chart the name of the vein used, location, gauge of the catheter, length of the cannula, time IV was started, type of solution used, additives to the solution, medications administered, size of container, rate of administration, patient's response to the treatment, vital signs, physician's name, anyone assisting with the procedures, and your signature.

BIOGRAPHICAL REFERENCE:

William Kurdi, RN, MA, is licensed in 21 states. He holds a California State Teaching Credential in nursing and psychology and belongs to numerous organizations involved in the advancement of medicine and education. He has authored two books: "Modern Intravenous Therapy Procedures," C 1976, and a novel, "Life In A Mental Hospital," C 1977.

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IV THERAPY

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THE 100 DON'TS OF IV THERAPY

1. Don't attempt to start the IV until you have been instructed in the proper manner.
2. Don't attempt to start the IV on the patient until you check the physician's order.
3. Don't attempt to start the IV until you check the patient's vital signs.
4. Don't attempt to start the IV unless you know what the IV solution is given for.
5. Don't attempt to start the IV until you have the conscious patient's cooperation.
6. Don't attempt to start the IV until you have explained to the conscious patient what you are going to do.
7. Don't attempt to start the IV on an anxious patient until you have tried to relax him.
8. Don't attempt to start the IV on an uncooperative patient without getting someone to assist you.
9. Don't set up the equipment in front of the patient.
10. Don't start the IV in front of other victims.
11. Don't start the IV in front of relatives.
12. Don't use any equipment unless you are positive it is sterile.
13. Don't use IV tubing unless it has injection sites on it.
14. Don't open the glass bottle until you check it for minute cracks.
15. Don't open the plastic bag until you check it for holes.
16. Don't open the container until you check it for particles in the fluid.
17. Don't open the container until you check the color of the solution.
18. Don't use the bottle if it does not bubble after you remove the rubber lid, which shows a vacuum present in the bottle.
19. Don't insert the spike of the drip chamber until you know the size of the drop count.
20. Don't open the IV tubing box until you are sure you have the right size tubing.
21. Don't attempt to start the IV until you have positive confirmation you have the right patient.
22. Don't attempt to start the IV until you are sure the patient is not allergic to any ingredient in the container.
23. Don't attempt to start the IV on an unconscious patient until you have someone identify the patient for you.
24. Don't attempt to start the IV unless the patient is in a comfortable position.
25. Don't discard any defective equipment; the manufacturer must be notified immediately.
26. Don't attempt to start the IV until you are in a comfortable position.
27. Don't attempt to start the IV until you wash your hands with soap and water. Or use alcohol swab to clean hands.
28. Don't use a tourniquet until you wash it with soap and water or use IV start kit.
29. Don't use the arm the patient favors.
30. Don't use areas of flexion to place the cannula.
31. Don't attempt to shave the patient's arm until you ask for his permission.
32. Don't attempt to shave the patient's arm dry.
33. Don't attempt to shave patient's arm unless it has soap and water on site to be used.
34. Don't use any equipment where package has been opened before.
35. Don't open needle or catheter package until you read instructions on package.
36. Don't use catheter over the needle set unless the bevel of the needle extends farther than the catheter.
37. Don't open intracath package until you check the package to be sure the needle bevel guard is enclosed.
38. Don't use a plastic catheter unless it is radiopaque.
39. Don't attempt to insert the needle until you press on the vein to be sure it is not the artery.
40. Don't attempt to start the IV until you know the difference between a vein and artery.
41. Don't use cold antiseptic on the injection site.
42. Don't push needle too deeply to go through the posterior aspect of the vein.
43. Don't use too much tape to secure the cannula.
44. Don't insert the cannula until you check the entire length of the vein for damage.
45. Don't use a cannula larger than the size of the vein.
46. Don't apply the tourniquet too tightly.
47. Don't tape the cannula in securely until you check the patency of the needle.
48. Don't use armboard unless indicated.
49. Don't tape armboard to patient's skin, use tape to tape.
50. Don't tie restraints around arm and board.
51. Don't tie restraints to area where restraints may act as tourniquet.
52. Don't allow any air bubbles to enter the patient's veins.
53. Don't ever pull back on the plastic catheter while the metal cannula is in the patient's vein.
54. Don't ever push the metal cannula up into the plastic catheter while it is in the patient's vein.
55. Don't leave the IV container hanging over the patient at any time.
56. Don't place the IV container in front of or by heat.
57. Don't leave the IV container in front of the air conditioner or cold air.
58. Don't allow the IV tubing to hang lower than the patient's body.
59. Don't allow the patient out of bed by himself when he has an IV running.
60. Don't leave patient alone after starting the IV without writing on dressing over site of IV the size and length, date and time and your name.
61. Don't ever leave patient after changing position without checking the flow rate.
62. Don't allow patient to lie on IV tubing after changing position.
63. Don't allow IV container to run empty.
64. Don't lower the container below the patient to check for infiltration.
65. Don't allow the IV to continue to run if injection site shows signs of phlebitis development.
66. Don't leave the patient without charting all details on the patient's chart (i.e.) date, time started, type of solution, amount started and flow rate.
67. Don't allow the IV to continue if injection site shows purulent drainage present.
68. Don't irrigate a clotted cannula.
69. Don't mix medications unless you know they are compatible.
70. Don't add medications to IV solutions unless you know they are compatible.
71. Don't add medications to IV container until you know the drugs you are using are not chemically related to one the patient is allergic to.
72. Don't administer the medications until you check if patient is taking any over the counter drugs and check to see they are compatible.
73. Don't administer medications unless you know what they are for.
74. Don't administer medications unless you know the average dose.
75. Don't administer medications unless you know the toxic signs.
76. Don't administer medications unless you know the antidotes for overdose.
77. Don't administer medications unless you check the vital signs.
78. Don't administer medications unless you are sure the patient's kidneys are working.
79. Don't administer medications unless they have been approved for administration by the physician.
80. Don't add medications to the IV container until you are ready to administer it to the patient.
81. Don't mix medications until you read the manufacturer's recommendations for type of solvent and amount to be used for reconstituting it.
82. Don't use the medication until you check expiration date on vial.
83. Don't place the remainder of the medication in refrigerator until you label vial with time, date, patient's name and dosage equivalent.
84. Don't use final or in-line filter unless you are sure medication may be used with filters.
85. Don't use infusion pump until you have been shown how to use it.
86. Don't administer blood without filter.
87. Don't start blood without y-type IV tubing which has injection site on tubing.
88. Don't remove blood from blood bank until you check it in lab for identification and contamination.
89. Don't remove blood from lab until you check expiration date.
90. Don't add blood to IV until vital signs have been checked.
91. Don't add blood to patient's IV until another person checks identification number with you.
92. Don't leave patient alone after starting IV.
93. Don't add medications to blood container.
94. Don't leave patient until you have made arrangements for someone to monitor the vital signs.
95. Don't run blood with dextrose.
96. Don't leave patient alone if symptoms of reaction occur.
97. Don't discontinue IV if systemic reaction occurs.
98. Don't attempt to make up loss of IV solution if you get behind on flow rate without notifying physician.
99. Don't discard any equipment when a patient has had a local complication.
100. Don't discard any equipment when a patient has had a systemic complication.

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