

# Infusion pump



# OBJECTIVES

- ▶ At the end of this lecture the learner will be able to answer the listed questions:
- ▶ What is the infusion pump?
- ▶ Why the infusion pump important for the patient ?
- ▶ Who are the patients in title for using infusion pump?
- ▶ How to operate the machine?



# INTRODUCTION

- ▶ Infusion pump delivers measured amounts of fluids or medications into the bloodstream over a period of time
- ▶ They supply a controlled amount of drugs very slowly into the blood stream over a period of time



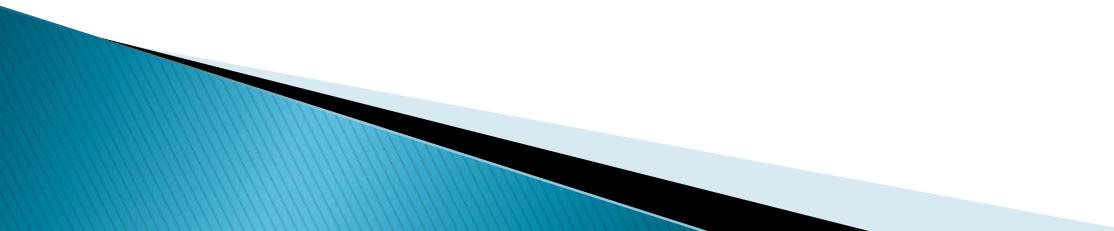
# INDICATIONS

There are two primary indications for the use of infusion pump:

- ▶ Prevention of fluid overload
- ▶ Administer a specific amount of a pharmacologic agent



# Factors impact infusion

- ▶ Quality of **vasculature**
  - ▶ Age of patient
  - ▶ Iv solution / medication
- 

# Types of infusion pump

There are two basic classes of infusion pump

1 – large volume pump can pump nutrient solution large enough to feed a patient

2 – small volume pumps infuse hormones ,such as insulin ,or other medications ,such as opiates

# Infusion pump process



- ▶ Ensure the machine is plugged correctly into suitable electrical socket ,switch on the machine
- ▶ Prepare material needed and check for expiry date
- ▶ Attach the pump to the I.V. pole
- ▶ Insert the administration set spike into the I.V. container, and fill the drip chamber to prevent air bubbles from entering the tubing

- Follow manufacturer's instructions for priming and placing the I.V. tubing
- Flush all the air out of the tubing before connecting it to the patient to lower the risk of an air embolism.





- To avoid fluid overload, clamp the tubing whenever the pump door is open
- Confirm the physician's order and verify the patient's identity using two patient identifiers, such as the patient's name and identification number.



- Position the pump on the same side of the bed as the I.V. or an anticipated venipuncture site, to avoid crossing I.V. lines over the patient.
- If necessary, perform the venipuncture.



- Depending on the machine, turn it on and press the start button.
- Set appropriate infusion rate and volume to be infused.
- monitor for infiltration, and monitor the accuracy of the infusion rate



- Tape all connections
- Turn on alarm switches
- Reinforce the explanation of the alarm system to the patient to prevent anxiety when the alarm is activated.



- Monitor the pump and patient frequently to ensure correct operation, proper infusion rate, to detect infiltration, and to observe for such complication as infection and air embolism.
- Keep the pump plugged in when possible to ensure that the battery is fully charged at all times

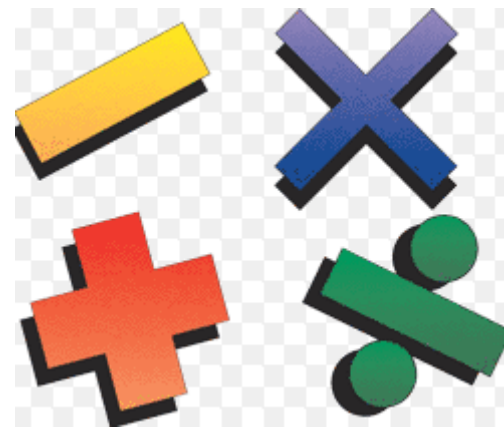


- If electrical power falls, the pump will automatically switch to battery power.
- Change the tubing and cassette every 72 hours, or according to facility policy.
- Reinforce the explanation of the use and purpose of the pump or controller to the patient and his family. If necessary repeat the demonstration of how the device works.



# How to calculate infusion rate?

- ▶ flow rate (mL/hr) = total volume (mL) ÷ infusion time (hr)
- ▶ infusion time (hr) = total volume (mL) ÷ flow rate (mL/hr)
- ▶ total volume (mL) = flow rate (mL/hr) × infusion time (hr)



ANY

QUESTIONS



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4/21/2018





Thank you

Knowledge is of no value  
unless you put it into  
practice.

Anton Chekhov



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4/21/2018

