Rapid Regulatory Compliance

Texas A&M Health Science Center
College of Medicine
(TAMHSC-COM)
The Lesson Covers

Safety issues of:
- Lifting Patients
- Fire Safety
- Slips, Trips, Falls
- Electrical Safety
- Latex Allergy
- Radiation Safety
- Hazard Communication
- MRI Safety
- Workplace Violence
- Ergonomics
- Reporting Incidents
- Back Safety
- Emergency Preparedness
- Infection Control
Hazards

- Biological
- Chemical
- Psychological
- Physical
- Environmental/Mechanical
## Hazards Safeguards

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Fire Prevention

► Prevention is the best defense against fire.
► Do not smoke on hospital premises.
► Instruct visitors and patients that the hospital is a non-smoking facility.
Electrical Malfunction

- Prevent fires by removing damaged or faulty equipment from service.
- Submit malfunctioning equipment for repair.
- Do not use any piece of equipment that you have not been trained to use.
Fire Safety

- Fire alarms
- Fire extinguishers
- Emergency exit routes and doors
- Smoke and fire doors and partitions
- Fire plans
Fire Safety Response

When in doubt, respond to fires using the RACE protocol:

► R Rescue - patients from immediate fire.
► A Alarm - call for help pull fire alarm.
► C Confine - close the door to room where the fire started.
► E Extinguish or evacuate.
Extinguish Fires

If the fire is small enough to put out with a portable extinguisher:

► **P** Pull the pin.
► **A** Aim the nozzle.
► **S** Squeeze the trigger.
► **S** Sweep back and forth at the base of the fire.

Otherwise: Evacuate patients.
Electrical Safety

Electric shock can cause:

- Burns
- Muscle spasms
- Ventricular fibrillation
- Respiratory arrest
- Death
Preventing Electrical Accidents

► Remove and report electrical hazards.
► Use electrical equipment properly.
  ▪ Do not operate in or around water, including wet hands.
  ▪ Turn off before plugging in or unplugging.
► Maintain, test, and inspect equipment regularly.
Preventing Electrical Accidents

➤ Use power cords and outlets properly.
  - Do not jerk cords from outlets; pull on the plug.
  - Only tape to secure power cords to walls/floors.
  - Only use 3-prong plugs.
Radiation Safety

- Radiation can increase risk of cancer.
- Limit exposure by:
  - Time - Minimize time you are exposed.
  - Distance - Maximize your distance from source.
  - Shielding - Use shielding to absorb the energy of the radioactive particles.
- Keep your radiation exposure As Low As Reasonable Achievable.
MRI Safety

- Ferromagnetic objects are attracted to the core of the MRI magnet which causes them to accelerate toward the core and become dangerous projectiles.
- Implanted or embedded ferromagnetic objects e.g., aneurysm clips, will try to align with the magnetic field and cause the objects to rip through soft tissues.
MRI Safety

- Pulsed radiofrequency fields in the MRI can produce electric currents in metal implants and result in burns.
- Electronic devices, e.g. pacemakers can malfunction.
- All persons should remove all metal objects before entering the MRI field.
Ergonomic Practices

- Ergonomics means designing work equipment and tasks to fit the natural laws of the human body.

- Good ergonomic practices can lead to fewer work related injuries.
Ergonomic Best Practices

► Avoid fixed or awkward postures.
► Avoid lifting without using proper devices.
► Avoid highly repetitive tasks.
► Avoid forceful exertions.
► Provide support for your limbs.
► Use proper posture when sitting, standing or lifting.
Ergonomic Best Practices

- Keep tools close to you, to avoid reaching, twisting, and bending.
- Use supportive equipment and ergonomic tools, e.g. wrist supports for keyboards.
- Respond promptly to aches and pains.
Back Safety

Proper Care and Operation of the Spine

► Sleep on back or side, not stomach.
► Stand upright in comfortable shoes.
► Sit with a 90° at knees and hips – if at a desk or keyboard form a 90° angle at the elbows – wrists should be straight.
Back Safety
Proper Care and Operation of the Spine

► Lift a static load vertically -
  ▪ Bend at the hips and knees.
  ▪ Keep head up.
  ▪ Hold load close to the body.
  ▪ Lift with the muscles of the legs.

► Lifting a patient -
  ▪ Avoid manual lifting.
  ▪ Use motorized lifts or other assistive devices.
Slips, Trips, Falls, Prevention

► Keep floors clean, dry, uncluttered.
► Use proper lighting.
► Choose slip resistant shoes.
  ▪ Soft rubber patterned soles
  ▪ Large surface area in contact with the floor
    ► No high heeled shoes
► Be alert to falls around stairs – use the handrails.
Icy or Wet Sidewalks

► Keep your feet flat and slightly spread apart.
► Point your toes slightly outward.
► Take slow, short steps.
► Keep center of balance under you.
► Make wide turns at corners.
► Keep your arms at your sides.
Latex Allergies

Questions for you or your patients:

- Any unexplained problems during surgery?
- Any breathing problems during a dental exam?
- Any problems when blowing up balloons?
- Any allergies to bananas, avocados, kiwis?
- Any rashes or discomfort after a medical exam on using condoms?
- Any history of allergy or skin problems
Latex Allergy Management

► If you are allergic to latex:
  ▪ Inform your clerkship director or preceptor.
  ▪ Use only non-latex gloves.
  ▪ Use silk or plastic tape.

► If a patient is allergic to latex:
  ▪ Indicate in the medical record.
  ▪ Place a allergy alert armband on the patient.
Hazardous Chemicals

Manufacturers of Hazardous Chemicals

- Research, create and distribute a material safety data sheet (MSDS) listing the specific hazards of the chemical.
- Label all containers of hazardous materials with the product name, hazard warning and manufacturer name and address.
Hazardous Chemicals

Employers

- Maintain a file of MSDS for all hazardous chemicals.
- Inspect incoming chemicals to verify proper labeling.
- If a chemical is transferred to an unlabeled container, label appropriately.
- Train employees in the use of hazardous chemicals.
Hazardous Chemicals

Medical students should:

- Know the hazardous chemicals used in their rotations.
- Know where MSDS’s are located on the units.
- Know how to read an MSDS.
- Read product labels carefully.
Workplace Violence

To keep your workplace safe from violence:

- Recognize aggressive behavior and warning signs of potential violence.
- Respond appropriately to the level of aggressive behavior.
- Report all unsafe situations immediately.
<table>
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<tr>
<th>Workplace Violence</th>
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<tr>
<td><strong>Tension</strong></td>
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<td><strong>Disruptiveness</strong></td>
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<td><strong>Loss of Control</strong></td>
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</table>
Reporting Incidences

- Breach in safety is referred to as an incident.

- Incidents happen -
  - When normal procedures are not followed
  - Safety is compromised
  - Injury or near injury occurs

- All incidents should be reported immediately.
Emergency Preparedness

- Be prepared to respond to disasters such as:
  - Natural disasters
  - Technological disasters
  - Transportation accidents
  - Terrorism
  - Nuclear, biological and chemical events

- Identify events that could occur.

- Determine probability of events occurring.

- Develop strategies to deal with events.
Emergency Preparedness

- To be assigned to disaster responsibilities, students must present with their current medical school photo ID.
- Medical students will be under the direct observation and mentoring of a Scott & White Senior Staff member.
- Medical students may be assigned patient care activities included in and previously covered by their curricula.
Make sure that YOU are ready to respond to disaster:

- Know the disaster events that pose a risk to the facility to which you are assigned.
- Volunteer to participate in all emergency response training and drills.
Infection Control

► Healthcare Associated Infection (HAI)
  ▪ Develops after contact with the healthcare system
  ▪ Can be very costly in terms of:
    ► Patient life and health
    ► Healthcare dollars
HAI Cause

Infectious organisms may come from:

- Environmental sources
- Patients
- Staff members
- Hospital visitors
HAI Cause

- People can be sources of HAI if they are:
  - Carriers of a disease
  - Incubating a disease
  - Actively ill with a disease
Hand Hygiene

- The single most important factor for preventing the spread of infection is proper hand hygiene.
- Hands should be washed or decontaminated before and after each direct patient contact.
- Use soap and water on visibly soiled hands.
- Alcohol based hand rubs for routine decontamination of hands.
Hand Hygiene

► Soap and Water

- Remove rings, jewelry and watches.
- Pre-wet hands with water.
- Use an appropriate amount of soap.
- Rub all surfaces of the hands and wrists for 15 seconds.
- Rinse thoroughly under running water.
- Dry hands with a disposable towel.
Hand Hygiene

- Alcohol Rub
  - Remove rings, jewelry, watches.
  - Apply the amount of rub recommended by the manufacturer.
  - Rub all surfaces of the hands and wrists until the hands are dry.
Environmental Hygiene

- Wash your hands before eating or assisting a patient with eating.
- Do not eat or drink in patient care areas.
- Dispose safely of clinical waste.
- Maintain a visibly clean, pest free environment.
- Clean, disinfect or sterilize medical equipment after each use.
- Laundeer used or infected linens safely.
Invasive Procedures

- HAI are related to invasive procedures, especially: Foley catheterization and IV line placement.
- The most common type of HAI is urinary tract infection due to indwelling urinary catheters.
- IV line placement breaks the patient’s first line of the defense, the skin.
Invasive Procedures

► High risk procedures, such as catheterization should be performed only when absolutely necessary.

► Catheters should be removed as soon as possible.

► Instruments and equipment used for invasive procedures should be properly sterilized before use and used with aseptic technique.
Antibiotic Resistance

The more antibiotics are used the more common resistant strains of bacteria become. Examples are:

- Methicillin resistant staphylococcus aureus
- Vancomycin resistant enterococci
- Drug resistant streptococcus pneumoniae
- Multidrug resistant mycobacterium tuberculosis
Antibiotic Resistance

Antibiotic resistance impacts:

- Drug choice - must use other antibiotics that are typically
  - Less effective against the bacteria
  - More toxic to the patient
  - More expensive
Antibiotic Resistance

► Patients with resistant infections tend to have:
  - Lengthier illness
  - Higher medical bills
  - Greater risk of death

► Healthcare Systems
  - More than 70% of all bacteria in HAI’s are resistant to one or more commonly used antibiotics.
Prevention of Resistance

- Strategies to prevent the antibiotic resistance:
  - Prevent Infections
    - Patients and healthcare workers should be kept up on appropriate vaccinations.
  - Diagnosing and Treating Infections
    - Identity cause of infection.
    - Use specific antibiotics to target infectious agent.
    - Avoid use of broad-spectrum antibiotics.
Prevention of Resistance

► Use Antibiotics Prudently
  ▪ Do not give to patients with colds and flu.
  ▪ Educate patients.

► Prevent Spread of Infection
  ▪ Use proper hand hygiene.
  ▪ Use proper isolation techniques.
Blood-borne Pathogens

Blood-borne pathogens are spread by unprotected exposure to:

- Infected blood
- Bodily fluids
- Non-intact skin
- Moist body tissues

*Blood-borne diseases include AIDS, Hepatitis B, and Hepatitis C.*
**Standard Precautions**

- Standard precautions are used in the care of ALL patients, regardless of their diagnosis.

<table>
<thead>
<tr>
<th><strong>Hand Washing</strong></th>
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<tr>
<td>► After touching bodily fluids or contaminated items</td>
<td></td>
</tr>
<tr>
<td>► After removing gloves</td>
<td></td>
</tr>
<tr>
<td>► Between patient contacts</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th><strong>Gloves</strong></th>
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</thead>
<tbody>
<tr>
<td>► Wear Gloves when touching bodily fluids or contaminated items.</td>
<td></td>
</tr>
<tr>
<td>► Put on clean gloves before touching mucous membranes of non intact skin.</td>
<td></td>
</tr>
<tr>
<td>► Change gloves between dirty &amp; clean tasks.</td>
<td></td>
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</table>
## Standard Precautions

<table>
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<th>Category</th>
<th>Precautions</th>
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<tr>
<td><strong>Mask, eye protection, face shield, gowns</strong></td>
<td>▶️ Use personal protective equipment to protect against splashes of sprays of body fluid.</td>
</tr>
</tbody>
</table>
| **Patient care equipment & linens** | ▶️ Avoid cross contamination from soiled equipment and linens.  
    ▶️ Discard single use items appropriately. |
| **Environmental Control**       | ▶️ Keep environment clean and disinfected.                                   |
| **Blood-borne Pathogens**      | ▶️ Do not bend or recap needles.  
    ▶️ Put used sharps in sharps containers. |
| **Patient Placement**          | ▶️ Patients who contaminate the environment should be in private rooms.     |
Airborne Precautions

Airborne Particles

- Are produced when an infected person sneezes, coughs, or talks.
- Can remain suspended in the air for long periods of time.
- Can travel long distances on air currents.
- Transmission occurs when a person inhales an infectious particle.
Airborne Disease

- Chickenpox, Shingles
- Measles
- TB
- Severe Acute Respiratory Syndrome (SARS)
- Smallpox
Contact Precautions

- Contact transmission of disease occurs via direct or indirect person to person contact.
- Contact transmission is the most important and common cause of HAI.
Contact Diseases

- Hepatitis A
- Respiratory syncytial virus infection
- Impetigo
- Conjunctivitis
- Viral hemorrhagic infections
- Rubella
## Contact Precautions

<table>
<thead>
<tr>
<th>Patient Placement</th>
<th>Isolate in private rooms or cohort.</th>
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<tr>
<td>Gloves, gowns, and hand antisepsis</td>
<td>Use gloves and gowns. Decontaminate hands.</td>
</tr>
<tr>
<td>Patient Transport</td>
<td>Limit as much as possible.</td>
</tr>
<tr>
<td>Patient Care Equipment</td>
<td>Non-critical equipment is dedicated to a single patient or cohort. If not, clean equipment between patients.</td>
</tr>
</tbody>
</table>
Droplet Precautions

- Droplet transmission happens via large respiratory droplets -
  - Generated during coughing, sneezing, talking.
  - Travel up to 3 feet through air.

- Disease transmission occurs when droplets land on mucous membranes of nearby person’s eyes, nose, or mouth.
Droplet Diseases

- Mumps
- Rubella
- Influenza
## Airborne Precautions

<table>
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<tr>
<th><strong>Patient Placement</strong></th>
<th>Patients on airborne precautions are isolated in private rooms with negative air flow ventilation systems - patients may be cohorted.</th>
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<tr>
<td><strong>Respiratory Protection</strong></td>
<td>Healthcare staff must wear personal respirators whenever they enter an airborne isolation room.</td>
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<tr>
<td><strong>Patient Transport</strong></td>
<td>Patient transport should be limited as much as possible.</td>
</tr>
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</table>
Personal Responsibility

- Use personal protective equipment:
  - Gloves, masks, goggles, gowns, respirators
- Keep your vaccinations up-to-date.
- Report all unprotected exposures.
- Stay home when you are sick.
Certification of Completion

►► M1 and M2, please sign and return to Student Affairs in Temple or College Station.
►► M3 and M4, please sign and return to Tamara Clothier/Student Affairs-Temple.

I have completed the regulation compliance learning module and understand safety issues, workplace violence, emergency preparedness and infection control.

_________________________ Student name_______ Date