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Lawrence Livermore National Laboratory

Information and References for Hospital Emergency Response Planners

Brooke Robert Buddemeier
Certified Health Physicist

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There may be significant health care worker absenteeism for radiological events

Commitment to help staff non-hospital, field medical facilities by incident and Type of Practice		
	Physician (559)	Nurse (2775)
Natural Disaster	83%	90%
Explosion Incident	67%	70%
Chemical Incident	59%	59%
Biological Incident	56%	53%
Contagious Epidemic	56%	49%
Radiological Incident	**52%**	**45%**

Lanzilotte, S., “Hawaii Medical Professionals Assessment”, Hawaii Medical Journal, Vo1 61. August 2002

There may be significant health care worker absenteeism for radiological events

Health Care Workers' Ability and Willingness to Report to Duty During Catastrophic Disasters (n=6,428, 47 facilities)		
	Willing	**Able**
Snow Storm	80%	49%
Bioterrorism (smallpox)	61%	69%
Chemical Terrorism	68%	71%
Explosion Incident (MCI)	86%	83%
Environmental Disaster	84%	81%
Radiological Terrorism	**57%**	**64%**
SARs outbreak	48%	64%

Able

Transportation, & dependant care

Willing

Fear and concern for family and self

Qureshi, K, Gershon,R., Gebbie, E., Straub, T, and Morse, S. (2005). Healthcare workers ability and willingness to report to duty during a catastrophic disaster. *Journal of Urban Healt*h. 82(3):378-88.

Risk Perception is NOT Reality

League of Women Voters	Activity or Technology	Experts
1	Nuclear power	20
2	Motor vehicles	1
3	Handguns	4
4	Smoking	2
5	Motorcycles	6
6	Alcoholic beverages	3
7	General (private) aviation	12
8	Police work	17
9	Pesticides	8
10	Surgery	5

Source: Science (Paul Slovick/Decision Research), as presented in NY Times, 1 February 1994.

We Can Fix This

- Get the facts
- Have a radiological emergency response plan
- Inform, train, exercise staff

Three Myths That Can Paralyze Medical Response

Myth 1

Radioactive Contamination is Highly Dangerous and Requires Extraordinary Protective Measures

Fact 1

"Skin or wound contamination is never immediately life threatening to affected people or medical personnel"
~ International Commission on Radiological Protection, report # 96

- Radioactive contamination:
  - Is NOT immediately dangerous to life and health
  - Is *easily* managed and contained using basic antiseptic practices (good hygiene, proper attire, proper gloving practices, etc.)
- Radioactive contamination (unlike biological or chemical agents) presents *little* hazard to the medical staff

Myth 2

Decontamination of the Patient is the Highest Medical Priority

Fact 2

"rescue and medical emergencies take precedence over radiological concerns"

"..radioactive material contamination rarely represents an immediate danger to the health of the victim or the responder. This reduces the immediacy of the need for decontamination and allows the emergency response community greater flexibility in selecting decontamination options"

~ National Council on Radiation Protection and Measurements, Commentary # 19

- Critical care takes precedence over monitoring or decontamination
- Simple decontamination; outer clothing removal and wiping exposed skin can often be sufficient

Myth 3

You need “special skills” to handle radioactive patients

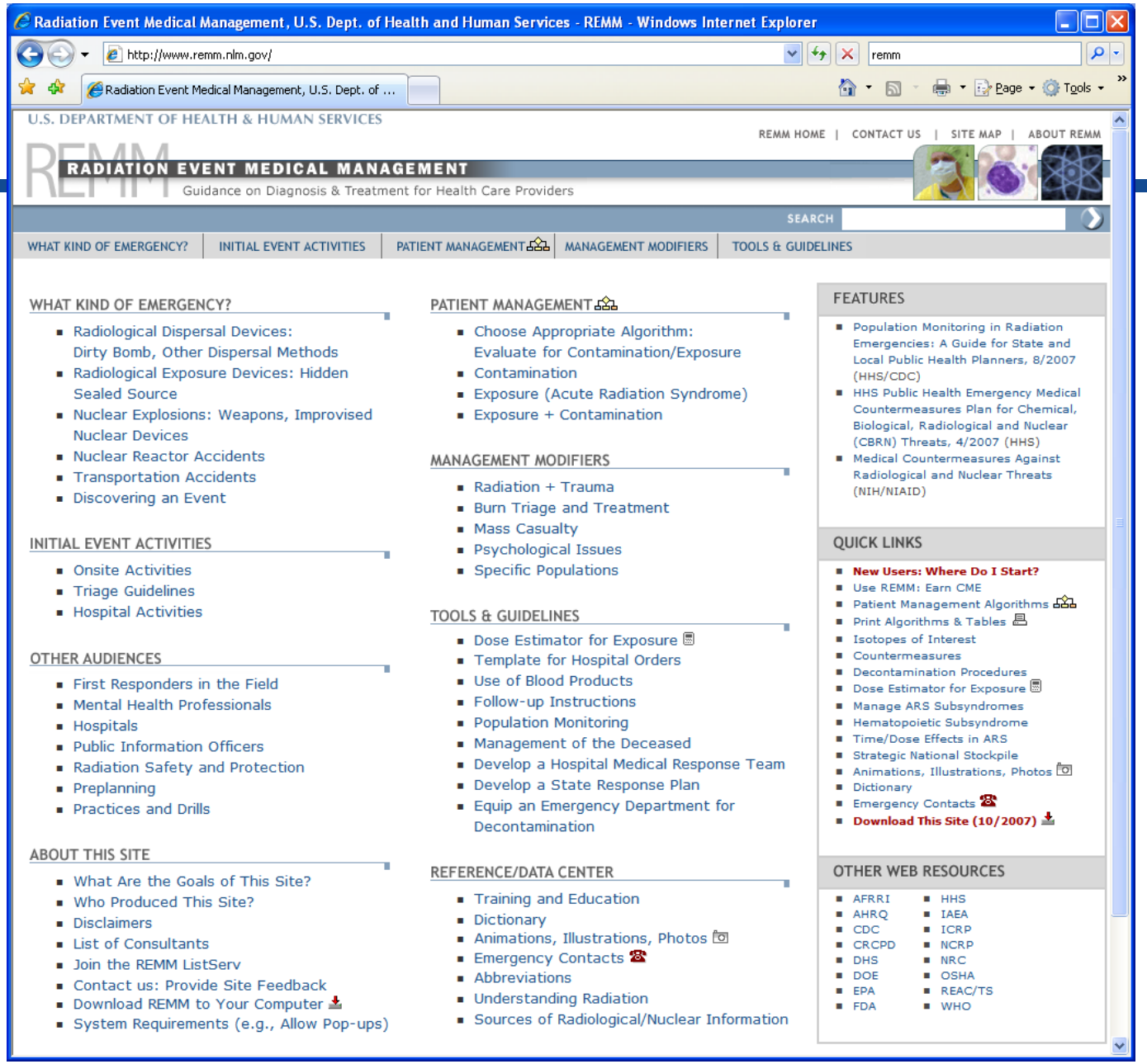
Fact 3

"Universal precautions (i.e., standard hospital personal protection procedures) in the emergency room are generally sufficient for treatment of victims of nuclear and radiological incidents"

~ National Council on Radiation Protection and Measurements, Commentary # 19

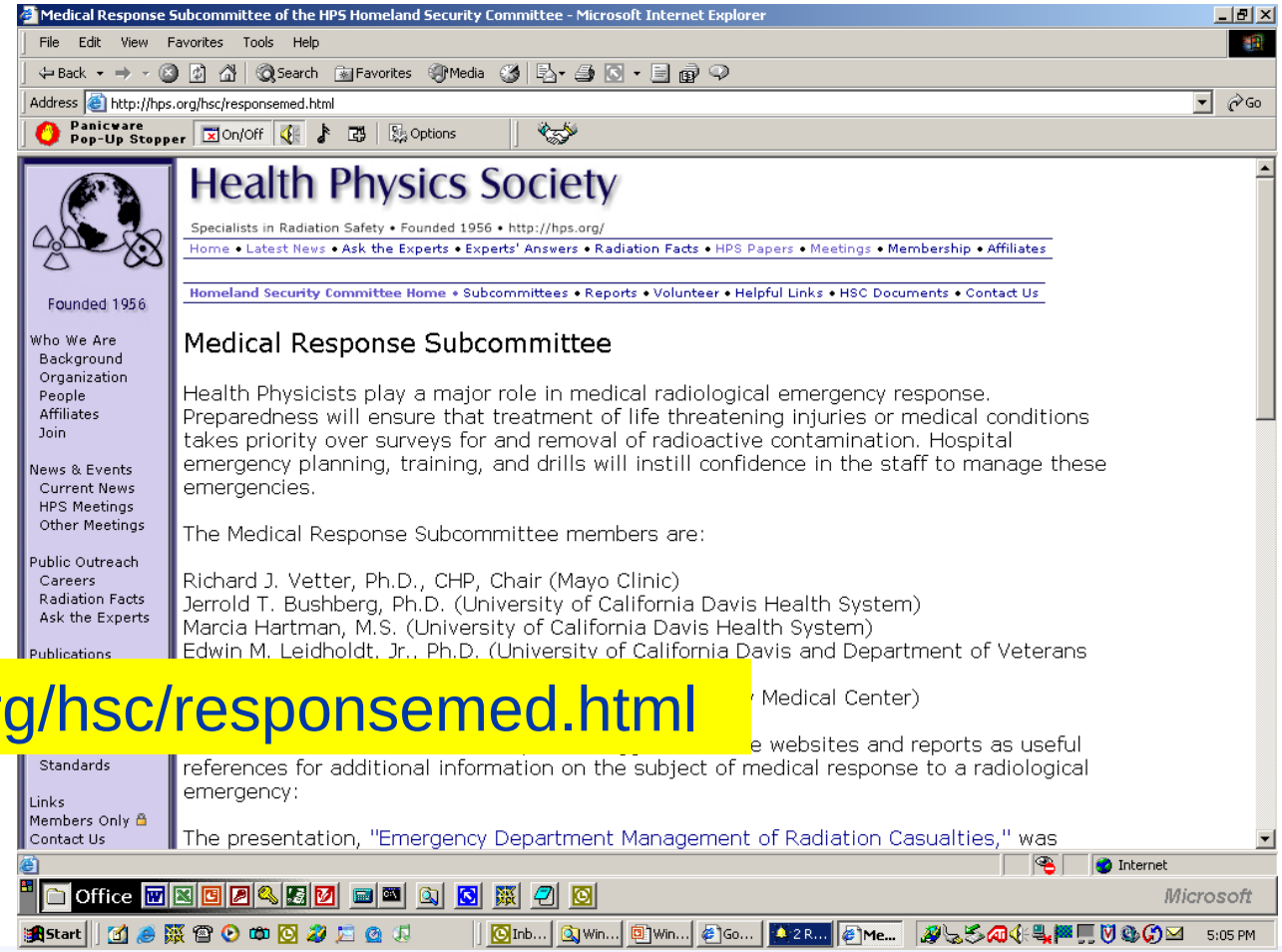
- Radioactivity can be easily and immediately measured with radiation meters (e.g., Geiger counters) are needed.
  - They are easy to use
  - Many hospitals already have them
  - Most fire departments now have meters
- Contamination surveys are easily taught and easily performed

http://www.remm.nlm.gov/



Planning; Help is Out There

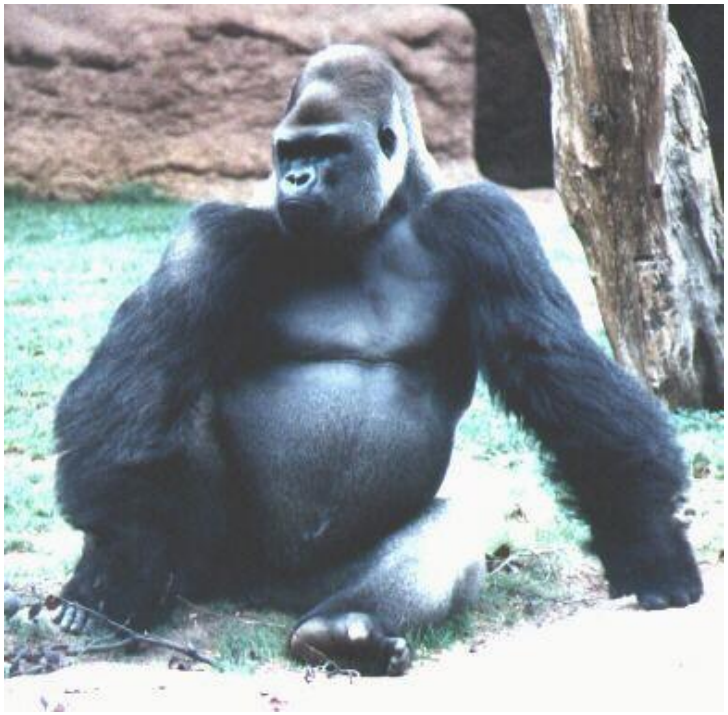
Use the Homeland Security Committee's Medical Response Website for Information



Visit http://hps.org/hsc/responsemed.html

Questions

The 800 Pound Gorilla of Radiological Response



How do you triage the merely distressed from the truly exposed?

Self-Referral by the Worried Well

In Goiania, Brazil, a large teletherapy source was opened by scavengers and the radioactive material circulated through a neighborhood. 249 people were contaminated by the material; four died.

However, ***120,000*** townspeople went to a soccer stadium to get checked for contamination (12% of the population)

In this group, a number of people presented symptoms (nausea, vomiting, etc.) which are features of radiation sickness. Of these,

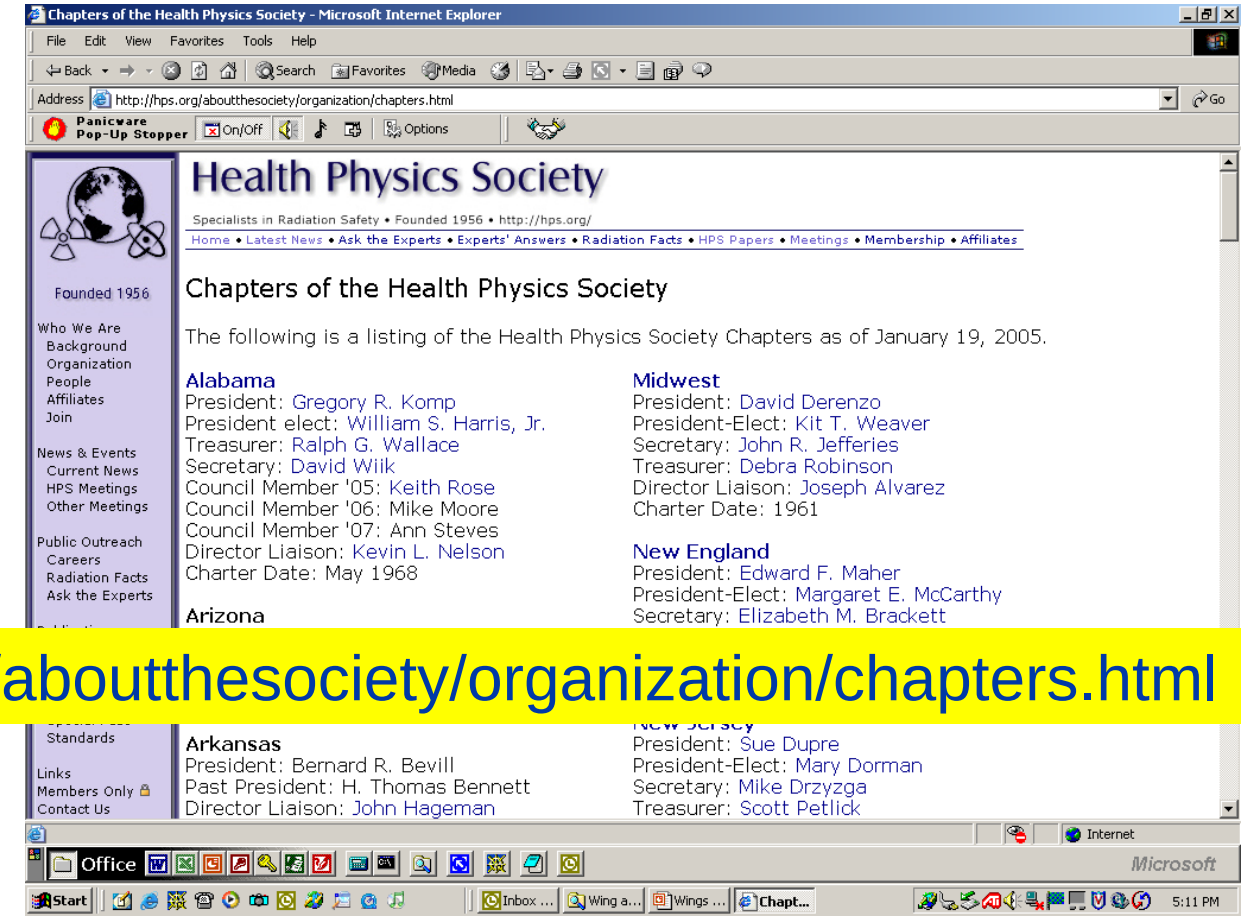
NONE were contaminated.

The Profession of Health Physics

- Health Physicists have been working EXCLUSIVELY with issues in radiation and radioactivity for over 60 years.
- They have a professional society, the Health Physics Society (founded 1956)
- The Society is sub-specialized into Sections, including Decommissioning, Medical, and Homeland Security.
- They have a local presence (42 local Chapters across the United States)
- They VOLUNTEER to assist other organizations with radiation safety matters

How Local Health Physicists Can Help

Work with Volunteers from Nearby Society Chapters



Visit http://hps.org/aboutthesociety/organization/chapters.html

Additional References

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- Training of Hospital Staff to Respond to a Mass Casualty Incident (PDF - 511 KB) (Evidence Report/Technical Assessment Number 95, AHRQ Publication No. 04-E015-2, July 2004)
- Key Elements of Preparing Emergency Responders for Nuclear and Radiological Terrorism (NCRP Commentary No. 19, December 2005, purchase required; see Free Overview (PDF - 219 KB))
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- Patient Decontamination: Recommendations for Hospitals (PDF - 124 K) (The Hospital and Healthcare System Disaster Interest Group and the California Emergency Medical Services Authority, July 2005, EMSA #233, Radiological Contamination, pages 11-16)
- Bushberg JT, Miller KL. Hospital Responses to Radiation Casualties (PDF - 141 KB) (Health Physics Society, 2004)
- Bushberg JT, Kroger LA, Hartman MB, Leidholdt EM Jr, Miller KL, Derlet R, Wraa C. Nuclear/radiological terrorism: Emergency department management of radiation casualties. J Emerg Med. 2007 Jan;32(1):71-85. [PubMed Citation]
- Interim Guidelines for Hospital Response to Mass Casualties from a Radiological Incident (PDF - 527 KB) (HHS/CDC, December 2003)