



-Fortuna Favet Paratis-

est. 2006

Radiation Injury Treatment Network - *2022 Year in Review*

Cullen Case Jr.

RITN Program Director

Operated by the National Marrow Donor Program/Be The Match

RITN@nmdp.org

www.RITN.net

January 3, 2023

Agenda

- Rad in the News
- 2022 Highlights
- 2023 Projects
- 2023 Tasks
- Q & A

*Preparing to treat Acute Radiation Syndrome casualties from a **distant** radiological mass casualty disaster*

What If Putin Actually Uses Nukes on Ukraine?

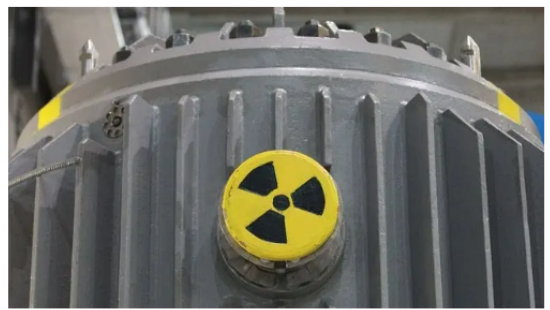
By Benjamin Hart, associate editor at *Intelligencer*



Iars ballistic missile rolls in Red Square during a dress rehearsal for the 2022 Victory Day military parade in Moscow, Russia. Photo: Alexander Zemlianichenko/AP/Shutterstock/Alexander Zemlianichenko/AP/Shut

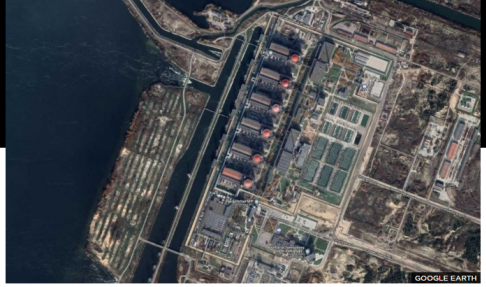
Austin holding ‘radiological incident’ exercise next week

BY CHLOE FOLMAR - 05/12/22 4:29 PM ET



The Ukrainian Nuclear Plant Fire May Be Out, But the Threat Remains

March 4, 2022 | 5:54 pm



Fukushima: Japan takes all necessary precautions ahead of plans to discharge treated water

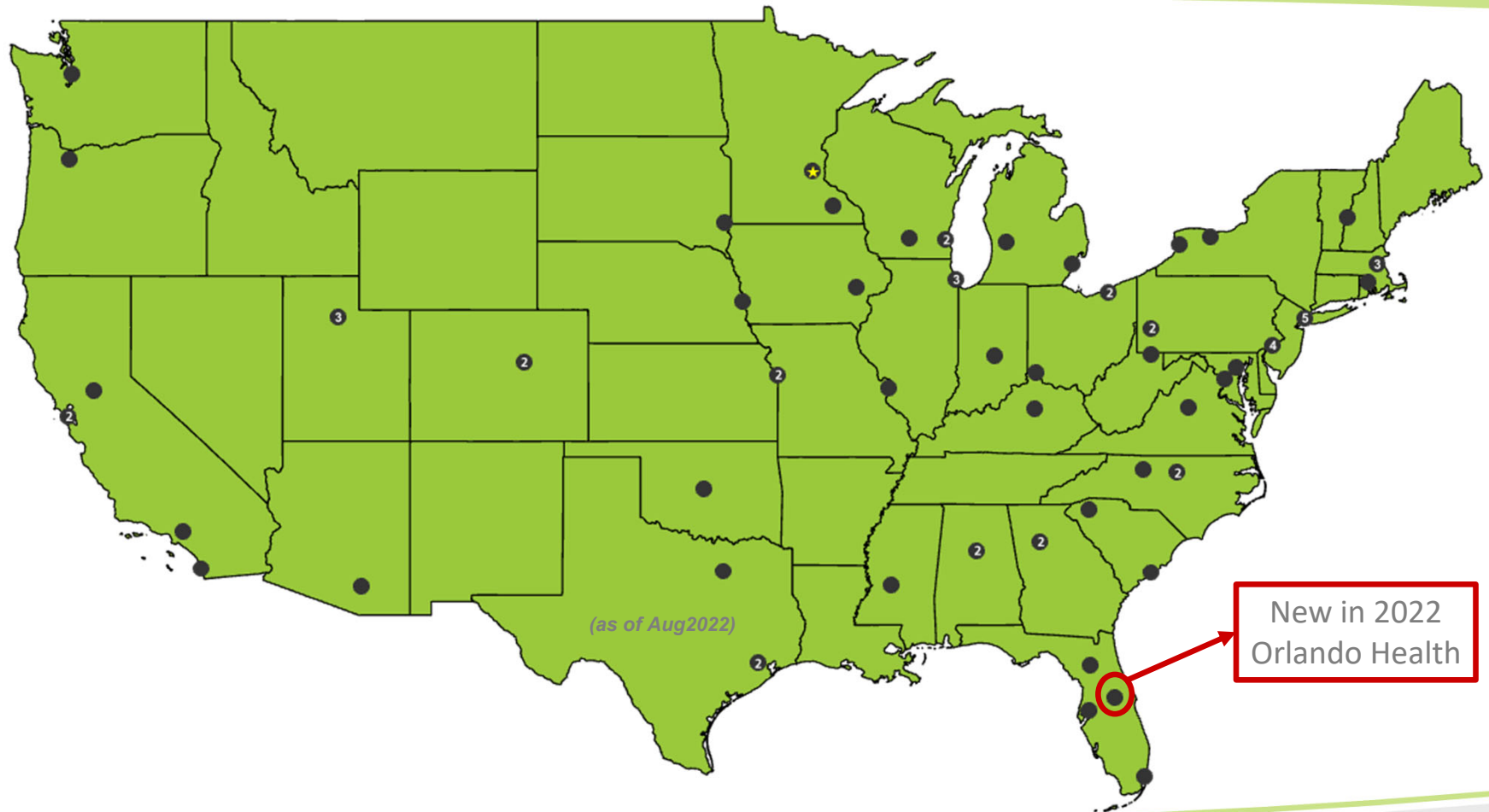
By Laurence Alexandrowicz • Updated: 19/12/2022



Silverlon Receives FDA 510k Clearance for Radiation Dermatitis and Cutaneous Radiation Injury

November 15, 2022 | BARDA | Radiation Dermatitis | CRI | 3 min read

RITN Participating Hospitals



Radiation Injury Treatment Network

Transplant Centers		Adult / Pediatric	Trauma Center	Burn Center	NDMS Hospital	HPP Hospital	Transplant Centers (cont.)		Adult / Pediatric	Trauma Center	Burn Center	NDMS Hospital	HPP Hospital	Transplant Centers (cont.)		Adult / Pediatric	Trauma Center	Burn Center	NDMS Hospital	HPP Hospital
AL	Children's Hospital of Alabama	P	T1	•	•	•	MA	Dana Farber/Partners Cancer Care	P/A		•	•	•	OH	University Hospitals Seidman Cancer Center	P/A	T1		•	•
AL	University of Alabama at Birmingham	P/A	T1	•	•	•	MA	Massachusetts General Hospital	A	T1	•	•	•	OK	Oklahoma Univ. Medical Center & Childrens Hosp.	P/A	T1		•	•
AZ	Banner University Medical Center	P/A	T1	•	•	•	MD	University of Maryland	A	T1	•	•	•	OR	Oregon Health & Science University	P/A	T1		•	•
CA	City of Hope National Medical Center	P/A		•	•	•	MI	Barbara Ann Karmanos Cancer Center	A		•	•	•	PA	AHN Cancer Institute West Penn Hospital	A		•	•	•
CA	Scripps Green Hospital	A		•	•	•	MI	Spectrum Health	P/A	T1	•	•	•	PA	Children's Hospital of Philadelphia	P	T1		•	•
CA	Stanford Health Care	P	T1	•	•	•	MN	Mayo Clinic Rochester	P/A	T1	•	•	•	PA	Temple University	A	T1	•	•	•
CA	UC Davis	A	T1	•	•	•	MN	University of Minnesota BMT Program	P/A	T2	•	•	•	PA	Thomas Jefferson University Hospital	A	T1	•	•	•
CA	UCSF Medical Center	P		•	•	•	MO	Barnes-Jewish Hospital at Washington	A	T1	•	•	•	PA	University of Pennsylvania Medical Center	A	T1		•	•
CO	Presbyterian/St. Lukes Medical Center	A	T4	•	•	•	MO	The Children's Mercy Hospital	P	T1	•	•	•	PA	UPMC	A	T1	•	•	•
CO	University of Colorado (Aurora)	A	T1	•	•	•	MS	University of Mississippi Medical Center	P/A	T1	•	•	•	RI	Roger Williams Medical Center	A		•	•	•
DC	Medstar Georgetown University Hospital	A		•	•	•	NC	Duke University Medical Center	P/A	T1	•	•	•	SC	Greenville Health System	A	T1		•	•
FL	H. Lee Moffitt Cancer Center	P/A		•	•	•	NC	UNC Hospitals	P/A	T1	•	•	•	SC	Medical University of South Carolina	P/A	T1	•	•	•
FL	Shands Hospital at the University of Florida	P/A	T1	•	•	•	NC	Wake Forest Baptist Hospital	A	T1	•	•	•	SD	Avera McKennan Transplant Institute	A	T2		•	•
FL	U of Miami/Sylvester Comprehensive Cancer Ctr	A		•	•	•	NH	Nebraska Medicine	P/A	T1	•	•	•	TX	Baylor University Medical Center	A	T1		•	•
FL	Orlando Regional Medical Center (ORMC)	A	T1	•	•	•	NH	Dartmouth-Hitchcock Medical Center	A	T1		•	•	TX	M.D. Anderson Cancer Center	P/A			•	•
GA	Emory University	A		•	•	•	NY	Memorial Sloan-Kettering Cancer Center	P/A		•	•	•	TX	Texas Children's Hospital	P	T1		•	•
GA	Northside Hospital	A		•	•	•	NY	Mount Sinai Hospital	P/A	T2	•	•	•	UT	LDS Hospital	A			•	•
IA	University of Iowa Hospitals and Clinics	P/A	T1	•	•	•	NY	North Shore Medical Center	A	T1	•	•	•	UT	Primary Children's Hospital	P	T1		•	•
IL	Northwestern Memorial Hospital	A	T1	•	•	•	NY	NYU Langone Health	A		•	•	•	UT	University of Utah	A	T1	•	•	•
IL	Rush University Medical Center	A		•	•	•	NY	Roswell Park Cancer Institute	P/A		•	•	•	VA	University of Virginia	A	T1		•	•
IL	University of Chicago	P/A	T1	•	•	•	NY	Strong Memorial Hospital	P/A	T1	•	•	•	WA	Fred Hutchinson Cancer Center	P/A			•	•
IN	Franciscan Hospital and Health Centers	A		•	•	•	NY	Westchester Medical Center	P/A	T1	•	•	•	WI	Children's Hosp of WI & Midwest Children's CC	P	T1	•	•	•
KS	University of Kansas Medical Center	A	T1	•	•	•	OH	Cincinnati Children's Hospital Medical Center	P	T1	•	•	•	WI	Froedtert Memorial Lutheran Hospital	A	T1		•	•
KY	University of Kentucky	A	T1	•	•	•	OH	Cleveland Clinic Foundation	P/A		•	•	•	WI	University Hospital (Madison)	P/A	T1	•	•	•
MA	Children's Hospital of Boston	P	T1	•	•	•								WV	West Virginia University Hospitals	A	T1		•	•

P = Pediatric patient only facility
A = Adult capable facility
B = Burn center
T = Trauma capable facility (# denotes designation)

Total number of RITN centers	74
Total Pediatric or Ped/Adult	38 51%
Total Trauma Centers	53 72%
Total Burn Centers	27 36%
Total NDMS Centers	58 78%
Total HPP Centers	66 89%



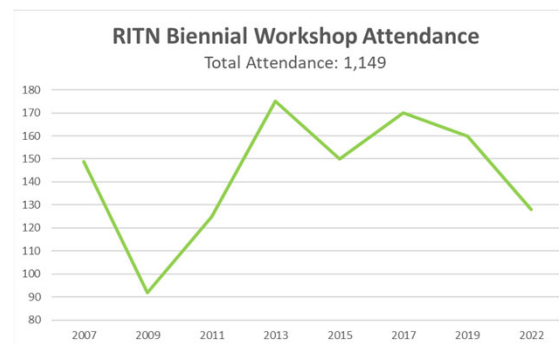
**please report any corrections to this document to RITN@nmdp.org
 As of August 2022

2022



2022 Projects

- **Growth**
 - Orlando Health
- **Preparedness Resources**
- **Training & Education**
 - 2022 RITN Workshop: *Past Informing the Plan, Past Improving the Plan for a Rad/Nuc Incident* (August 4-5, 2022)
 - REAC/TS & AHLS training sessions
- **Exercises**
 - Annual RITN tabletop
 - Resuming funded functional exercises
 - Nebraska Med. Regional exercise collaboration
- **Increased Awareness & Partnerships**
 - Presentations to coalitions and other organizations
 - Continued collaboration with ABA
 - Conference booths
- **Special Projects**
 - Provided H-ARS DOD Clinical Practice Guidelines input



DRAFT: 5 Year Plan

- Increase the number of RITN medical centers by 15 hospitals

Focal areas for recruitment into RITN:

Albany, NY

Albuquerque, NM

Bethesda, MD

Biloxi, MS*

Boise, ID

Dallas, TX

El Paso, TX*

Fresno, CA

Honolulu, HI

Las Vegas, NV

Little Rock, AR

Los Angeles, CA

Memphis, TN

Nashville, TN

Northampton, MA

Phoenix, AZ

Portsmouth, VA

Reno, NV

Richmond, GA*

San Antonio, TX*

Shreveport, LA

Spokane, WA

Washington, DC

**denotes DOD FCC location*

- Increase visibility of RITN within the medical community
 - Conference booths
 - Coalition tabletop exercise kit
- Increase collaboration and coordination with key federal partners
 - DOD
 - DHHS
 - VA
- Increased staffing to support all efforts

Radiation Based Functional Exercise Toolkit

- **Healthcare Coalition functional exercise toolkit**

- **Exercise purpose:**

- Address the operational elements of the receipt, triage, and care of radiation-injury and acute blast/burn injury casualties in accordance with existing Health Care Coalition and individual hospital/agency plans.

- **Scope:**

- Functional elements minimally include activation of command, notifications, and patient triage. Optional injects will exercise decontamination, pharmacy resources, patient transfer, and just-in-time training needs. Participants will include Health Care Coalition partners and relevant federal partners. The exercise is not limited to jurisdictions that have a RITN hospital.

- <https://ritn.net/exercises/hccfunctional/>

HCC Exercise Materials Provided:

1. Exercise Plan (just a comment placeholder for video link)
2. AAR template
3. Exercise slides without audio (in the event a HCC wants to customize the content)
4. Patient profiles
 1. Burn trauma
 2. General trauma (blast and crush) with radiation exposure
 3. Spontaneous/self transport family
 4. Radiation-only profiles
5. MSEL
6. Patient manifests

ARS Treatment Orders in Epic EMR

- Adult & Pediatric Radiation Injury Admission orders
- Covers:
 - Admission
 - Nursing
 - Fluids
 - Consults
 - Labs
 - Medications
 - Imaging
 - Prophylaxis
 - Immunizations

- Look for the Radiation Injury Order Sets that are available in the Foundation System Hosted environment
- Organizations can also see the structure and content of the Orders Sets within the Community Library and filtering on the Foundation System

Radiation Injury Admission [3040100817]

General

Order to Admit (Single Response) (Selection Required)

<input checked="" type="radio"/> Admit to inpatient	Bed request comments:
<input type="radio"/> Initiate observation status	Observation
<input type="radio"/> Other	Bed request comments:

Code Status - No current active code (Single Response) (Selection Required)

<input type="radio"/> Full code	Details
<input type="radio"/> Do not resuscitate	Details
<input type="radio"/> Partial code	Cardio resuscitation: Ventilation: Drug protocol:
<input type="radio"/> Other	

Code Status - Patient has current active code (Single Response)

This patient already has a code status order for this admission. If you wish to change this status now, order will be automatically discontinued and replaced with your new order.

<input type="radio"/> Full code	Details
<input type="radio"/> Do not resuscitate	Details
<input type="radio"/> Partial code	Cardio resuscitation: Ventilation: Drug protocol:
<input type="radio"/> Other	

Isolation

<input type="checkbox"/> Initiate airborne isolation	Details
<input type="checkbox"/> Initiate contact isolation	Details
<input type="checkbox"/> Initiate droplet isolation	Details
<input type="checkbox"/> Other	

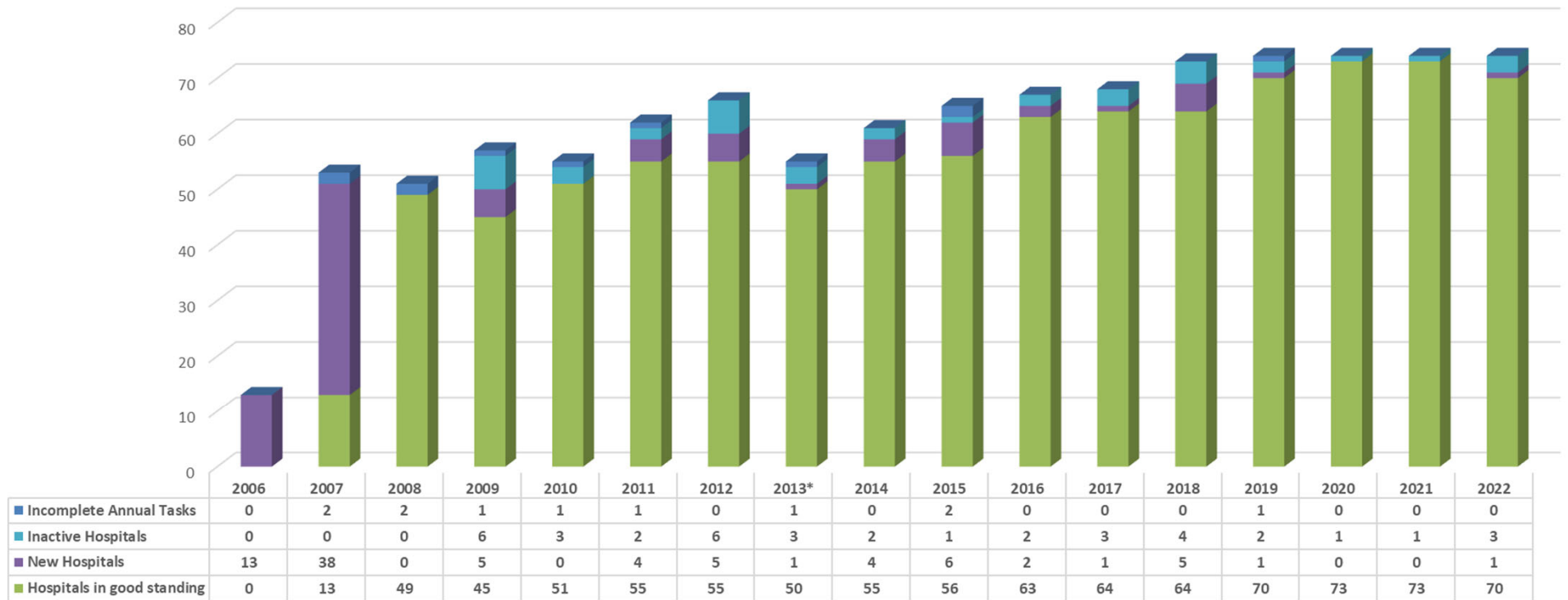
Diet/Nutrition (Selection Required)

<input type="checkbox"/> NPO diet	Diet effective now, Starting
-----------------------------------	------------------------------



Growth & Task Completion

RITN Hospital Growth

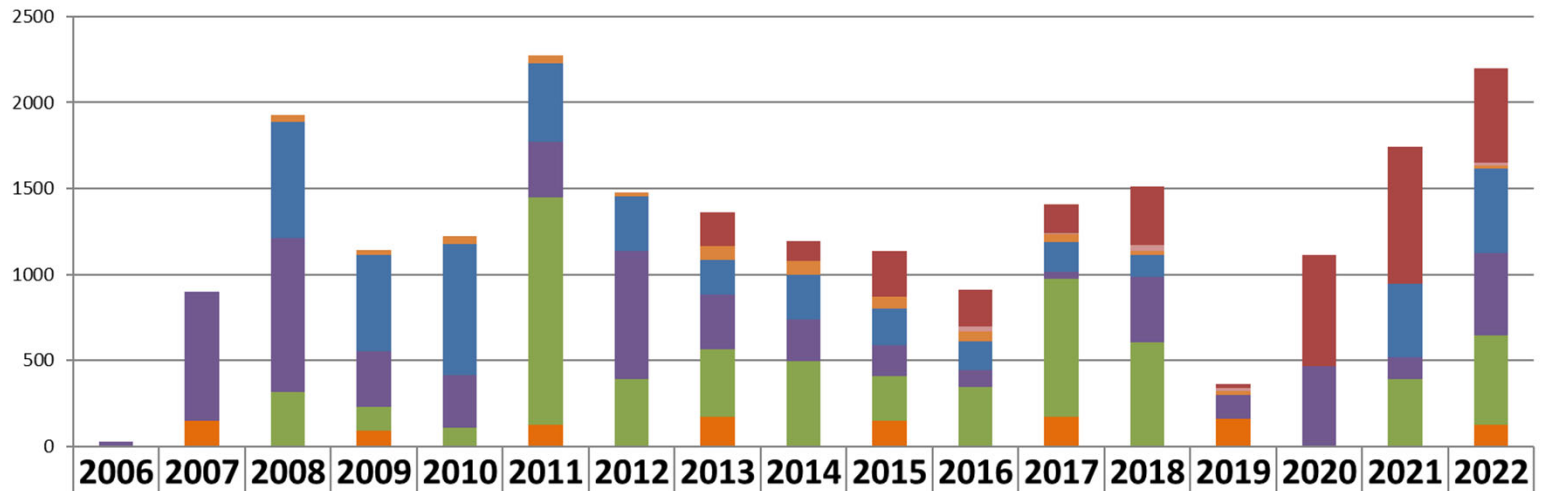


* Decrease in 2013 was due to the removal of DC and CBB from calculations



RITN Training & Education

Grand Total = 21,917

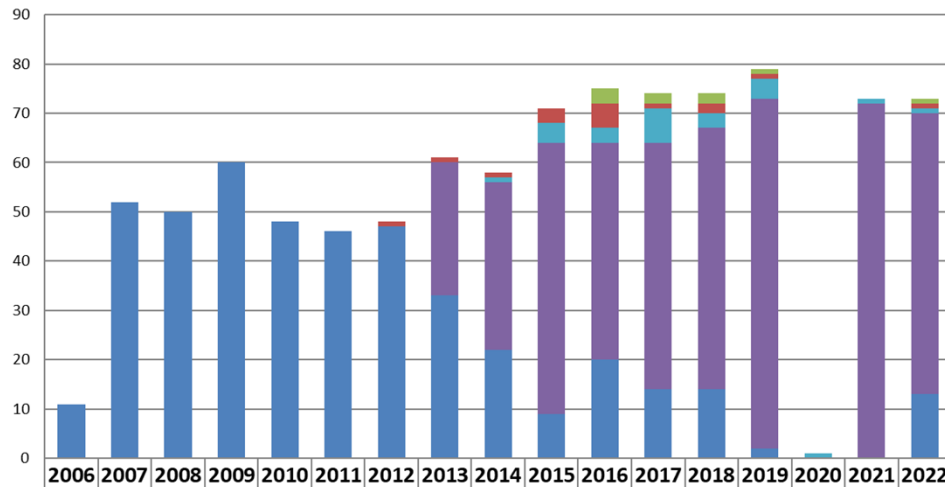


	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Other RITN Web Courses								192	120	267	217	163	342	23	646	796	551
AHLS										1	28	10	36	16	0	0	20
REAC/TS			38	26	46	45	26	84	77	71	58	42	20	23	0	0	14
Grandgrounds			677	564	763	460	314	203	259	208	164	172	128	0	0	428	490
Basic Rad Tng	30	752	895	320	301	322	744	316	242	180	99	43	380	140	468	127	480
Outreach Presentation			317	139	112	1322	394	389	498	261	347	805	608	0	0	391	518
Biennial Conference		149		92		125		175		150		170		160			128



Exercise Accomplishments

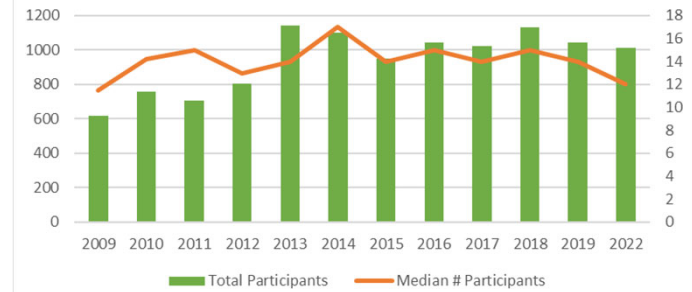
RITN Exercises by Year
Grand Total = 954



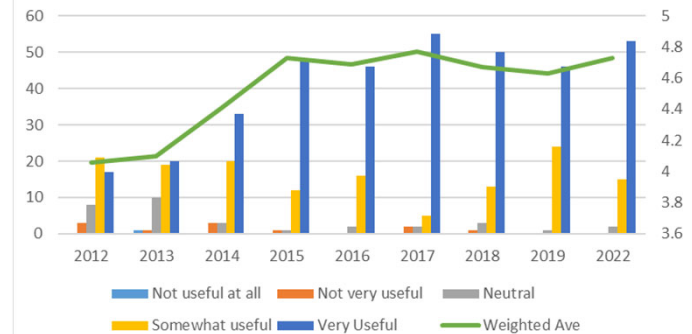
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Functional											3	2	2	1	0	0	1
Fullscale							1	1	1	3	5	1	2	1	0	0	1
Regional Tabletop									1	4	3	7	3	4	1	1	1
Web-based Tabletop							27	34	55	44	50	53	71	0	72	57	
Tabletop	11	52	50	60	48	46	47	33	22	9	20	14	14	2	0	0	13

RITN Tabletop Exercise Participation

Total Participants: 11,328



RITN Tabletop Exercise Evaluation of Value



Future

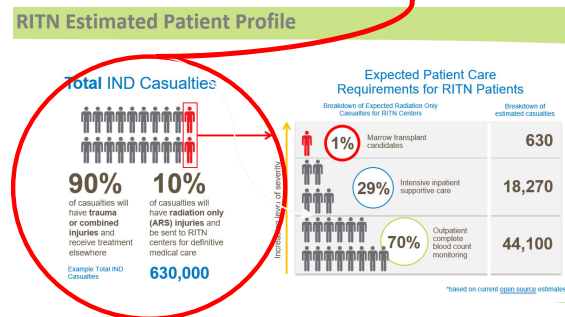


2023 Projects

- **Growth**
- **Preparedness Resources**
 - Update Concept of Operations
 - Implement RITN Member Portal
 - Update RITN.net
- **Training & Education**
 - REAC/TS & AHLS on-site training sessions
 - Refresh training materials
- **Exercises**
 - Annual RITN tabletop
 - Funded functional exercises
 - Asian Pacific Islands Radiation Exercise Collaboration
- **Increased Awareness & Partnerships**
 - Continued collaboration with ABA
 - Conference booth at conferences
 - MOU with Armed Forces Radiobiology Research Institute

Shifting view for Concept of Operations

Incorporating burn and trauma into a collaboration where they expect to call on RITN for referrals for ARS patients with combined injuries



Total IND Casualties



90%

of casualties will have **trauma or combined injuries** and receive treatment elsewhere

Example Total IND Casualties

10%

of casualties will have **radiation only (ARS) injuries** and be sent to RITN centers for definitive medical care

630,000

Annual Participation (send Questions to RITN@nmdp.org)

- Seeking new hospitals in your area
- Medical centers with bone marrow transplant units and/or hematology/oncology units
- Annual tasks
 - Administrative: quarterly webinar, contact update, SOP submission, annual capabilities report
 - Exercise: RITN facilitated web-based TTX
 - Education: web-based training modules or attend in person training
- Annual time commitment (on average):
 - Primary MD – 5 hours
 - Primary coordinator – 10 hours
 - Secondary coordinator – 5 hours
 - Emergency manager – 5 hours



**In exchange each hospital is
provided with a
~unrestricted grant**

2023 Tasks

TASK DEADLINES (may also be completed any time before deadline):

1. 1/31/2023 – RITN-issued GETS card test (Task 1)
2. 5/31/2023 – Contact information updated/confirmed (Task 1)
3. 7/31/2023 – Education (Task 3)
4. 8/31/2023
 - a. Institutional Review Board (IRB) Approved Marrow Toxic Injury Research Consent Forms Up to Date (Task 1)
 - b. Standard Operating Procedure (SOP) update (Task 1)
5. Seven (7) days **BEFORE** participating in (or conducting) annual exercise (Task 1)
 - a. Submit capacity survey via RITN Portal
 - b. Exact date will be different for centers depending on when they participate in annual exercise
6. Three (3) days **AFTER** completion of Annual Exercise (Task 2)
 - a. Submit responses from participation via Survey Monkey link
 - b. Exact date will be different for centers depending on when they participate in annual exercise

What are your questions?