Meeting Agenda

I. Opening Remarks & Roundtable Introductions  
   Dennis Confer, M.D.  
   12:00-12:10

II. Network Update  
    Cullen Case  
    12:10-12:30

III. Israeli Radiological Preparedness Efforts  
     Lion Poles, M.D.  
     12:30-1:20

   Deputy CEO of Kaplan Medical Center and consultant to the Israeli Ministry of Health.

   Dr. Lion Poles (Phoryles), M.D., is the Deputy CEO of Kaplan Medical Center since 2001 and a Senior Interventional Cardiologist at the Heart Institute. He has retired the Israeli Defense Forces’ Medical Corps as a LTC. Dr. Poles is a Special Consultant to the Ministry of Health, Emergency Division on Planning for Non-Conventional Medical Emergencies. He is an active member of the National Epidemiological Management, an active member of the National Advisory Committees on Hospital CW Preparedness, Hospital Mass Toxicological Event Preparedness and Radiological Event Medical Preparedness. Dr. Poles received his medical degree from Sackler School of Medicine at Tel-Aviv University in 1984.

   Dr. Poles is an accomplished CBRN (Chemical, Biological, Rad/Nuke) planning and response expert that will discuss Israeli preparedness efforts.

IV. Engaging Local and State Public Health  
    Nelson Chao, M.D.  
    1:20-1:55

V. Closing Remarks  
   Dennis Confer, M.D.  
   1:55-2:00

Copy of slides:  
Will be made available through the RITN Website

RITN resources:  
RITN Control Cell Contact Info: 612.884.8276 | RITN@nmdp.org  
RITN Web site: www.RITN.net
2014 RITN Steering Committee Meeting

February 27, 2014

Questions: RITN@nmdp.org
Agenda

• **RITN 101 in 5 min** (for those new to RITN)
• Updated Scenario Information
• 2013 Highlights
• 2014 Projects & Tasks
• Questions
RITN in 5 Min
Connection from NMDP to RITN

• National Marrow Donor Program private non-profit corporation that coordinates live saving cellular therapy

• NMDP holds contract to operate the congressionally mandated National Bone Marrow Donor Registry (legislation passed in 1987)
  – Coordinated over 61,000 transplants since 1987 (6,300 in 2013)
  – As of January 2014 >11 Million volunteer donors on Be The Match Registry
  – Access to >22.5 Million through international partner registries

• Worldwide Network of hospitals, collection centers, cord blood banks, donor centers, and registries of volunteer donors

• NMDP holds grants from Office of Naval Research (contingency planning = RITN) and Health Resources Service Administration

• In preparation for transplant patients are purposely exposed to high doses of ionizing radiation; much like what would be expected from a radiological disaster
• RITN Centers are not 1st Responders or trauma care specialists
• In the aftermath of a marrow toxic incident, RITN centers may:
  – Accept patient transfers to their institutions
  – Provide intensive supportive care to victims
  – Provide treatment expertise to practitioners caring for victims at other locations
  – Travel to other centers to provide medical expertise
  – Provide data on victims treated at their centers
  – Facilitate marrow transplant for those who require it
Possible Incidents & Planned NDMS Movement

- Military nuclear weapon
- Improvised Nuclear Device (IND)
- Radiological exposure device (RED)
- Radiological Dispersal Device (RDD)
- Industrial/nuclear power plant accident
Conceptual Flow of Victims to a RITN Center

Ad hoc First Aid Sites → First Responder Medical Aid Stations → State/Local Public Health Casualty Collection Centers → NDMS Contracted Transportation

Radiological Survey & Gross Decontamination → Radiological Survey & Spot Decontamination → Survey & Decon

NDMS Contracted Hospitals → Specialized Medical Care Facilities (burn, RITN, etc…)

FCC/NDMS Patient Reception Area

*** This model does not account for victims with trauma or no injuries.
Timeline of RITN Response

Day 1
- Alert and Notification
- Early Symptoms – e.g., nausea and vomiting
- RITN Centers - review capabilities & prepare to receive casualties

Day 3
- Earliest casualties arrive at RITN Centers near incident
- Daily/Periodic CBCs

Day 7
- Expected initial surge of casualties for RITN Centers

Day 30
- Discharge and return to home region

Initiate G-CSF as soon as possible when indicated
Key things to stress about RITN

1. Not 1st Responders or trauma care
2. Expect patient surge 7-10 days after incident
3. If incident is local; the local RITN centers focus is on incident response not RITN
4. Casualties should not be significantly contaminated when they arrive at a RITN center
5. Affiliated with National Disaster Medical System:
   a) Casualty distribution is through NDMS
   b) Reimbursement is through NDMS
Updated Scenario Information
“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

As of 31 December 2012 there were a total of 2331 confirmed radiological theft or misuse incidents reported by participating States; of these 419 involved unauthorized possession and related criminal activities, 615 incidents involved reported theft or loss and 1244 incidents involved other unauthorized activities and events.
Paraphrased from IAEA INCIDENT AND TRAFFICKING DATABASE (ITDB) highlights 1993-2012

From 1993-2012 there were 16 incidents where unauthorized possession of HEU or plutonium were reported. Some involving attempts to sell or traffic these materials across international borders. Most were gram sized amounts however some were kilogram quantities of weapons grade material.
Paraphrased from IAEA INCIDENT AND TRAFFICKING DATABASE (ITDB) highlights 1993-2012
IAEA Reported Incidents 1993-2012

Unauthorized Possession

16 incidents with HEU or Plutonium

This is only what is being reported

Thief or Loss

2331 reported incidents of theft or loss

Figure 1. Incidents reported to the ITDB involving unauthorized possession and related criminal activities, 1993–2012.

Figure 2. Incidents reported to the ITDB involving theft or loss, 1993–2012.
Availability of Materials on black market?

• 2005
  – Ukrainian police seize six metal containers filled with cesium-137 in a village in Crimea. The containers’ radiation level exceed the normal background level by 380 times, prompting officers to evacuate the home in which they were discovered and surrounding houses.

• 2006
  – A Russian man attempting to sell 100 grams of weapons-grade uranium is arrested through a joint Georgian-CIA operation in Tbilisi, along with several Georgian accomplices. Oleg Khinsagov was carrying a plastic bag full of the highly enriched uranium in his pocket. The capture is one of the largest of its kind, and Khinsagov is sentenced to eight to ten years in prison.

• 2008
  – A staffer of the Ukrainian Embassy in Germany and the security manager of a Ukrainian bank are arrested with radioactive materials, including uranium and cesium, worth 3.1 millions euros ($4.1 million) in their car. The material had been stolen from a Kiev holding facility, and the two planned to sell it to a criminal group.

• 2011
  – Moldovan police arrest six people for attempting to sell more than one kilogram (2.2 pounds) of uranium-235, valued at approximately $20 million.

Read more: http://www.smithsonianmag.com/science-nature/Top-Ten-Cases-of-Nuclear-Thefts-Gone-Wrong-189690171.html#ixzz2a09xBnbQ
Are radiological materials secure or not?

Two strontium powered lighthouses vandalized

Part of: Radioisotope thermoelectric generators (RTGs)

Two Strontium containing Radioisotope Thermoelectric Generators, or RTGs, used to power navigation beacons and lighthouses were found literally ripped to pieces by unknown vandals during regular checks by the Russian Navy’s Northern Fleet in the area of the Kola Peninsula last week.
Video of all Nuclear Detonations 1945-1998

• Search for “A Time-Lapse Map of Every Nuclear Explosion Since 1945 - by Isao Hashimoto” on YouTube (http://www.youtube.com/watch?v=_W_lLhBt8Vg)
2013 Highlights
Growth

• Three centers were inactive during 2013:
  – Iowa, Froedtert, Children’s of WI

• Three centers joined RITN during 2013:
  – Boston Children’s (MA)
  – All Children’s (FL)
  – Thomas Jefferson (PA)

• One center left RITN during 2013:
  – Vanderbilt
RITN Center Locations

RITN Center Locations*

- **Donor Centers**
- **Transplant Centers**
- **Cord Blood Centers**

* Multiple centers of a single type located within close geographic proximity are represented by a single symbol.

September 2013
## Transplant Centers

<table>
<thead>
<tr>
<th>State</th>
<th>Center Name</th>
<th>State</th>
<th>Center Name</th>
<th>State</th>
<th>Center Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>AL</td>
<td>University of Alabama at Birmingham</td>
<td>OK</td>
<td>Oklahoma Univ. Medical Center &amp; Children's Hospital</td>
<td>P/A</td>
<td>NDMS</td>
</tr>
<tr>
<td>AZ</td>
<td>University Medical Center</td>
<td>OR</td>
<td>Oregon Health &amp; Science University</td>
<td>P/A</td>
<td>NDMS HPP</td>
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<tr>
<td>CA</td>
<td>UCSF Medical Center</td>
<td>PA</td>
<td>Children's Hospital of Philadelphia</td>
<td>Ped</td>
<td>NDMS HPP</td>
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<tr>
<td>CA</td>
<td>City of Hope National Medical Center</td>
<td>PA</td>
<td>Temple University</td>
<td>Ped</td>
<td>NDMS HPP</td>
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<tr>
<td>CA</td>
<td>Stanford Hospital and Clinics</td>
<td>PA</td>
<td>University of Pennsylvania Medical Center</td>
<td>NDMS HPP</td>
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<tr>
<td>CA</td>
<td>Presbyterian/St. Luke's Medical Center</td>
<td>PA</td>
<td>Western Pennsylvania Cancer Institute</td>
<td>NDMS</td>
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<tr>
<td>FL</td>
<td>All Children's Hospital</td>
<td>Ped</td>
<td>Thomas Jefferson</td>
<td>P/A</td>
<td>NDMS HPP</td>
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<tr>
<td>FL</td>
<td>H. Lee Moffitt Cancer Center</td>
<td>RI</td>
<td>Roger Williams Medical Center</td>
<td>NDMS HPP</td>
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<td>FL</td>
<td>Shands Hospital at the University of Florida</td>
<td>SC</td>
<td>Medical University of South Carolina</td>
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<td>FL</td>
<td>University of Miami</td>
<td>SD</td>
<td>Avera McKennan Transplant Institute</td>
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<tr>
<td>GA</td>
<td>Northside Hospital</td>
<td>TX</td>
<td>M.D. Anderson Cancer Center</td>
<td>P/A</td>
<td>HPP</td>
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<td>IA</td>
<td>University of Iowa Hospitals and Clinics</td>
<td>TX</td>
<td>Texas Children's Hospital</td>
<td>Ped</td>
<td>NDMS HPP</td>
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<tr>
<td>IL</td>
<td>Rush University Medical Center</td>
<td>UT</td>
<td>LDS Hospital</td>
<td>NDMS</td>
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<tr>
<td>IN</td>
<td>St. Francis Hospital and Health Centers</td>
<td>UT</td>
<td>Primary Children's Medical Center</td>
<td>Ped</td>
<td>NDMS HPP</td>
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<td>KS</td>
<td>University of Kansas Medical Center</td>
<td>UT</td>
<td>University of Utah</td>
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<td>NDMS HPP</td>
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<td>MA</td>
<td>Children's Hospital of Boston</td>
<td>WA</td>
<td>Seattle Cancer Care Alliance</td>
<td>P/A</td>
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<tr>
<td>MA</td>
<td>Dana Farber/Partners Cancer Care</td>
<td>WV</td>
<td>West Virginia University Hospitals</td>
<td>NDMS HPP</td>
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<tr>
<td>MA</td>
<td>Massachusetts General Hospital</td>
<td>WI</td>
<td>Children's Hosp of WI &amp; Midwest Children's CC</td>
<td>Ped</td>
<td>NDMS HPP</td>
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<tr>
<td>MI</td>
<td>Barbara Ann Karmanos Cancer Center</td>
<td>WI</td>
<td>Froedtert Memorial Lutheran Hospital</td>
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<tr>
<td>MN</td>
<td>Mayo Clinic Rochester</td>
<td>WI</td>
<td>Univ. of Wisconsin at Madison</td>
<td>P/A</td>
<td>NDMS HPP</td>
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<tr>
<td>MN</td>
<td>University of Minnesota BMT Program</td>
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<tr>
<td>MO</td>
<td>Barnes-Jewish Hospital at Washington</td>
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<tr>
<td>MO</td>
<td>The Children's Mercy Hospital</td>
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<td>MS</td>
<td>University of Mississippi Medical Center</td>
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<td>NC</td>
<td>UNC Hospitals</td>
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<tr>
<td>NC</td>
<td>Wake Forest Univ Baptist Medical Center</td>
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<tr>
<td>NC</td>
<td>Duke University Medical Center</td>
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<tr>
<td>NH</td>
<td>Dartmouth-Hitchcock Medical Center</td>
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<tr>
<td>NY</td>
<td>Strong Memorial Hospital</td>
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<tr>
<td>NY</td>
<td>Memorial Sloan-Kettering Cancer Center</td>
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<tr>
<td>NY</td>
<td>Mount Sinai Hospital</td>
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<td>NY</td>
<td>Westchester Medical Center</td>
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<td>OH</td>
<td>Cincinnati Children's Hospital Medical Center</td>
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<td>OH</td>
<td>Cleveland Clinic Foundation</td>
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<tr>
<td>OH</td>
<td>University Hospitals of Case Medical Center</td>
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</tbody>
</table>

## Donor Centers

<table>
<thead>
<tr>
<th>State</th>
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</thead>
<tbody>
<tr>
<td>CA</td>
<td>City of Hope National Medical Center</td>
</tr>
<tr>
<td>CO</td>
<td>Colorado Marrow Donor Program</td>
</tr>
<tr>
<td>MD</td>
<td>C.W. Bill Young Marrow Donor Center</td>
</tr>
<tr>
<td>MI</td>
<td>NMDP operated donor center</td>
</tr>
<tr>
<td>TN</td>
<td>Blood Assurance</td>
</tr>
<tr>
<td>WA</td>
<td>Puget Sound Blood Center</td>
</tr>
</tbody>
</table>

## Cord Blood Banks

<table>
<thead>
<tr>
<th>State</th>
<th>Center Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA</td>
<td>StemCyte International Cord Blood Center</td>
</tr>
<tr>
<td>CO</td>
<td>University of Colorado</td>
</tr>
<tr>
<td>IL</td>
<td>ITxM Cord Blood Services</td>
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<tr>
<td>MO</td>
<td>St. Louis Cord Blood Bank</td>
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<tr>
<td>NC</td>
<td>Carolina Cord Blood Bank</td>
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<tr>
<td>TX</td>
<td>MD Anderson</td>
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<tr>
<td>WA</td>
<td>Puget Sound Blood Center</td>
</tr>
</tbody>
</table>

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**Total NDMS Centers:** 42 (78%)
**Total HPP Centers:** 41 (75%)
**Total Pediatric or Ped/Adult:** 31 (58%)

**As of 02 Jan 2014**

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**Please report any corrections to this document to RITN@nmdp.org**
• Site Assessments
• Tabletop exercises attended
• Web based training released (https:\nmdp.sumtotalsystems.com)
  1. Intro to RITN
  2. RITN Concept of Operations
  3. GETS 101
  4. Satellite telephone 101
  5. Basic Radiation Training
  6. Non-medical Radiation Awareness Training

• Mayo Full-scale Exercise
• 2 x Web based tabletop exercises
• Mobile REAC/TS held at Duke University
• 2 x resident REAC/TS courses
• New Partnership with CMCRs
• 4th biennial conference w/ 175 attendees
RITN Hospital Task Completion

2013* is the first year DC and CBB were not asked to complete tasks

Does not include DC/CBB
Totals since 2006:
- 265 REAC/TS
- 2,981 GR
- 3,680 BRT
- 2,826 Overview
- 541 Conference

10,293 grand total

Summary of RITN Training & Education
2014 Projects and Tasks
2014 Projects

- Addition of 5+ transplant centers
- 2014 member survey (in process deadline: 3/4/14)
- Release RITN Referral Guidelines early 2014
- Collect triage guidelines for release 2015
- Regional tabletop exercise for NY State & NYC
- G-CSF distribution project with ASTHO and CDC
  - Will seek 6 subject matter experts to attend workshop
2014 Projects (cont.)

- 2 x Mobile REAC/TS training sessions (Boston & Chicago)
  - Travel expenses for up to 20 physicians & adv. practitioners
- Review of updated REMM ARS guidelines
- Medical staff risk communications training development
- Exercises: Full-Scale Exercise (Boston), 3 x Web based TTX, Communications drill with DHHS-ASPR
- 2015 Exercise RFP to be released 3/4/14
- Definition of web based data collection forms
2014 Tasks (Nov 1, 2013-Aug 31, 2014)

1. Administrative
   a) SOP update, contact update, GETS test, HCS, satellite phone, IRB of consents

2. Exercise
   a) Primary choice will be web based on 3 scheduled dates
   b) Can coordinate and host own if prefer

3. Training
   a) Options: 20 x BRT, MD to REAC/TS, Grandrounds, Overview to external preparedness group, submit triage guidelines or site assessment
RITN is Incorporated into Federal Plans

- DHHS-ASPR: [http://www.PHE.gov/about/oem/cbrne](http://www.PHE.gov/about/oem/cbrne)
- State and Local Planners Playbook for Medical Response to a Nuclear Detonation
- RDD Playbook
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

REMM Website Updated August 2013
References:

www.RITN.net

www.REMM.NLM.gov

REMM Website Updated Aug 2013
Download the App!!
Free Resources

- http://journals.cambridge.org/action/displayIssue?jid=DMP&volumeId=5&seriesId=0&issuelId=S1
- http://www.ritn.net/About/