RITN®

RADIATION INJURY TREATMENT NETWORK

2012 Year in Review

December 4, 2012

Questions: RITN@nmdp.org

Agenda

- 2012 Activity
- 2013 Projects
- 2013 Tasks and Draft Stipend
- Questions

Prevailing opinion of experts is not if, but when…

"the possibility of a group making a weapon using highly enriched uranium is very plausibly within capabilities of a sophisticated terrorist group." *Matthew Bunn (Harvard Belfer Center) 3/22/2012*

"Making a simple "gun-type" bomb, the easiest for terrorists to build, requires at least 50 kilograms of HEU enriched to 90% U-235." *From "Consolidation: Thwarting Nuclear Theft" Harvard Belfer Center, March 2012*

"Between 1995-2011 the IAEA has confirmed 2164 incidents, 399 involved unauthorized possession and related criminal activities. Incidents included in this category involved illegal possession, movement or attempts to illegally trade in, or use, nuclear material or radioactive sources. 16 incidents in this category involved HEU or plutonium. There were 588 incidents reported that involved the theft or loss of nuclear or other radioactive material and a total of 1124 cases involving other Unauthorized activities, including the unauthorized disposal of radioactive material or discovery of uncontrolled sources." IAEA "Nuclear Security Achievements 2002-2011 "

IAEA Reported Incidents

Confirmed incidents involving unauthorized possession and related criminal activities, 1993–2011

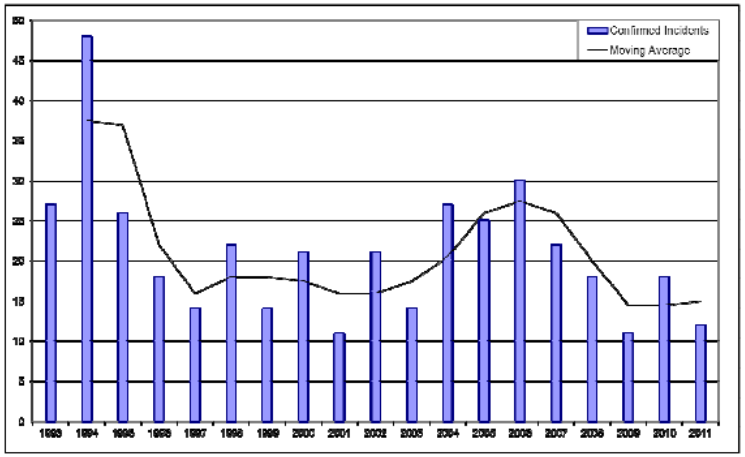


Figure 1. Incidents reported to the ITDB involving unauthorized possession and related criminal activities, 1993–2011.

Confirmed incidents involving theft or loss, 1993–2011

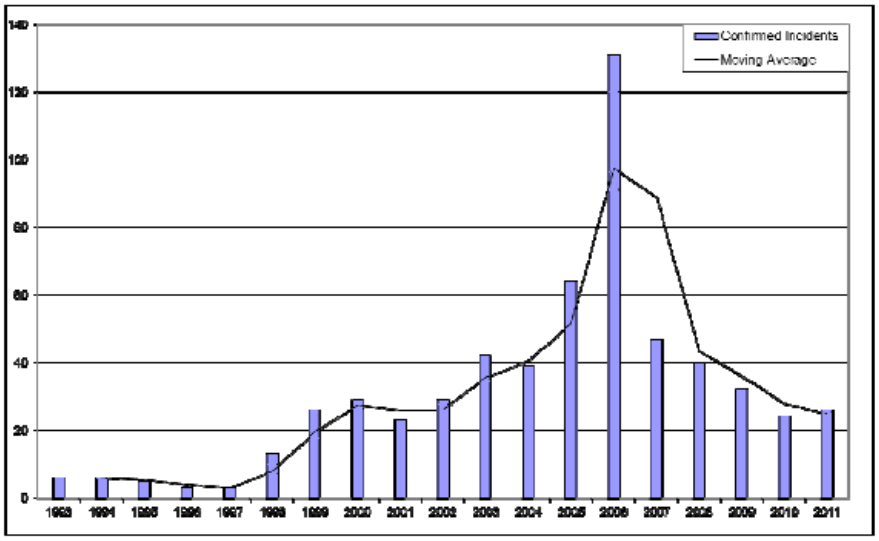


Figure 2. Incidents reported to the ITDB involving theft or loss, 1993–2011.

2012 Activity

Organization

- Five centers were inactive during 2012:
  - Iowa, Vanderbilt, Froedtert, Children's of WI, St. Francis

- Six centers joined RITN during 2012:
  - Primary Children's Medical Center
  - Massachusetts General Hospital
  - Zalmen A. Arlin Cancer Institute/Westchester MC
  - West Virginia University Hospitals, Inc.
  - Mount Sinai
  - University of Wisconsin Hospital & Clinics, Madison

Radiation Injury Treatment Network

Transplant Centers				
AL - University of Alabama at Birmingham	P/A	NDMS	HPP
AZ - University Medical Center	P/A	NDMS	HPP
CA - UCSF Medical Center	P/A		
CA - City of Hope National Medical Center	P/A	NDMS	HPP
CA - Stanford Hospital and Clinics	P/A	NDMS	HPP
CO - Presbyterian/St. Lukes Medical Center		NDMS	HPP
FL - H. Lee Moffitt Cancer Center	P/A	NDMS	
FL - Shands Hospital at the University of Florida	P/A		HPP
FL - University of Miami		NDMS	HPP
GA - Northside Hospital			HPP
IA - University of Iowa Hospitals and Clinics	P/A	NDMS	HPP
IL - Rush University Medical Center			
IN - St. Francis Hospital and Health Centers		NDMS	HPP
KS - University of Kansas Medical Center		NDMS	HPP
MA - Dana Farber/Partners Cancer Care	P/A		HPP
MA - Massachusetts General Hospital		NDMS	HPP
MI - Barbara AnnKarmanos Cancer Center			
MN - Mayo Clinic Rochester	P/A	NDMS	HPP
MN - University of Minnesota BMT Program	P/A	NDMS	
MO - Barnes-Jewish Hospital at Washington			HPP
MO - The Children's Mercy Hospital	Ped	NDMS	
MS - University of Mississippi Medical Center	P/A	NDMS	HPP
NC - UNC Hospitals	P/A	NDMS	HPP
NC - Wake Forest Univ Baptist Medical Center			HPP
NC - Duke University Medical Center	P/A	NDMS	HPP
NH - Dartmouth-Hitchcock Medical Center			
NY - Strong Memorial Hospital	P/A	NDMS	
NY - Memorial Sloan-Kettering Cancer Center	P/A		HPP
NY - Mount Sinai Hospital	P/A	NDMS	HPP
NY - Westchester Medical Center		NDMS	HPP
OH - Cincinnati Children's Hospital Medical Center	Ped		
OH - Cleveland Clinic Foundation		NDMS	HPP
OH - University Hospitals of Case Medical Center		NDMS	HPP
OK - Oklahoma Univ. Medical Center & Childrens Hospital	P/A	NDMS	
OR - Oregon Health & Science University	P/A	NDMS	HPP

Transplant Centers			
PA - Children's Hospital of Philadelphia	Ped	NDMS	HPP
PA - Temple University		NDMS	HPP
PA - University of Pennsylvania Medical Center		NDMS	HPP
PA - Western Pennsylvania Cancer Institute		NDMS	
RI - Roger Williams Medical Center		NDMS	HPP
SC - Medical University of South Carolina		NDMS	HPP
SD - Avera McKennan Transplant Institute			HPP
TN - Vanderbilt University Medical Center		NDMS	HPP
TX - M.D. Anderson Cancer Center	P/A		HPP
TX - Texas Children's Hospital	Ped	NDMS	HPP
UT - LDS Hospital		NDMS	
UT - Primary Children's Medical Center	Ped	NDMS	HPP
UT - University of Utah	P/A	NDMS	HPP
WA - Seattle Cancer Care Alliance	P/A		
WV - West Virginia University Hospitals		NDMS	HPP
WI - Children's Hosp of WI & Midwest Children's CC	Ped	NDMS	HPP
WI - Froedtert Memorial Lutheran Hospital		NDMS	
WI - Univ. of Wisconsin at Madison	P/A	NDMS	HPP

Donor Centers

CA - City of Hope National Medical Center
CO - Colorado Marrow Donor Program
MD - C.W. Bill Young Marrow Donor Center
MI - NMDP operated donor center
TN - Blood Assurance
WA - Puget Sound Blood Center

Cord Blood Banks

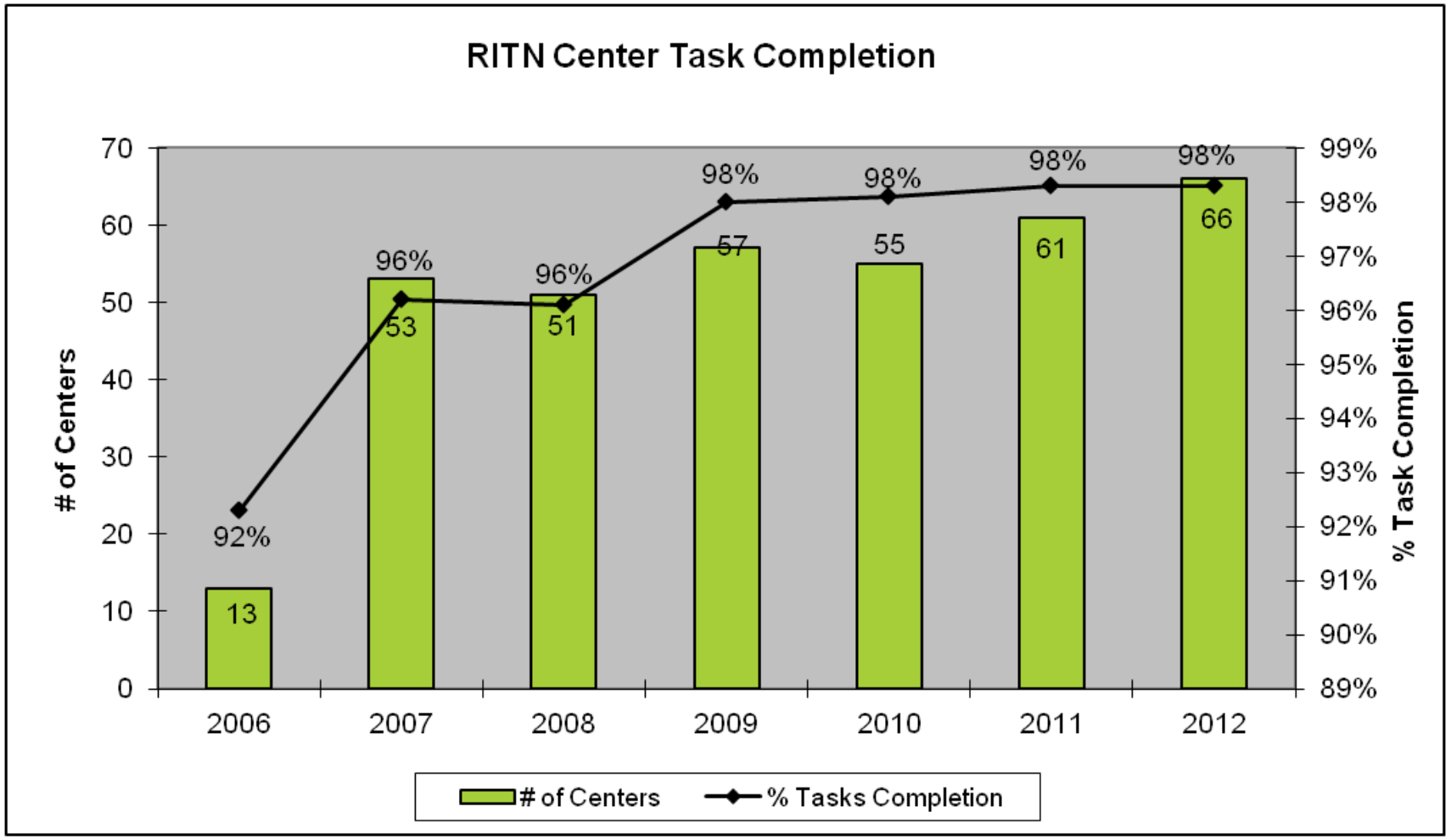
CA - StemCyte International Cord Blood Center
CO - University of Colorado
IL - ITxM Cord Blood Services
MO - St. Louis Cord Blood Bank
NC - Carolinas Cord Blood Bank
TX - MD Anderson
WA - Puget Sound Blood Center

Ped = Pediatric patient only facility
P/A = Pediatric and adult capable facility
NDMS = National Disaster Medical System Center
HPP = Hospital Preparedness Program
If no capability is annotaed the facility is adult only

As of 12 Nov 2012

TC	53
DC	6
CBB	7
Total	66
Total NDMS Centers	**39**
% TCs that are NDMS	**74%**
Total HPP Centers	**39**
% TCs that are HPP	**74%**

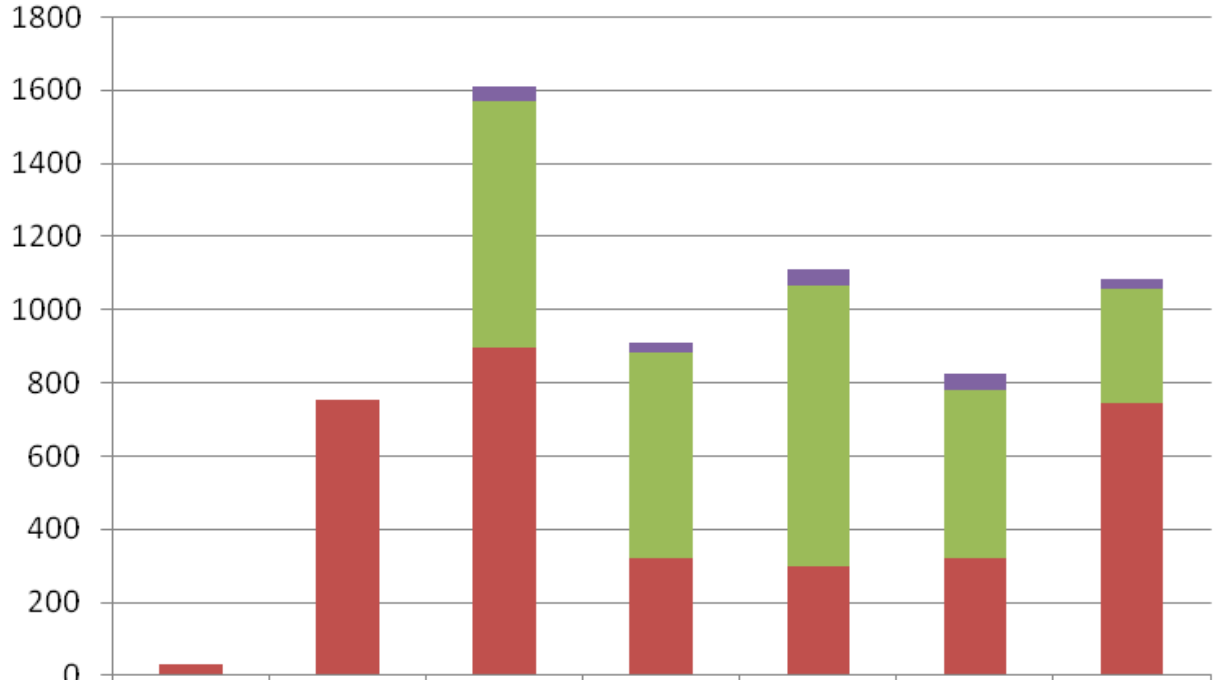
RITN
RADIATION INJURY TREATMENT NETWORK


RITN Center Task Completion
# of Centers
% Task Completion
70
60
50
40
30
20
10
0
99%
98%
97%
96%
95%
94%
93%
92%
91%
90%
89%
2006
2007
2008
2009
2010
2011
2012
13
53
51
57
55
61
66
92%
96%
96%
98%
98%
98%
98%
# of Centers
% Tasks Completion

Training of RITN Center Staff

Summary of Training of RITN Center Staff

6323 total



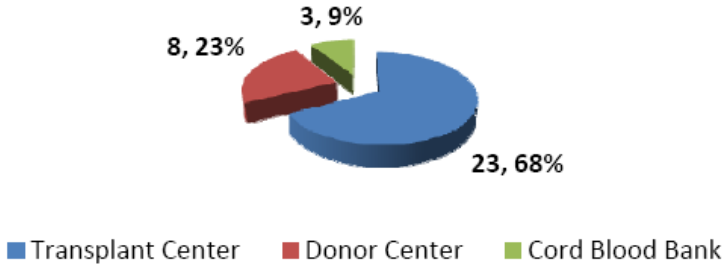
	2006	2007	2008	2009	2010	2011	2012
REAC/TS			38	26	46	45	26
Grandrounds			677	564	763	460	314
Basic Radiation Training	30	752	895	320	301	322	744

2012 Activity

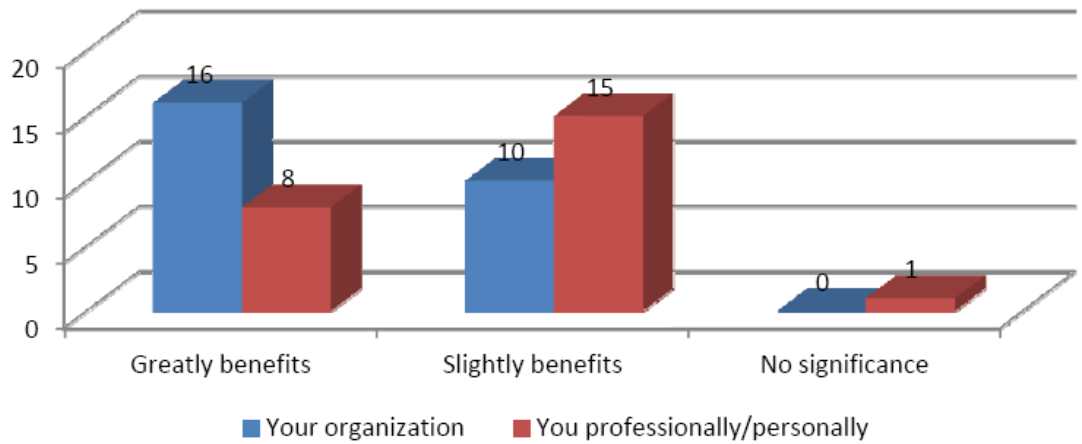
- Site Assessments
- Site Assessment summary of best practices
- Updated SOP template
- 2012 Member Survey
- Pediatric treatment guidelines with REMM website
- Basic Radiation Training move to Web based system
- MSKCC Full-scale Exercise (postponed due to Sandy)
- New Partners:
  - Veteran's Administration
  - ASTHO – Association of State and Territorial Health Officials
  - NACCHO – National Assoc. of County and City Health Officials

2012 Member Survey (summary)

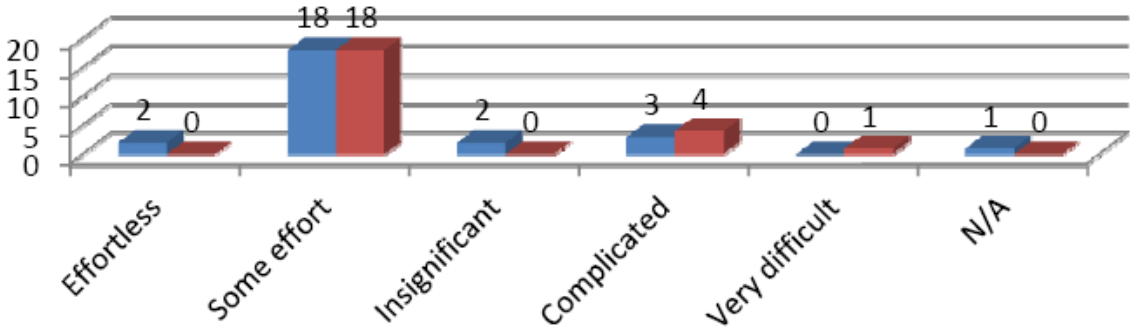
What type of RITN center are you responding for?



How you feel participation in RITN benefits (3 skipped question):



How Difficult is it to (3 skipped question):



To secure continued participation in RITN (annual agreement approval)?

To participate in RITN (task completion)?

2013 Plan & Tasks

2013 Projects

- New:
  - Addition of 5+ transplant centers
  - User Managed Inventory proposal to BARDA
  - 2013 surveys (capacity and member)
  - Referral center patient review guidelines
  - New/updated RITN training:
    - Intro to RITN
    - GETS
    - Satellite telephone
    - Concept of operations
    - Non-medical staff rad training
- Mayo Full-Scale Exercise

Initial Pool for 2013 Growth

1. Cook Children's Medical Center
2. Thomas Jefferson University Hospital, Inc.
3. Children's Hospital of Michigan
4. Akron Children's Hospital
5. Medical City Dallas Hospital
6. Miami Children's Hospital
7. Hahnemann University Hospitals
8. All Children's Hospital
9. North Shore University Hospital
10. Indiana University Bone Marrow & Stem Cell Transplant Program
11. Univ KY
12. Univ of Colorado
13. Yale New Haven
14. Children's Hospital Boston
15. UCSD Medical Center
16. University of Chicago

2013 Tasks (Period of performance is TBD)

TASK SUMMARY TABLE:

	Task 1	Task 2	Task 3	Task 4	Task 5
	Communications	SOP	Exercise	Education	IRB
TC	Yes	Yes	Yes	Yes	Yes

Only 9 have not already done this already

2013 Capacity Survey

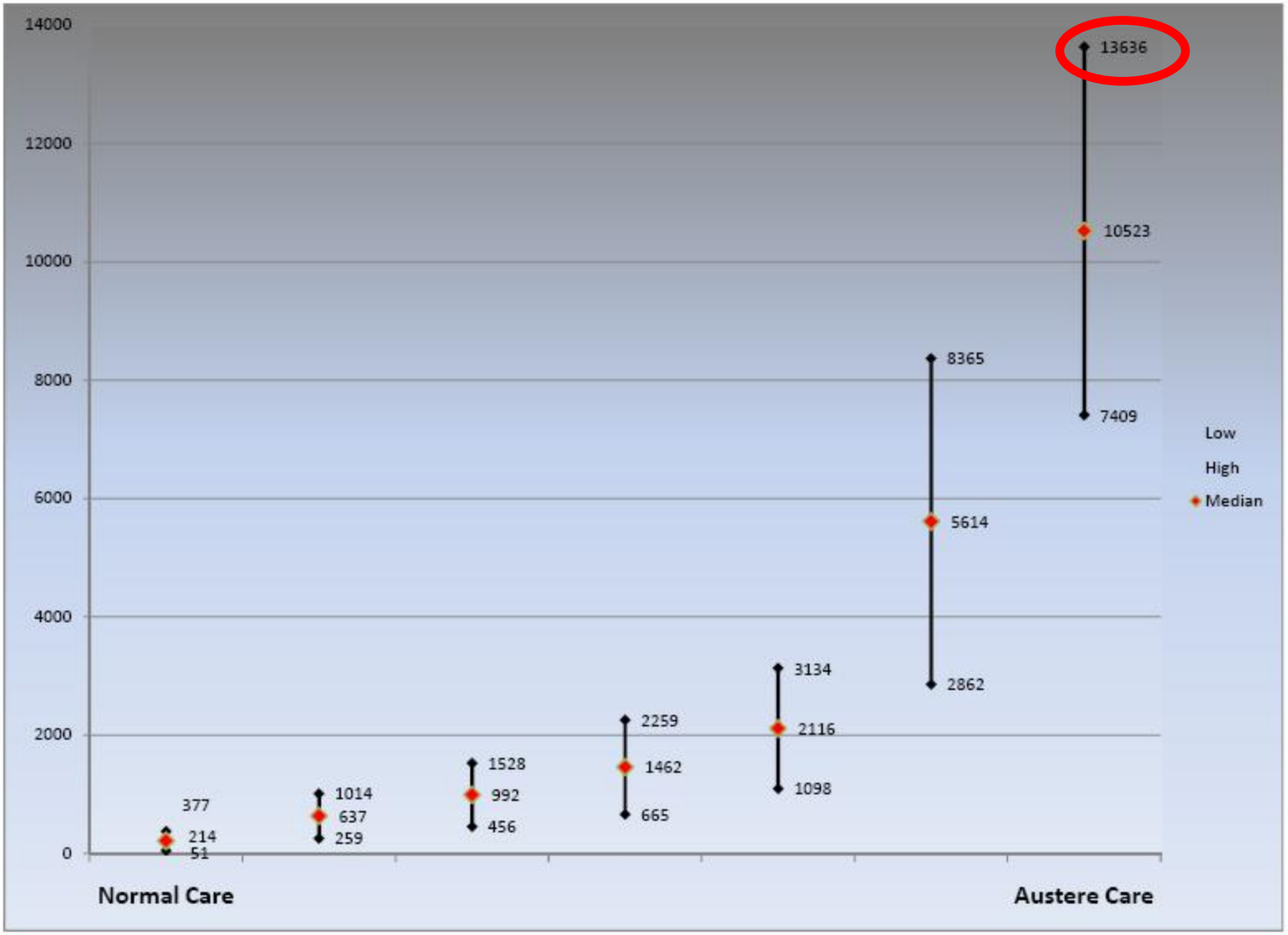
2011 Capacity Survey

#	Question
1	How many patients could you receive in your existing BMT unit with no changes (e.g., no early discharges/transfers, no delayed admissions, no addition of beds, etc…)?
2	How many patients could you receive now in your existing BMT unit with modest changes (e.g., early discharges/transfers, a few delayed admissions, addition of beds from Hem/Onc service, etc…)?
3	How many patients could you receive now in your existing BMT unit with aggressive changes (e.g., aggressive discharges/transfers, many delayed admissions)?
4	How many patients could you receive now with spill-over into other areas of your hospital (Hem/Onc, med/surg, ICU), assuming no alterations in standards of care?
5	How many patients could you receive now in your existing BMT unit with aggressive changes and spill-over into other areas of your hospital (Hem/Onc, med/surg, ICU), assuming some alterations in standards of care?
6	How many patients could you receive now with the above and utilizing additional hospitals in your community?
7	How many patients could you receive now with the above and incorporating large austere emergency treatment facilities that have been previously planned for (e.g. pre-defined: dormitories, gymnasiums, domed stadiums, and assuming major alterations in standards of care)?

Answer Options

1-10
11-50
51-100
101-499
>500

2011 Capacity Survey



Radiation Casualty Estimates for an Improvised Nuclear Device

Radiation Dose (Gy)	Care Requirement	Mid Casualty Estimate (50th %tile)	Moderately-High Casualty Estimate (85th %tile)	High Casualty Estimate (95 %tile)
Mild (0.75-1.5)	Outpatient monitoring	5,000	32,000	91,000
Moderate (1.5-5.3)	Supportive Care and possible inpatient admission	7,000	29,000	51,000
Severe (5.3-8.3)	Intensive Supportive Care (most possibly including HCT)	3,000	9,000	12,000
Expectant (>8.3)	Comfort Care	10,000	28,000	47,000
Combined Injury and Radiation (>1.5)	Stabilization and monitoring, pending resource availability	3,000	20,000	44,000

Total Possible Estimate of Victims for RITN (Moderate + Severe categories)	10,000	38,000	63,000

*****Radiation doses are estimates based on clinical presentation and laboratory values.*****

Table adapted from: Knebel AR, Coleman CN, Cliffer KD; et al. Allocation of scarce resources after a nuclear detonation: setting the context. Disaster Med Public Health Prep. 2011;5 (Suppl 1):S20-S31

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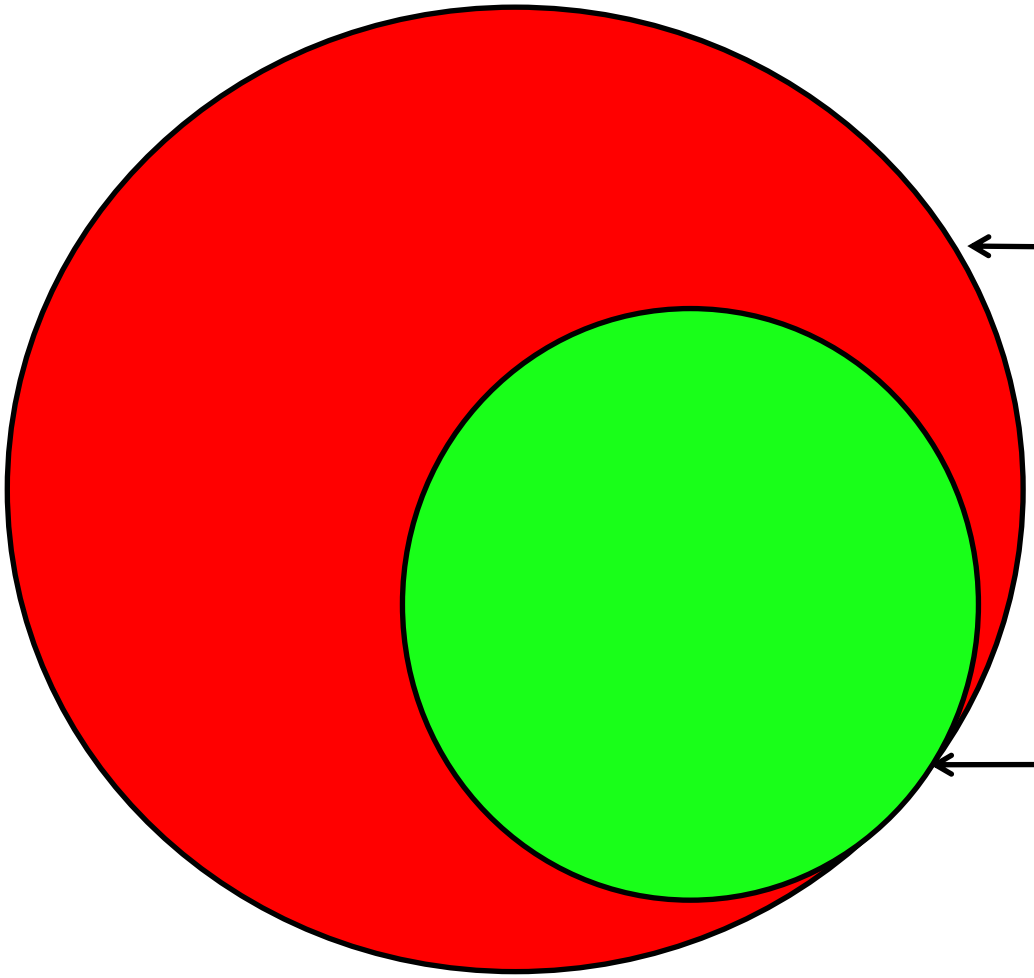
Still have more to do…

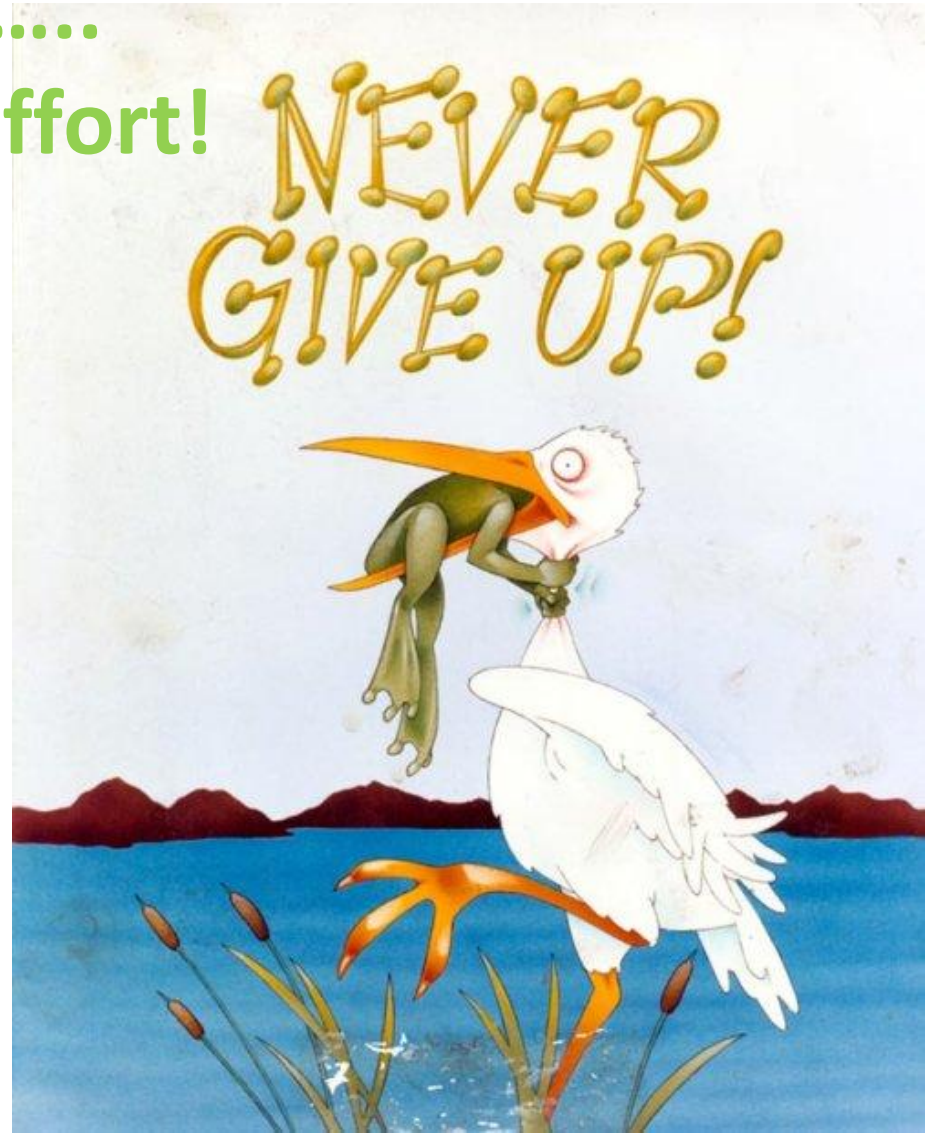


Estimated need of 38,000 for monitoring, intensive supportive care and possible transplant

Estimated **MAXIMUM** capacity of RITN (13K)

It is not the Cold War…..

It is not a futile effort!



http://Apctechnology.com.au accesses 6/8/2011

Send questions or comments to RITN@nmdp.org

RITN RADIATION INJURY TREATMENT NETWORK

Partners

- American Society for Blood and Marrow Transplantation
- Department of Defense - Office of Naval Research
- Health Resources and Services Administration
- Dept. Health & Human Services - Asst. Secretary of Preparedness and Response
- AABB-Disasters Task Force (formerly American Assoc. of Blood Banks)
- New England Center for Emergency Preparedness
- European Group for Blood and Marrow Transplantation-Nuclear Accident Committee
- Center for International Blood and Marrow Transplant Research
- Radiation Emergency Assistance Center/Training Site
- Radiation Emergency Medical Management website: www.remm.nlm.gov

REMM Website Updated Jan 2012