Topics

- Intro to EMS: Chapter 1
- Well-Being of the EMT-B: Chapter 2
- Medical/Legal, Ethical Issues: Chapter 3
- The Human Body: Chapter 4
- Vital Signs and SAMPLE: Chapter 5
- Lifting and Moving Patients: Chapter 6

EMS System in King County

King County coverage area map.
EMS System in King County

Dispatch Centers follow Criteria-Based Guidelines.

- Seattle
- Eastside Communications
- Port of Seattle
- Valley Communications
- Enumclaw

EMS System in King County

Fire/EMS Agencies.

- 38 Fire Departments
- 4000 EMTs

EMS System in King County

Medic One.

- 6 agencies
- ~ 270 paramedics
EMS System in King County

- Hospitals
  - Medical control hospitals
  - Other hospitals

Layers of Care

- Citizens
- Emergency dispatchers
- EMTs
- Paramedics
- Emergency Departments

Chain of Accountability

- Washington State RCW and WAC
- County Medical Program Director
- Program Medical Directors
- Emergency physicians at medical control hospitals
- EMTs and paramedics
Top 10 List

10: Be Professional
- Act the part
- Focus on patient's problem
- Listen to the patient
- Keep family informed
- People not diseases
- Bedside manner
- Respect privacy of patient
  - Don't talk about patients outside of work
  - All patient information is confidential

9: Always Be a Student
- Certification every 3 years
- EMS Online
- Every patient can teach you something
- Ask the doctor
8: Document Everything

- Documentation is your friend
- Importance of vital signs
- Importance of name, address, phone
- Document unusual situations

7: Embrace Change

- New protocols and guidelines for resuscitation
- ROC
- SPHERE
- Alert Cards

6: Follow Established Guidelines

- Patient Care Guidelines
- Local policies
3: Stick to the Basics

- SICK or NOT SICK
- Vital signs, MOI, IOS
- Common sense and good judgment

4: Be Safe

- Take care of yourself
- Dangerous world out there – people and microbes
- Drive safely

5: Seek Help

- Stay humble
- Help from partners
- Help from paramedics
- Help from control hospitals
2: Take Pride in Our System

- International reputation
- Highest survival rate from cardiac arrest in the world
- Highest rates of bystander CPR
- Highest support of taxpayers
- Highest trained paramedics in the world
- Best EMT training: EMS Online

1: Remember the Secret of Patient Care...

The Secret of Caring for Patients...

Is Caring for Patients!
I wish you the best in your career!

Resources
- National Highway Traffic Safety Administration
- Washington State Department of Health EMT-Basic Protocols
  http://www.doh.wa.gov/hsqa/emstrauma/default.htm
- Office of Emergency Medical and Trauma Services
  http://www.doh.wa.gov/hsqa/emstrauma/publications.htm
- 2005 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care
  http://circ.ahajournals.org/content/vol112/24_suppl/

Well-Being of the EMT-B
Work Environment

- EMS can be a high-stress job, mentally and physically.
- Even the most experienced providers have difficulty overcoming personal reactions.
- Emotions must be kept under control at the scene.

Work Environment, continued

- Personal health, safety, and well-being are vital to an EMS operation.
- Understand the causes of stress.
- Prevent stress from negatively affecting you.

Emotional Well-Being

SELF AWARENESS is achieved through:

1. Proper training
2. Experience
3. Strategies to cope with stress
4. Dedication to serving others
Stressful Situations

- Mass-casualty situations
- Infant and child trauma
- Amputations
- Abuse
- Death of a coworker

Warning Signs

**PHYSICAL SIGNS**
- Fatigue
- Changes in appetite
- Headaches
- Insomnia
- Irritability

**PSYCHOLOGICAL SIGNS**
- Fear
- Depression
- Anger
- Frustration
Stress Management

- Understand the effects of stress.
- Find balance in life.
- Change or eliminate stressors.
- Change partners to avoid negative or hostile personality.
- Avoid complaining or worrying about things you cannot change.
- Expand your social support system.

Critical Incident Stress Debriefing

- Held within 24 to 72 hours of a major incident.
- All information is confidential.
- CISD leaders and mental health personnel offer suggestions for overcoming stress.

CISM System

- Pre-incident stress education
- Peer support
- CISD
- Follow-up services
- Spouse and family support
**Body Substance Isolation (BSI)**

- Hand washing
- Gloves and eye protection
- Mask and gowns
- Proper disposal of sharps

**Body Substance Isolation (BSI)**

- Always follow BSI precautions.
- Always use a barrier between you and the patient.
- Be careful when handling needles.
- Always wash your hands.
- Make sure all immunizations are current.

**Scene Safety**

- Hazardous materials
  - Never approach an object marked with placards.
- Electricity
  - Do not touch downed power lines.
  - Recognize the signs before a lightning strike.
- Fire
  - Do not approach unless trained and protected.
Scene Safety, continued

VIOLENT SITUATIONS

- Civil disturbances
- Domestic disputes
- Crime scenes
- Large gatherings

If personal safety is in doubt, do not place yourself at risk.

Medical, Legal, and Ethical Issues

Duty to Act

- Individual’s responsibility to provide patient care.
- Legal duty to act begins once an ambulance responds to a call or treatment is initiated.
- No legal duty to act when off duty.
Duty to Act, continued

- The EMT-B cannot deny care to a patient with a suspected communicable disease, even if the patient poses a risk to safety.
- To deny care is considered abandonment or breach of duty; the EMT-B may also be considered negligent.

Good Samaritan Laws

Good Samaritan

- Based on the principle that you should not be held liable when assisting another in good faith.

What is Negligence?

Failure to provide the same care that a person with similar training would provide.
Negligence, continued

- **Duty**: Responsibility to act reasonably based on standard of care
- **Breach of duty**: Failure to act within expected and reasonable standard of care
- **Damages**: Physical or psychological harm created in a noticeable way.
- **Cause**: Existence of reasonable cause and effect.

What is Abandonment?

- Termination of care without patient's consent
- Termination of care without provisions for continued care

Care cannot stop unless someone of equal or higher training takes over.

Consent

- Expressed consent
- Implied consent
- Minors
- Mentally incompetent adults
- Forcible restraints
Refusal of Care

- Mentally competent adults have the right to refuse care.
- Patients must be informed of risks, benefits, treatments, and alternatives.
- EMT-B should obtain a signature and have a witness present, if possible.

The Human Body

Objectives

- Identify and locate on the body the following topographic terms: anterior, posterior, midline, right and left, bilateral, proximal and distal.
- Describe anatomy and functions of the following major body systems: respiratory, circulatory, musculoskeletal, nervous, and endocrine.
Objectives

- Anterior
- Posterior
- Right and left
- Superior and inferior
- Lateral and medial
- Proximal and distal
- Superficial and deep

Anatomic Positions

- Prone
- Supine
- Fowler’s position
The Skeletal System

- Skull
  - Protects brain and central nervous system.

- Spine

- Chest
Pelvis
- Interior vena cava
- Descending aorta
- Ilium
- Sacrum
- Ischiadic nerve
- Pubis
- Pubic symphysis
- Iliac tuberosity
- Femoral artery
- Femoral vein

Upper Extremity
- Shoulder girdle
- Arm
- Elbow
- Forearm
- Wrist
- Hand
- Joints (pictured)

Lower Extremity
- Hip
- Thigh
- Knee
- Leg
- Ankle
- Foot
**Abdomen**

- Second major body cavity.
- Contains the major organs of digestion and excretion.

**Abdomen, continued**

**Respiratory**
Respiratory (infant/child)

- Structures less rigid
- Airway smaller
- Tongue proportionally larger
- Dependent on diaphragm for breathing

Breathing Process

**Inhalation**
- Diaphragm and intercostal muscles contract, increasing the size of the thoracic cavity.
- Pressure in the lungs decreases (negative pressure).
- Air travels to the lungs.

**Exhalation**
- Diaphragm and intercostal muscles relax.
- As the muscles relax, all dimensions of the thorax decrease.
- Pressure in the lungs increases.
- Air flows out of the lungs.
Control of Breathing

- Brain stem controls breathing.
  - Increases breathing rate if the carbon dioxide level in blood becomes too high
- Hypoxic drive is a “backup system.”
  - Activates when oxygen levels fall to stimulate breathing

Characteristics of Breathing

- Normal rate and depth
- Regular rhythm
- Good breath sounds in both lungs
- Regular rise and fall movements in the chest
- Easy, not labored

Normal Breathing Rates

- Adults: 12 to 20 breaths/min
- Children: 15 to 30 breaths/min
- Infants: 25 to 50 breaths/min
Inadequate Breathing

• Irregular rhythm
• Labored breathing
• Muscle retractions
• Pale or blue skin
• Cool, clammy skin
• Faster respiratory rate

Circulatory System

• The wave of blood through the arteries formed when the left ventricle contracts
• Can be felt where an artery passes near the skin surface and over a bone
Blood Pressure

• Amount of force exerted against walls of arteries
• Systole: Left ventricle contracts
• Diastole: Left ventricle relaxes

Pulse

Circulatory System, cont'd

Perfusion

• Circulation of blood within an organ or tissue
• If inadequate, the patient goes into shock.

Heart—blood flow

The right side of the heart receives oxygen-poor blood from the veins.
Heart—blood flow, continued

The left side of the heart receives oxygen-rich blood from the lungs.

Electrical Conduction System

- SA node
- AV node
- Purkinje fibers

Normal Heart Rates

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Adults</td>
<td>60 to 100 beats/min</td>
</tr>
<tr>
<td>Children</td>
<td>70 to 150 beats/min</td>
</tr>
<tr>
<td>Infants</td>
<td>100 to 160 beats/min</td>
</tr>
</tbody>
</table>
Major Arteries
- Radial
- Carotid
- Femoral
- Brachial

Nervous System
The nervous system controls the body's voluntary and involuntary actions.
Nervous System, cont'd

| Central | • Links the organs of the body to the central nervous system. |
| Peripheral | • Sensory nerves carry information from the body to the central nervous system. |
| Peripheral | • Motor nerves carry information from the central nervous system to the muscles of the body. |

Vital Signs and SAMPLE History

Patient Assessment

An accurate patient assessment is the most complex skill EMTs learn.

During patient assessment you will:

- Evaluate the patient and make a decision.
- Gather pertinent information.
- Learn the history of what happened.
- Paint a clinical picture of the patient's overall health/status.
Evaluating the Patient

**SICK/NOT SICK Decision inside 60 seconds.**

Gather Pertinent Information

- Obtain the patient’s name.
- Note the age and gender.
- Look for identification if the patient is unconscious.

Learn the History

- Chief Complaint
- SAMPLE
- OPQRST
Paint the Clinical Picture

- We need a summary here.

Vital Signs

- Key signs used to evaluate a patient's condition
- First set is known as baseline vitals.
- Repeated vital signs compared to the baseline

Reassess stable patients every 15 minutes.
Reassess unstable patients every 5 minutes.

Vital Signs, continued

<table>
<thead>
<tr>
<th>Respiration</th>
<th>Rate: # of breaths in 30 seconds x 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rhythm: regular or irregular</td>
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<td></td>
<td>Effort: normal or labored</td>
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<td></td>
<td>Noisy: normal, stridor, wheezing, snoring, gurgling</td>
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<tr>
<td></td>
<td>Depth: shallow or deep</td>
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</tbody>
</table>
Vital Signs, continued

Pulse
- Rate: # of beats in 30 seconds x 2
- Strength: bounding, strong, or weak (thready)
- Regularity: regular or irregular

Respirations

Blood Pressure
- Recorded as systolic/diastolic
- Blood pressure should be measured in all patients older than 3 years.
- A drop in blood pressure may indicate:
  - Loss of blood
  - Loss of vascular tone
  - Cardiac pumping problem

Temperature
- warm, hot, or cool

Color
- pink, pale, blue, red, or yellow

Moisture
- dry, moist, or wet

Capillary refill: evaluates the status of the circulatory system (perfusion)
SAMPLE History
S—Signs and Symptoms
A—Allergies
M—Medications
P—Pertinent (Past) history
L—Last oral intake
E—Events leading to injury or illness

Level of Consciousness (LOC)
A—Alert
V—Responds to verbal stimulus
P—Responds to painful stimulus
U—Unresponsive

Pupils
• Fixed with no reaction to light
• Dilate with light and constrict without light
• React sluggishly
• Unequal in size
• Unequal with light or when light is removed
Lifting and Moving Patients

Principles of Lifting and Moving
• Avoid injury to yourself.
• Avoid further injury to your patient.
• Practice using equipment.
• Use the right tool for the job.

Body Mechanics
• Shoulder girdle aligned over the pelvis
• Lifting done with legs
• Weight kept close to the body
• Grasp with palms up
Proper Lifting

General Considerations

- Find out how much the patient weighs.
- Plan the move.
- Look for options that cause the least strain to you and the patient.
- Allow 1 person to give commands.
- Do not attempt to lift a patient who weighs over 250 lbs with fewer than four rescuers.

Stretcher

- Most commonly used device.
- You must be familiar to specific features used in your aid unit.
- NOT something you can learn by looking at a slide.
**Stair Chair**

- Secure patient to stair chair with straps.
- Rescuers take their places: one at head, one at foot.
- Rescuer at the head gives directions.
- Third rescuer precedes.

**Backboard**

**Scoop Stretcher**

1. Adjust stretcher length.
2. Lift patient slightly and slide stretcher into place, one side at a time.
3. Lock stretcher ends together.
4. Secure patient and transfer to the cot.
Emergency Drags

- Performed if there is some potential danger for you or the patient.
- Performed if necessary to reach another patient who needs lifesaving care.
- Performed if unable to properly assess patient due to location.

Emergency Drags, cont'd

- Clothes Drag
- Blanket Drag

Emergency Drags, cont'd

- Arm Drag
- Arm-to-Arm Drag
Rapid Extrication

- Vehicle or scene is unsafe.
- Patient cannot be properly assessed.
- Patient requires immediate care/transport.
- Patient is blocking access to another seriously injured patient.

Rapid Extrication, cont'd

1. Provide in-line support and apply cervical collar.

Rapid Extrication, cont'd

2. Rotate patient as a unit.
Rapid Extrication, cont’d

1. Provide in-line support and apply cervical collar.
2. Rotate patient as a unit.
3. Lower patient to the backboard.

Questions

• What questions do you have?

To review this presentation, go to: http://www.emsonline.net/emtb

QUESTIONS?

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