Population Monitoring and Decontamination In A Radiological Event

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Potential Nuclear/Radiological Events

- Transportation
- Power Plant
- Weapons
- Laboratory
- Industrial
- Medical
- Space
- Terrorism
Impact

- **Nuclear Event**
  - Significant loss of life
  - Loss of infrastructure
  - Medical capacity overwhelmed
    (burns, physical trauma, combined injury)

- **Radiological Event**
  - Limited casualties
  - Psychosocial issues
  - Economic impact
  - Concerned citizens
“All emergencies are local”

Terrorist Attack

Local Public Health Response Organizations

State Public Health Response Organizations

Federal Public Health Response Organizations

(But for most large-scale events, the response will be national.)
What is Population Monitoring

- The process of identifying, screening, and monitoring people for exposure to radiation or contamination with radioactive materials.

Population Monitoring

Evaluate potentially-affected population for:

- Immediate need for medical treatment (both rad and non-rad related)
- Presence of contamination on body or clothing
- Intake of radioactive materials
- Removal of external or internal contamination (decontamination)
- Radiation dose received and risk of health effects
- Long-term health effects (needs registry)
Population Monitoring - An Integrated Process

- Involves multiple response organizations and crosses multiple disciplines
- Not limited to a specific time window or location
- Requires extensive planning
- Needs to be scalable and flexible
  - Prioritized needs of people at the time and location
  - Availability of resources
Public Health Functions After Any Disaster

- Rapid assessment of community health needs
- Potable water, safe food, sanitation and hygiene
- Vector control
- Solid waste, waste water management
- Hazardous material disposal
- Sheltering and housing, mass care safety
- Injury and illness surveillance

- Registry
- Handling of the deceased
- Rumor control
- Public service announcements
In a Radiation Emergency:

Public health practitioners need to work closely with radiation safety professionals (e.g., health physicists)

Your state radiation control program is a key partner!
Default Thinking in Dealing with the “Contaminated” Public
Need for Monitoring and Decontamination

- Department of Defense supports transport of victims
  - Current protocols: victims must be stable and decontaminated before they will be accepted for movement

- American Red Cross supports public shelters
  - Current protocols: Before entering a shelter, evacuees need to be free of radioactive contamination
Decon before MedEvac??
Radioactive Contamination

- Radioactive decontamination should be done as soon as possible, but it does not require the same immediacy as chemical contamination.

- Radioactive contamination is not immediately life threatening.

- People evacuating may be advised to self-decontaminate.
Pets Evacuation and Transportation Standards (PETS) Act of 2006
Decontamination/Population Monitoring are:

“the responsibility of State, local, and tribal governments.”

www.fema.gov/emergency/nrf/
Community Reception Centers (CRC)

- Local response strategy for conducting population Monitoring
- Multi-agency effort, public health lead
- Staffed by government officials and organized volunteers
- Opened 24-48 hours post event
- Located outside of “hot zone”
- Support operations of public shelters
Community Reception Centers (CRC)

- Basic services include:
  - external contamination screening
  - external decontamination
  - registration
  - prioritizing people for further care

- Benefits include:
  - reducing burden on hospitals
  - managing scarce medical resources
  - supporting shelters
    - CRC may be co-located with shelters
      (congregate Care Center)
Community Reception Centers
Additional Resources

- Monitoring for internal contamination
- Collection of Bioassays
- Medical intervention for decorporation
- Counseling
- Relocation services
- Pet monitoring

Add modules as resources become available.
Community Reception Center

Process Flow

- 7 Main Process Areas
  - Initial Sorting
  - First Aid
  - Contamination screening
  - Wash
  - Registration
  - Radiation dose assessment
  - Discharge

Can easily modify floor plans for POD locations
CRC Resources

- Population Monitoring Guide
- Virtual CRC, an interactive web-based training (downloadable) [http://emergency.cdc.gov/radiation/crc/vcrc.asp](http://emergency.cdc.gov/radiation/crc/vcrc.asp)
- RealOpt–CRC optimization software
- CRC-STEP, Simulation Tool for Evaluation and Planning
- All are customizable
Call for Radiation Response Volunteers

“Planners should identify radiation protection professionals in their community and encourage them to volunteer and register in any one of the Citizen Corps or similar programs in their community.”

Chapter 5
Medical Reserve Corps - Radiation Response Volunteers

State boundary

MRC coverage area

Radiation Volunteers

General/Public Health/Medical Volunteers

State Volunteer Registry

MRC 1

MRC 2

MRC 3

MRC 4

Radiation Control Program
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