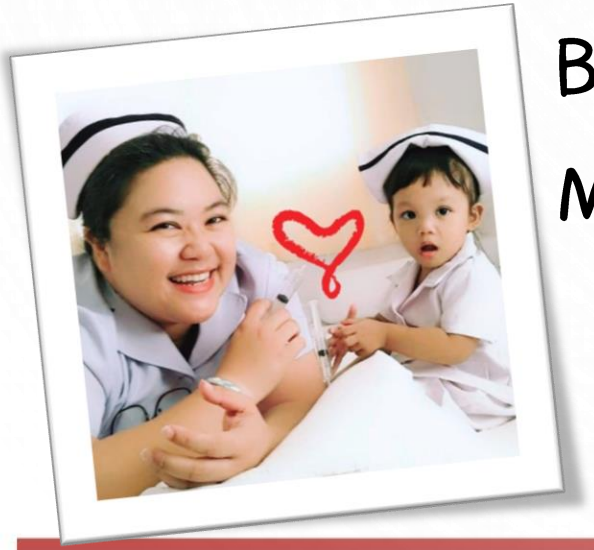
CHILD AND ADOLESCENT NURSING PRACTICUM

TOPIC 6

PARENTERAL DRUG ADMINISTRATION



By

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OBJECTIVES OF LEARNING

The topic aims to develop in students an understanding of, and an ability to do

1. An intravenous drug administration
2. Changing intravenous solution
3. Regulating intravenous flow rate

AN INTRAVENOUS DRUG ADMINISTRATION

LEARN TO CONCERN BY...

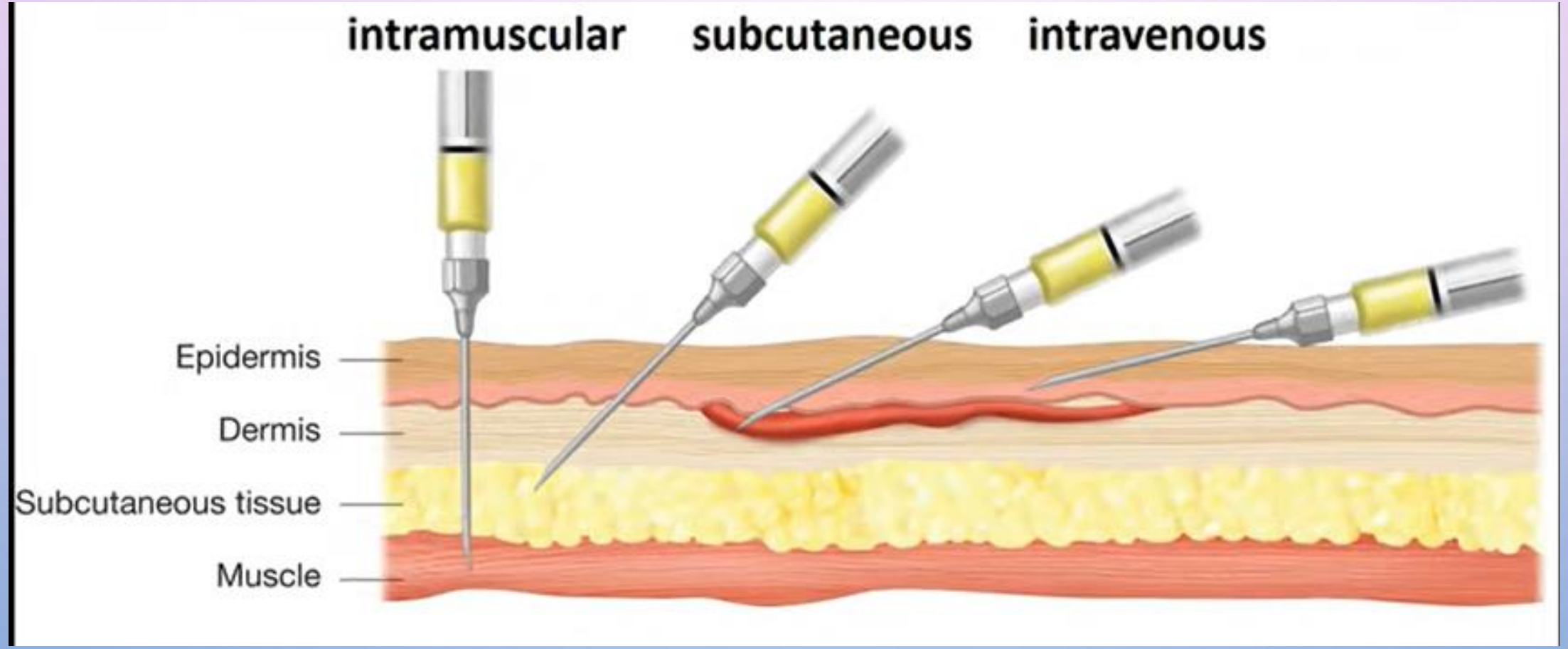
- discuss the way intravenous drug administration can cause infection;
- identify potential entry points where organisms may gain access to the system;
- state how line sepsis can be detected.
- describe how risks of infection in intravenous drug administration can be minimized

PARENTERAL ROUTE OF MEDICATION

- PARENTERAL ADMINISTRATION IS INJECTION OR INFUSION BY MEANS OF A NEEDLE OR CATHETER INSERTED INTO THE BODY

1. INTRAVENOUS
2. INTRAMUSCULAR
3. SUBCUTANEOUS
4. INTRA-ARTERIAL
5. INTRA-ARTICULAR
6. INTRATHECAL
7. INTRADERMAL

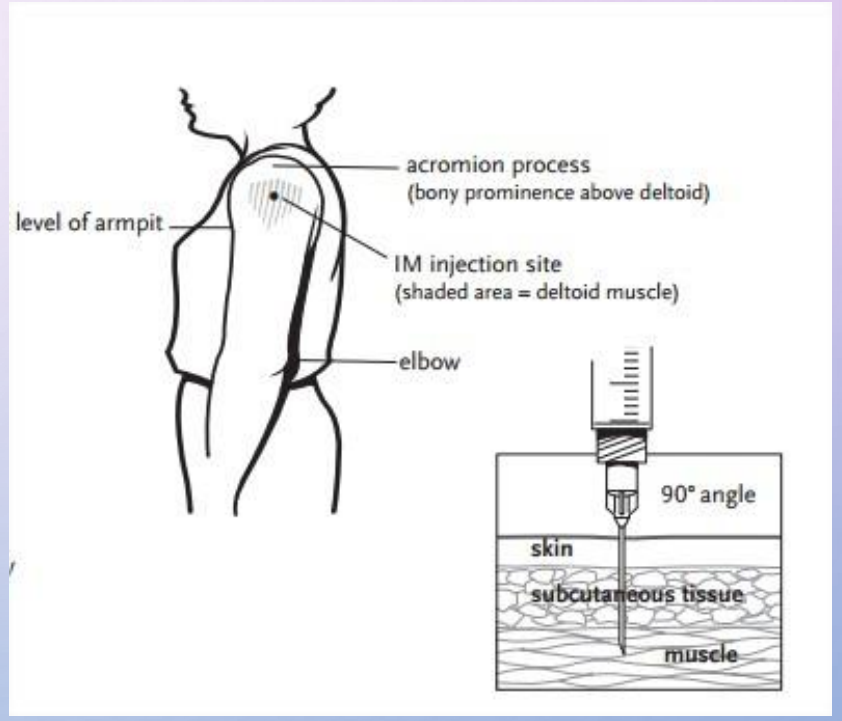
PARENTERAL ROUTE OF MEDICATION



Picture From: https://i.ytimg.com/vi/4wg3BSRyK3k/maxresdefault.jpg

INTRAMUSCULAR (IM) INJECTIONS

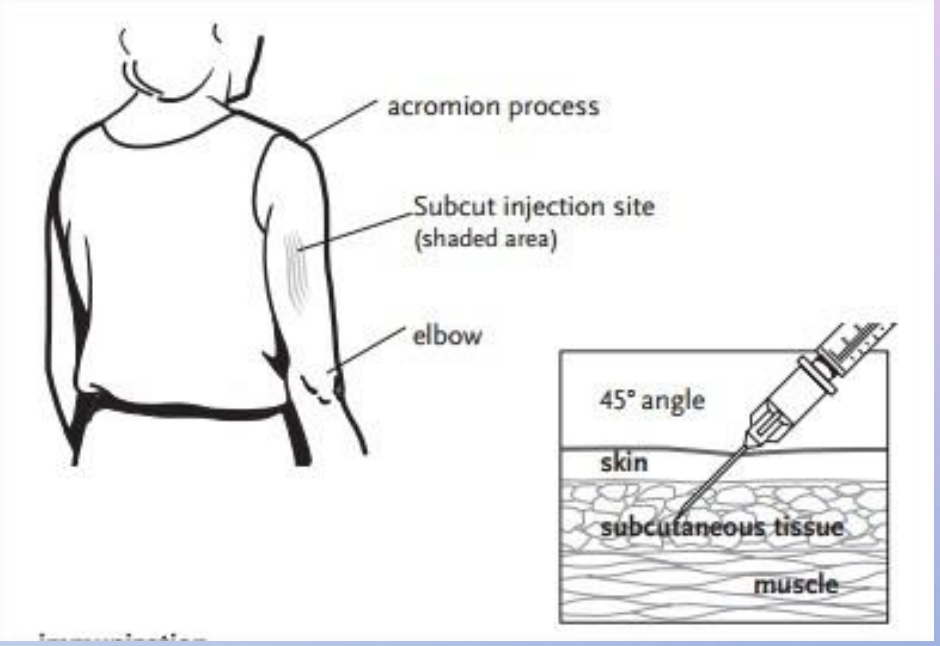
- **Injection site:** Given the central and thickest portion of the deltoid muscle – above the level of the armpit and approximately 2–3 finger breadths below the acromion process. To avoid causing an injury, do not inject too high (near the acromion process) or too low.
- **Needle size:** 22–25 gauge, , 1–1½" needle
- **Needle insertion** : Use a needle long enough to reach deep in to the muscle. Insert the needle at an angle of 90° to the skin with a quick thrust. Separate the two injections given in the same deltoid muscle by a minimum of 1".



Picture From:
http://www.medsplan.com/MedicalInfoDetails/Angles-for-inserting-injections

SUBCUTANEOUS (SUBCUT) INJECTIONS

- **Injection site** : A subcutaneous injection is administered as a bolus in to the subcutis ie , the layer of skin directly below the dermis and epidermis, collectively teamed as cutis. Subcutaneous injections are highly effective in administering vaccines and medications such as insulin, diacetylmorphine, morphine,and goserelin.
- **Needle size** : 23–25 gauge, 5/8" needle.
- **Needle insertion : 1)** Pinch up on the tissue to prevent injection in to the muscle. 2) Insert the needle at an angle of 45° to the skin. 3) Separate the two injections given in the same area of fatty tissue by a minimum of 1".



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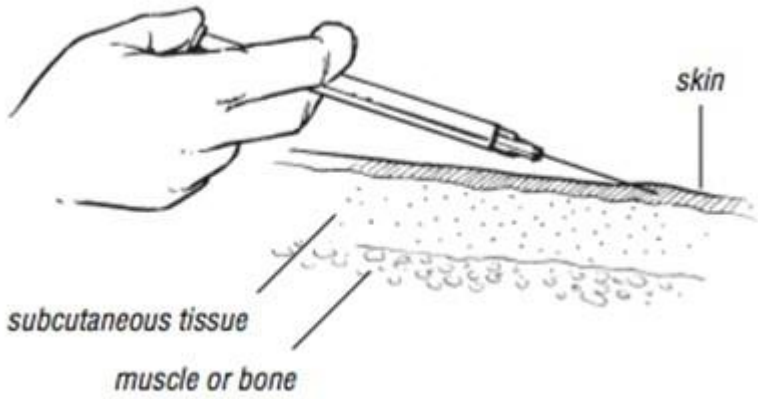
INTRADERMAL

- **Injection site :** Intradermal injection is the injection of medication into the dermis, just below the epidermis.
- **Needle size :** Amount to be injected is usually 0.01 - 0.1 cc. Use a tuberculin or 1 cc syringe and 25-27 gauge, 3/8 - 5/8 inch needle.
- **Needle insertion :** The needle has to be inserted into the skin at an angle of 5 to 15-degree.



Picture From:
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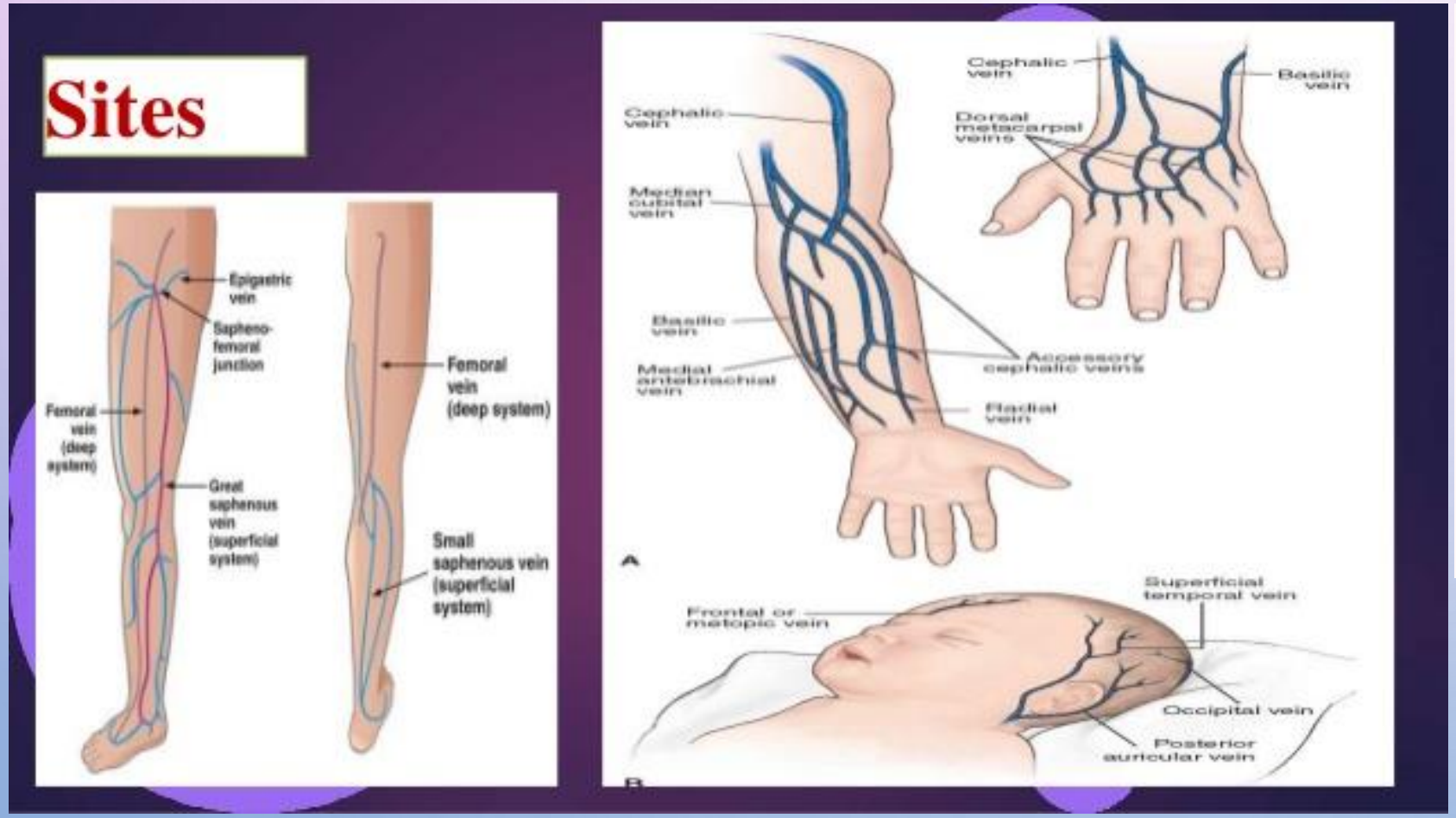
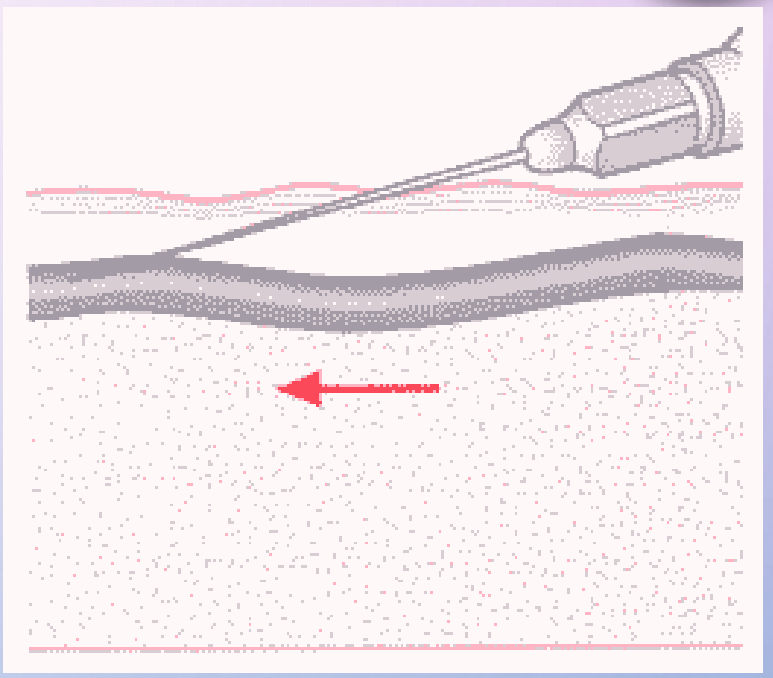
INTRAVENOUS INJECTION

- **Injection site:** include the areas where veins lie close to the skin and are enough to withstand the pressure and volume of an intravenous injection. The peripheral intravenous injection sites are primarily located in the upper extremities or arms. IV sites are located in the legs, but intravenous injection sites in the lower extremities are hard to reach and very painful to use. Central intravenous injection sites are commonly difficult to reach with a standard IV cannula or a hypodermic needle and usually need placement of an indwelling central catheter such as a subclavian line or PICC line before an administration of IV medication.
- **Needle size :** Intravenous injectors commonly use shorter needles no larger than 25G. Intravenous injectors use either a tuberculin needle and syringe (usually called a blue tip because of its color) or a standard insulin set (orange cap).
- **Needle insertion :** There are two kinds of IV medication administration. An IV “push”- is a one time, rapid injection of medication into the bloodstream and an IV infusion - is a slow “drip” of medication into the vein over a set period of time, to deliver a constant amount of therapy. Insert the needle at an angle of 25° to the vein.

INTRAVENOUS INJECTION





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IV DRUG ADMINISTRATION

- Potentially the most life threatening of all nursing interventions.
- Be aware of all potential hazards.
- Take great care to prevent complications.

IV DRUG ADMINISTRATION

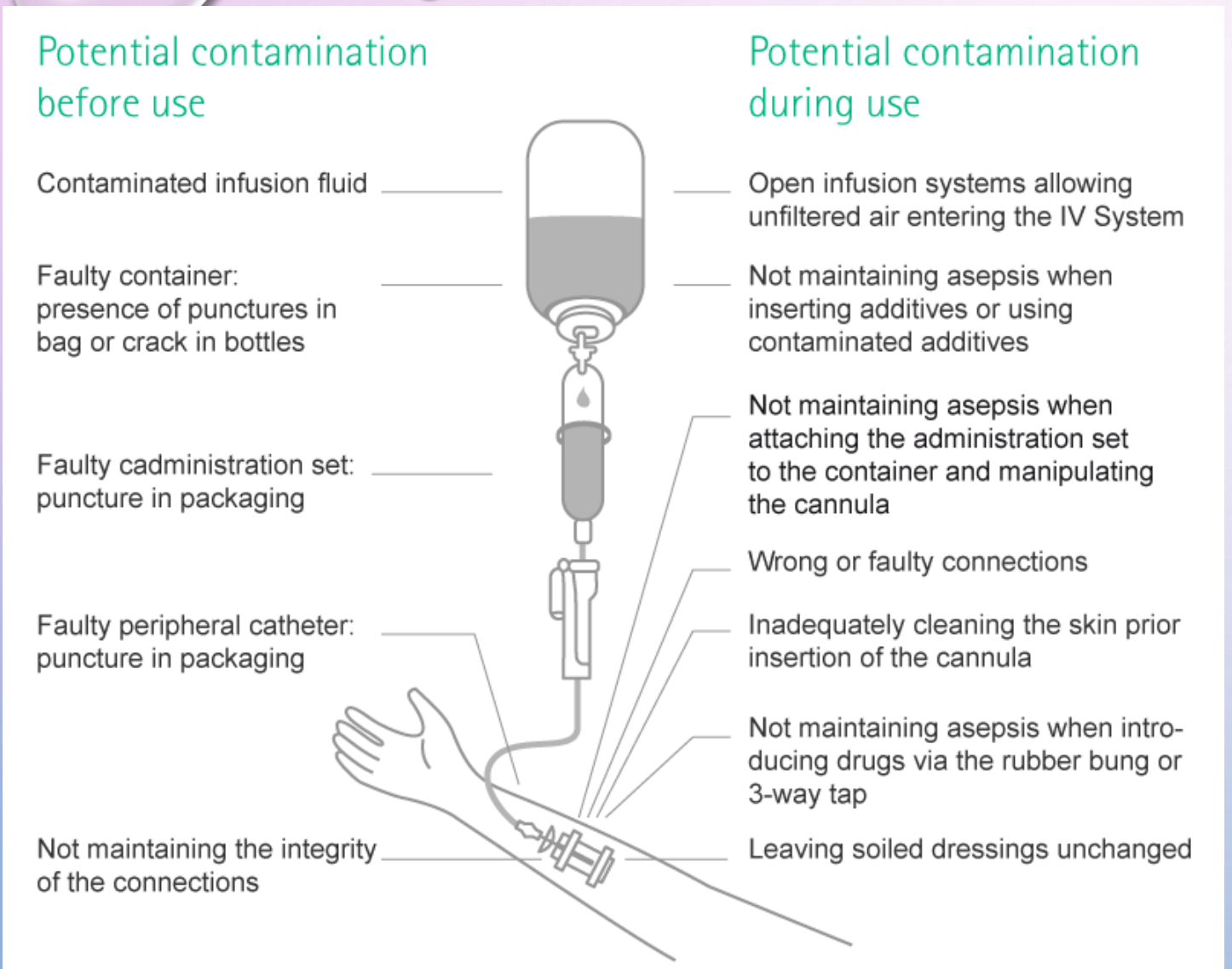
Let’s watch the clip

POTENTIAL IMPLICATIONS

Pain	Infection	Delay in further intervention	Side effects of antibiotics	Delay in discharge
Death	Patient	Pain being unwell	Phlebitis	Delay in further interventions/treatments
	Side affects of antibiotics rash, nausea	Delay in discharge	Death	

POTENTIAL IMPLICATIONS

- Division
- Sundries
- Increased medical and nursing intervention
- Delay in discharge/next admit
- Resistant organisms
- Litigation
- Sundries.
- Antibiotics and antibiotic levels.
- Other tests Blood cultures, x-rays
- Needles and syringes etc.
- Hotel costs



WHERE ORGANISMS GAIN ENTRY

- Peripheral catheters associated with very few infections, about one third of patients develop phlebitis. Although the risk of phlebitis is reduced if the veins in the hand are used.
- The aseptic management of the catheter hub, connection ports and administration sets is essential to prevent contamination of the system and subsequent infection.

SOLUTIONS WHICH INCREASE GROWTH POTENTIAL

- TPN
- BLOOD AND BLOOD PRODUCTS
- LIPID EMULSIONS/DRUGS

- Phlebitis
- Catheter related sepsis
- Infusate Contamination

PREPARATION

Have a clean trolley/surface area

Prepare alcohol hand gel
drug required
alcohol wipes
needle, syringe and if required new connection
gloves
sharps bin

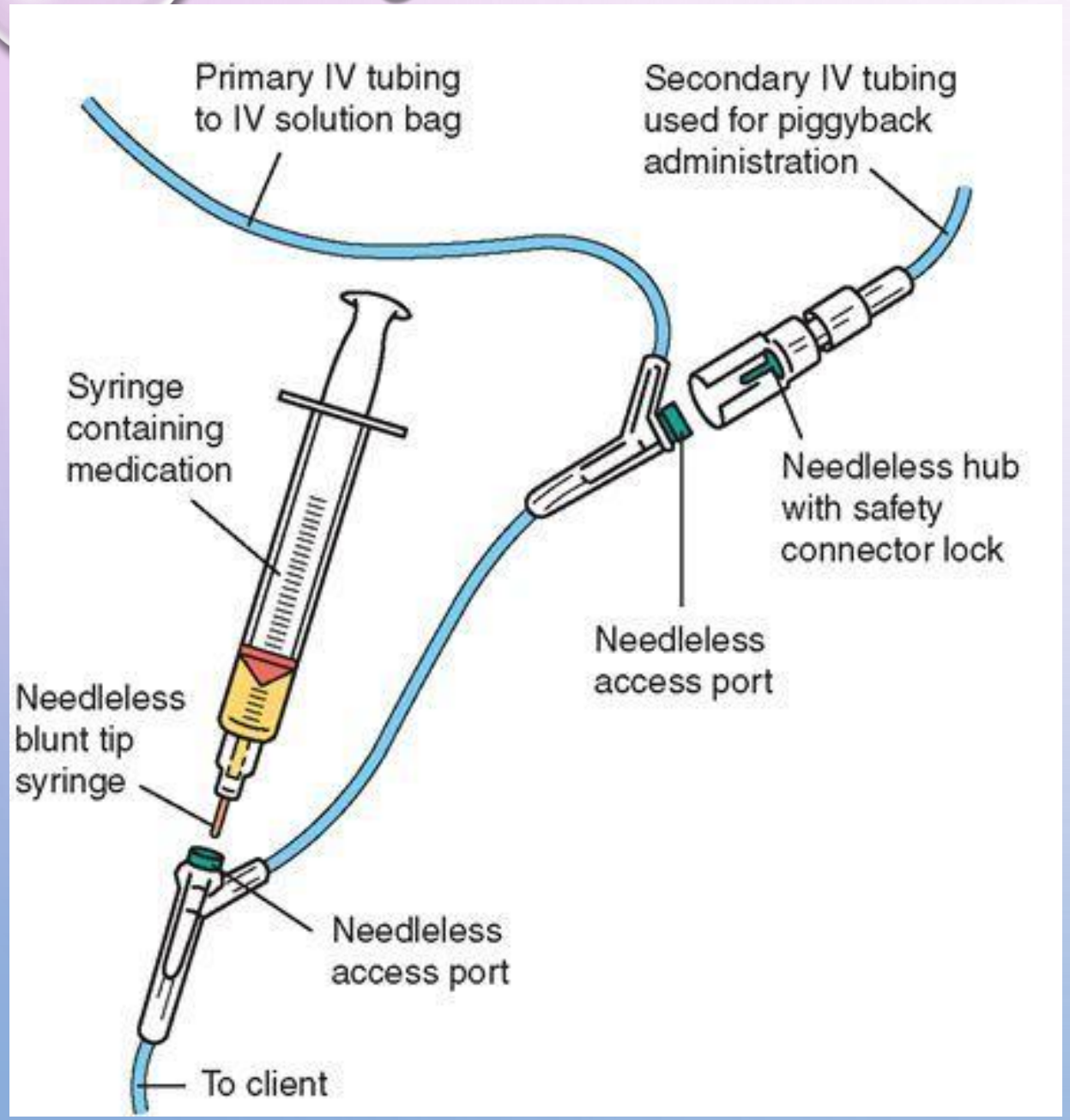
NOTE !!!

- NEVER REUSE SINGLE USE VIALS
- NEVER PREPARE DRUGS IN ADVANCE

1. HAND HYGIENE
2. CHECK SOLUTION IS CLEAR
3. DISINFECT AMPOULE
4. DISINFECT THE HUB
5. PUT ON GLOVES
6. ADMINISTER DRUG

NOTE !!!

7. AFTER CARE DISCARD SHARPS IMMEDIATELY.
8. REMOVE GLOVES AND WASH HANDS
9. RECORD AS NECESSARY.
10. WATCH FOR SIGNS OF SEPSIS.
11. IF ON A PUMP/TPN, CENTRAL LINE - FOUR HOURLY TEMP CHART.
12. IV CARE PLAN.



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AN INTERESTING CLIP

- ANTT to administer IV medication at the RNOH

Credit: https://www.youtube.com/watch?v=900ZGd5Rm-s

- Please watch and discuss later

GIVING SETS

- Change giving set after administration of blood or blood products
- After 24 hours of TPN administration
- After 72 hours if clear fluids are used
- Use filters if infusing in-house prepared infusions lasting longer that 12 hours
- All in-house infusion should be changed after 24 hours

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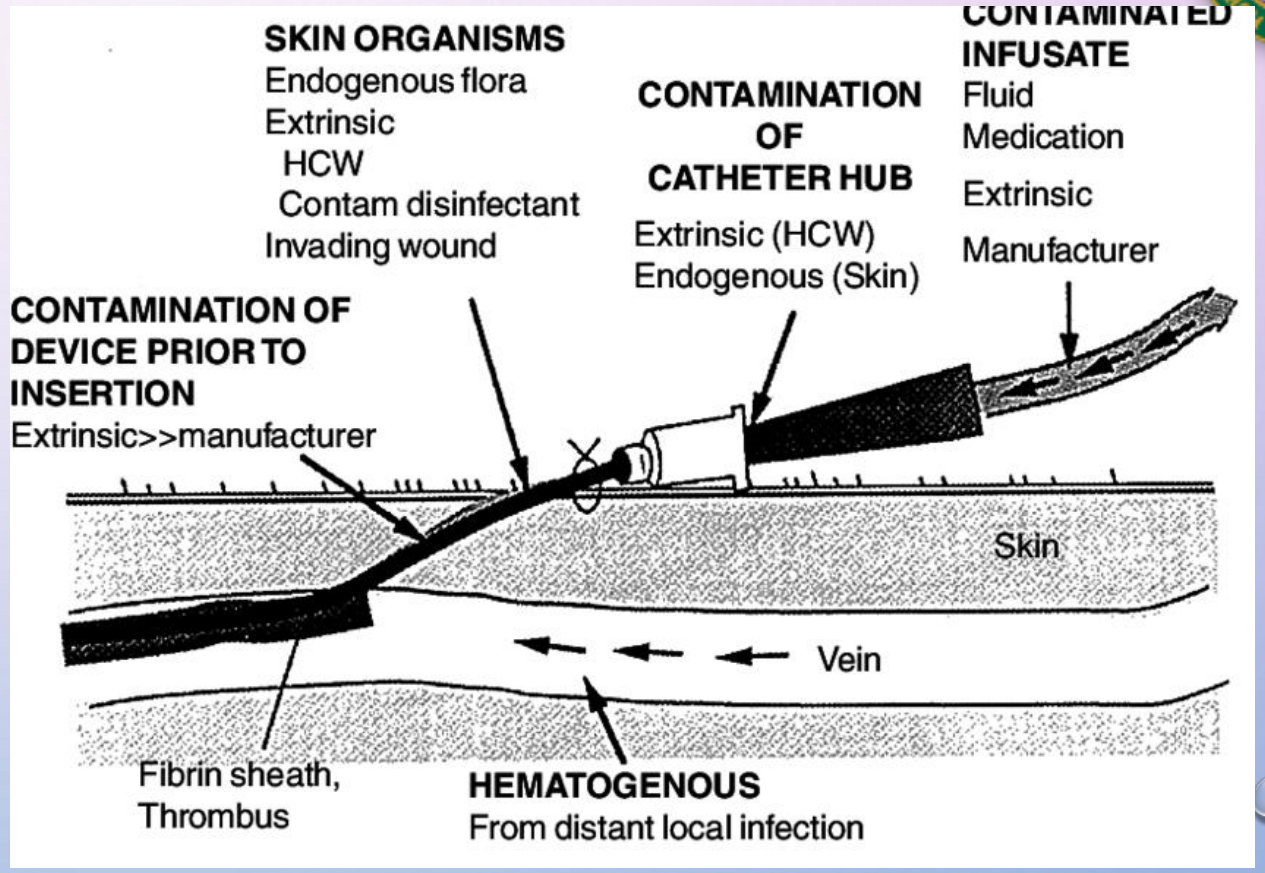
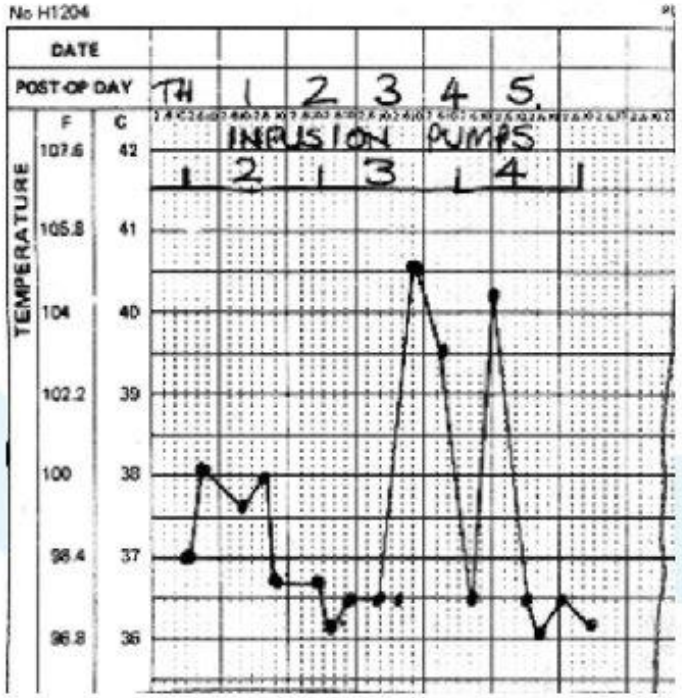
INFUSATE SEPSIS

https://upload.wikimedia.org/wikipedia/commons/thumb/0/0d/ICU_IV_1.jpg/1200px-ICU_IV_1.jpg



https://www.researchgate.net/profile/Christopher-Crnich/publication/11632721/figure/fig2/AS:394525697691669@1471073664746/Sources-of-infection-of-a-percutaneous-intravascular-device-The-major-sources-are-the.png

Infusate Sepsis



10 hours after infusion 3 commenced patient spiked a temp.
Patient pulled out cannula.
Cannula resited same infusion recommenced.
Temp spiked again, blood cultures taken.
Environmental *Pseudomonas sp* isolated from blood.

Body temperature & IV site line

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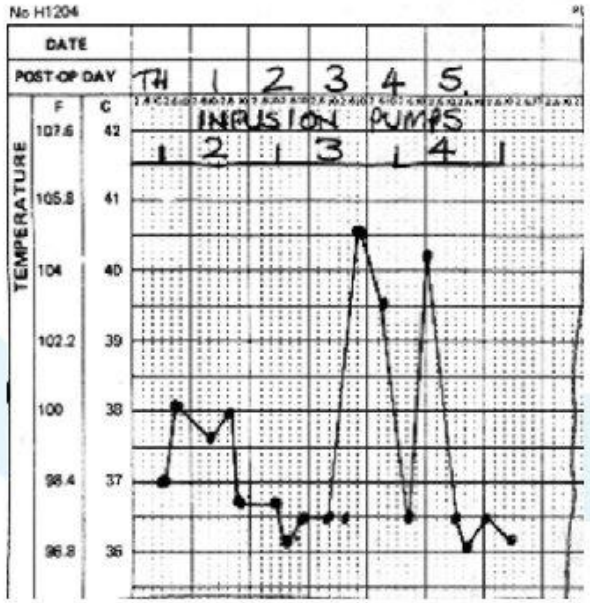
Infusate Sepsis



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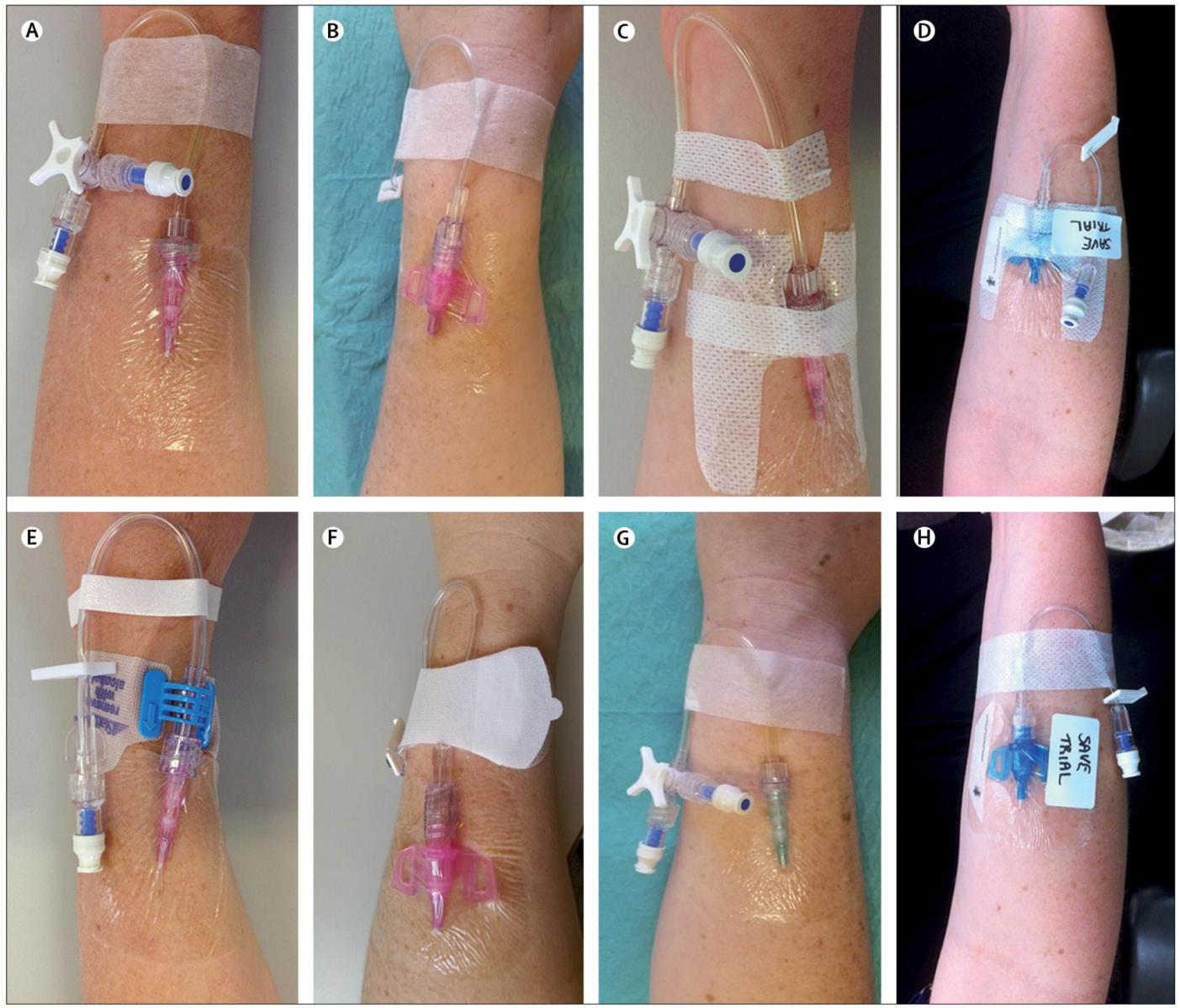
Body temperature & IV site line

Treatment Stop the infusion - inform medical staff

Send the infusate for culture.

- Send blood cultures & swab from site.
- Monitor vital signs.
- Remove the line - send tip.



DRESSINGS

Up to 90% of hospitalized pediatric patients will receive IV therapy.
Between 35–50% of peripheral IV catheters fail due to infiltration, accidental dislodgment, blockage, phlebitis, or other causes.

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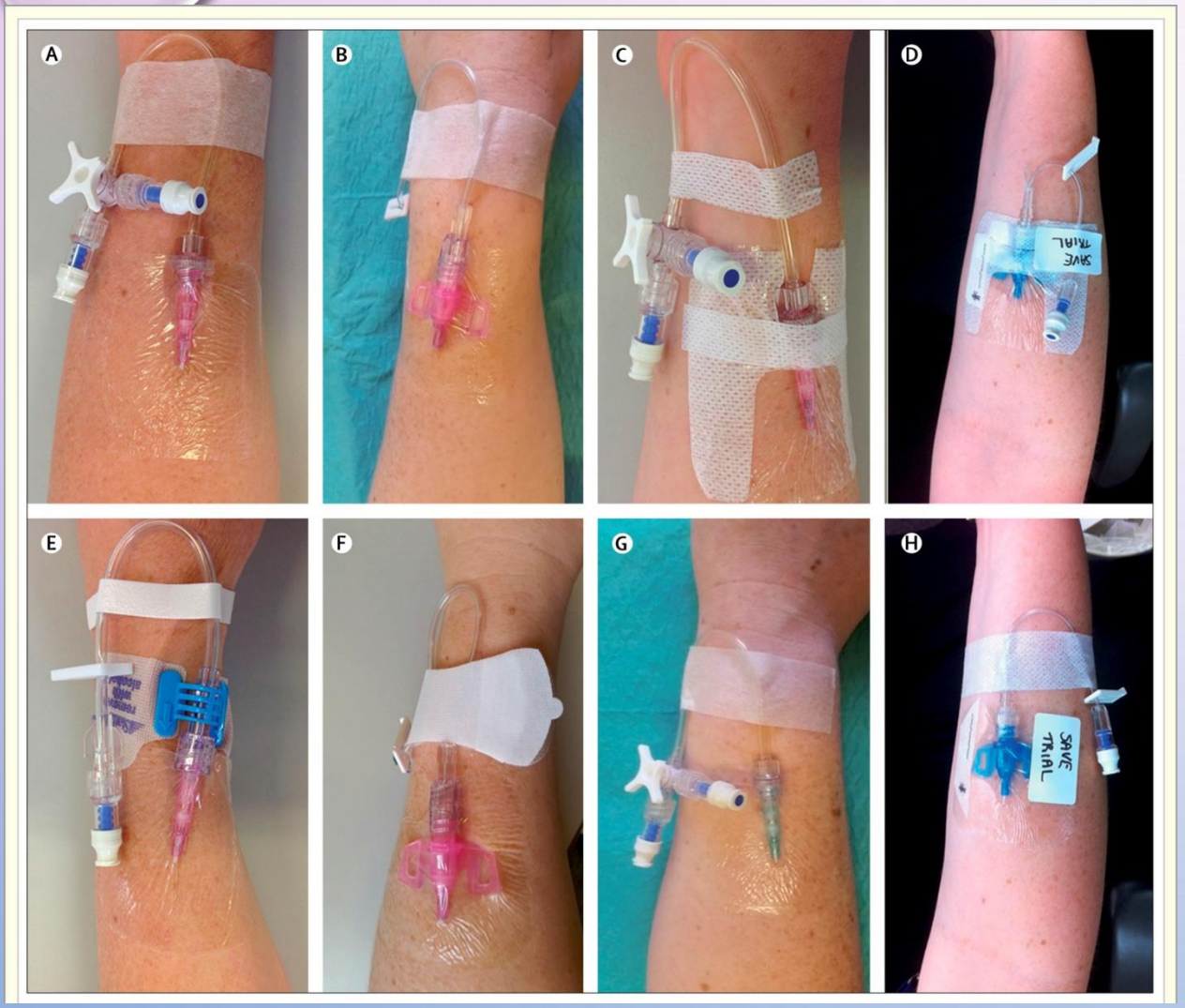

https://media.jwatch.org/images/JX2019022501/JX2019022501_large_1551120463488.jpeg

DRESSINGS

- Not the most important factor.
- Dry dressings - do not alter skin flora
- Film dressings can increase skin flora
- Non-sterile tape - no evidence against for peripheral veins.
- Don’t store tape in pockets.

DRESSINGS

https://www.ivhouse.com/sites/default/files/2018-01/750LFP-child-hand-0215.jpg

https://i.ytimg.com/vi/SbGTI5d4le8/maxresdefault.jpg

KEY POINTS

- Intravenous drug administration if not done properly can cause infection
- Hand hygiene, aseptic technique, correct preparation and administration of iv drugs/solutions and line changes will minimize the risk of infection
- Patients should be closely monitored for signs of infection

CHILD AND ADOLESCENT NURSING PRACTICUM

THANK YOU

DO NOT FORGET TO DO HW.

By

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