

Challenges for Building Capacity – Healthcare Systems Perspectives

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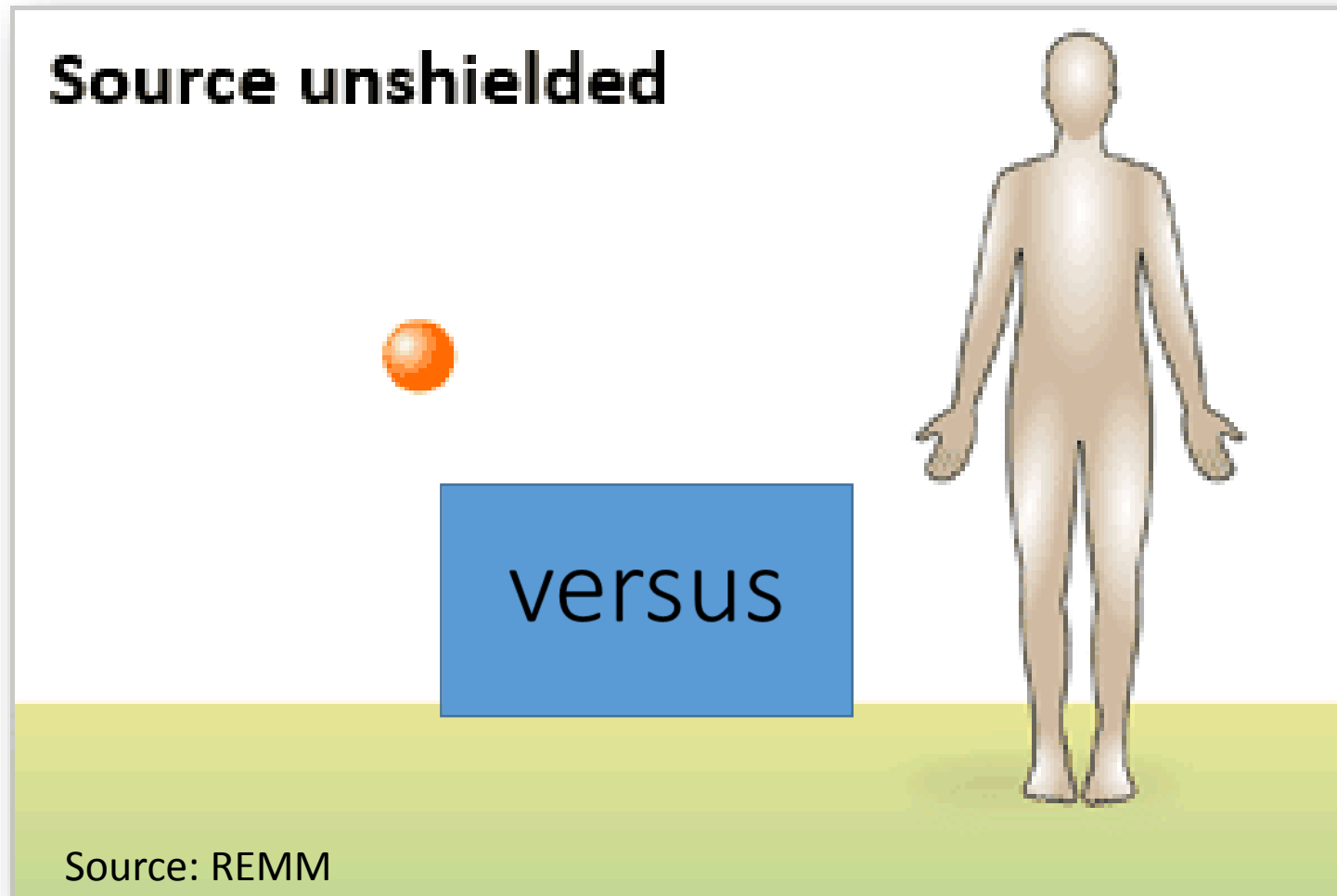
Conflict of Interest

- I serve as editor of the AHLS for Radiological Incidents and Terrorism

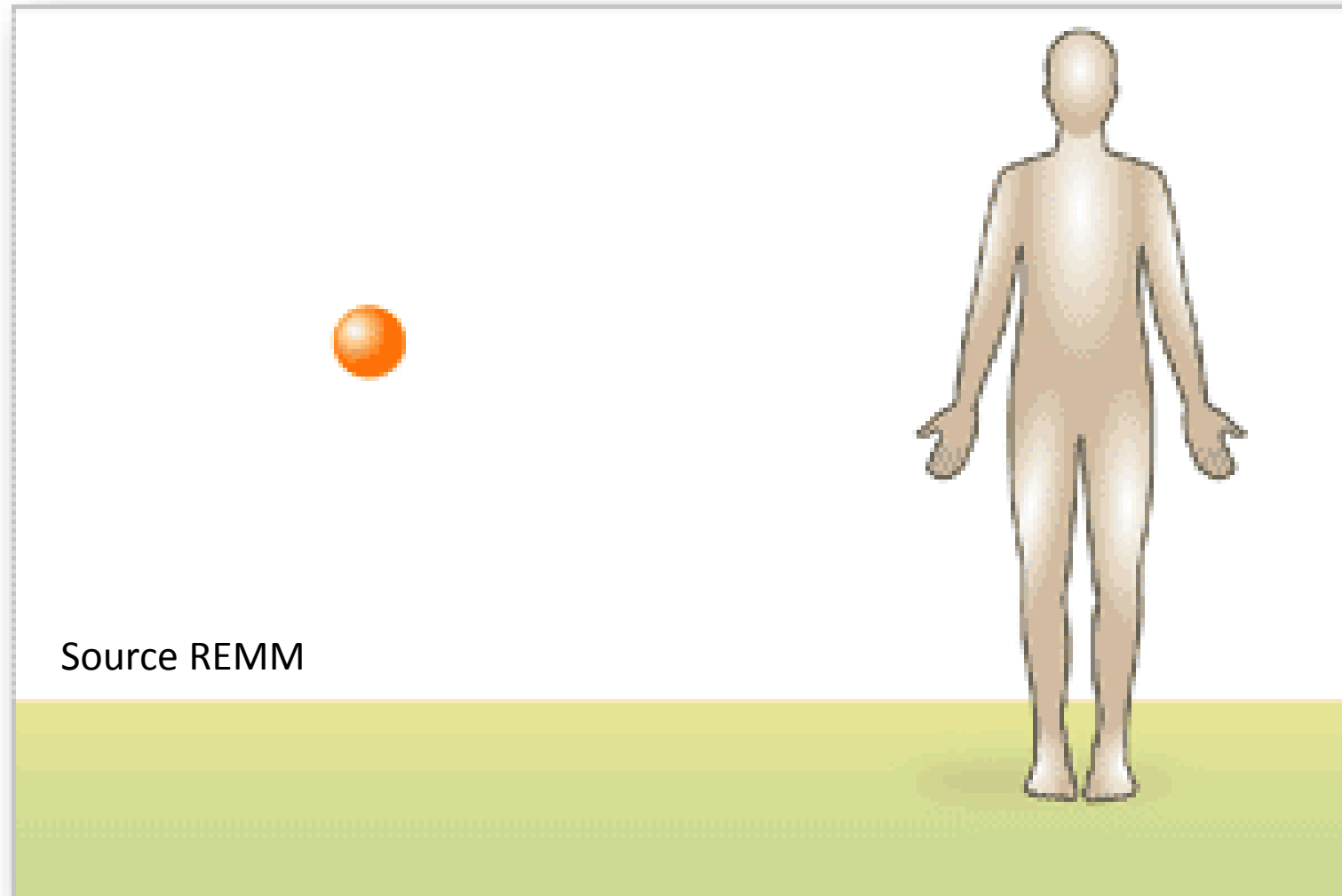
The Role of Medical & Clinical Toxicologists in a Catastrophic Nuclear Emergency

What are the gaps
and
where do we go from here?

Exposure to Radiation



Contamination with Radioactive Material



Challenges

- Very large number of victims
- Very large number of concerned individuals
- Inadequate number of specialists
- Interpretation of bioassays
- Inadequate knowledge
- Risk communication for delayed effects, prenatal and hereditary effects

Inadequate Comfort Level and Knowledge of Health Care Providers and Medical Volunteers

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- Sheikh S, McCormick LC, Pevear J, Adoff S, Walter FG, Kazzi ZN. Radiological preparedness-awareness and attitudes: a cross-sectional survey of emergency medicine residents and physicians at three academic institutions in the United States. *Clin Toxicol (Phila)*. 2012;50(1):34-8.
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Medical and Clinical Toxicology Resources

- At medical centers (academic, tertiary-care and community-based)
 - Outpatient
 - Inpatient
- At poison centers
- Federal agencies (HHS, FDA, CDC)
 - Fukushima response
 - National level exercises
 - National planning
 - Cardiogen contamination
- State Health Departments

The 2012 Core Content of Medical Toxicology

Lewis S. Nelson • Beth A. Baker • Kevin C. Osterhoudt •
Curtis P. Snook • The Medical Toxicology Core Content
Task Force for the Medical Toxicology Subboard •
Julia N. Keehbauch • for the American Board of
Emergency Medicine

Medical Toxicology Major Core Content Categories

- 1.0 Principles of Toxicology
- 2.0 Toxins and Toxicants
 - 2.1 Drugs
 - 2.2 Drugs of Abuse
 - 2.3 Industrial, Household, and Environmental Toxicants
 - 2.4 Natural Products
 - 2.5 Warfare and Terrorism
 - 2.6 Radiological
- 3.0 Clinical Assessment
- 4.0 Therapeutics
- 5.0 Assessment and Population Health
- 6.0 Analytical and Forensic Toxicology

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Medical Toxicologists and the American College of Medical Toxicology

- 400-500 Board-Certified Medical Toxicologists
- Education
 - Agents of Opportunity for Terrorism (in collaboration with REAC/TS)
 - Pediatric Environmental Health Specialty Units (PEHSU)
 - AACT Radiation Special Interest Section
 - AHLIS for Radiological Incidents and Terrorism (Sponsored by AACT)
- Research
 - Toxicology Investigators Consortium (ToxIC) registry
- Clinical
 - Telemedicine
 - Outpatient clinics
- Advocacy and Consultation
 - PEHSU and AMA
 - ATSDR and DHS Networks

www.acmt.net



Existing Data Sources

- AAPCC NPDS: exposure and syndromic surveillance in real-time (www.aapcc.org)
 - Fukushima Daiichi role of poison centers
- Kazzi ZN, Miller CW. The role of toxicologists and poison centers during and after a nuclear power plant emergency. Clin Toxicol. 2013 Jan;51(1):1-2.
- Law RK, Schier JG, Martin CA, Olivares DE, Thomas RG, Bronstein AC, Chang AS. National surveillance for radiological exposures and intentional potassium iodide and iodine product ingestions in the United States associated with the 2011 Japan radiological incident. Clin Toxicol. 2013 Jan;51(1):41-6.

United States Poison Centers



No matter where you are in the U.S., you have a poison center. Some

59 RITN Centers

13%	Med Tox fellowship in same institution
41%	Med Tox fellowship in same city
66%	Poison Center in same city
95%	Poison Center in same state
24%/15%	Co-located with inpatient toxicology services and outpatient toxicology clinics
56%/51%	Inpatient toxicology services and outpatient toxicology clinics in same city
57%	Inpatient toxicology service, an outpatient toxicology clinic, or a medical toxicology fellowship in same city
73%	One of these resources or a poison control center based within the same city

Future Needs

- Enhance linkage with RITN
- Enhance the linkage of medical toxicologists with Federal, State and Local response agencies
- Further develop and characterize the group of medical toxicologists who would be willing to serve in the role of subject matter experts in a catastrophic radiation emergency

Thank you