

# HOSPITAL HAZARDS



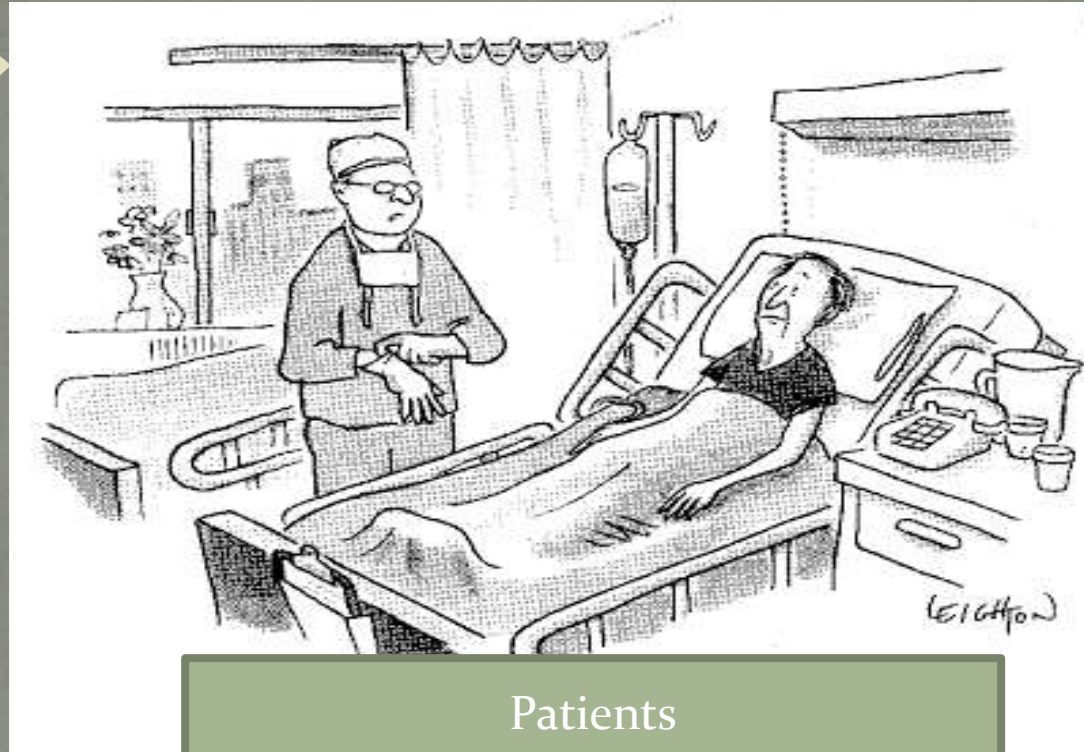
# Definition:

- Hospital Hazards : anything ( substance/ activity) that directly or indirectly potentiate hazards to those linked with the healthcare.

# Healthcare Hazards:



Infrastructure



Patients



Staff

# Infrastructure

- Critical infrastructure Hazards



# Staff:

- Designated Substances
- Physical hazards
- BIOLOGICAL Hazard
- Chemical Hazards
- Ergonomic Hazards
- Psychological Hazards
- Burn out

# Patients

- Moral hazards
- Noso-comial infection

# CRITICAL INFRASTRUCTURE HAZARDS:

- Targeting our economy, security and way of life.
- Its impairment would cause a sustained shortage of supplies, significant disruptions to public order or other dramatic consequences. (German FMI 2009, p. 4)

Critical facilities are socially, economically or operationally essential to the functioning of a society or community. They include such things as transport systems, air and sea ports, electricity, water and communications systems, *hospitals* and health clinics, and centers for fire, police and public administration services” (UN/ISDR 2009, p. 8 f).



Natural events	Technical failure/ human error	Terrorism, crime, war
Hydro-meteorological hazards	System failure (e.g. insufficient or excessive complexity of planning or defective hardware)	Terrorism
Geological hazards	Negligence	Sabotage
Epidemics and pandemics	Accidents and emergencies	Other forms of crime
Cosmic events	Failures in organizations	(Civil) Wars

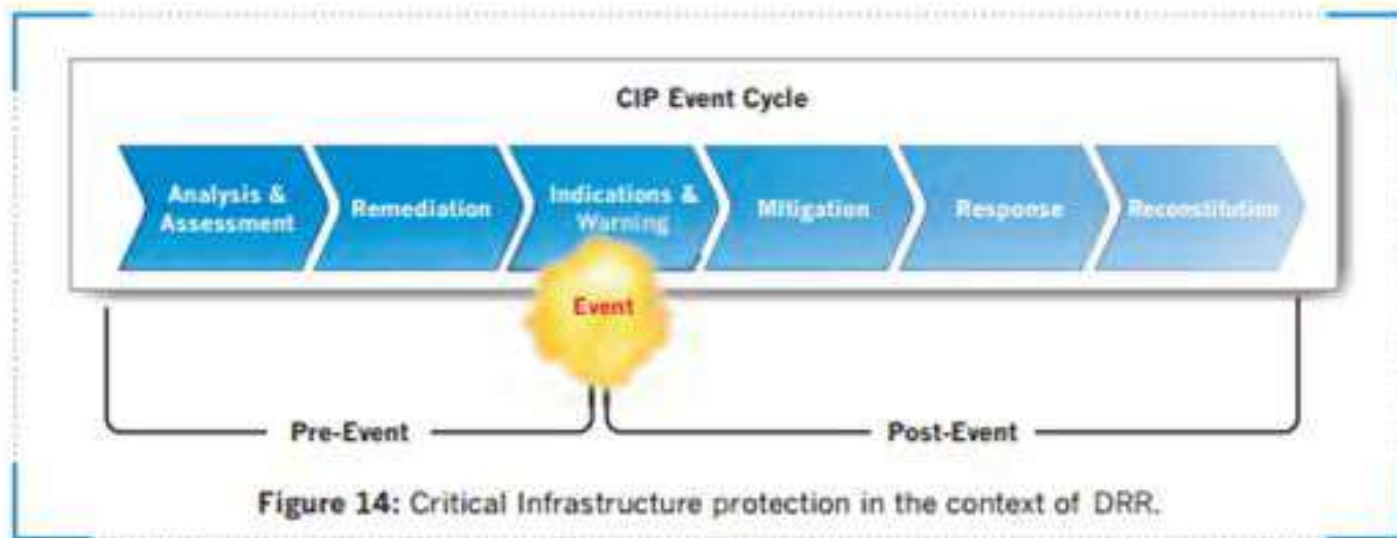
Regarding infrastructure susceptibility, three main characteristics are of particular relevance:

- Dependencies on other infrastructures
- Dependencies on specialized staff
- Dependencies on environmental services

Basically four main general characteristics describe the coping capacity of a Critical Infrastructure system: **preparedness, redundancy, replacability and robustness** (Lenz 2009)

*Redundancy* describes the multiple existences of certain components or services which are able to replace or to take over the function of another component.

*Robustness* describes the ability of a service or component to withstand the effects of one or multiple hazard(s) without losing its function.



**Figure 14:** Critical Infrastructure protection in the context of DRR.

Source: NRC 2009.



# . Designated Substances :

- 1. Biological Hazards
  - Needle stick injuries and Universal precautions
  - Care of infectious cases
  - deathcare.

Immediate measure = PEP

## 2. Radiological Hazards

- According to Radiation Protection Rules, 1971,
  - The radiation exposure limit for a radiation worker is 20mSv(milliSievert) per year.
  - Protective gloves (lead=0.3mm)
  - Lead apron(lead=2.5mm)
  - Screen with control panel

- dosimeter(TLD) badges
- Blood tests (Hb, TLC, DLC) once in 3- 6 months
  
- 3. Chemical hazards
  - Mercury spill
- 4. Physical hazards
  - Fall
  - Fire.

# Ergonomic Risk Factors Of Healthcare Jobs

<i>Risk factors</i>	<i>Examples</i>
<b>Repetition</b>	Transferring patients, hand-cranking beds, slicing meat, using a computer keyboard.
<b>Force</b>	Transferring patients, lifting laundry bags, pushing carts or patients in wheelchairs or gurneys, grasping a syringe or forceps, gripping or scooping ingredients from large food bags.
<b>Awkward postures</b>	Transferring, turning or lifting patients; reaching manual bed cranks; bathing and dressing patients; loading or unloading linen carts; assisting in surgery with neck and back bent; walking on wet floors; reaching for food supplies; using a computer keyboard.
<b>Contact stress</b>	Wearing tight latex gloves, sitting on a chair where the seat pan cuts the blood supply to the legs, sitting on a chair with armrests that are too close to the body.
<b>Vibration</b>	Using an electric drill, chipping hammer, jig saw, grinder or sander. (Maintenance professionals in health-care might use these tools.)



# GUIDELINES:

- Provide assist devices for lifting;
- Provide convenient storage of lifting devices;
- Lower items to alleviate reaching;
- Provide handles on carts;
- Encourage team lifts or start a no-lift program;
- Provide redesigned surgical instruments, containers and computer workstations;
- Perform regular maintenance on lifting devices and equipment wheels, cranks and controls; and
- Encourage exercise.



# Physical hazards

It includes toxic, reactive, corrosive or flammable compressed gases and chemicals; extreme temperatures that may cause burns or heat stress; mechanical hazards that may cause lacerations, punctures or abrasions; electrical hazards; radiation; noise; violence; and slips and falls.

# Precautions:

- Wearing the right shoes;
- Properly cleaning and maintaining floors;
- Reporting leaks and spills;
- Storing cylinders upright;
- Storing flammables in approved, closed containers;
- Wearing proper personal protective equipment, including hearing protection where necessary;
- Maintaining electrical equipment according to manufacturer and company standards;
- Regularly inspecting tools, cords, grounds and accessories;
- Locking and tagging out power sources and switches when servicing or repairing mechanical equipment;
- Learning to recognize and treat the signs of heat stress and drinking plenty of water;
- Not entering restricted radiation areas, unless trained and authorized;
- Treating and interviewing aggressive patients in relatively open areas;
- and
- Reporting all assaults or threats to a supervisor or manager.

# Psychological hazards

These are related to discrimination, technological changes, malfunctioning equipment, tight work schedules, downsizing, overwork, understaffing, paperwork, increased facility size and bureaucracy, violence, dependent and demanding patients, and patient deaths.



stress, fatigue, anger, frustration and the feeling of being isolated and powerless,



Burn outs.



# To control:

- Regular staff meetings to share feelings and innovative ideas;
- Stress management programs;
- Readily available counseling;
- Alternative job arrangements;
- Adequate staffing;
- Reasonable shift schedules;
- Group therapy for staff dealing with chronically ill or deceased patients;
- Organized and efficient work functions and environment;
- Recognition of and action on legitimate complaints;
- Relaxation exercises;
- Opportunities to improve skills;
- More flexibility and worker participation in scheduling;
- Scheduled rotation of unit assignments.
- Grievance redressal
- Sabbatical leaves



## HAZARDS RELATED TO STAFF: its management

1. Pre-placement medical examinations
2. Periodic health maintenance
3. Health and safety education programs
4. Employee immunizations
5. Post exposure Prophylaxis: Provisions for care of illness and injury at work
6. Environmental control and surveillance services
7. Employee health and safety records
8. Coordinated planning

# Patient

1. **Hazardous agents** include biological agents, chemical agents, disinfectants and sterilants, antibiotics, hormones, antineoplastics, waste anesthetic gases, latex gloves, aerosolized medications (e.g., ribavirin) and hazardous waste.
2. Blood borne Pathogens Standard and the Hazard Communication Standard were the top two regulations cited against health services (SIC 80) by the Occupational Safety and Health Administration from October 2000 through September 2001

# Exposure control plan and a hazard communication program

- Keep hazardous agents labeled properly;
- Avoid eating around hazardous agents;
- Wear proper personal protective equipment, including respirators where necessary;
- Request non-latex gloves if allergic to latex;
- Use tools to apply or handle hazardous agents;
- Avoid recapping needles and use safe and effective alternatives where available;
- Learn where emergency eyewash stations are located;
- Dispose of hazardous agents in proper containers;
- Report leaks and spills;
- Recognize the signs and symptoms of illness relating to hazardous agents; and
- Report exposure incidents.





*"I'll have someone come in and prep you for the bill."*

In response to a change in reimbursement incentives, hospitals may change the intensity of services provided to a given set of patients, change the type (or severity) of patients they see, or change their market share. Each of these three responses, which we define as a moral hazard effect



In economics, **moral hazard** occurs when one person takes more risks because someone else bears the cost of those risks. A **moral hazard** may occur where the actions of one party may change to the detriment of another after a financial transaction has taken place.



MANAGEMENT...



# Pro-active risk management

- 1. Employee Education .
- 2. Accurate and Complete Documentation
- 3. Departmental Coordination
- 4. Prevention
- 5. Correction
- 6. Complaints
- 7. Incident Reporting

# Joint commission environment of care standard

- 1. safety management
- 2. security management.
- 3. Hazardous material and waste management
- 4. Emergency preparedness
- 5. life safety.
- 6. Medical equipment management
- 7. Utility system management.

# Occupational safety and health Administration.

- General Industry Standards Related to healthcare industry are:
  - 1. Hazard communication standards
  - 2. Blood borne pathogens standards
  - 3. Hazard specific standards
- OSHA Tuberculosis standards



# OSHA Guidelines:

- Management commitment
- Work site analysis
- Hazard Prevention and control
- Employee training.

THANK YOU.....!