

Phoenix

Ambulatory Blood Pressure Monitor
Patient Experience

Robert Schlentz

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BP Monitoring In The Hospital

- Patient is in bed
- BP is often measured every 5 minutes after surgery
- EKG, Temperature, oxygen measured at the same time
- Time between measurements is increased to every 10 minutes, every 15 minutes, every hour, every 3 hours

Ambulatory BP Monitoring

- Patient leads a “normal” life
- BP may be measured every 30 minutes
- BP cuff is often on the left upper arm

Arm Circumference Changes

- Circumference changes as the amount of lymph in the arm changes
- Circumference changes throughout the day
- Circumference may change 50 % in 10 minutes in a sick person

Reasons To Use An ABPM

- Symptoms of high blood pressure
- Symptoms of low blood pressure
- Lung and heart failure
- Kidney failure, Diabetes, ...
- Pain
- Lymphedema
- Blood clots

Circulatory System

- Blood and lymph
- 4 chambers of the heart
- Valves in the heart
- Aorta, arteries, arterioles, capillaries
- Venules, veins, great veins
- Lymph system
- Valves in some veins and some lymph vessels

Other Parts Affect Circulation

- Brain, Central Nervous System, and Peripheral Nervous System
- Glands
- Lungs
- Kidneys
- . . .

Indirect Measurement

- BP and flow differs throughout the body
- Cuff measurements are affected by
 - Placement
 - Muscle
 - Edema
 - Arteriosclerosis
 - Blood clots

Reasons To Not Use ABPM

- Restrictions on what you can do
- Pain
- Physiologic problems

Things You Cannot Do

- Measurements prevent an active life You may not be able to
 - Hold something
 - Write
 - Walk, run, ...
 - Drive a car
 - Sleep

Pain

- Measurements outside the limit cause the measurements to be repeated
- BP cuff pressures are very high
- Measurements are often very painful

Proximal Causes Of Pain

- PB cuff moves on the arm
- Arm circumference changes
- Tubing is pinched or has a hole
- Programming of the instrument

Cuff Moves On The Arm

- Arm is not a thin cylinder, it is more like an egg
- Motion causes the cuff to move
- Clothing causes the cuff to move

Tubing

- Tubes are easily pinched because they go up the arm and then go down the thorax – the radius of curvature usually gets smaller during the day and especially at night
- A hole in the tube sometimes occurs at the connector – it is easy for the tube to be bent at a right angle with respect to the connector

Instrument Program

- No stop switch that causes an immediate release of BP cuff pressure
- BP cuff pressure is too high during repeated measurements

Physiologic Problems

- Dizziness and other symptoms with slight change in systolic and diastolic pressures or heart rate
- Similar measurement procedure for blood flow lead to release of blood clot(s) and heart attack (emergency room)
- Cardiologist does not know what to do with the information (true for other specialists too)