Japan Radiation Event triggered by the Tohuku Earthquake and Tsunami of March 11, 2011

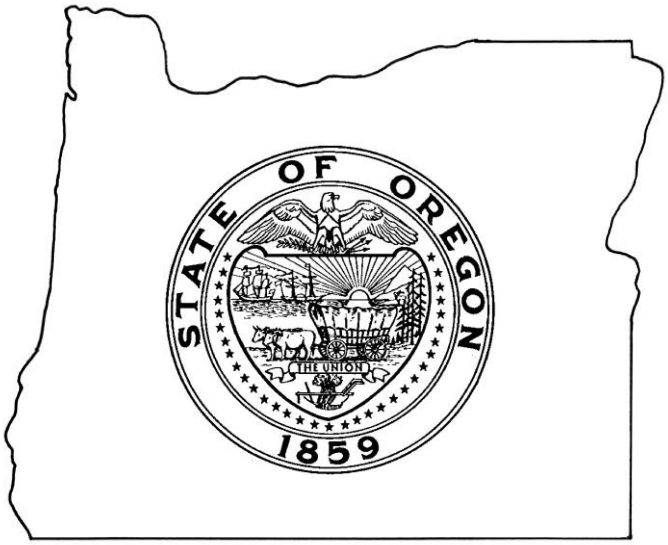
Public Health Division response initiated March 11

Incident Management Team established March 16

AOC established March 21-April 8, 2011

AFTER ACTION REPORT AND CAPABILITIES IMPROVEMENT PLAN

June 30, 2011



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Executive Summary

A 9.0 earthquake occurred at 14:46 local (Japan) time [05:46 hours GMT] on Friday, March 11 off of the NE coast of Japan. This equates to 21:46 hours Pacific Time on Thursday, March 10. The resulting tsunami (along with earthquake damage) devastated the NE Japan coastline, sent a tsunami across the Pacific and caused severe damage to the nuclear reactors at the Fukushima Daiichi Nuclear Plant, 127 miles NE of Tokyo. The tsunami alert by the Pacific Tsunami Warning Center resulted in evacuation orders being issued for coastal Oregon communities, with the only significant tsunami damage in Oregon occurring in Curry County at Brookings. Once it became clear that the tsunami would not have widespread impact in Oregon, the next issue of concern was the potential impact in Oregon of the radiation release from the damaged nuclear reactors. A determination was made between Oregon Emergency Management and state Public Health that Public Health would take the lead in addressing public concerns about radiation and OEM would assume the lead in the Tsunami response and recovery effort.

The Public Health Duty Officer was initially notified of the Earthquake & Tsunami at 0300, Friday 11 March. Oregon Public Health Division (OPHD) leadership considered the appropriate roles and response for the agency during the day, with Dr. Mel Kohn, State Public Health Director, issuing his first public statement on the health implications for Oregonians from the radiation release in Japan on Saturday 12 March. The Office of Environmental Public Health and its Radiation Protection Services (RPS) initially assumed the lead in response efforts to the event. It soon became clear that the complexity of the response (communications with the public, communications and coordination with intra and inter-state partners and working with Federal agencies), required a more robust response. A modified Incident Management Team (IMT) was subsequently formed on 16 March and a limited Agency Operations Center (AOC) activation occurred on Monday, 21 March[1].

PH leadership and the IMT determined that the primary roles of PHD during the response to the Japan Radiation Event (JRE) were to provide situational awareness through monitoring levels in Oregon of radioactivity and nuclides attributable to the JRE, through monitoring and critical evaluation of information about the situation in Japan obtained through the International Atomic Energy Agency and other sources, and to develop and disseminate accurate, timely risk communication messages based on this information to the public and response partners. It was further agreed that these roles could be carried out most effectively through collaboration with local health departments, health care partners, other state agencies, tribes and neighboring states and federal agencies.

Information from several hot washes[2] conducted with internal public health staff and an on-line survey for external partners is summarized below:

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[1] AOC hours were limited to 0800-1200, M-F the weeks of 21 and 28 March. Hours were curtailed to 0800-0900 the week of 4 April, with deactivation on Friday, 8 April

[2] (a) There were two Incident Management Team hot washes (at shift change and one week post demobilization), a PHIC hot wash, a Radiation Protection Service focused hot wash, and hot washes with both an Incident Manager (Gail Shibley) and Planning Chief (Beth Crane). (b) The on-line survey received 55 responses from external partners, including representatives from 27 local health departments, 8 county or city emergency management agencies and 6 state agencies.

A. What went well?

1. Emergency Operations Coordination:
   - Once established, the Incident Management Team fell into positions rapidly and comfortably
   - Consistency, competence and commitment of staff in positions
   - Efficiency of Finance Branch
   - Pre-positioned Incident Action Plan (IAP) template allowed rapid development of objectives
   - Setting up of on-line survey to capture call data
   - Excellent internal coordination and collaboration between Radiation Protection Service and Drinking Water
   - Inproved coordination between Agency Operations Center and Public Health Information Center (PHIC) compared to the H1N1response.
   - Senior Health Advisor role well defined and the incumbent made significant contributions
   - Demobilization Plan was effective
2. Emergency Public Information and Warning
   - 96% of respondents to the on-line survey felt they had the information needed in order to communicate effectively with their constituents. This information was mainly provided by AOC briefings, the state web site and the HAN as well as external sources.
   - The state web site provided links to FAQs, updated radiation-level information and messaging about radiation concerns and safety
   - Use of the 800 number for public call in with questions
   - Improved process for document review and release compared to the H1N1 response.
   - PHIC management was competent and flexible, resulting in smoothness of operations.
   - Rapid translation (within 24 hours) of public messaging into 6 languages
3. Information sharing
   - That OEM facilitated conference calls between PH and other state agencies. These agencies included Department of Environmental Quality (DEQ), Oregon Department of Agricultue (ODA), Oregon State Fire Marshal (OSFM),, Oregon Occupational Safety & Health Division (OSHA), Oregon Department of Fish and Wildlife (ODFW), Oregon Military Department (OMD) and Oregon Department of Energy (ODOE).
   - AOC participated in HHS Region X-facilitated conference calls with ID, WA, AK and CA as well as with Federal Region X agencies (EPA and FDA), helping to ensure a consistency of information and messaging.
   - Briefings of congressional staff (Senator Merkley and Congressman Blumenauer)
   - Briefing of Immigrant and Refugee Community Organization (IRCO) by Subject Matter Experts (SME).
4. Public Health Surveillance & Epidemiology
   - RPS staff showed remarkable initiative, adaptability, and commitment in rapidly

gearing up and maintaining regular, nuclide-specific radiation monitoring in addition to an accelerated monitoring schedule for gross beta activity.

- Close working relationship between RPS and PSET assured that surveillance data to assess potential health threats and environmental hazards were updated regularly and that this information was incorporated into situational awareness reports.
- Internal coordination between RPS and Drinking Water Program [worked well Can we give an example or two to demonstrate what worked well? Maybe, "developed plan for testing of surface water, sea water and tap water samples, then collaborated to ensure that data from this testing and relevant background information to interpret the data were available to decision makers".
- PSET provided timely, useful situational awareness reports
- Participation of Public Health staff in a discussion with Port of Portland and Customs and Border Protection on screening and processing of air passengers arriving at PDX with potential or actual exposure to radiation from the Japan Radiation Event (JRE) incident.
- RPS staff demonstrated full commitment to the response and produced timely, dependable surveillance results on air and precipitation levels of over-all radioactivity and of biological risk associated with specific isotopes

B. What needs improvement?

1. Emergency Operations Coordination:
   - DO notification: The Duty Officer (DO) was notified of the earthquake and tsunami by the Deputy PH Officer at 0300 on 11 March, rather than by OERS (upside down notification)
   - Need to better define process for triggering AOC activation: Lack of defined roles and responsibilities, with uncoordinated messaging and priorities, till the decision was made to implement an ICS structure, effective Wednesday, 16 March and activate the AOC on Monday, 21 March
   - Coordination between IM and PH leadership: There needs to be an on-going discussion with PH leadership on the latitude of the Incident Manager to implement proposed operational activities and delegation of authority.
   - Incident Manager wore three hats: The IM was the Administrator of the program (RPS) that provided subject matter expertise to the event, as well as being the Incident Manager and, on occasion, a media spokesperson. Consideration should be given to assigning an IM whose role is separate from the response efforts
   - Need to educate IMT: There would have been benefit to briefing the IMT at the start of the IMT/AOC activation process on likely radiation issues to be faced
   - Need to drive decisions more quickly on technical issues once there is an understanding of the requirements.
2. Emergency Public Information and Warning:
   - Need to take a "what if" approach to message requirements: Need to anticipate what the public would be concerned with at the beginning of the Incident Management Team effort. Each involved discipline needs to develop message maps that anticipate the range of concerns (rain water, drinking water, ocean water, milk, etc.)

- Clarification of roles: There continues to be a certain amount of uncertainty about the respective roles of PHEP and OHA PIO staff [example?]
- Balance: There is a need to continue to provide objective responses to public concerns without being overly reassuring
- Response to public: SMEs need to be at least somewhat sheltered from having to answer all public inquiries that come in via phone or e-mail.
- SMEs and SHA must meet copy deadlines in order for PHIC staff to format message and process through approval channels. Usual delivery of content was @ 5pm and then PHIC staff went work. Overtime could have been prevented if agreed upon deadlines for content were met.

3. Information Sharing:
   - EPA and FDA did not provide Policy Action Guides (PAGs) and Derived Intervention Levels (DILs) for several weeks, hindering Oregon's ability to provide essential information to the public.
4. Public Health Surveillance & Epidemiology
   - Oregon State Public Health Laboratory Radiation capabilities: That OSPHL could revitalize its MOU with Washington State Public Health Laboratory for radiation testing of biological samples
   - That RPS could explore developing MOUs with Oregon State University and Reed College to expand its radiation laboratory capacity.

Summary: The OPHD response to the Japan Radiation Event presented challenges in determining the level and objectives of the response. An earlier activation of the Incident Management Team and Agency Operations Center would likely have resulted in a more robust, coordinated initial response. Nevertheless, once established, it was determined that the primary purpose of the response was to *focus on risk communication* for the public as well as to monitor radiation levels to ensure situational awareness This was accomplished through consultation with internal and external subject matter experts, accelerated in-house monitoring by RPS staff, and collaboration about messaging with local health departments, health care partners, other state agencies, tribes, and neighboring states and federal agencies.

On-line survey results from LHDs, and sister state agencies give strong support to the statement that this primary objective was accomplished.

SECTION 1: EVENT OVERVIEW

Event Details

Event Name

Japan Radiation Event

Mission: Response

The Oregon State Public Health response to this incident was to *focus primarily on the health and medical informational needs* of the public, public health and medical partners and other state agencies and tribes relating to the radiation release caused by damage to several nuclear reactors from the Tohuku Earthquake and Tsunami of March 10 and 11, 2011

Key Event Actions

Thursday	**March 10**	**Tohuku EQ occurred at 2146 hours Pacific Time (14:46 Japan time/05:46 GMT on March 11)**
Friday	March 11	State Public Health Duty Officer notified of earthquake and tsunami at 0300 hrs [in conflict with 3/17 action summary]
		Initial discussions within Public Health leadership on appropriate level of response
Saturday	March 12	Dr. Mel Kohn (State Public Health Director) releases a statement on the health implications for Oregonians from the radiation release in Japan
Sunday	March 13	First of daily HHS Region X and IX-hosted coordination conference calls with regional state and federal partners
Monday	March 14	Oregon Public Health Division conducted a conference call with Local Health Departments, tribes, healthcare response partners and emergency management agencies
		OPHD posted Frequently Asked Questions (FAQ) and Fact Sheets on radiation and human health for Oregonians
Tuesday	March 15	A 24/7 radiation information line established as well as the capacity for the public to submit questions on line for response within 24 hours.
Wednesday	**March 16**	**Established a Modified Incident Management Team**
		OEM opened Incident 2001-0663 on OpsCenter and hosted first of scheduled state agency coordination calls

Thursday	March 17	OPHD made contact with Office of Multicultural Health and Services to ensure translation and community needs are met.
Monday	**March 21**	**Limited Agency Operations Center activation: (M-F, 0800-1200 hrs, weeks of 21 & 28 March)**
Tuesday	March 22	PIO conference call for PIOs throughout the state
Wednesday	March 23	Demobilization planning initiated
Friday	March 25	IMT rotation completed at 1700
Monday	**April 4**	**AOC placed on standby, meeting from 0900-1000 hrs**
Friday	**April 8**	**AOC demobilization/deactivation complete at 1700 hrs**
Post Demobilization		Web page updates continued from first postings on March 14 to May 16 with a link on the Oregon Health Authority home page, when the link was transferred to the Radiation Protection Services website home page. Of note was the orange bar placed on the OHA web page that took the public directly to the event information. There were 12,055 instances where individuals had bookmarked the website. Radiation Protection Services continues to respond to citizen inquiries throughout May RPS continues working with Drinking Water Program to monitor drinking water samples Public Health PIOs continue to be available for media inquiries throughout May

Overarching Objectives

OA Objective 1: Keep the Oregon public informed of situation and state response

OA Objective 2: Ensure Governor's Office, Oregon Health Authority, Department of Energy, Department of Department of Agriculture, Department of Environmental Quality and the Oregon Public Health Division partners and stakeholders have timely and accurate information relating to the release of radiation from Japan as a result of the earthquake and tsunami

OA Objective 3: Inform OPHD workforce of situation and our response

OA Objective 4: Ensure continuity of Public Health operations

OA Objective 5: Demonstrate stewardship of public resources.

Operational Objectives:

These objectives were consistent throughout the 10 business days of limited and 5 business days of standby activation of the AOC and centered on the following CDC Public Health Preparedness Capabilities:

- Emergency Operations Coordination (Capability #3)
- Emergency Public Information and Warning (Capability #4)
- Information Sharing (Capability #6)
- Public Health Surveillance and Epidemiological Investigation (#13)

Capabilities Discussion:

CDC Capability3: Emergency Operations Coordination

Emergency operations coordination is the ability to direct and support an event[38] or incident[39] with public health or medical implications by establishing a standardized, scalable system of oversight, organization, and supervision consistent with jurisdictional standards and practices and with the National Incident Management System.

F1: Conduct preliminary assessment to determine need for public activation

Task 1: At the time of an incident analyze data and work with partners to determine level of activation

Observation 1: There was an evolution of understanding the benefit/need to activate the AOC. Initial response was for individuals and offices within Public Health to respond without adequate internal coordination. There was, however, coordination with external partners, including Department of Environmental Quality (DEQ) and Oregon Department of Agriculture (ODA) through an Oregon Emergency Management (OEM)-coordinated call and a HHS Region X-coordinated call with regional state partners.

Recommendation: Develop pre-established consultation processes and trigger points for determining the need for AOC activation

Task 2: At the time of an incident determine whether Public Health has the lead, supporting or no role.

Observation: PH role is defined in the State EOP.

Recommendation: That OPHD and Oregon Emergency Management continue close collaboration in determining response roles for a given event.

Task 3: Define incident command for the Public Health event

Observation: OPHD leadership determined that only selected Incident Management Team positions would be filled. This approach took into consideration the limited focus of the Public Health response (mainly radiation monitoring and risk communication with the public) and the need to conserve personnel resources. Positions filled depended on the operational situation. Initial positions included the IM, Deputy IM, Planning Chief, Finance Chief, PIO, Operations chief and Senior Health Advisor (SHA) [NOTE: . Operations Chief and Logistics Chief were initially filled when planning was underway to place two radiation-monitoring devices on the coast. Leadership decided not to deploy these devices and the OPS and LOG chief positions reverted to standby status.]

Recommendation: Continue development and refinement of IMT positions through exercises.

F2: *Activate Public Health Agency Operations Center*

Task 1: Prior to an event or incident, identify incident command and emergency management functions for which Public Health is responsible

Observation: Public Health plans define ESF 8 and Public Health roles in an incident or event response

Recommendation: Define levels of activation in OPHD ESF 8 Plan

Task 2: Prior to an event or incident, identify a pool of staff who have the skills necessary to fulfill required incident command and emergency management roles deemed necessary for a response. The pool should include public health subject matter experts, Incident Commander, Section Chiefs, Command Staff, and support positions (e.g., Informational Technology Specialist).

Observation: This was a limited activation; therefore, PHEP-funded staff served in the bulk of IMT positions.

Recommendation: Continue efforts to have a pool of ICS trained staff to fill requisite positions.

Task 3:Prior to an event or incident, identify staff to serve in the required incident command and emergency management roles for multiple operational periods to ensure continuous staffing during activation.

Observation: There was limited need for additional staffing outside of PHEP-funded positions because of the limited nature of the activation.

Recommendation: Continue efforts to have a pool of ICS trained staff to fill requisite positions.

Task 4: At the time of an event or incident, notify designated incident command staff of public health response.

Observation: PHEP and public health leadership did not designate an Incident Management Team till March 16; nevertheless, the same individuals who had taken the lead in the immediate aftermath of the event (OEPH Administrator, Radiation Protection Service and departmental PIOs, were already engaged in the response and moved into formal IMT positions on activation.

Recommendation: That notification of assignment to an IMT be accomplished as soon as a decision to activate has been made.

F4: *Manage and sustain the public health response*

Task 1: Coordinate public health and medical emergency management operations for the public health response (e.g., phone calls, meetings, and conference calls).

***Observation*:** The IMT coordinated and scheduled meetings and conferences with state and local partners, initiated and maintained FAQs and situational updates on appropriate websites and opened a 24/7 hotline for the public. Most state and local partners provided a link to the OHA website on their home pages.

Recommendation: Results from the on-line survey evaluation of response activities suggest a high degree of effectiveness in accomplishing this task

Task 3: Maintain situational awareness using information gathered from medical, public health, and other health stakeholders (e.g., fusion centers).

Observation 1: The IMT was in frequent and regularly scheduled conversation with OPHD RPS and Environmental Health SMEs, DOE, EPA, Region X and other state

and federal agencies. The IMT also published updated Sit Stats on a daily basis while in activation.

Recommendation: None

Observation 2: There was concern on the part of the IMT and leadership on the lack of responsiveness and timely information by several federal agencies

Recommendation: Convey concerns about federal responsiveness through HHS Region X.

Task 4*:* Conduct shift change briefings between outgoing and incoming public health staff to communicate priorities, status of tasks, and safety guidance.

Observation: One shift change was held on March 25 during which a hot wash was conducted. Priorities and ongoing tasks and objectives were addressed.

Recommendation*:* None

F5: *Demobilize and evaluate PH emergency operations*

Task1: Return resources to a normal state of operations

Observation: The AOC was demobilized according to steps outlined in the DEMOB plan with operational and policy decisions reverting to individual program managers.

Recommendation: Develop and/or refine incident-specific triggers for DEMOB

Task 2: Develop final incident close out of PH operations

Observation: Formal "hot washes" were conducted on several occasions, to include separate debriefings with the IMT personnel (all invited), Incident Manager, RPS staff and Public Health Information Center (PHIC) staff.

Recommendation: None

Task 3: Produce AAR

Observation: PH held a hot wash at Incident Management Team changeover and three (3) subsequent hot washes with participating parties. Additionally there were separate hot washes with the Radiation Protection Services (RPS) team and Public Information Officer (PIO) staff. A 10-question on-line survey was developed and posted on Survey Monkey, producing 55 responses from a total of 27 county Local Health Departments plus 8 city and county Emergency Management agencies. Two (2) PHEP staff were assigned to develop the AAR.

Recommendation: That the individual designated to develop the AAR be appointed coincident with the IMT/AOC activation.

Task 4: Implement Capabilities Improvement Plan

Observation: Improvement plan includes improvements observed since H1N1 and will be implemented according to guidance provided by leadership.

Recommendation: Monitor the progress on the CIP

CDC Capability4: Emergency Public Information and Warning

Emergency public information and warning is the ability to develop, coordinate, and disseminate information, alerts, warnings, and notifications to the public and incident management responders.

F1*: Activate the emergency public information system*

Task 1: Prior to an incident, identify PIO, support staff and potential spokesperson to convey information to public

Observation 1: We have identified a PIO and PHIC staff from an operational point of view but have not formalized the position/person in plans.

Recommendation: Develop plans with specific OHA staff by title to staff the PHIC

Observation 2: We have not identified spokes people prior to actual response. NOTE: OPHD routinely uses SMEs rather than professionally trained spokespeople;

Recommendation: OPHD programs need to identify at least two or more SMEs in each program prior to events and require their participation in exercises and drills.

Observation 3: Lack of bench depth in the PHIC staffing poses a potential long-term problem.

Recommendation: OPHD programs pre-identify PHIC staff and allow them to participate in training, exercising and drills.

*Observation 4:*The multiplicity of software programs used by the three (3) programs accessing Room 450 create ongoing operational issues; specifically, functionality of hard drives, satellite programming for TVs is not updated regularly, phones need to have passwords reprogrammed, etc.

Recommendation: That each program commits an IT staff person to monthly maintenance and software updates to maintain the room in a state of readiness.

Task 2: Prior to an incident, identify a primary and alternate physical and/or virtual structure that will be used to support alerting and public information operations.

Observation: PHEP was the designated lead for the JRE; and, as PH was the primary agency providing information on the event, therefore stood up a Public health Information Center rather than a JIC.

Observation 2: The primary location of the PHIC is in Room 450 of the PSOB. Given other circumstances, there are two Alternate AOC locations that could be utilized as necessary. The problem with these alternate locations is that the concept of using them as alternate PHICs has not been formalized in plans or tested.

Recommendation: Alternate PHIC locations and utilization need to be formalized in plans and tested

Task 3: Prior to the incident, ensure identified personnel are trained in the functions they may be asked to fulfill.

Observation: OHA public affairs staff has not yet completed mandatory ICS training. PHEP staff is compliant with ICS 100, 200, 300, 400, 700 and 800 training

Recommendation: OHA Public Affairs staff completes ICS 100 and 200

Task 4: At the time of the incident, notify PIO, support staff and potential spokesperson(s) and Subject Matter Experts (SME), if applicable to the incident, of the need to either be on-call or to report for duty as necessary within a time frame appropriate for the incident.

Observation: PIO staff was notified of the earthquake and tsunami by HAN alert on Friday 11 March at 0630 that PHEP staff were monitoring the event with the intent that PIO and other staff would be further notified as necessary.

Recommendation: None

Task 5: At the time of an incident, assemble PIO staff at the appropriate location, brief on the incident and assign duties.

Observation: PIO staff participated in initial conference calls with HHS Region X on Saturday 12 March and Sunday 13 March during which staff was briefed and possible assignments were discussed.

Recommendation: None

Task 6: Assist local public health systems in implementing emergency communications abilities.

Observation 1: Monday, 14 March: Oregon Public Health Division conducted a conference call with Local Health Departments, tribes, healthcare response partners and emergency management agencies

Observation 2*:* Monday 14 March: Launched a web site dedicated to information relating to the JRE that was accessed through a prominent banner link at the top of the OHA home page. Included in this location were FAQs and daily updates.

Observation 3: Conducted a PIO conference call to inform LHD and other organizational PIOs of latest information on the JRE.

Recommendation: Continue to have a proactive and transparent approach in keeping all relevant partners informed of public health issues relating to an emergency response.

F2: *Determine the need for a joint public information system*

Task 2: Identify a health department representative to participate in the jurisdiction's EOC to ensure public health messaging capacity is represented if a JIC or VJIC is not applicable to the incident.

Observation: OEM served as the lead for the tsunami response while PH was the agreed upon lead for the radiation-related response. OEM further established conference calls between PH and other state agencies (DEQ, DAG, OSFM, OSHA, ODFW, OMD and ODOE) to be sure that these other agencies were being kept abreast of PH's response and messaging for the event.

Recommendation: That this level of cooperation between OEM and PH continue.

Task 3: Assign tasks to support staff to support message coordination and public information through three principal functions: Research, Media Operations and Administration, as applicable to the incident.

Observation: Media Operations: There were daily contacts with print, broadcast and radio representatives, coordinated through the PIO, and talking points were updated regularly.

Observation 2: Research: PHIC research focused on monitoring various media outlets.

Observation 3: Administration: There was a noticeable improvement in the PHIC administration since H1N1 response. Specifically in technological functionality, and in coordination internal to the PHIC and externally to partners.

Recommendation: Review and refine approval process for press releases/media talking points to ensure that they are vetted both completely and in a timely, efficient fashion. [Research best practices and lessons learned to implement effective use of social media.

F3: Establish and participate in information-system operations

Task 1: Develop, recommend and execute approved public information plans and strategies on behalf of the Incident Command or Unified Command structure.

Observation: [There is no clearly defined crisis communications strategy promulgated by OHA, resulting in an *ad hoc* approach to public information planning, including the need to "reinvent the wheel" for each incident.

Recommendation: [Working through OHA seek clear guidelines around public information plans and strategies concerning crisis communications. See above.]

Task 2:Based on jurisdictional structure, provide a single release point of information for health and healthcare issues through a pre-identified spokesperson in coordination with the JIC.

Observation: All JRE-related communications were released through the OPHD PIO

Recommendation: Continue with existing practices.

Task 3: Facilitate rumor control for media outlets for the jurisdiction such as television, internet, radio and newspapers.

Observation: This function is accomplished through the media monitoring function in the PHIC, coupled with review and refinement of talking points and incorporation of pertinent information into press releases and media contacts.

Recommendation*:* Continue existing practice

F4: *Establish avenues for public interaction and information exchange*

Task 1: Establish mechanisms (e.g., call center, Oregon Poison Center, and non-emergency line such as 211 or 311) for public and media inquiries that can be scalable to meet the needs of the incident.

Observation: Established a 24/7 message line through the existing environmental health messaging system with the option of live contact with a radiation subject matter expert during business hours if a caller had further questions.

Recommendation: Establish contingency contracts for scalable call centers for public inquiries that will meet the needs of any incident. Evaluate strategies that might decrease the overall work burden on subject matter experts associated with live response to incoming calls from the public.

Task 2: Post incident-related information on health department website as a means of informing and connecting with the public.

Observation: Updated website provided incident-related information that was linked to a variety of agencies and partners and available to the general public.

Recommendations: Develop a long-term strategy for website construction and activation that takes into consideration [archival site management.

Task 3: Utilize social media (e.g., Twitter and Facebook) when and if possible for public health messaging and notification of emergencies/events

*Observation*1*:* The response team utilized OHA social media (Facebook and Twitter);

Recommendation: Develop a clearly defined social media strategy, with specified outcomes, as part of the overall crisis communications strategy. Build in metrics to assess effectiveness and user demographics.

F5: *Issue public information, alerts, warnings, and notifications*

Task2: Disseminate information to the public using pre-established message maps in languages and formats that take into account jurisdiction demographics, at-risk populations, economic disadvantages, limited language proficiency, and cultural or geographical isolation.

*Observation*1: Documents were translated into 6 languages based on recommendations by the OHA Office of Multicultural Health and Services. Speed of translation decreased from a 6-month lag time during H1N1 to a 24-hour turnaround.

*Observation*2: In collaboration with the OHA Office of Multicultural Health and Services, OHA SMA conducted specific briefing for Immigrant and Refugee Coalition Organization (IRCO) outreach staff on radiation status and risks ; provided copies of low-literacy FAQs in 6 languages for distribution by IRCO staff.

Recommendation: Explore distribution channels through community organizations and identification of community leaders for public information during emergencies utilizing existing advisory council

Task3: Transmit health-related messaging information to responder organizations through secure messaging platforms.

Observation: The Health Alert Network (HAN) was used to share event-specific information with LHDs, tribes, hospitals, state and federal partners. The HAN alerting system was first utilized in support of this event to warn coastal health partners of the risk of tsunami. It was subsequently used to provide partners access to/and disseminate IAPs, SitStats and notices of upcoming press conferences

Recommendation: Continue assisting local health partners in their use of the HAN system.

Observation: [The IMT utilized the Oregon Hospital Capacity (HOSCAP) website to provide situational awareness of state health response during the JRE. This was in addition to HAN messaging and was employed to provide information to partners who have historically not been engaged fully in use of the HAN system.

Recommendation: Continue to leverage both HAN and HOSCAP to provide information and situational awareness.

CDC Capability6: Information Sharing

Information sharing is the ability to conduct multijurisdictional, multidisciplinary exchange of health-related information and situational awareness data among federal, state, local, territorial, and tribal levels of government, and the private sector. This capability includes the routine sharing of information as well as issuing of public health alerts to federal, state, local, territorial, and tribal levels of government and the private sector in preparation for, and in response to, events or incidents of public health significance.

F1*: Identify stakeholders to be incorporated into information flow*

Task 1:Prior to and as necessary during an incident, identify intra-jurisdictional stakeholders across public health, public safety, private sector, law enforcement, and other disciplines to determine information-sharing needs.

Observation 1**:** Extensive pre-event coordination has resulted in identification of appropriate response partners in LHDs, Tribes, OEM, DOA, DEQ, Military Dept, ODOT, OSP State Fire Marshal, Fish and Wildlife, and other state agencies, as well as the healthcare community (hospitals). Each of these stakeholders has been incorporated in the HAN alerting system.

Recommendation: [Review plans to ensure that intra-jurisdictional stakeholders are pre-defined in plans according to their ESF roles

Observation 2**:** There were coordinated and scheduled conference calls with intra-jurisdictional stakeholders on a scheduled and ad hoc basis (see Key Event Timeline above)

Recommendation: Continue coordinated information exchange with partners.

Observation 3*:* CDC and HPP liaisons are tasked with ensuring that all stakeholder organizations are maintaining current contact information in the Health Alert Network.

Recommendation: Metrics must be created to audit and track local stakeholder presence and participation to serve as a tool for areas of improvement.

Observation 4: Experience during the JRE suggests that there is need for on-going training of stakeholders in proper use of HAN.

Recommendation: Metrics must be created to audit and track local stakeholder presence and participation to serve as a tool for areas of improvement.

Task 2: Prior to and as necessary during an incident, identify inter-jurisdictional public health stakeholders to determine information sharing needs.

Observation: PHEP maintains current contact Public Health Preparedness information in the Duty Officer book for WA, ID and AK (HHS Region X), CA (HHS Region IX), Region X Federal partners (HHS, FEMA, EPA, DOE, USDA, CDC). Other OPHD on-call staff also maintains contact information for agencies relevant to their subject areas at the federal level and in other states.

Recommendation: Continue to maintain and update contact information.

Task 3: Prior to and as necessary during an incident, work with elected officials, identified stakeholders (both inter- and intra-jurisdictional) and private sector leadership to promote and ensure continual connection (e.g., ongoing standing meetings, webinars, and teleconferences) and use continuous quality improvement process to define and redefine information-sharing needs.

*Observation***:** OPHD leadership assured current information was provided to Dr Goldberg's and Governor Kitzhaber's offices and that their advice was sought as necessary. Senator Merkley's and Representative Blumenauer's office staff received briefings on the status of Oregon's PH response to the JRE.

Recommendation: Continue to be pro-active in keeping OHA leadership, Governor's office and Congressional delegation abreast of significant event-related matters

F2: *Identify and develop rules and data elements for sharing*

Task 2: Prior to and as necessary during an incident, identify routine or incident-specific data requirements for each stakeholder

*Observation*1**:** 96.3% of individuals who answered the following question answered yes:"Overall, did you feel you had the information you needed in order to communicate effectively with your constituents?"

*Observation*2**:** Public Health needs to strategize and develop canned messages, FAQs and fact sheets for the most likely public health-related events. Of additional concern is that our federal partners had difficulty sharing information about PAGs and DILs in a timely fashion (see CDC Capability #13 below)

Recommendation: That (1) Public Health assemble a subject matter expert working group to determine most likely canned messages, FAQs and fact sheets needed and subsequently develop and post these documents on HAN (2) Public Health PIO draft standard message templates for the most likely hazards.

Task 3: Prior to and as necessary during an incident, identify public health events and incidents that, when observed, will necessitate information exchange.

*Observation*1*:* There is an established notification tree for Oregon Emergency Response System notification of events of public health significance

Observation 2: The Public Health Duty Officer is provided a decision tree on which programs to contact for a given public health-related event. Management in these programs helps inform the need to provide public information.

*Observation*3: Public Health leadership and the Incident Management Team quickly determined that information sharing was critical to the Japan Radiation Event response as evidenced by the overarching objectives.

Recommendation: Continue preparation of informational and risk communication for events that can be anticipated, and refine capacity to analyze available information and produce timely, accurate just-in-time materials as events unfold..

CDC Capability13: Public Health Surveillance and Epidemiological Investigation

Public health surveillance and epidemiological investigation is the ability to create, maintain, support, and strengthen routine surveillance and detection systems and epidemiological investigation processes, as well as to expand these systems and processes in response to incidents of public health significance.

F1: *Conduct public health surveillance and detection*

Task 1: Engage and retain stakeholders, which are defined by the jurisdiction, who can provide health data to support routine surveillance, including daily activities outside of an incident, and to support response to an identified public health threat or incident.

*Observation*1: RPS staff showed remarkable initiative, adaptability, and commitment in rapidly gearing up and maintaining regular, nuclide-specific radiation monitoring in addition to an accelerated monitoring schedule for gross beta activity. PSET served as support in the communications effort to interpret the PH significance of positive radiation sample results in air and precipitation and developed situational awareness reports. Other samples that were collected included source water, tap water, coastal sea water and milk, all of which were below minimum detection levels. OEPH staff (RPS and Drinking Water) collected all samples except milk, which were collected by EPA. RPS in-house laboratory staff performed the analysis of all samples except for milk. A portion of the air and precipitation samples was split with the EPA. EPA normally conducts air sampling at two Oregon locations on a monthly basis. Milk testing is done on a quarterly basis, again by the EPA. However, during this response, the Oregon RPS lab conducted air and precipitation 2x/week and tap water from the Portland region weekly. On a one-time basis the RPS lab processed tap water samples from numerous sites that rely on surface source water. [Given that the results were negative (at about week 3) it was determined that further tap water and source water sampling was not needed. RPS also analyzed coastal seawater samples from 3 different sites with negative results. Check this. I believe supplemental testing of tap water samples from other communities was done later in the response.]

Recommendation:1. Maintain the strong working collaboration between RPS, PSET, and the Drinking Water Program.

2. Maintain **Regional** communications and interaction (state & feds via teleconferences) as a means of coordinating messaging and situational awareness among western states and regional federal counterparts.

3. It would be helpful if federal agencies could be more proactive in providing PAGS[3] and DILs[4] for use in risk communication.

[3] PAG: Protective Action Guides: An EPA predetermined projected dose level at which specified actions should be taken to protect the public from exposure to radiation …

[4] DILs: Derived Intervention Level: The FDA has adopted DILs to help determine whether domestic food in interstate commerce or food offered for import into the United States presents a safety concern based on

Observation 2: Problem: It took 3-4 weeks to get permission to access or discuss the comparison numbers (Protective Action Guides [PAG]) or Derived Intervention Levels (DIL) corresponding levels from federal agencies (EPA, FDA and CDC). This was particularly problematic because of media and public concern.

Task 2: Conduct routine and incident-specific morbidity and mortality surveillance as indicated by the situation (e.g., complications of chronic disease, injury, or pregnancy) using inputs such as reportable disease surveillance, vital statistics, syndromic surveillance, hospital discharge abstracts, population-based surveys, disease registries, and active case-finding.

Observation: Not an issue for the JRE response since levels never approached levels of PH or clinical concern

Recommendation: N/A

Task 3: Provide statistical data and reports to public health and other applicable jurisdictional leadership in order to identify potential populations at-risk for adverse health outcomes during a natural or man-made threat or incident.

Observation: N/A-see above

Recommendation: N/A-see above

Task 4: Maintain surveillance systems that can identify health problems, threats, and environmental hazards and receive and respond to (or investigate) reports 24/7.

Observation: Close working relationship between RPS, PSET, and the Drinking Water Program insured that surveillance for health threats and environmental hazards were up to date

Recommendation: Relationship between RPS,PSET, and DWP should continue to be fostered.

F2: *Conduct public health and epidemiological investigations*

Task 1: Conduct investigations of disease, injury or exposure in response to natural or man-made threats or incidents and ensure coordination of investigation with jurisdictional partner agencies. Partners include law enforcement, environmental health practitioners, public health nurses, maternal and child health, and other regulatory agencies if illegal activity is suspected.

Observation: PSET assessed data and, in collaboration with RPS and federal partners, determined that the PH threat from the radiation release was minimal.

Recommendation: Continue to review and interpret pertinent data generated by a given event.

Task 2: Provide epidemiological and environmental public health consultation, technical assistance, and information to local health departments regarding disease, injury, or exposure and methods of surveillance, investigation, and response.

Observation: PSET, through the IMT, provided daily information updates to LHDs and tribes through Sit Stats and targeted teleconferences

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the radionuclide activity concentration.

Recommendation: Continue to provide up-to-date information to LHDs, tribes, and other partners as the event warrants

Task 3: Report investigation results to jurisdictional and federal partners, as appropriate. *(For additional or supporting detail, see Capability 6: Information Sharing)*

Observation: SITSTATS were posted on HAN and OpsCenter. Oregon Emergency Management (OEM) coordinated conference calls with sister state agencies. HHS Region X initially coordinated calls between regional federal and state partners. These calls were subsequently coordinated by Federal agencies at the national HQ level .

Recommendation: That state and regional calls be continued in the same manner for future events. National-level calls were deemed to be too broad in scope and of less utility than the regionally led and focused calls.

F3: *Recommend, monitor, and analyze mitigation actions*

Task 1: Determine public health mitigation, including clinical and epidemiological management and actions to be recommended for the mitigation of the threat or incident based upon data collected in the investigation and on applicable science-based standards outlined by *Morbidity and Mortality Weekly Report*, control of Communicable Diseases Manual, Red Book of Infectious Diseases or, as available, a state or CDC incident annex

Observation: It took 3-4 weeks to be able to receive appropriate federal radiation protective action guideline information in order to confirm the validity of state-level mitigation recommendations.

Recommendation: Federal agencies need to be more immediately proactive in providingcurrent PAGS and DILs

Task 2: Provide information to public health officials to support them in decision making related to mitigation actions.

Observation: Daily SitStat plus SME interpretation of data were provided. Monitoring results demonstrated that mitigation activities to avoid radiation effects were not indicated.

Recommendations: Maintain monitoring capability

Task 4*:* Recommend additional mitigation activities, based upon mitigation monitoring and analysis, throughout the duration of the incident, as appropriate

Observation: Sampling of air, water, milk and other sources continued throughout the event, and did not indicate the need for any mitigation activities.

Recommendation*:*N/A.

F4: Improve PH surveillance and epidemiological investigation systems.

Task 1: Identify issues & outcomes during and after the incident

Observation: The Incident Management Team, in conjunction with SMEs and sister agencies and regional partners, identified issues and proposed messaging and appropriate actions throughout the event

Recommendation: Maintain and enhance these collaborative efforts**.**

Task2: Conduct post-incident agency evaluation meetings to identify internal protocols and deficiencies that require corrective actions…

Observation: A series of Hot Washes was held with Incident Management Team members, both as a group and individually, to identify strengths and weaknesses in the PH Japan Radiation Event response

Recommendation: Accomplished

Task 3: Develop an After Action Report

Observation: PH held a hot wash at Incident Management Team changeover and three (3) subsequent hot washes with participating parties. Additionally there were separate hot washes with the Radiation Protection Services (RPS) team and Public Information Officer (PIO) staff. A 10-question survey was developed and posted on Survey Monkey, generating 55 responses from a total of 27 county Local Health Departments plus 8 city and county Emergency Management agencies. Two (2) PHEP staff were assigned to develop the AAR.

Recommendation:The individual designated to write the AAR should be appointed coincident with the standing up of the Incident Management Team and/or activation of the Agency Operations Center.

Task 4: Communicate recommended AAR Capabilities Improvement Plan corrective actions to PH leadership

Observation: The draft AAR, including recommended corrective actions, will be reviewed by PH staff, finalized, and forwarded to PH leadership.

Recommendation: That the review process be finalized and corrective actions be implemented.

SECTION 4: CONCLUSION

The Oregon response to the Japan Radiation Event was a real-time response triggered by the Tohuku Earthquake and Tsunami of March 11, 2011. Damage caused by the tsunami to the Oregon coast did not necessitate a state Public Health response. Rather, state PH focused primarily on the health and medical informational needs of the public, public health and medical partners and other state agencies and tribes.

OPHD initially responded in an *ad hoc* manner. It was subsequently determined that a more effective approach would be to establish an Incident Management Team and activate the Agency Operations Center, which were accomplished on 16 March and 21 March respectively.

Agency Operations Center and Public Health Information Center operations worked well, with enhanced cooperation demonstrated in message development and interaction with the media. Use of HAN, links on the OHA website to FAQs and statistical data, rapid translation of messages into 6 languages, teleconferences with LHDs, tribes, PIOs and Region X Federal and state partners and Oregon Emergency Management facilitated calls with sister state agencies resulted in consistent information being provided. The major deficiency in the process was the lack of clarity and responsiveness from the national headquarters of federal agencies (EPA, FDA).

Though circumstantial (LHDs and other state partners were surveyed, not the general public) SurveyMonkey results suggest that the state's Japan Radiation Event responsive was effective in providing the necessary information to both inform and calm the public's concerns.

APPENDIX A: CAPABILITIES IMPROVEMENT PLAN (CIP)

This CIP has been developed specifically for the OPHD as a result of the Japan Radiation Event response conducted from 11 M arch-8 April 2011.These recommendations draw on both the After-Action Report and several hot washes conducted both in group and individual settings.

Please incorporate changes above into the matrix below, as appropriate.

Table 1A

CDC Capability #3: Emergency Operations Coordination							
Function	Task	Observation	Recommendation	Reference H1N1 AAR Corrective Action Description	Corrective Action	Responsible	Assignment Date / Completion Date
1: *Conduct preliminary assessment to determine need for public activation*	1: At the time of an incident analyze data and work with partners to determine level of activation	There was an evolution of understanding the benefit/need to activate the AOC.	In plans, have pre-established consultation processes and trigger points for determining the need for AOC activation				
2: *Activate Public Health Agency Operations Center*	2. Prior to an event or incident, identify a pool of staff who have the skills necessary to fulfill required incident command and emergency management roles deemed necessary for a response	This was a limited activation; therefore, PHEP funded staff served in the bulk of IMT positions	Maintain a pool of ICS trained staff to fill requisite positions.				
	3. Prior to an event or incident, identify staff to serve in the required incident command and emergency management roles for multiple operational periods to ensure continuous staffing during activation	There was limited need for additional staffing outside of PHEP-funded positions because of the limited nature of the activation.	Continue efforts to have a pool of ICS trained staff to fill requisite positions.				
4. Manage and sustain the public health response	3. Maintain situational awareness using information gathered from medical, public health, and other healthstakeholders	There was concern on the part of the IMT and leadership on the lack of responsiveness and timely information by several federal agencies	Convey concerns about federal responsiveness through HHS Region X.				

Table 2A

CDC Capability #4: Emergency Public Information and Warning							
Function	Task	Observation	Recommendation	Reference H1N1 AAR Corrective Action Description	Corrective Action	Responsible	Assignment Date / Completion Date
1. *Activate the emergency public information system*	1. Prior to an incident, identify PIO, support staff and potential spokesperson to convey information to public	1. We have identified a PIO and PHIC staff from an operational point of view but have not formalized the position/person in plans	Develop plans with specific OHA staff by title to staff the PHIC				
		2. We have not identified spokes people prior to actual response. NOTE: OPHD routinely uses SMEs rather than professionally trained spokespeople	OPHD programs need to identify at least two or more SMEs / program prior to events and require participation in exercises and drills.				
		3. Lack of bench depth in the PHIC staffing poses a potential long term problem.	That OPHD programs pre-identify PHIC staff and allow them to participate in training, exercising and drills.				
		4. The multiplicity of software programs used by the three (3) programs accessing Room 450 create ongoing operational issues; specifically, functionality of hard drives, satellite programming for TVs is not updated regularly, phones need passwords reprogrammed, etc.	TBD				

CDC Capability #4: Emergency Public Information and Warning-continued							
Function	Task	Observation	Recommendation	Reference H1N1 AAR Corrective Action Description	Corrective Action	Responsible	Assignment Date / Completion Date
1. *Activate the emergency public information system*	2. Prior to an incident, identify a primary and alternate physical and/or virtual structure that will be used to support alerting and public information operations.	2. The primary location of the PHIC is in Room 450 of the PSOB. Given other circumstances, there are two (2) Alternate AOC locations that could be utilized as necessary. The problem with these alternate locations is that the concept of using them as alternate PHICs has not been formalized in plans or tested.	Alternate PHIC locations and utilization needs to be formalized in plans and tested				
	3. Prior to the incident, ensure identified personnel are trained in the functions they may be asked to fulfill.	OHA public affairs staff has not yet completed mandatory ICS training. PHEP staff is compliant with ICS 100, 200, 300, 400, 700 and 800 training	OHA Public Affairs staff complete ICS 100, 200, 700 800				
2. *Determine the need for a joint public information system*	3. Assign tasks to support staff to support message coordination and public information through three principal functions: Research, Media Operations and Administration, as applicable to the incident.	3. There was a noticeable improvement in the PHIC administration since H1N1 response. Specifically, technology functionality, coordination internal to the PHIC and externally to partners.	Research best practices and lessons learned to implement effective use of social media				

CDC Capability #4: Emergency Public Information and Warning-continued							
Function	Task	Observation	Recommendation	Reference H1N1 AAR Corrective Action Description	Corrective Action	Responsible	Assignment Date / Completion Date
3. Establish and participate in information system operations	1. Develop, recommend and execute approved public information plans and strategies on behalf of the Incident Command or Unified Command structure.	1. There is no clearly defined crisis communications strategy promulgated by DHS/OHA, resulting in an ad hoc approach to public information planning, including the need to "reinvent the wheel" for each incident	Working through DHS/OHA seek clear guidelines around public information plans and strategies concerning crisis communications				
4. *Establish avenues for public interaction and information exchange*	3. Utilize social media (e.g., Twitter and Facebook) when and if possible for public health messaging.	1. Attempts were made at utilizing OHA social media (Facebook and Twitter) with unclear results of impact.	Develop a clearly defined social media strategy, with specified outcomes, as part of the overall crisis communications strategy.				
5. *Issue public information, alerts, warnings, and notifications*	1. Prior to the incident, comply with established jurisdictional legal guidelines to avoid communication of information that is protected for national security or law enforcement reasons or that may infringe on individual and entity rights.	1. JRE did not involve the communication of information that was protected for national security, law enforcement or that did infringe on individual and entity rights	Provide training on disclosure requirements as needed.				
	2. Disseminate information to the public using pre-established message maps in languages and formats that take into account jurisdiction demographics, at-risk populations, economic disadvantages, limited language proficiency, and	1. Documents were translated into 6 languages based on recommendations by the OHA Office of Multicultural Health. Speed of translation decreased from a 6 month lag time during H1N1 to a 24 hour turnaround.	Explore distribution channels through community organizations for public information during emergencies utilizing existing advisory council				

CDC Capability #4: Emergency Public Information and Warning-continued							
Function	Task	Observation	Recommendation	Reference H1N1 AAR Corrective Action Description	Corrective Action	Responsible	Assignment Date / Completion Date
	cultural or geographical isolation.	2. Specific briefing for Immigrant and Refugee Coalition Organization (IRCO) staff on radiation dangers by OHA SME (Dr Leman) and provided copies of the translations in 6 languages.					

Table 3-A

CDC Capability #6: Information Sharing							
Function	Task	Observation	Recommendation	Reference H1N1 AAR Corrective Action Description	Corrective Action	Responsible	Assignment Date / Completion Date
1. *Identify stakeholders to be incorporated into information flow*	1. Prior to and as necessary during an incident, identify intra-jurisdictional stakeholders across public health, public safety, private sector, law enforcement, and other disciplines to determine information-sharing needs.	1. Extensive pre-event coordination has resulted in identification of appropriate response partners in LHDs, Tribes, OEM, DOA, DEQ, Military Dept, ODOT, OSP State Fire Marshall, Fish and Wildlife, and other state agencies, as well as the healthcare community (hospitals). Each of these stakeholders has been incorporated in the HAN alerting system.	Review plans to ensure that intra-jurisdictional stakeholders are pre-defined in plans according to their ESF roles				

CDC Capability #6: Information Sharing-continued							
Function	Task	Observation	Recommendation	Reference H1N1 AAR Corrective Action Description	Corrective Action	Responsible	Assignment Date / Completion Date
1-cont.. *Identify stakeholders to be incorporated into information flow*	1. –cont. Prior to and as necessary during an incident, identify intra-jurisdictional stakeholders across public health, public safety, private sector, law enforcement, and other disciplines to determine information-sharing needs.	3. CDC and HPP liaisons are tasked in ensuring that all stakeholder organizations are maintaining current contact information in the Health Alert Network.	Develop procedure to audit and track local stakeholder presence and participation to serve as a tool for areas of improvement.				
		4. Experience during the JRE suggests that there is need for further training of stakeholders in proper use of HAN.	Metrics must be created to audit and track local stakeholder presence and participation to serve as a tool for areas of improvement.				
2. *Identify and develop rules and data elements for sharing*	2. Prior to and as necessary during an incident, identify routine or incident-specific data requirements for each stakeholder	2. Public Health needs to strategize and develop canned messages, FAQs and fact sheets for the most likely Public Health related events. Of additional concern is that our federal partners were lacking in PAGs and DILs (see CDC Capability #13 below)	1. That Public Health assemble a Subject Matter Experts working group to develop canned messages, FAQs and fact sheets 2. Public Health PIO draft standard message templates for the most likely hazards.				

Table 4-A

CDC Capability #13: Public Health Surveillance and Epidemiological Investigation							
Function	Task	Observation	Recommendation	Reference H1N1 AAR Corrective Action Description	Corrective Action	Responsible	Assignment Date / Completion Date
1. *Conduct public health surveillance and detection*	1. Engage and retain stakeholders, which are defined by the jurisdiction, who can provide health data to support routine surveillance, including daily activities outside of an incident, and to support response to an identified public health threat or incident.	4. It took 3-4 weeks to get permission to access or discuss the comparison numbers (Policy Action Guides [PAG]) or Derived Intervention Levels (DIL) corresponding levels from federal agencies (EPA, FDA and CDC). This was particularly problematic because of media and public concern	Work with HHS Region X in getting our federal partners to provide clinical decision making tools on a timelier basis.				
3. *Recommend, monitor, and analyze mitigation actions*	1. Determine public health mitigation, including clinical and epidemiological management and actions to be recommended for the mitigation of the threat or incident based upon data collected in the investigation and on applicable science-based standards outlined by *Morbidity and Mortality Weekly Report*, control of Communicable Diseases Manual, Red Book of Infectious Diseases or, as available, a state or CDC incident annex	1. It took 3-4 weeks to be able to receive appropriate federal action guideline levels in order to confirm or assure the accuracy of state level mitigation recommendations.	Federal agencies need to be more immediately proactive in providing for clinical decision levels and PAGS/DILs				

CDC Capability #13: Public Health Surveillance and Epidemiological Investigation-continued							
Function	Task	Observation	Recommendation	Reference H1N1 AAR Corrective Action Description	Corrective Action	Responsible	Assignment Date / Completion Date
4. *Improve PH surveillance and epidemiological investigation systems.*	4. Communicate recommended AAR Capabilities Improvement Plan corrective actions to PH leadership	The draft AAR, including recommended corrective actions, will be reviewed by PH staff, finalized, and forwarded to PH leadership.	That the review process be finalized and corrective actions be implemented.				

APPENDIX B

PROGRESS ON H1N1 CORRECTIVE ACTIONS AS DEMONSTRATED DURING THE JAPAN RADIATION EVENT

Observed Improvements since H1N1 (Comments from Survey Monkey and hotwashes):

The Observations below were cited in the H1N1 AAR as needing improvement. The text in red contains observations from the Japan Radiation Event hot washes capturing these improvements.

Observation 1.3 (Area for Improvement):Health Alert Network (HAN) system had varying degrees of success.

Observation (Strength):I thought this event was the best with regards to communication.
Observation (Strength):HAN was good source of communication.
Observation (Strength):Health Alert Notifications.
Observation (Strength):Use of HAN.

Observation 1.4 (Area for Improvement): LHDs established hotlines before the State hotlines were functioning.

Observation (Strength): Information Line - Up and running fairly quickly with good information, especially the addition of staff phone numbers should a citizen wish to speak to someone in person. We referred to the Info line on our local website. Well done.
Observation (Strength): Establishing a website and hotline; providing clear talking points.
Observation (Strength): Japan Radiation Webpage - It was up very quickly with easy to navigate information. It was updated frequently with resources and current information. On our LHD website, we referred residents to the state website as it was the most useful tool available. Excellent work.

Observation 1.5 (Area of Improvement): The process for development and approval of new policies and

guidance in the AOC was delayed.

Observation (Strength): Refined doc approval process-captured deviations, quicker, reduced duplication

Observation (Strength): Doc controller system went smoother—better than H1N1, knew process, hover technique, more clarity

Observation (Strength): approval cover sheet on red paper

We still had issues here, specifically with confusion in the approval process for press releases, FAQs and fact sheets. Do we want to mention areas here where we still recognize areas (albeit smaller) of improvement?

Observation 2.1 (Area for Improvement): There was a lack of communication and coordination between State Public Health Division's Incident Management Team (IMT) and Department of Human Services (DHS) / Seniors and People with Disabilities (SPD).

Observation (Strength): Did well on keeping their partners updated.

Observation (Strength): Information Coordination. While the 'event' had minimal consequences in USA, it was 'real-time' practice for involving essential agencies in the conversation. This is needed, and I think we learned (more) from it.

Observation (Strength): Communicate with each other for a unified response.

Observation (Strength): Organizing regular debriefs via phone. This also gave us a way to anticipate what was coming next. Also guiding us in pushing out a consistent message across the state was done very well.

Observation (Strength): All concerned handled this event very well and were an invaluable resource to us. Thanks!

Observation (Strength): I am pleased to see OEM provide more leadership in providing situational awareness among state agencies. Unless I'm mistaken this is the first time OEM has used coordination calls among state agencies to share information and discuss issues. I think OEM and state agencies are on the right track with using such tools and processes.

Observation 2.1 (Area for Improvement): The State JIC faced challenges in organizational structure and leadership.

Observation (Strength): More organized, increased smoothness of operations
Observation (Strength): Job action sheets, RPI findings—revision of org chart, H1N1 lessons learned
Observation (Strength):Standing up PHIC-comms in different room outside of AOC, managed well (compared to H1N1—less chaotic, people knew what to do, who to talk to).
Observation (Strength): Lynda managed PHIC, Candy & Christine worked together well—provided guidance, buffer from non-PHIC staff, education on process of non-PHIC staff.
Observation (Strength): Easy to step into process as newbie, doc approval process on display, knowing that all knew layers that existed, clear process, all players together in the same room, media coverage beside Lead PIO, separation from AOC. Physical distance gives you buffer from experts, intense conversations, lots of churning/wasted idea discussions vs decisions by chain of command, efficient filtering system, space to discern what's important.

Observation 3.1(Area of Improvement): Conference calls were not always well structured and/or accurately informative.

Observation (Strength):Setting up the State phone conferences
Observation (Strength):Organizing regular debriefs via phone. This also gave us a way to anticipate what was coming next. Also guiding us in pushing out a consistent message accross the state was done very well.
Observation (Strength): the State came a long way since H1N1 - good work!
Observation (Strength): In the case of the Japan radiation event, fewer coordination calls would have addressed my agency's needs. Public Health I noted suggested winding down the coordination calls earlier; I would have also suggested less frequent calls. While coordination calls may not seem time-consuming, in the mix of regular work and scheduled meetings and appointments, invariably they are disruptive and resource-intensive especially if we are unable to easily assign a delegate to participate in the calls. As you know, many calls and Agency reports were of the "nothing to report" nature and this should have been a strong clue regarding the number and duration of the calls.
Observation (Strength): Thanks for the opportunity to comment. I close by again reinforcing that I thought this was an important and useful pilot exercise for a new tool that should be used more frequently, and I applaud OEM for the steps taken.

Observation 3.2 (Area for Improvement):There was limited non-English material available.

Observation (Strength): translation process improved – within 24 hr timeframe--+6 different languages, coordination with OMHS on which languages to coordinate (new process).

Observation (Strength): Less reliance on DHS pubs—quicker, no more InDesign, less rework.

APPENDIX C: ACRONYMS

Acronym	Meaning
AOC	Agency Operations Center
DAG	Department of Agriculture
DEQ	Department of Environmental Quality
DHS	Department of Homeland Security
DHS	Department of Homeland Security
DIL	Derived Intervention Levels
DOE	Federal Department of Energy
ECC	Emergency Coordination Center
EOC	Emergency Operations Center
EPA	Environmental Protection Agency
ESF	Emergency Support Function
FEMA	Federal Emergency Management Administration
HAN	Health Alert Network
HOSCAP	Hospital Capacity Web Site
IAP	Incident Action Plan
ICS	Incident Command System
IMT	Incident Management Team
JIC	Joint Information Center
JRE	Japan Radiation Event
ODA	Oregon Department of Agriculture
ODFW	Oregon Department of Fish and Wildlife
ODOE	Oregon Department of Energy
OEM	Oregon Emergency Management
OMD	Oregon Military Department
OPHD	Oregon Public Health Division
OSFM	Oregon State Fire Marshal
OSHA	Oregon Occupational Safety & Health Division
PAG	Policy Action Guides
PHEP	Public Health Emergency Preparedness
PHIC	Public Health Information Center
PIO	Public Information Officer
PSET	Preparedness Surveillance and Epidemiology Team

Acronym	Meaning
RPS	Radiation Protection Services
SitStat	Situational Status Report
SME	Subject Matter Experts
VJIC	Virtual Joint Information Center

APPENDIX D: ON-LINE SURVEY RESULTS (EXTRACT)

Survey results with comparisons to answers from a similar survey conducted for the H1N1 response

Answer Options	Response Percent	Response Count
Title	100.0%	55
Organization	100.0%	55
answered question		55
skipped question		0

What is your name, email, and phone number?

Answer Options	Response Percent	Response Count
Name	100.0%	55
E-mail	100.0%	55
Phone number	98.2%	54
answered question		55
skipped question		0

Do you distribute information through (check all that apply):

Answer Options	Response Percent	Response Count
County/tribe/district website	76.0%	38
Other website (not including social media)	20.0%	10
Television	22.0%	11
Print	58.0%	29
Radio	48.0%	24
RSS feeds	0.0%	0
Social media (Facebook, MySpace, Twitter etc)	22.0%	11
E-mail subscription lists	36.0%	18
Media distribution lists/resources	42.0%	21
Other	20.0%	10
Other (please specify)		15
answered question		50
skipped question		5

What were your primary sources of information during the Japan Radiation event?			H1N1 Response to similar Question	
Answer Options	**Response Percent**	**Response Count**	%	#
State AOC briefings	55.6%	30	77.8%	35
State website	68.5%	37		
Oregon Health Alert Network	68.5%	37	71.1%	32
Colleagues	20.4%	11	60.0%	27
Internet	55.6%	30	57.8%	26
National media	50.0%	27	48.9%	22
Supervisor	5.6%	3	22.2%	10
Local media	11.1%	6	20.0%	9
Social media	7.4%	4	11.1%	5
Subordinate	0.0%	0	8.9%	4
Other (please specify)	7.4%	4		17
Other (please specify)		8		
answered question		**54**	100%	45
skipped question		**1**		

What would you have preferred be your primary source of information?		
Answer Options	**Response Percent**	**Response Count**
State AOC briefings	16.3%	8
State website	22.4%	11
Oregon Health Alert Network	44.9%	22
Colleagues	4.1%	2
Internet	2.0%	1
National Media	2.0%	1
Supervisor	0.0%	0
Local Media	2.0%	1
Social Media	0.0%	0
Subordinate	0.0%	0
Other (please specify)	6.1%	3
Other (please specify)		6
answered question		**49**
skipped question		**6**

H1N1 response to this same question (What would you have preferred be your primary source of information?): 56% of the respondents indicated the State is their first choice, or their first choice along with the CDC. Other choices included the CDC alone, WHO, and NACCHO. Where regional PIO networks are established, they are also a preferred source. Some respondents expressed frustration with the State when answering this question, replying that information came too slow or it seemed to come from too many, fragmented State sources.
38 responders (84%)

Overall, did you feel you had the information you needed in order to communicate effectively with your constituents?			H1N1 Response to similar Question	
Answer Options	**Response Percent**	**Response Count**	%	#
Yes	96.3%	52	55.6%	25
No	3.7%	2	2.2%	1
If no, what information would have helped?		2	42% answered "sometimes"	19 answered "sometimes"
answered question		54	100%	45
skipped question		1		

Additional comments from the H1N1 survey re: Overall, did you feel you had the *information* you needed in order to communicate effectively with your constituents about H1N1?: Twelve respondents made suggestions to make OPHD more helpful. Generally, they felt the State was not keeping up with changes in the information quickly enough to keep LHDs sufficiently informed, and this must be addressed. They also noted some information from the State as "contradictory" - sometimes contradictory with other information released by the State, sometimes contradictory with information available through the CDC.

Did you participate in the statewide PIO call?			H1N1 Response to similar Question	
Answer Options	**Response Percent**	**Response Count**	%	#
Yes	27.3%	15	60%	16
No	47.3%	26	33%	9
Sometimes	25.5%	14	7%	2
Comment		10		
answered question		55	77%	27
skipped question		0		

H1N1 responders to this question: Respondents who did not participate in the PIO calls, or participated only occasionally, felt that the information discussed at calls was often outdated or obsolete. PIOs also did not attend because many of them have multiple responsibilities and felt they had little time to attend more conference calls. Finally, some complained that the calls went on too long.

Was the RPS Hotline promoted in your community?			H1N1 Response to similar Question	
Answer Options	**Response Percent**	**Response Count**	%	#
Yes - we put a lot of effort into promoting it	11.8%	6	37.8%	17
Yes - we put some effort into promoting it	62.7%	32	60.0%	27
No - we did not promote it in our community	25.5%	13	2.2%	1
If not, why not?		16		
answered question		51	100%	45
skipped question		4		

Comments from H1N1 survey on similar question: Those who put "no effort" or "some effort" into promotion explained that their constituents wanted a local connection and called their office to speak with local health personnel, and that the State hotline took too much time for them to set up (and occasionally, they set up their own local hotlines as a result).

From a risk communications perspective, what do you feel the State did best during the Japan Radiation response?		H1N1 Response to similar Question
Answer Options	**Response Count**	**Response Count**
	48	30
answered question	**48**	30
skipped question	**7**	

- Drafted a unified message
- The fact sheet was informative and well done; overall a very useful tool
- Having a consistent message not only from State employees but also private practice experts. Same with most Radio and TV
- Information Line - Up and running fairly quickly with good information, especially the addition of staff phone numbers should a citizen wish to speak to someone in person. We referred to the Info line on our local website. Well done.
- Japan Radiation Webpage - It was up very quickly with easy to navigate information. It was updated frequently with resources and current information. On our LHD website, we referred residents to the state website as it was the most useful tool available. Excellent work.

Comments from the H1N1 survey on "What the State Did Best" include the following:

- Though many respondents criticized the State conference calls (both for the content and the number of them), a significant number of informants answered that they appreciated the calls, but that they needed to happen sooner and they would have appreciated fewer of them. Several respondents also praised HAN and the resources available through it, though others had criticized it.
- Several respondents appreciated Mel Kohn's leadership and the press briefings he gave. Local PIOs also found the State flu website of very high quality, particularly after its overhaul in early November.

From a risk communications perspective, where do you feel the State has the most room to improve?		H1N1 Response to similar Question
Answer Options	**Response Count**	**Response Count**
	43	28
answered question	**43**	28
skipped question	**12**	

- Early HAN messages lacked needed detail, had to go to news websites to get info
- Besides just saying there is no risk, continue to provide how and why you came to that conclusion.
- I don't think it was very clear what the role of Public Health in Oregon and at the local level was during this event. That could've been made more clear from the get-go.
- Keeping the message out there. Have not heard much on local media lately concerning radiation levels and risk.

- I think it is imperative that LHDs receive information prior to release to the media so that LHDs can formulate responses to local media and local citizens. It is part of the planning and response process. Subscribing to the website is an after-the-fact way to obtain information.

Comments from the H1N1 survey on "…where do you feel the State has the most room to improve?":

- Interviews with PIOs pointed to two major areas for needed improvement. First, OPHD should consolidate emergency health messaging from the State. Informants described State communications during H1N1 as "fragmented", "inconsistent", "contradictory with its own messaging", and that "right hands did not know what left hands were doing." Respondents attributed some of this problem by the multiple conference H1N1 conference calls, which they wanted consolidated.
- Second, timeliness is also clearly important to local PIOs. They felt that messaging arrived too late, and sometimes after its relevance had already passed. This caused great frustration for local PIOs who began to think of the State as an unreliable source for guidance.
- HAN also received many comments during this part of the interview, with concerns that it is not user-friendly enough and confusing to navigate.

APPENDIX E: HAN ALERTS RELATING TO THE JRE

	A	B	C	D	E	F	G	H
1	2011-0663 Oregon HAN - Alert History 3/11/2011 - 4/08/2011							
2	Sent	ty	Profiles/Em	Sender	Title	Recipients	rs	(Y/N)
3	3/11/2011 5:21	High	Alert Profiles	Michelle Wyatt	Distant Tsunami 7 a.m.	Coos County LHD & Partners	16 Users	Y - 88%
4	3/11/2011 6:28	High	Work Email Only	Mike Harryman	E.S.F. 8 Situation Statur Reporting	LHD Admin & deputy, LHD and Hospital HAN Admins, LHD/Tribe/Hospital Preparedness Coordinators, Hospital ED Mgrs	396/341	N
5	3/11/2011 7:27	Medium	Work Email Only	Brian K. Johnson	Tsunami Alert Issued for West Coast	Lane County LHD & Partners	6/11	N
6	3/11/2011 9:42	High	Alert Profiles	Gerry Hefner	INCIDENT COMMAND ALERT (Sent as a sensitive alert - Full message is not sent to email. Requires alert recipients to log in to HAN to receive mesg.)	West Valley Hospital IMT	6/16	N
7	3/11/2011 15:50	Medium	Work Email Only	AOC User	Update: E.S.F. 8 Situation Statur Reporting	LHD Admin & deputy, LHD and Hospital HAN Admins, LHD/Tribe/Hospital Preparedness Coordinators, Hospital ED Mgrs	341	N
8	3/12/2011 17:55	Medium	Alert Profiles	AOC User	Nuclear event in Japan poses no health risk in Oregon	State and Federal partners, LHD Admin & deputy, LHD and Hospital HAN Admins, LHD/Tribe/Hospital Preparedness Coordinators, Hospital ED Mgrs	773/836	Y - 49%
9	3/14/2011 9:03	Medium	Alert Profile	Mike Harryman	State Public Health Update on Radiation Emergency in Japan	LHD Admin & deputy, LHD and Hospital HAN Admins, LHD/Tribe/Hospital Preparedness Coordinators, LHD Enviro Health Hospital ED Mgrs, LHD/Tribe/Hospital Preparedness PIOs	539/607	Y - 62%
11	3/15/2011 7:49	Low	Work Email Only	Kevin Cradock	Update: Additional Public Health Division Website Information	State and Federal partners, LHD Admin & deputy, LHD and Hospital HAN Admins, LHD/Tribe/Hospital Preparedness Coordinators, Hospital ED Mgrs	895	N
14	3/16/2011 17:36	Low	Work Email Only	Nick May	Oregon PHD Response to Radiation Releases in Japan - Conf. Call	LHD Admin & deputy, Emergency Mgrs, Enviro Health, LHD/Hosp/Tribe PIOs, LHD EPIs, LHD Preparedness Coordinators	498/535	N
15	3/18/2011 15:18	Low	Work Email Only	Kevin Cradock	Updated: Oregon Public Health Current Hazards Website	State and Federal partners, LHD Admin & deputy, LHD and Hospital HAN Admins, LHD/Tribe/Hospital Preparedness Coordinators, Hospital ED Mgrs	894	N
16	3/21/2011 12:43	Medium	Work Email Only	AOC User	Oregon ESF 8 AOC Activation for Radiation Event Public Health Messaging	State and Federal partners, LHD Admin & deputy, LHD and Hospital HAN Admins, LHD/Tribe/Hospital Preparedness Coordinators, LHD/Tribe/Hospital PIOs Hospital ED Mgrs	655/743	N
17	3/21/2011 17:58	Medium	Work Email Only	AOC User	Radiation Response - Partner Update Conference Call	LHD Admin & deputy, LHD/Tribe/Hospital Preparedness Coordinators, LHD/Tribe/Hospital PIOs Hospital ED Mgrs	512/522	N
18	3/22/2011 9:22	Medium	Work Email Only	Candy Cates	Japan Radiation Event Update for Oregon PIOs	LHD/Tribe/Hospital PIOs, LHD Administrators and deputies	144/126	N
20	3/31/2011 12:15	Medium	Work Email Only	AOC User	April 1rt OR ESF-8 Partner Conference Call 1:00 pm (1300)	LHD Admin & deputy, Emergency Mgrs, LHD and Hospital HAN Admins, Enviro Health, LHD/Hosp/Tribe PIOs, LHD EPIs, LHD Preparedness Coordinators	563/553	N
24	6 ESF 8 PH Duty Officer alerts were sent during the 3/11/2011 - 4/08/2011							

APPENDIX F: WEB HITS FOR 11 MARCH-11 APRIL 2011

Google Analytics reports for the first month of our new web site use, March 11 - April 11, 2011 are reported below.

Overall, our Current Hazards/Air Monitoring page received the **2nd most hits** in the month for the entire division, only behind the OPHD homepage. Our Current Hazards/Homepage received the **4th most hits** for the month in the entire division.

Current Hazards: Air Monitoring - 36,356 visits (Mar 11, 2011 - April 11, 2011)
Current Hazards: Homepage - 29,615 visits (Mar 11, 2011 - April 11, 2011)
HAN - 3,866 visits (Mar 11, 2011 - April 11, 2011)
Preparedness Program - 1,907 visits (Mar 11, 2011 - April 11, 2011)
Preparedness Page - 1,504 visits (Mar 11, 2011 - April 11, 2011)
Current Hazards: Event History - 1,277 visits (Mar 11, 2011 - April 11, 2011)
Current Hazards: Event Resources - 643 visits (Mar 11, 2011 - April 11, 2011)
SERV-OR - 252 visits (Mar 11, 2011 - April 11, 2011)