EMERGENCY MEDICAL MANAGEMENT OF RADIATION CAUSALTIES IN HOSPITAL

Module XVII

Hospital management of radiation accident victims

- **Potential** problem of admitting victims of radiation accident
- **Plan & protocol** for emergency department needed to deliver prompt and appropriate medical care to victim
- **Slight potential** for radioactive contamination of hospital team, equipment and facility

Preparation for hospital care of radiation accident victims

- Organization of hospital radiological emergency response team
- Facility preparation and staff training
- Patient reception and triage
- Decontamination and decorporation procedures
- Radiological monitoring & contamination control
- Bioassay sampling
- Post-emergency activities

Arrival of radiation accident victims at hospital

Meet victims at ambulance or other transport vehicle at hospital entrance

Instruct ambulance personnel to stay with vehicle until surveyed and released by radiation safety officer (RSO)

Extended triage and reception of victim at hospital

- **Lifesaving measures**
- **Extended triage**

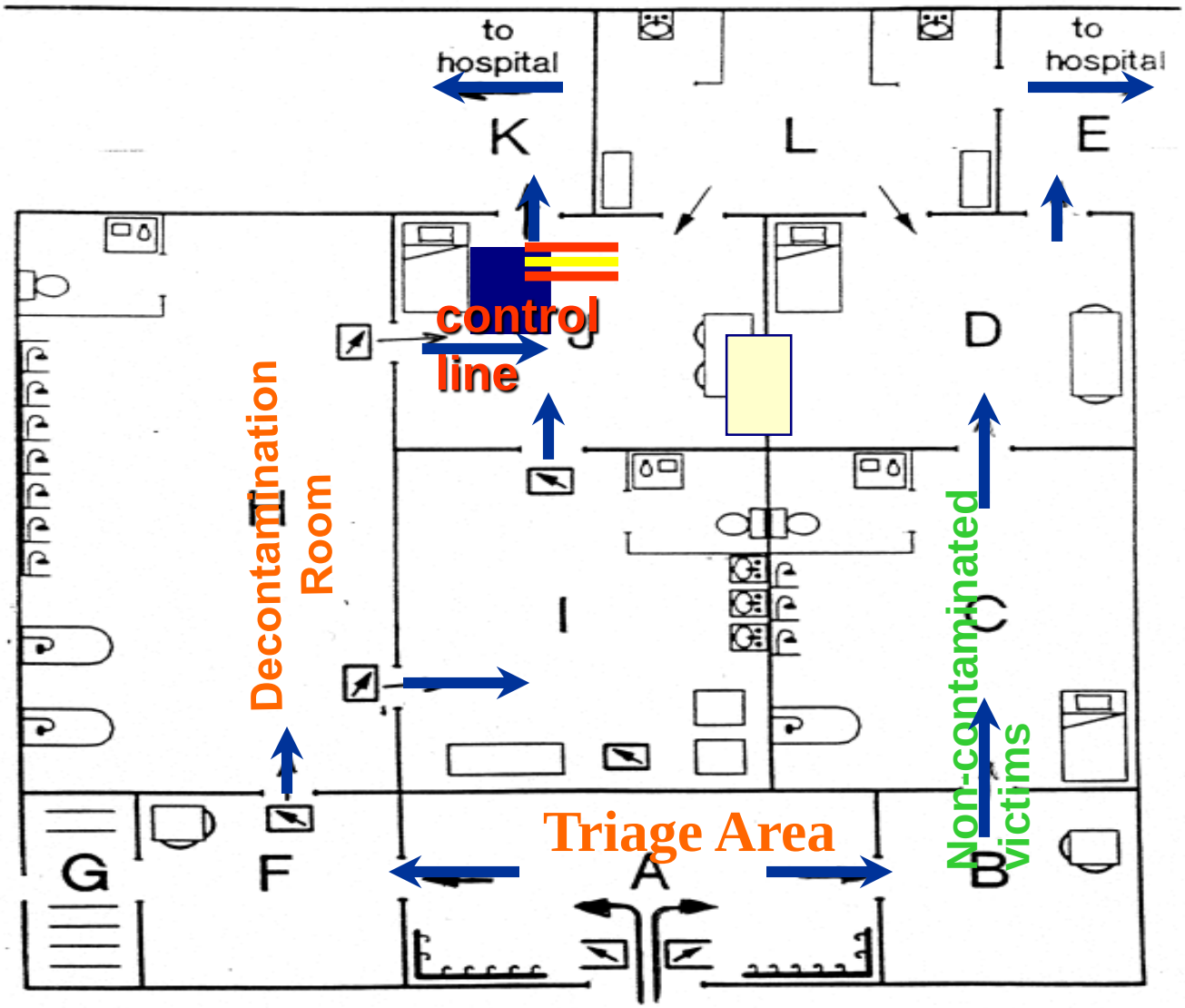
- **If victim's condition allows, perform brief *radiological survey* to check for contamination**
- **Remove victim's contaminated clothing in or near the ambulance**

Establishing radiation emergency area (REA)

Area Selection Considerations

- Outside entrance with easy access
- Away from main hospital traffic flow
- Availability of and storage capacity for equipment and supplies
- Sufficient rooms of suitable size for decontamination and treatment

Plan of hospital reception area for radiation casualties



Preparation of radiation emergency area (REA) - I

- Procedures for handling contaminated accident victims similar to strict reverse isolation precautions and to protocol for "septic" surgical cases

- Prevents spread of radioactive contaminants and simplifies clean up

Preparation of REA - II

- Victim considered contaminated until proven otherwise
- Remove patients, uncontaminated casualties, and non-essential personnel from REA before using it
- Designate separated part of REA for patient decontamination

Preparation of REA - III

- Cover route from ambulance entrance to decontamination room, and floor of room and treatment area with wide strong rolled paper
- Roped off route and mark “radiation area”
- Establish control line at entrance to decontamination room

Preparation of REA - IV

Life support and other essential medical equipment and supplies should be available immediately and ready for use

Prepare decontamination table and materials

Cover door handles and light switches to reduce contamination that might be spread by hand

Preparation for radiological monitoring

- Prior to patient arrival, check radiation monitors
- Cover probe of contamination monitor
- Check and record background radiation level in decontamination room

Procedures for contamination control

1. Set up and equip controlled area
2. Restrict access
3. Use strict isolation precautions, including protective clothing and double bagging
4. Monitor anyone/anything leaving controlled area

Response team preparation for receiving potentially contaminated radiation victims

- Necessary supply: Surgical gown and suit, mask, head cover, gloves, waterproof apron and shoe covers
- Tape all clothing sleeves and cuffs
- Splash protection for eyes
- Double gloving procedures
- Issue personal dosimeters

Assessment and treatment of non-contaminated patient

Care for non-contaminated patients like any other emergency case

Victim of external exposure without contamination poses no radiological hazard

If exposure known or suspected, order blood cell count in particular to determine absolute lymphocyte count. Record time blood sample taken

Summary: assessment and treatment of contaminated patient

- Contaminated patients can have radioactive material deposited on clothes, hair, skin, in wounds, or internally (ingested, inhaled, or absorbed)
- Assess level of consciousness and vital signs on arrival
- **Reassess contaminated patient's airway, breathing and circulation** first and stabilize condition
- After examining patient and identifying all injuries, conduct complete radiological survey (incl. nasal swabs and skin smears)