National Institute of Environmental Health Sciences
Your Environment. Your Health.

Disaster Research Response Project Tabletop Exercise

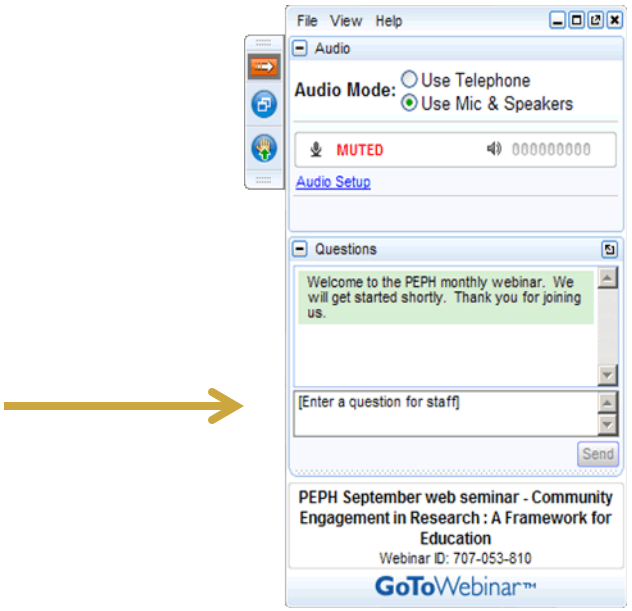
April 7, 2014 • Los Angeles, CA

Webinar

March 24, 2014

How to Ask Questions

Type in your question.



Click the send button.

How to Ask Questions (cont'd)

Click on the orange button to expand the control panel.

Agenda

I. Introduction/Welcome

Chip Hughes/Les Reinlib/Stavros Garanziotis, NIEHS

II. Background on Disaster Research Response Project

Chip Hughes, NIEHS

III. Briefing on the Concept of Operations

Kevin Yeskey, MDB, inc.

IV. Research Protocol Training

Stavros Garanziotis, NIEHS and S-3

V. Introduction of the Scenario

Stephanie Ross and Geoff Plumlee, USGS

Agenda (Cont.)

VI. Worker Safety and Health Training

Jim Remington, NIEHS and Bill Hatch, UCLA

VII. Tabletop Exercise

Kevin Yeskey, MDB, inc.

VIII. Logistics

Joy Lee, MDB, inc.

IX. Questions

X. Closing Remarks

XI. Adjourn

Welcome

Background

"The knowledge that is generated through well-designed, effectively executed research in anticipation of, in the midst of, and after an emergency is critical to our future capacity to better achieve the overarching goals of preparedness and response: preventing injury, illness, disability, and death and supporting recovery."

Lurie, Manolio, Patterson, Collins, & Frieden. New England Journal of Medicine. 368; Mar 2013

Disaster Research Can Improve Response and Recovery

- Characterization of environmental toxins
- Exposure of vulnerable populations and disaster responders
- Provide immediate feedback
- Effectiveness of interventions
- Clean-up guidance
- Health consequences of exposure
  - Short term
  - Long term

Disaster Research Depends on Integration Into the Existing Response Structure

- Timing of Research Response
  - Earlier the better but cannot interfere with lifesaving activities
- Researchers must understand disaster environment
  - Disaster specific training a ‘must’
- Researchers must work within the established HHS response structure
  - Accountability
  - Health and Safety
  - Reporting/Communications
  - Interactions with State/local colleagues

Tabletop Exercise

Goals/Objectives

- Main Goal: Test Disaster Research Response Concept of Operations
- Objectives:
  - Assess the need to perform disaster research
  - Discuss activation of the disaster research response team
  - Demonstrate integration into the HHS/ESF8 operations
  - Demonstrate process for initiating a research protocol
  - Identify issues with the engagement and research CONOPS
  - Access the NLM disaster research website
  - Engage selected stakeholders and partners
  - Explore opportunities for community based research
  - Engage and collaborate with local and state agencies

Disaster Research Response Concept of Operation

Key Assumptions

- Engagement of researchers will occur concurrently with other responders and will not interfere with the provision of life-saving activities.
- The need for disaster research is defined
- Research teams will deploy under the HHS response/recovery construct
- Funding will be available for research.
- Federal interagency coordination and state/local coordination is required throughout the process.
- Paperwork Reduction Act requirements will have been met.
- Individual privacy protection will be maintained.
- All research will be approved by an established IRB.

Notification and Activation Process

- Notification
  - Presidentially Declared Disasters/PHE declarations/NRT engagements
  - Direction by HHS Secretary, NIH Director, NIEHS Director

- Activation
  - Activation of the RRT and networks will be by the Director, NIEHS or her designee

Engagement Process

- Pre-engagement
  - Decision (triggers) to deploy
  - Funding
- Engagement
  - Worker health and safety training
  - Communication (ICS, media, etc.)
  - Integration and coordination (federal, state, and local)
- Re-engagement
  - Decision to stand-down
  - Data access, analysis, and publication
- After-action

Research Protocol Training

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Disaster Research Response Project

The 'RAPIDD' Study Protocol: Rapid Acquisition of Post-Incident Disaster Data

Stavros Garantziotis, MD (NIEHS)

Steve Ramsey, MPH (SSS)

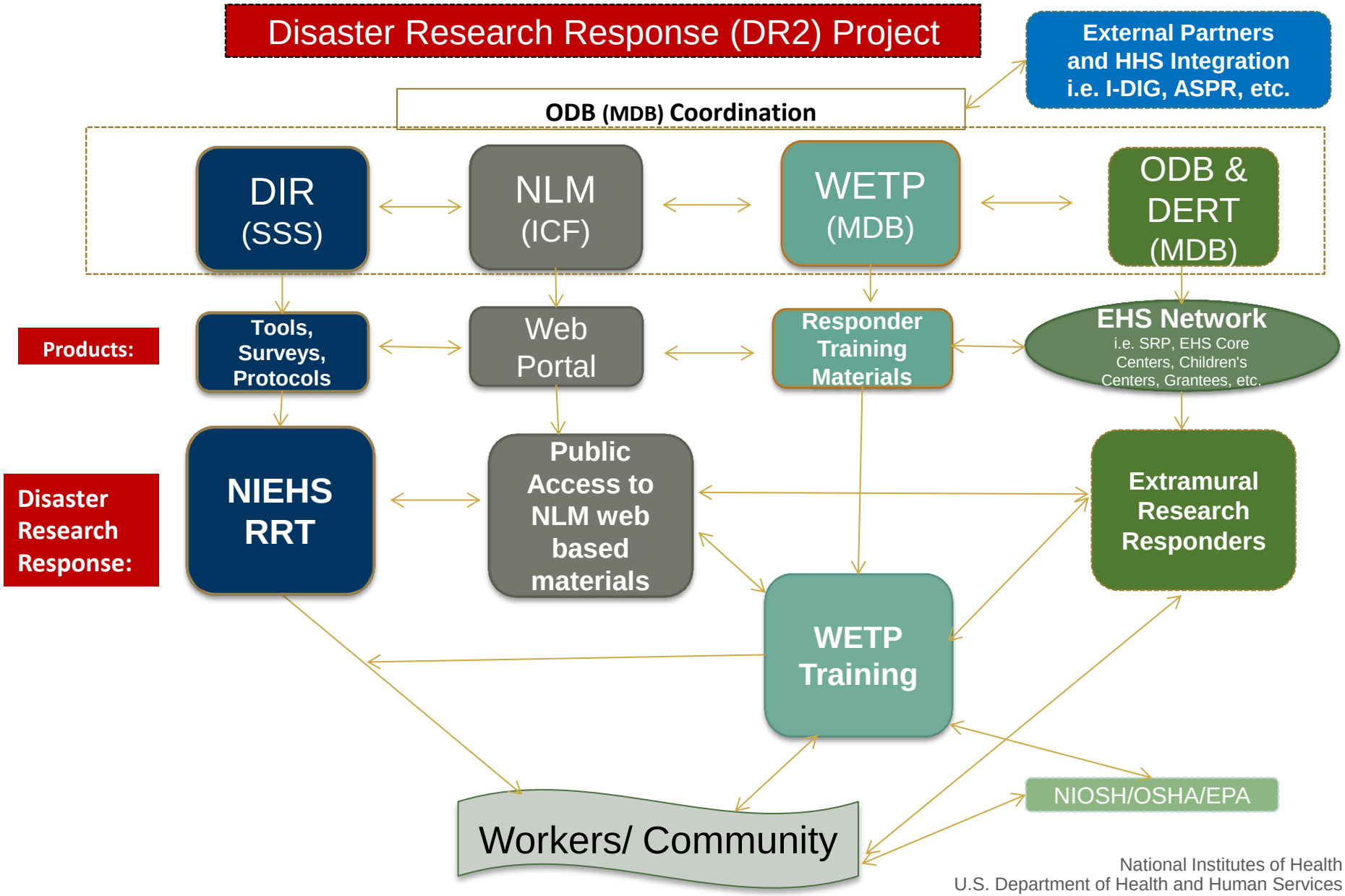
Richard Rosselli, MPH (SSS)

Introduction to the RAPIDD Protocol Team

- NIEHS Division of Intramural Research
  - Stavros Garantziotis, Principal Investigator
- Social & Scientific Systems (SSS)
  - Coordinating center
    - create study documents
    - develop and implement operational plans/procedures
    - conduct training
    - data management
    - study monitoring

Overview

- DR2 Organizational Structure
- Challenges and Opportunities
- RAPIDD Rationale and Objectives
- Data and Specimen Collection Considerations
- Study Equipment
- Training and Field Guides


Disaster Research Response (DR2) Project
External Partners and HHS Integration i.e. I-DIG, ASPR, etc.
ODB (MDB) Coordination
DIR (SSS)
NLM (ICF)
WETP (MDB)
ODB & DERT (MDB)
Products:
Tools, Surveys, Protocols
Web Portal
Responder Training Materials
EHS Network
i.e. SRP, EHS Core Centers, Children's Centers, Grantees, etc.
Disaster Research Response:
NIEHS RRT
Public Access to NLM web based materials
Extramural Research Responders
WETP Training
NIOSH/OSHA/EPA
Workers/ Community

Challenges and Opportunities

Historic Barriers

- Support from incident managers/access to worksites
- Ability to identify and locate subjects
- IRB and OMB approvals
- Collecting baseline bio specimens
- Limited resources
- Quick collection of reliable data
- Estimating exposures

DR2 Opportunities

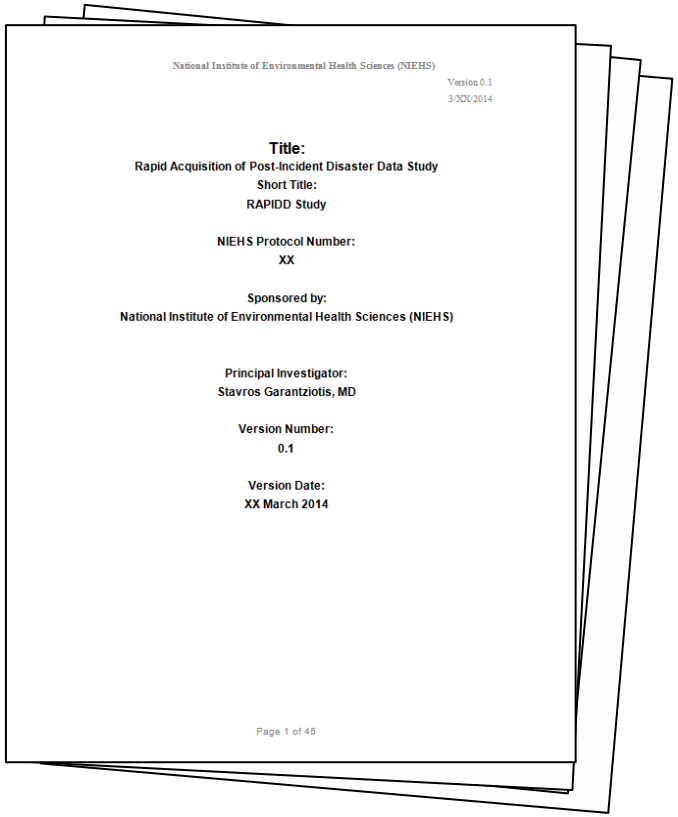
- ESF-8 Integration
- Captive audience (WETP)
- Preapproved IRB and OMB approvals
- Request for resources
- Modular implementation based on conditions
- Potential for easier exposure determination based on real-time environmental monitoring and situational reports from incident managers

Source: Decker, Kiefer, Reissman, et al., Am. Journal of Disaster Medicine, Vol. 8, No. 1, 25-33, 2013

RAPIDD

The Rapid Acquisition of Post-Incident Disaster Data

- Acquiring baseline data to help **future disaster researchers**
- NIEHS IRB approved protocol
- Prospective, observational study
- Target cohort includes disaster response workers
- Collect *scalable* questionnaire data and biological specimens
- Appendices structured in tabular format to enable quick modification for IRB amendments


National Institute of Environmental Health Sciences (NIEHS)
Version 0.1
3/XX/2014

Title:
Rapid Acquisition of Post-Incident Disaster Data Study
Short Title:
RAPIDD Study

NIEHS Protocol Number:
XX

Sponsored by:
National Institute of Environmental Health Sciences (NIEHS)

Principal Investigator:
Stavros Garantziotis, MD

Version Number:
0.1

Version Date:
XX March 2014

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RAPIDD Decision Tree

Triggers to Determine Protocol Activation

- Disaster research is warranted/considered of value
- A cohort of interest is involved (e.g., individuals from affected community, disaster workers, trainees under WETP-funded program)

Protocol Implementation

- Is the cohort of interest included in the IRB-approved protocol?
- Are all procedures/evaluations of interest included in the IRB-approved protocol?

YES to both

NO to either

Protocol Amendment

- Modular protocol appendices updated with new cohort and/or procedure info
- IRB review/approval of revised appendices

Registry Visit

- Informed consent
- Confirm eligibility (e.g., ≥18 years old, is part of cohort of interest)
- Collect any or all of the following data: demography, anthropometry, spirometry, questionnaire responses
- Collect any or all of the following specimens: blood, urine, nail clippings

Processing of Data/Specimens

- Processing and short-term storage at SSS

Long-Term Storage of Data/Specimens

- Data and specimens stored in secure, NIEHS-affiliated location
- Available for future IRB-approved research

Additional Contacts

- Participants may be contacted by RAPIDD study staff for additional data/specimens
- Participants register to potentially be contacted for future research studies

Proposed Data Collection

- Questionnaires
- Biological specimens
- Vital signs
- Anthropometric measurements
- Spirometry

Questionnaire

Questionnaire & Brief Description	# Questions	Estimated Time	Select?
Registry Basic Core Form	26	5 minutes	Yes□ No□
Registry Enhanced Core Form	36	10 Minutes	Yes□ No□
Demographics and Sociological Factors	16	5 Minutes	Yes□ No□
ERHMS/ATSDR Based Deployment Module	8	Unavailable	Yes□ No□
General Health			**Yes☐ No☐**
ACE General Survey – Medical History Module F.	19	Unavailable	Yes□ No□
ERHMS Basic Pre – Deployment Health Screening	12	Unavailable	Yes□ No□
ACE General Survey - Acute Health Effects Module B	57	Unavailable	Yes□ No□
Rand Medical Outcomes Study Short Form Survey 20	20	5- 10 minutes	Yes□ No□
Veterans Rand 12 Health Survey (VR-12)	12	7 Minutes	Yes□ No□
NHANES 2013 -2014 Physical activity/ Fitness Module	21	Unavailable	Yes□ No□
Measures of Overall Psychological Well-Being			**Yes☐ No☐**
Kessler 6 (K6)	6	2-3 minutes	Yes□ No□
Kessler 10 (K10)	10	5 Minutes	Yes□ No□
Measure(s) of Post-Traumatic Stress Disorder (PTSD),			**Yes☐ No☐**
PTSD Self Rating Scale (PTSD-SRS)	17	Unavailable	Yes□ No□
Primary Care PTSD Screen (PC-PTSD)	4	1-2 Minutes	Yes□ No□
Impact of Event Scale Revised (IES-R)	22	10 Minutes	Yes□ No□
Measure(s) of Anxiety and Depression			**Yes☐ No☐**
Zung Self Rated Depression Scale	20	10 Minutes	Yes□ No□
Patient Health Questionnaire (PHQ)	11	5 Minutes	Yes□ No□

U.S.Department of Health & Human Services www.hhs.gov

Disaster Information Management Research Center

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National Institutes of Health
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SIS Home > DIMRC Home > NIH Disaster Research Response Project

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Share

NIH Disaster Research Response Project

About the Project
Background
Project Goals
Project Components
NIH Coordination and Collaboration
Stakeholder Opportunities
Timeline and Upcoming Events
Sustainment of Project
Previous NIH Disaster Experience
Contact Us

About the Project

"The knowledge that is generated through well-designed, effectively executed research in anticipation of, in the midst of, and after an emergency is critical to our future capacity to better achieve the overarching goals of preparedness and response: preventing injury, illness, disability, and death and supporting recovery."

Lurie N, Manolio T, Patterson AP, Collins F, Frieden T. Research as a Part of Public Health Emergency Response. New England Journal of Medicine. 2013 Mar 28;368:1251-1255. Available from: http://dx.doi.org/10.1056/NEJMsb1209510

The National Institutes of Health's (NIH) commitment to disaster resilience has been the foundation for more than three decades of research. Multiple NIH Institutes, Centers and grantees conduct research focusing on disaster preparedness, response and recovery issues. These efforts have contributed to a deeper understanding of disaster risks and recovery and act to provide critical information when disasters strike.

In response to recent disasters and the research conducted in their wake, NIH has committed to fund the NIH Disaster Research Response Project. This pilot project, developed by the National Institute of Environmental Health Sciences

Displaying records 1 - 1 of 1 Expand all Collapse all
Page 1 of 1 Results/page: 10 Sort: Newest First

1. **Impact of Events Scale (IES) - Original**

Source: AAAAA- correct source not yet selected

Date Published: 05/01/1979

Format: PDF

Annotation: The IES was developed by Mardi Horowitz, Nancy Wilner, and William Alvarez to measure current subjective distress related to a specific event (Horowitz, Wilner, & Alvarez, 1979.
Tool Category: Mental Health/Psych/Neuro
Condition Assessed: PTSD/Trauma Exposure
Type: Screening
Ease of Use: Easy
Flesch-Kincaid Score: 3.8
Established Reliability/Validity: Yes
Population: Adults Only
Length: 15
Time to Complete: 5-10 minutes
Mode of Administration: Self Admin/Self Report
Considerations: Requires compentent reading ability
Available in: English, Spanish, French, Turkish, Chinese, Japanese, Korean, Italian, Kannada, Persian languages, and German [less]

URL: http://www.psychosomaticmedicine.org/content/41/3/209.long

Type: Guideline/Assessment Tool

Access Notes: Mardi Horowitz, Nancy Wilner, William Alvarez. Impact of Event Scale: A Measure of Subjective Stress. Psychosomatic Medicine (May 1, 1979) vol. 41 no. 3. 209-21 Pietrantonio, F., De Gennaro, L., Di Paolo, M. C., & Solano, L. (2003). The Impact of Event Scale: validation of an Italian version. Journal of psychosomatic research, 55(4), 389-393. http://academic.regis.edu/clinicaleducation/pdf's/IES_scoring.pdf http://regis-scholars.wdfiles.com/local--files/whiplash/IES Free/Publicly Available Daniel Weiss, PhD Department of Psychiatry University of California - San Francisco PO Box F-0984 San Francisco, CA 94143-0984 Phone: (415) 476-7557 Email: daniel.weiss@ucsf.edu hugos@lppi.ucsf.edu From the Department of Psychiatry, University of California School of Medicine, San Francisco. Address reprint requests to: Dr. Mardi J. Horowitz, Langley Porter Institute, 401 Parnassus Avenue, San Francisco, California 94143. Phone: (415) 476-7557 Email: daniel.weiss@ucsf.edu hugos@lppi.ucsf.edu From the Department of Psychiatry, University of California School of Medicine, San Francisco. Address reprint requests to: Dr. Mardi J. Horowitz, Langley Porter Institute, 401 Parnassus Avenue, San Francisco, California 94143.

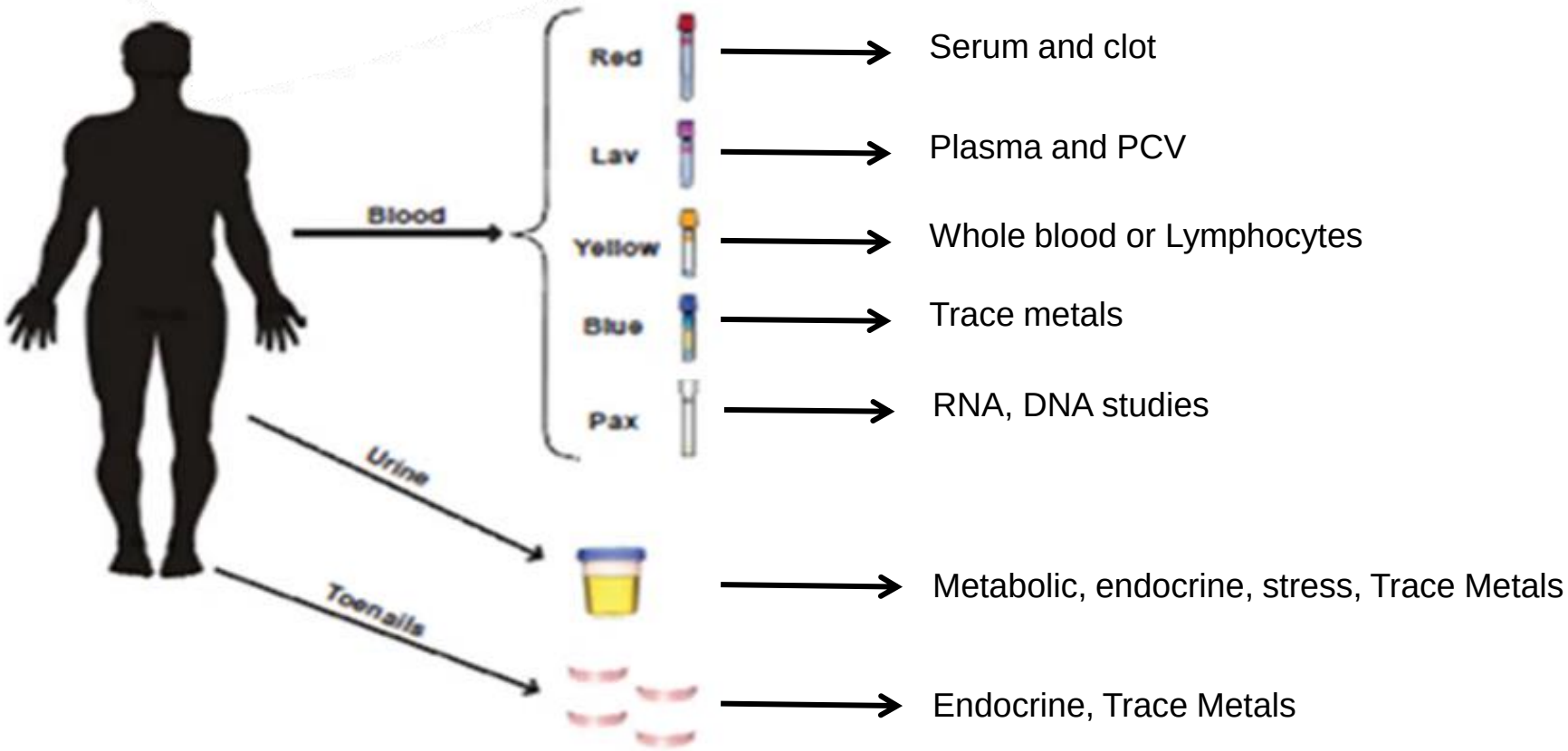
Includes Research Tools: Yes

ID: 7447

Specimen Collection Considerations

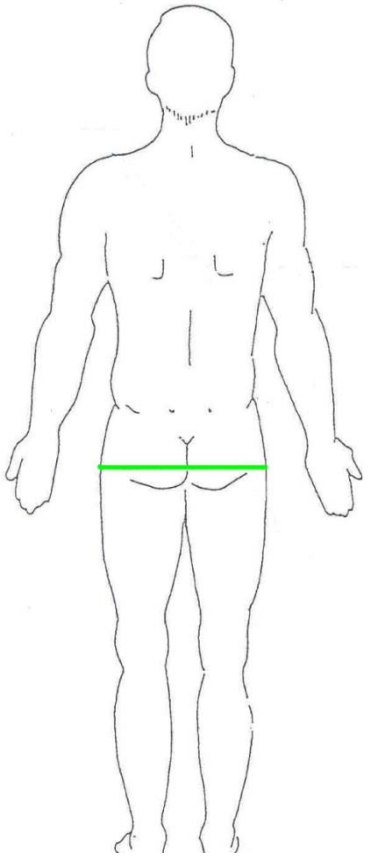
- Scale
- Complexity
- Time
- Space
- Electricity
- Processing
- Refrigeration
- Transport

Proposed Biological Specimens



Other Data Collected

- Vital Signs
  - HR, BP
- Anthropometric
  - Height, Weight, Waist/Hip Circumference
- Spirometry
  - Full Forced Vital Capacity maneuver



Proposed Disaster Responder Data Collection at Baseline

Registry Basic Core Form
- Unique ID
- Name
- Address
- Contact Info
- Employer & Employer Contact
- Age (DOB)
- Gender
- Languages
- Friend/Relative Contact Info

Biospecimen Collection
- Blood
- Urine
- Finger/Toenails

Mental Health
- IES-R
- K6
- PHQ

Respiratory
- Spirometry
- ATS-DLD-78 OR St. George Respiratory Questionnaire

Epi/Env Exposure History
- ACE General Survey Medical History
- Social/Lifestyle Qx
- Rx and OTC Use
- Immunizations
- Disaster-specific Exposures

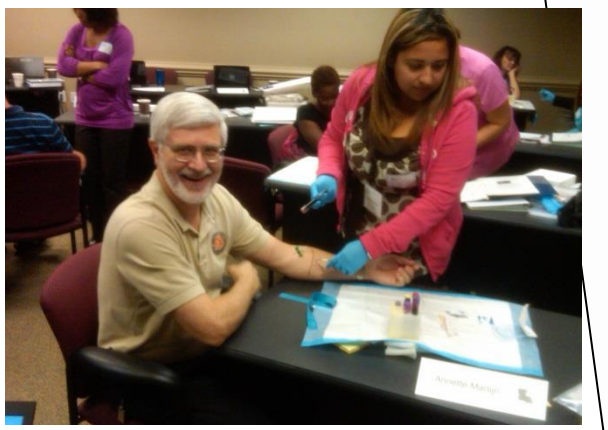
Sources of Health Assessment Pre-Deployment Screening Tools
- ERHMS Basic Pre-Deployment Health Screening
- CDC Responder Readiness Medical Clearance
- Form DD2795

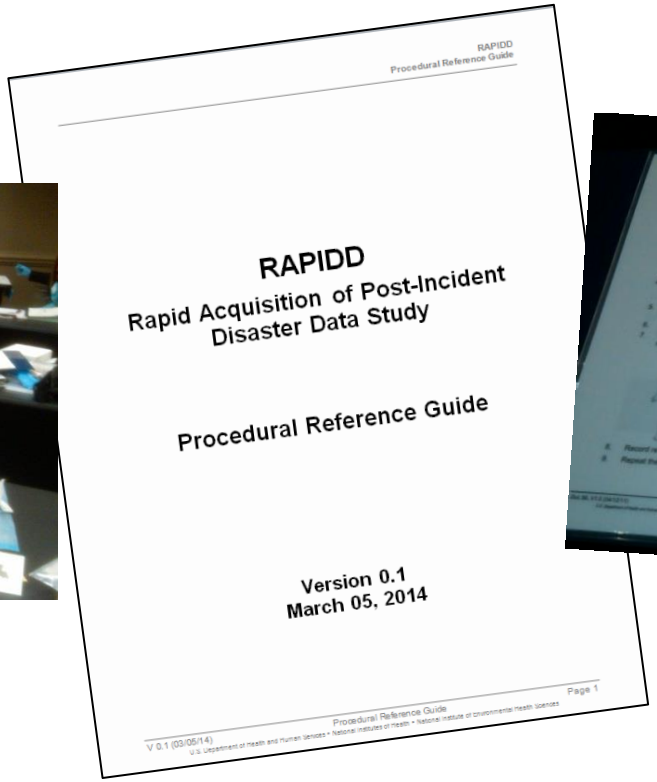
Equipment

- Durable
- Portable
- Battery operated
- Calibrated

Training and Field Guides

- Manual of procedures
- Abbreviated procedural reference guide for field use



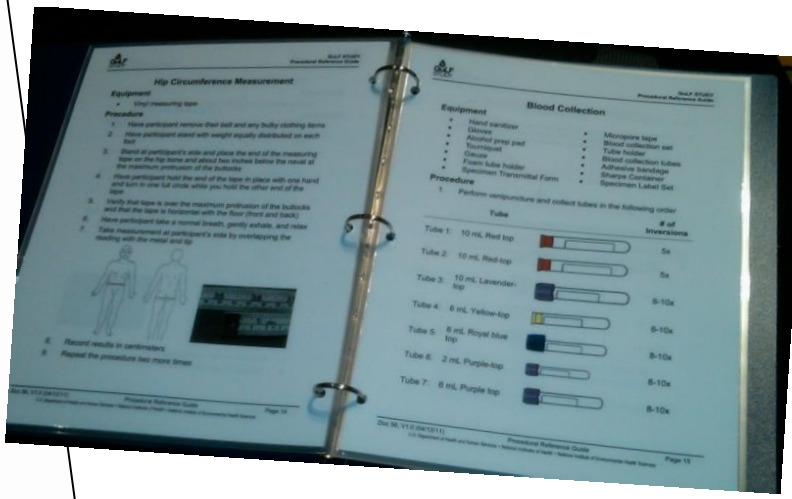

RAPIDD
Procedural Reference Guide

RAPIDD
Rapid Acquisition of Post-Incident Disaster Data Study

Procedural Reference Guide

Version 0.1
March 05, 2014

V 0.1 (03/05/14) Procedural Reference Guide Page 1



Specimen Processing and Storage

- Aliquot samples will be coded and stored in restricted–access freezers at the repository
- Requests from future researchers who wish to study these samples and/or data will be reviewed according to NIEHS policies and will include approvals by IRBs or other appropriate committees.

Breaking News!

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NATURAL HAZARDS MISSION AREA SAFRR Project: Science Application for Risk Reduction

...

The SAFRR Tsunami Scenario: Improving Resilience for California from a Plausible M9 Earthquake near the Alaska Peninsula

A product of the USGS SAFRR project in partnership with CGS, Cal OES, NOAA and others

S. L. Ross, L. M. Jones, R. I. Wilson, B. Bahng, A. Barberopoulou, J. C. Borrero, D. M. Brosnan, J. T. Bwarie, E. L. Geist, L. A. Johnson, S. H. Kirby, W. R. Knight, K. Long, P. Lynett, K. Miller, C. E. Mortensen, D. J. Nicolsky, D. D. Oglesby, S. C. Perry, G. S. Plumlee, K. A. Porter, C. R. Real, K. Ryan, E. Suleimani, H. K. Thio, V. V. Titov, A. Wein, P. M. Whitmore, N. J. Wood

Natural Hazards: Earthquake • Volcanic Eruption • Landslide • Flood • Geomagnetic Storm • Wildfire • Tsunami • Coastal Erosion



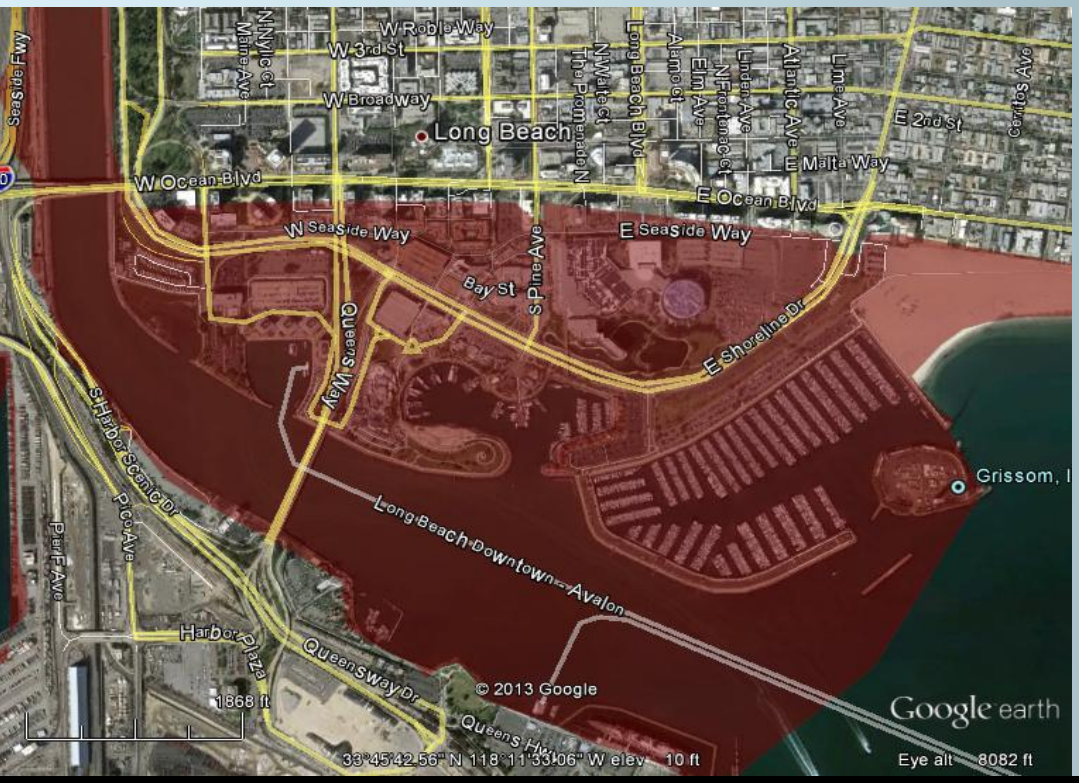



SAFRR Scenario principles

- Previous SAFRR scenarios include the ShakeOut earthquake scenario and the ARkStorm flood scenario
- A single, large but plausible event, one we need to be ready for
- Craft study with community partners
  - Tsunami Scenario report had over 230 contributors representing over 70 organizations
- Consensus among leading experts
  - Earth Science, Engineering, Social Sciences, Emergency Management
  - EQ Source -> Wave heights and current velocities -> Physical Damages -> Environmental, Ecological, and Economic Impacts, Population Vulnerability. Also Emergency Management, Identification of Policy Issues.

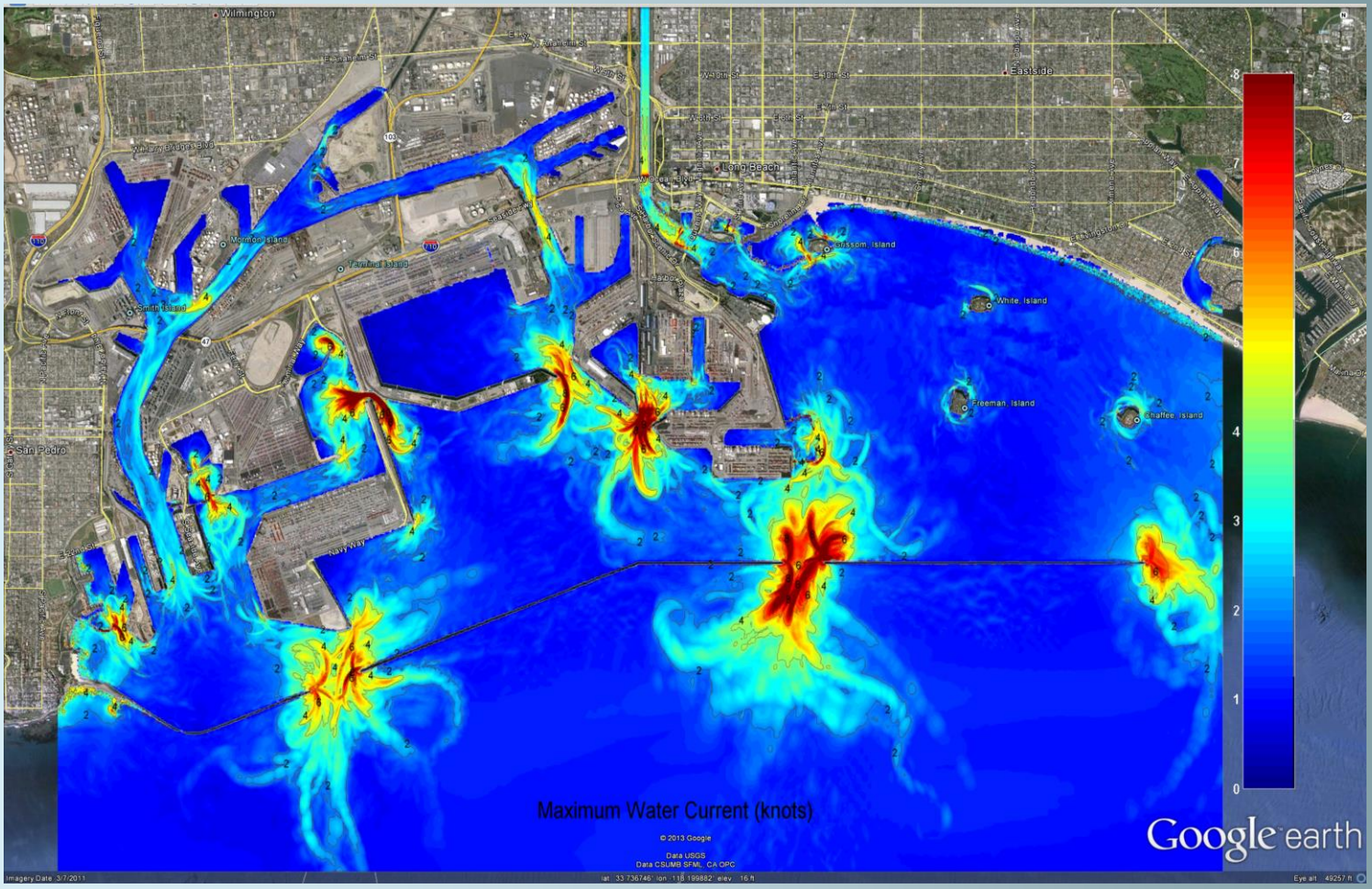
Inundation maps

Orange County – Huntington Beach:
Flooding overtops some levees and floods areas inland.



Los Angeles County – Long Beach: Flooding of downtown area occurs where many businesses and convention center are located.

Maximum Currents at Ports of Los Angeles and Long Beach



Ports of Los Angeles and Long Beach

- Shut down for at least 2 days due to strong currents.
- Inundation would cause $100 million in damage to cargo and additional downtime.
- Direct cost of port shutdown would total over $1.2 billion.
- Business interruption losses in California would more than triple that amount.
- Business interruption losses can be reduced by 80-90% with business continuity and resilience strategies.

Marinas

- 1/3 of boats and over half of docks in California marinas would be damaged, destroyed or sunk.
- $700 million to repair boats and docks plus additional costs to due to sediment transport and environmental contamination.
- Fires could start at many sites where fuel and petrochemicals are stored in ports and marinas.
- Debris cleanup and recovery could take months or years depending on severity of impacts and available resources.

Other Damages

- $1.8 billion of property damage.
- $85 million for highway and railroad repairs.
- $4 million of agricultural losses.
- $2 million of fishing interruption losses due to damage to boats, harbors, and fish processing facilities.
- 130 million square feet of coastal homes and businesses would be inundated: the area of approximately 70,000 dwellings.

Total losses could be $5-$10 billion depending on resilience strategies

Evacuations

- 500,000 people would be present in inundation zone.
- 750,000 people would be evacuated from State of California maximum inundation zones due to limited time to make decisions.
- 8,500 residents would need shelter facilities.
- Island and peninsula communities with limited access present evacuation challenges.
- Dependent-care populations present additional challenges.

To get the reports (fact sheet and 11chapters of SAFRR Tsunami Scenario USGS Open-File Report published September 2013)

http://www.usgs.gov/natural_hazards/safrr/projects/tsunamiscenario.asp

Or Google:

- USGS Tsunami Scenario
- SAFRR Tsunami

Report and fact sheet received over 700,000 web hits in the first 2½ months

The SAFRR Tsunami Scenario Team

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Environmental and Environmental-Health Implications of the USGS SAFRR California Tsunami Scenario

Geoff Plumlee, PhD
gplumlee@usgs.gov
Suzette Morman, MPH, RN, MS_{geol}
Carma San Juan, MS
US Geological Survey

U.S. Department of the Interior
U.S. Geological Survey

Constraining plausible environmental and related health impacts of the scenario tsunami

- Lessons learned from past tsunamis, with appropriate scaling
- GIS-based screening using regional, national scale databases such as EPA Facilities Registry System, EPA Risk Management Plan hazardous chemical sites, Fish and Wildlife Service critical habitat, etc.
- Identify potentially vulnerable natural and anthropogenic sources of contamination
  - Different types of sources will have characteristic suites of contaminants released
  - Can understand general magnitude of release, environmental transport and fate of contaminants from each source
- Identify potentially impacted areas of ecological concern, human exposures
- Infer likely ecological and human exposures, toxicity, health impacts
- Limitations when applied over broad area, so our analysis is a first step
- Inform about plausible impacts without sensationalization

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Publication

- Plumlee, e al., 2013, U.S. Geological Survey Open-File Report 2013–1170, 34 p., http://pubs.usgs.gov/of/2013/1170/f/.

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CGS CALIFORNIA GEOLOGICAL SURVEY

Potential Environmental and Environmental-Health Implications of the SAFRR Tsunami Scenario in California

Open-File Report 2013–1170–F
California Geological Survey Special Report 229

U.S. Department of the Interior
U.S. Geological Survey

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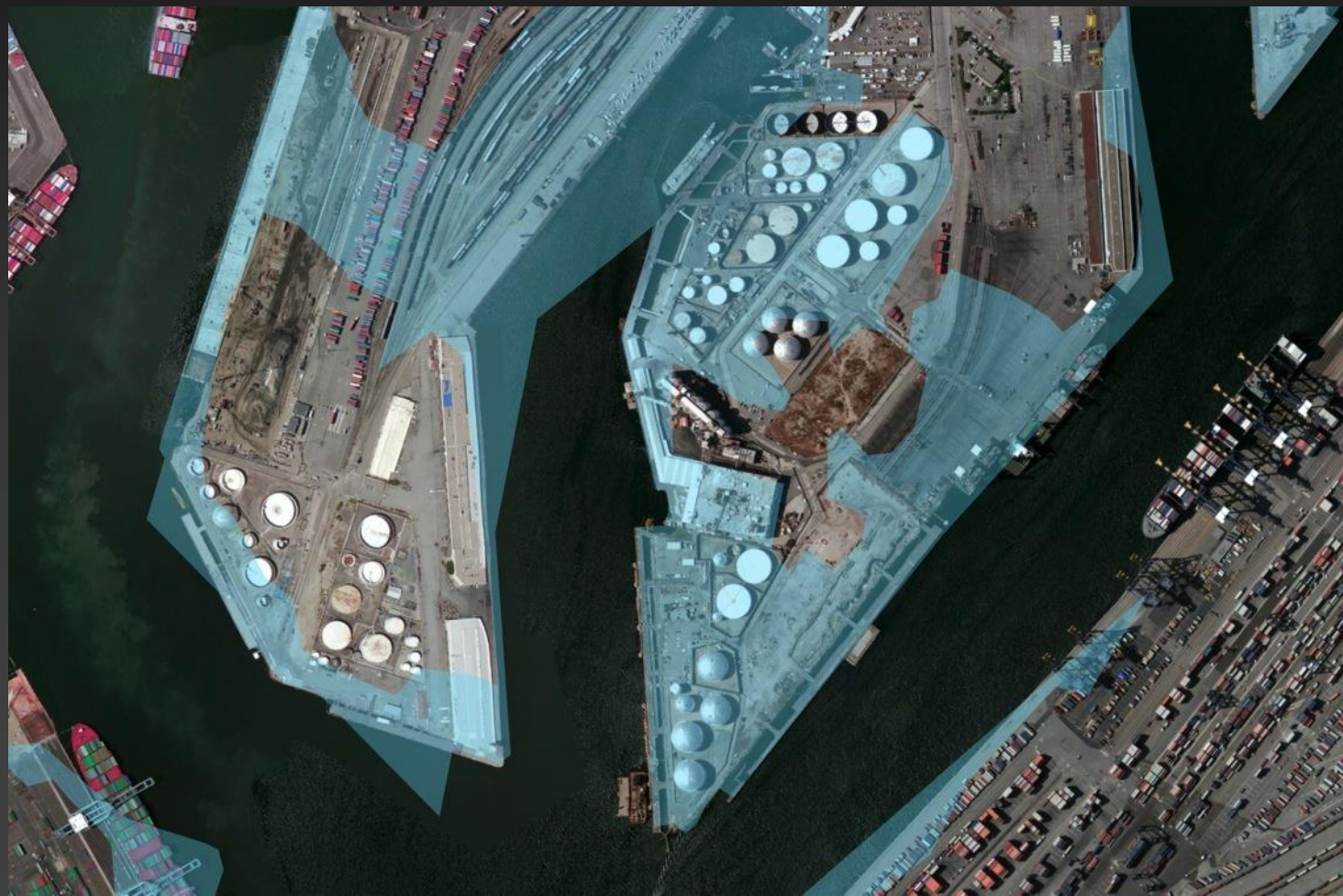
Link inundation maps to environmental databases such as EPA Facilties Registry System, Risk Management Plan

Inundation of marine oil terminals, refineries

- Potential for release of petroleum products, other chemicals used in the refining (e.g., anhydrous ammonia, hydrogen sulfide, butane, pentane, aqueous ammonia)



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Redistribution of contaminated harbor sediments

- DDT, other legacy pesticides, organotin, mercury,
- Acid-generating iron sulfides in anoxic sediments?

DDT in POLB harbor sediments > 2 ppb
Westin Solutions, 2009, Summary of Sediment Quality Conditions in the Port of Long Beach

Maximum predicted current area
DDT in sediments >2 ppb (numeric target) (Weston, 2009a)
EPA Facilities Registry System site in scenario or CA-OES inundation zones
CA-OES maximum inundation
Scenario predicted inundation

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Ports, harbors, marinas—potential environmental concerns

- Potential toxicants in debris from damaged piers, buildings, small watercraft, berthed automobiles?
- Petroleum, crude oil, gasoline spills from refineries, marine oil terminals, tank farms, damaged small watercraft, large tankers, berthed autos, haulage trucks, and other vehicles on docks.
- Possible releases of dry bulk cargo (e.g., prilled sulfur, petroleum coke, cement, solid fertilizers, industrial borates).
- Possible releases of liquid bulk cargo (i.e., vegetable oil)
- Smoke, airborne ash, residual ash, and debris from tsunamigenic fires (mostly petroleum-based that could spread to wood piers, other structures, berthed automobiles, cargo).
- Possible scour, resuspension, redistribution, onshore transport of contaminated sediments from harbor bottoms.

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Inundation of wastewater treatment plants

Potential for releases of raw or partially treated sewage:

- Human hormones and metabolic wastes, components of pharmaceuticals and personal care products, detergents, fire retardants, home use pesticides and rodenticides, dissolved metals
- Pathogens that can be present include bacteria (for example, *E. coli* or *Salmonella*), protozoa, enteric viruses, and parasitic worms

- In POLA/POLB, Terminal Island WWTP is outside SAFRR inundation zone but inside Cal OES inundation zone
  - Even if not inundated, could shutdown potentially result in backup and releases of raw sewage from sewers outside inundation zone?

Inundation of residential areas (Newport Bay, Balboa Island, others)

- Generation of debris, if tsunami is powerful enough to damage or destroy houses–debris may pose an exposure and/or disposal issue)
  - Potential contaminants vary as a function of age
  - Asbestos, lead, mercury liquid greater in older houses
  - Chrome-copper-arsenate treated wood
  - Mercury vapor from fluorescent lights
  - Pesticides?
  - Household chemicals, paints, etc.
- Flooding of less heavily damaged buildings
  - Exposures to debris, contaminants during renovation?
  - Mold exposures?

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Tsunami direct health impacts likely not an issue if evacuation of population is successful

- Drowning in flood waters
- Injuries or death caused by floodwater-borne debris
- Infection of puncture, flap wounds by pathogens in sea water, soils, debris
- “Tsunami lung” associated with near drowning in sea water due to uncommon pathogens
- Damage to public health infrastructure, relocation of thousands of people from affected areas into refugee camps
- Psychological impacts
- Disaster-related exacerbation of chronic diseases

Plausible environmental health concerns

- Increases in skin infections or gastrointestinal illnesses due to exposures to:
  - sewage-related pathogens inside and outside inundation zone
  - other sea water-borne pathogens in tsunami waters
- Short-term exposures to contaminants in smoke, ash from tsunamigenic fires (vary depending upon material burned):
  - PM2.5, caustic alkalis, lead, Cr[VI], asbestos, PAHs, PCBs, dioxins?
- Short-term, geographically localized exposures to toxicants released from tsunami-damaged storage facilities?
  - Gases: Anhydrous ammonia, hydrogen sulfide, sulfur dioxide, pentane, 1-Pentene, 1-Butene, Isobutane, hydrogen fluoride
  - Aqueous: Ammonia, hydrofluoric acid

- Effective public health response and cleanup measures (ie using dust mitigation, appropriate personal protection) would likely minimize risk of infectious disease outbreaks or serious longer-term illnesses.

Next steps to enhance resilience

- Based on screening analysis, carry out more detailed analysis of specific affected areas, working with State/local databases (e.g. CERS) and local experts
- Identify specific sources of contamination and their vulnerability to tsunami impacts
- Develop enhanced knowledge about
  - general magnitude of releases,
  - plausible mixtures, concentrations, and environmental transport and fate of contaminants released
- Development of State and local policies that plan for and facilitate rapid assessment of potential contamination, and that facilitate rapid decision making for disposal options should hazardous debris, sediments, etc. be identified

Worker Safety and Health Training

Field Safety Orientation

City of Long Beach

Field Safety Orientation

This is what the ports and refinery areas looks like now.

Field Safety Orientation

After a Tsunami it could look like this.

What would be the Hazards?

Field Safety Orientation

L.A./Long Beach Ports area

Proximity to Wilmington homes

Field Safety Orientation

L.A./Long Beach Ports area

Proximity to Wilmington homes

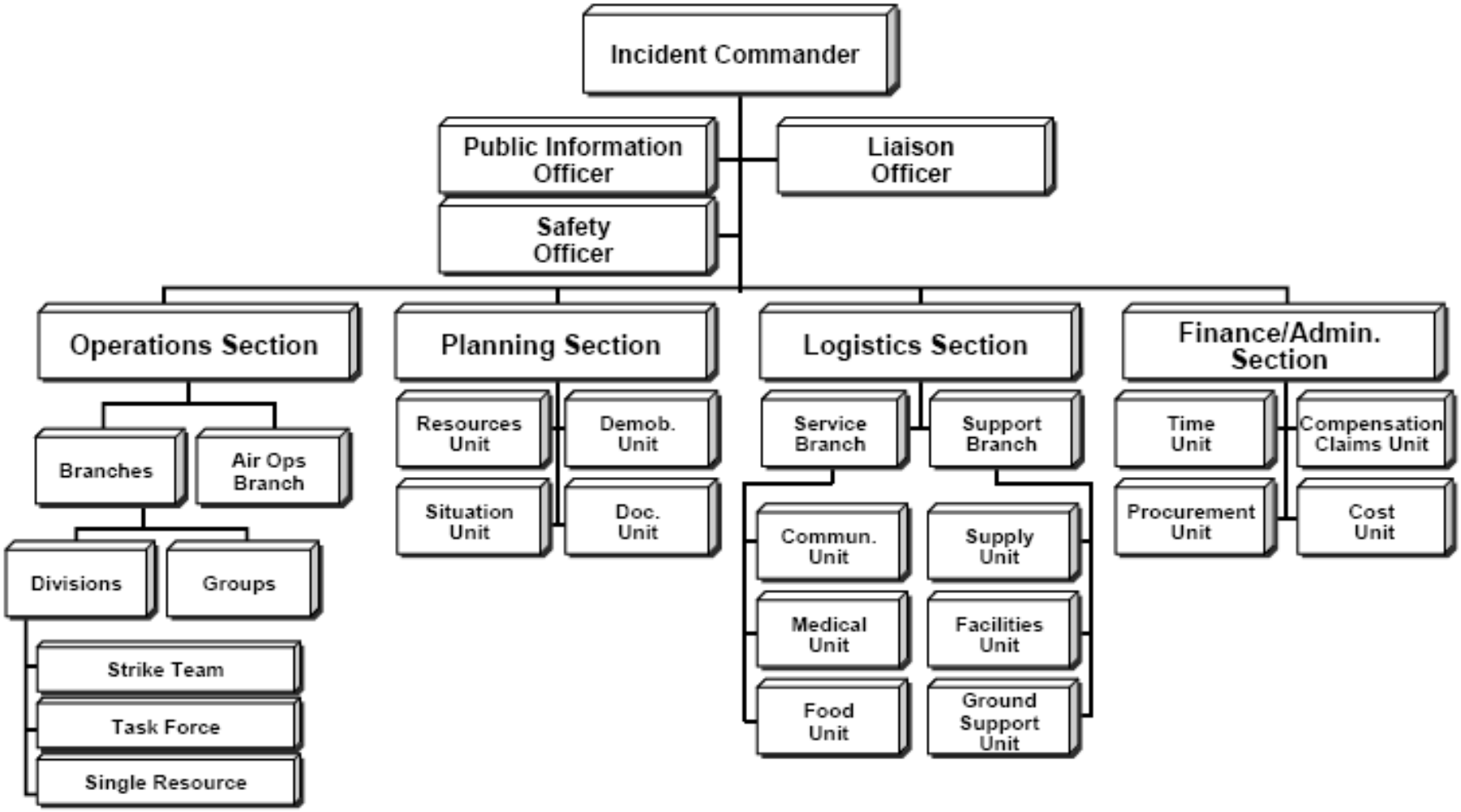
Floodwaters from Super-storm Sandy surround homes in South Bethany, Delaware

Presentation Overview

- Command Structure
- Identifying Hazards
- Personal Safety Hazards

Command Structure

Incident Command System - **ICS**



Unified Command – Joint Agency Operations

Who would the Researchers report to?

Identifying Hazards

During Tail Gate Safety Briefing,
Health and Safety Plans (HASP) should be reviewed

OSHA has set regulations that require HASP.

The HASP serves as a guide for workers to follow during their operations to help prevent injury, illness, and death.

Emergencies in the Field

Ask what first aid support is available during your briefing?

Minor medical concerns:

- Local hospitals or clinics
- First Aid

For serious emergencies

call 911

- Know your exact location.

Personal Protective Equipment (PPE)

Request it during the safety briefing

Depending upon your job task follow PPE requirements

- Air respirator may be required.
- Protective footwear.
- Cut/abrasive resistant work glove.
- Fully enclosed goggles or safety glasses.
- Ear protection in noisy areas.
- Head protection if in construction or demolition zones.
- Be sure to follow your work site's PPE program.

The OSHA PPE standard (29 CFR 1910 Subpart I) must be followed when selecting and implementing PPE.

Hazards Associated with Debris

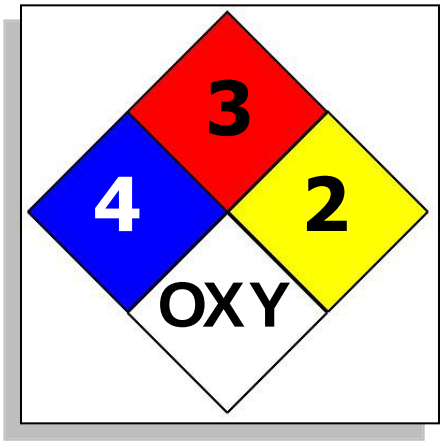
- Asbestos
- Ash
- Creosote soaked wood
- Compressed cylinders
- Chemical containers
- Electrical Transformers
- Moldy materials
- Lead
- Air conditioners
- Lead acid batteries
- Paints and thinners
- Fertilizers/pesticides

Electrical Power Lines

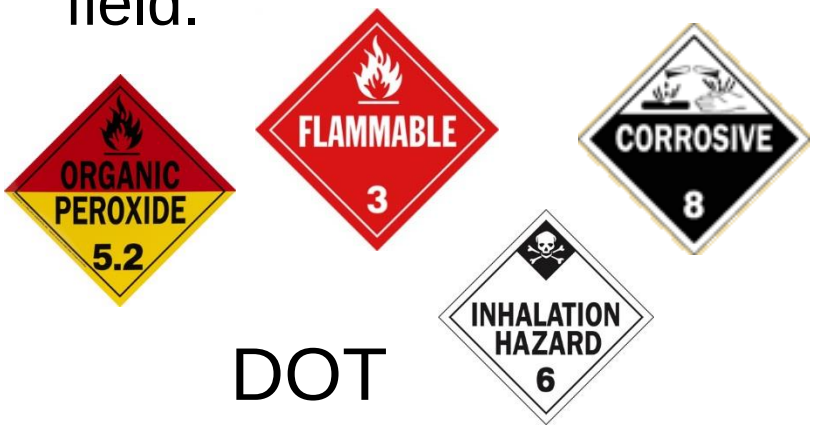
- Treat all power lines and cables as energized.
- Use appropriately grounded low-voltage equipment.
- Stay clear of downed and damaged electrical lines.

Hazardous Materials Identification

- During work you may find dislodge or damage tanks, drums, pipes, and equipment which may contain hazardous materials.
- Do not handle unidentified or damaged containers.
- Warning labels may also be useful in the field.



NFPA 704



DOT

OSHA Hazard Pictog

Confined Spaces

What is a Confined Space?

- Space with limited access and egress
- Large enough for bodily entry
- Not designed for occupancy

Examples: boiler, pit, septic tank, utility vault, well, basement and trench

Safety Officer Must Approve Confined Space Entry

If you are not trained DON'T GO IN

Driving and Traffic Issues

- Buckle up
- Fatigue
- Personal distractions
- Drive defensively
- Barricades do not provide adequate protection for workers.
- Inexperienced or poor drivers
- Poor visibility
- Wear high visibility clothing.

Driving in Dense fog

Hard to see people

Keep your distance

Use your low beams

Field Safety Orientation

Driving in rain – slow down

Field Safety Orientation

Heat Stress

California has a
Heat Stress Regulation
CCR Title 8 3395
know your local regulations

Common signs and symptoms workers experience if they have any of these conditions.

Early Signs of Heat Stress	Heat Exhaustion	Heat Stroke
Headache	Headache	Headache
Thirst	Dizziness	Dizziness
Profuse sweating	Confusion	Restlessness
Muscle aches	Nausea	Confusion
	Sweating-pale, clammy skin	Hot, flushed dry skin
	Cramps, legs & abdomen	Body temp above 104˚ F
	Rapid, weakening pulse & breathing	Unresponsive/disoriented

Heat Stress (Continued)

- Drink when thirsty.
- Monitor yourself and coworkers, use the buddy-system.
- Use cooling fans/air-conditioning and rest regularly.
- Wear lightweight, light-colored, loose-fitting clothes and a hat if available.
- Avoid alcohol, caffeinated drinks, or heavy meals.
- Get medical help for heat stress symptoms
- Take shelter in shaded areas.

Blood Borne Hazards

- Use latex or similar gloves when handling human remains or assisting with injuries.
- Replace gloves if punctured or torn.
- Do not handle human remains or assist those with injuries if you have skin cuts or punctures
- Use goggles or face shield and mask for handling human remains.
- Make sure to wear a respirator.

OSHA Blood Borne Pathogen Standard: 29 CFR 1910.1030

Traumatic Stress

- In a traumatic event individuals perceives actual or threatened death or serious injury.
- Reactions to traumatic events will vary, ranging from relatively mild to severe.
- It is common for people to experience personal or social disconnection.[1]
- Pay attention to co-workers and how they are being affected by traumatic stress

•[1] International Society For Traumatic Stress Studies

Field Safety Orientation

Symptoms and negative effects of Traumatic Stress include:

- Physical illness (headaches, fatigue)
- Unable to function normally on the job
- Depression
- Anxiety
- Making efforts to avoid reminders of a traumatic event
- Marital and family conflict
- Hostility and aggression
- Death through suicide as a reaction to overwhelming stress

Individuals with prolonged traumatic stress (anxiety, depression, etc.) that disrupt their daily functioning should consult with a trained and experienced mental health professional.

How to Cope With Traumatic Stress

Useful techniques to reduce stress during a response are:

- Take a break from the news.
- Pace yourself and take frequent rest breaks.
- Watch out for each other.
- Be conscious of those around you. Workers who are exhausted, feeling stressed, or even temporarily distracted may place themselves and others at risk.
- Maintain as normal a schedule as possible.
- Drink plenty of fluids such as water and juices.

Summary

- Follow Incident Command System
- Follow Safety Briefing Instructions
- Stay alert for hazards
- Take breaks from the hazard area
- Seek help if situation is stressful
- Recognize co-workers need for;
  - physical or
  - mental assistance

Tabletop Exercise

Exercise Day

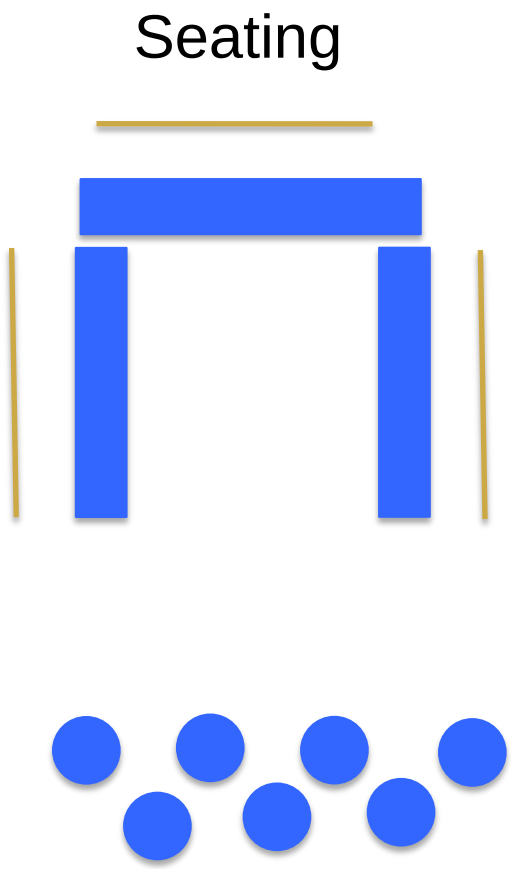
- Registration and pick up at Westin Hotel
- Tour of communities and sites
- Exercise at Banning's Landing

Participants Roles and Responsibilities

- Assume role of your own organization
- Questions will be directed to participants as it relates to specific activities
- Responses should be based on your role as it relates to the activity

Seating

- Main U-Shape Table
  - Primary discussion
  - Decision makers regarding the operation of research responders
- Round tables
  - Secondary discussions
  - Key stakeholders



Logistics

Logistics

- Registration will take place at Westin Hotel starting at 8:00 am.
- Buses will leave from the Westin Hotel at 8:30 am on the dot.
- Lunch will be available for purchase at the site—more information will be sent out prior to the exercise day
- Buses will leave Banning's Center after the exercise to both hotels.

Questions?

Please type your questions in the question box

THANK YOU!
QUESTIONS?

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