Baseline Vital Signs & SAMPLE History

Lesson Goal
- Obtain and interpret vital signs & SAMPLE history

Lesson Objectives
- Identify components of VS
- Describe methods to obtain breathing rate
- Identify attributes that should be obtained when assessing breathing
- Differentiate among shallow, labored, & noisy breathing
Lesson Objectives

- Describe methods to obtain pulse rate
- List information to obtain when assessing pulse rate
- Differentiate between strong & weak pulse and regular & irregular pulse
- Describe methods to assess skin color, temperature, & condition (capillary refill in infants & children)

Lesson Objectives

- Identify normal & abnormal skin color
- Differentiate among pale, blue, red, & yellow skin
- Identify normal & abnormal skin temp
- Differentiate among hot, cool, & cold skin

Lesson Objectives

- Identify normal & abnormal skin conditions
- Identify normal & abnormal capillary refill in infants & children
- Describe methods to assess pupils
- Identify normal & abnormal pupil size
Lesson Objectives

- Differentiate between dilated & constricted pupil size
- Differentiate between reactive & nonreactive pupils and equal & unequal pupils
- Describe methods to assess BP

Lesson Objectives

- Define systolic pressure
- Define diastolic pressure
- Explain difference between auscultation & palpation for obtaining a BP
- Identify components of SAMPLE history

Lesson Objectives

- Differentiate between sign & symptom
- State importance of accurately reporting & recording baseline VS
- Discuss need to search for additional medical identification
Introduction

- VS & initial history essential to making decisions about patient care
- Information must be accurate to make good patient care decisions

Baseline Vital Signs

- Respirations
- Pulse
- Skin signs
- Pupil response
- Blood pressure

Baseline Vital Signs

- Vital signs—indicators of critical body functions
- Accuracy is essential
- Baseline VS followed by ongoing assessment
Respirations

- Respirations refer to breathing

Assessing respirations
- Rate
- Quality
- Pattern (rhythm)

Respirations

- Respiratory rate
  - Number of breaths in 1 minute
  - Number of respirations in 15 seconds x 4
  - Number of respirations in 30 seconds x 2

<table>
<thead>
<tr>
<th>Age</th>
<th>Newborn</th>
<th>Infant</th>
<th>Toddler</th>
<th>Preschooler</th>
<th>School-Age</th>
<th>Adolescent</th>
<th>Adult</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>30 - 50</td>
<td>20 - 30</td>
<td>20 - 30</td>
<td>20 - 30</td>
<td>18 - 30</td>
<td>12 - 20</td>
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</tr>
</tbody>
</table>
Respirations
- Consider need for O₂ and assistance with ventilations when assessing respirations

Respirations
- Rapid respirations
  - Stress/anxiety
  - Fever
  - Shock
  - Inadequate oxygen
  - Exertion

Respirations
- Slow respirations
  - Drug overdose
  - Stroke
  - Brain injury
Respirations

- Quality
  - Adequate?

- Described as:
  - Normal
  - Noisy
  - Labored
  - Shallow

Respirations

- Normal respirations are quiet & effortless
- Noisy respirations = partial airway obstruction
  - Snoring
  - Stridor
  - Crowing
  - Gurgling
  - Wheezing
  - Grunting

Respirations

- Labored respirations
  - ↑ effort to breathe
  - ↑ accessory muscles use
  - Speaks only 1-2 words at a time
Accessory Muscle Use

- Reflects heart function & circulation
- Pulse points
  - Assess:
    - Rate
    - Quality
    - Rhythm

Patterns

<table>
<thead>
<tr>
<th>Accessory Muscles</th>
<th>Description</th>
<th>Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apanuesis</td>
<td>Local, deep, lack of spite, periods of apnea between</td>
<td>Stroke, severe brain damage or disease</td>
</tr>
<tr>
<td>Aneurysm</td>
<td>Irregular, shallow, and deep, no pattern</td>
<td>Stroke</td>
</tr>
<tr>
<td>Carotid Artery</td>
<td>Repetitive start then shallow and increase in rate and depth and then decrease with periods of apnea</td>
<td>Stroke, metabolic problems</td>
</tr>
<tr>
<td>Central Aneurysm</td>
<td>Continuous deep, rhythmic, rate may be slow or fast</td>
<td>Asthma, brain tumor</td>
</tr>
<tr>
<td>Klauer's</td>
<td>Regular deep (rhythmic, quality rapid)</td>
<td>Asthma, associated with various conditions</td>
</tr>
</tbody>
</table>

Pulse

8
Pulse

- Rate
  - Measured in beats per minute (bpm)
  - Count pulsations in 15 sec & multiply by 4, or
  - Multiply pulsations in 30 sec by 2

Pulse—Adults & Older Children

- Radial
- Unresponsive: Carotid

Pulse—Infants

- Brachial
Pulse

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</thead>
<tbody>
<tr>
<td>Pulse</td>
<td>120 to 160</td>
<td>80 to 140</td>
<td>90 to 130</td>
<td>80 to 120</td>
<td>80 to 100</td>
<td>60 to 100</td>
<td>60 to 100</td>
</tr>
</tbody>
</table>

Pulse

- $\uparrow$ HR
  - Anxiety/stress
  - Fever
  - Exercise
  - Hypoxia
  - Difficulty breathing
  - Drug overdose
  - Shock

Pulse

- Quality
  - Strong
  - Weak
Pulse

- Rhythm
  - Regular
  - Irregular

Skin

- Color
- Temperature
- Condition
- Capillary refill

Skin Color

- Normal
- Pale
- Flushed
- Cyanotic
- Jaundiced
- Mottled
Skin Color

- Pale
  - Shock
  - Hypothermia
  - Anemia

Skin Color

- Flushed/red
  - Hypertensive
  - Hot
  - Carbon monoxide poisoning
  - First-degree burns

Skin Color

- Cyanosis
  - Respiratory disease

- Jaundiced
  - Liver disease
Skin Color
- Mottled
  - Shock
  - Hypothermia

Skin Temperature
- Warm skin
  - Normal
- Cold skin
  - Hypothermia
- Hot skin
  - Hyperthermia
  - Fever

Skin Condition
- Dry
  - Normal
- Diaphoretic
  - Exertion
  - Fever
- Dehydrated
- Edema
  - Too much fluid
Skin

- Capillary refill
  - Normal: <2 sec
  - Delayed: ↓ circulation
  - Accurate predictor in infants & children

Pupils

- Normal
  - Round
  - Equal
  - React to light

- Dilated
  - Drug use
  - Brain injury
  - Eye drops

- Constricted
  - Drug overdose
  - Eye drops
Pupils

- Unequal
  - Stroke
  - Brain trauma
  - Artificial eye

- Nonreactive
  - Drug use
  - Hypoxia

Blood Pressure

- Pressure within arteries
- Measured with sphygmomanometer
- Systolic
  - Pressure when heart beats
- Diastolic
  - Pressure when heart relaxes
- Recorded as systolic/diastolic in mmHg
  - Example: 124/84 mmHg

Blood Pressure

- High BP (hypertension)
  - Stroke

- Low BP (hypotension)
  - Shock
    - Sepsis
    - Cardiogenic
    - Hypovolemic
    - Neurogenic
Blood Pressure

- Methods
  - Auscultation
    - Using stethoscope
    - Obtain systolic & diastolic pressure
  - Palpation
    - By feeling
    - Obtain systolic pressure only

<table>
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<th>Blood Pressure</th>
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<tbody>
<tr>
<td>Newborn</td>
</tr>
<tr>
<td>50 – 68</td>
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</table>

Blood Pressure

- Auscultation
  - Correct cuff
  - 1" above elbow
  - Inflate
    - While palpating brachial pulse
  - Deflate
    - While listening for tapping sounds
    - Watching gauge
Skill 5-1: Auscultate BP

1. Place BP cuff on patient; place stethoscope earpieces in your ears

Skill 5-1: Auscultate BP

2. Palpate for brachial artery

Skill 5-1: Auscultate BP

3. Place diaphragm of stethoscope over brachial artery
Skill 5-1: Auscultate BP

4. Ensure valve is closed; inflate cuff by squeezing on bulb

Skill 5-1: Auscultate BP

5. Slowly release air from cuff and listen for 1st sound (systolic pressure)

Skill 5-1: Auscultate BP

6. Continue to slowly release pressure and listen for last sound (diastolic pressure)
Skill 5-2: Palpating BP

1. Place BP cuff on patient’s arm

Skill 5-2: Palpating BP

2. Palpate for radial pulse

Skill 5-2: Palpating BP

3. Make sure valve is closed; inflate cuff by squeezing on bulb
Skill 5-2: Palpating BP

4. Slowly release air from cuff and feel for pulse. The beat you feel is systolic pressure.

Reassessment

- Baseline VS
  - Unstable patients
    - Reassess every 5 min
  - Stable patients
    - Reassess every 10-15 min
    - Reassess after interventions

SAMPLE History

- Signs & symptoms
- Allergies
- Medications
- Past medical history
- Last oral intake
- Events preceding
SAMPLE History

- Communication
  - Be respectful
  - Listen
  - Physically at patient's level
  - Language
  - Confirm answers
  - Allow time to answer
  - Open-ended questions
  - Interpreter if needed

SAMPLE History

- Sign
  - Bruise
  - Skin color
  - Odors
  - Pulse
  - Swelling

- Symptom
  - Pain
  - Nausea
  - Dizziness

SAMPLE History

- Allergies
  - Foods
  - Environmental
  - Medications
SAMPLE History

- Medications
  - Prescription
  - OTC
  - Herbal
  - Others’ medications
  - Recreational drugs
  - When taken?
  - How much?

SAMPLE History

- Past medical history
  - Relevant
  - Applicable

SAMPLE History

- Last oral intake
  - Complaint-related
  - Need for anesthesia
SAMPLE History

- Events preceding
  - Cause & effect
  - Medical conditions may precede trauma

Bystander Information

- Patient—preferred source of information
- Others may have valuable information not offered by patient

Summary

- Baseline vitals & SAMPLE History
  - Determine patient’s needs & treatment
- Vital signs
  - Respiration
  - Pulse
  - Skin signs
  - Pupils
  - Blood pressure
Summary

• SAMPLE history
  ➢ Signs & symptoms
  ➢ Allergies
  ➢ Medications
  ➢ Past medical history
  ➢ Last oral intake
  ➢ Events preceding

Summary

• These skills require practice to become proficient

• With time, you will adapt taking vital signs & getting a history to care for patient’s needs