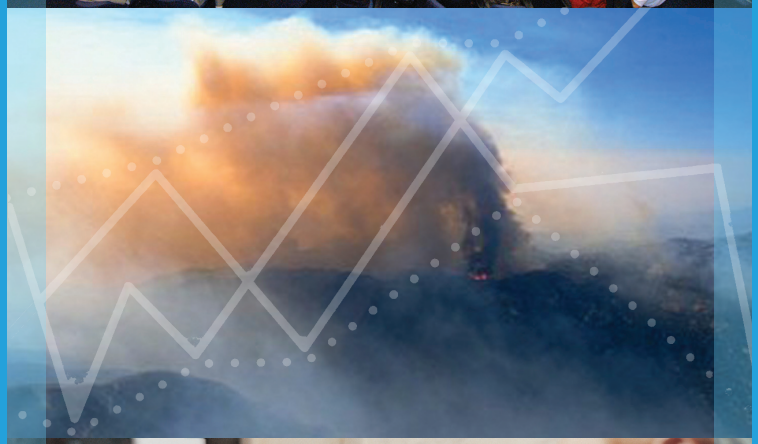
CARPA
California Air Response Planning Alliance

Air Quality in Emergency Response:
Monitoring, Modeling, Messaging, and Media



A training summit for building a network of local, state and federal air and public health resources to improve coordinated responses to major air incidents.

2008 Summit Proceedings and Next Steps

CARPA
California Air Response Planning Alliance

CARPA STEERING COMMITTEE AGENCIES

- California Air Resources Board and USEPA Region 9 – Co-Chairs

- Agency for Toxic Substances and Disease Registry (Regional Office)

- California Air Pollution Control Officers' Association

- California Conference of Local Health Officers

- California Environmental Protection Agency

- California National Guard 95th Civil Support Team

- Department of Public Health

- Governor's Office of Emergency Services

- Inter-Agency Modeling and Atmospheric Assessment Center (IMAAC)/Lawrence Livermore National Laboratory (LLNL)/National Atmospheric Release Advisory Center (NARAC)

- Office of Environmental Health Hazard Assessment

- Sacramento City Fire Department Special Operations Unit

CARPA MISSION STATEMENT

To provide actionable incident response information to protect public health and the environment from the impacts of accidental or deliberate releases of hazardous compounds into the air. (See definition of "actionable" in Appendix 1.)

CARPA WEBSITE

http://www.arb.ca.gov/carpa/carpa.htm

CARPA CONFERENCE SUPPORT

California State University Sacramento (CSUS):

- Center for Collaborative Policy (http://www.csus.edu/ccp) – Conference design and facilitation; report preparation.
- College of Continuing Education (http://www.cce.csus.edu) – Conference planning and logistics.

DISCLAIMER

This document is an important compendium of information, comments, suggestions, and ideas that were presented or discussed at the Summit. This Proceedings document is intended to stimulate further discussions and, perhaps, develop consensus for future endorsements. However, at this time, this document does not necessarily represent an endorsement by CARPA or the agencies represented by the Steering Committee or official positions of those agencies.

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INTRODUCTION

The California Air Resources Board, with the assistance of the Governor's Office of Emergency Services and the U.S. Environmental Protection Agency Region 9, recognized the need to strengthen the response to airborne emissions from industrial accidents and disasters. The three agencies established the California Air Response Planning Alliance (CARPA) Steering Committee, including technical and response leaders, their representatives, and government health professionals, to improve California's overall air response preparedness.

The 2008 training summit—held on October 15 – 16 in Sacramento—was the first for CARPA local, state, and federal partners. The summit was a success with over 200 participants from local, state, tribal, and federal government and the private sector. A broad range of speakers and panelists shared their expertise and perspectives with summit participants. In addition, summit participants were able to visit 15 exhibitors (http://www.arb.ca.gov/carpa/carpa.htm).

SUMMIT PURPOSE AND OUTCOMES

In planning this event, the CARPA Steering Committee identified the purpose of the training summit and planned the summit sessions around the stated purpose to facilitate the outcomes listed below.

PURPOSE

- Build a network of local, state and federal air and public health resources to improve coordinated responses to major air incidents.
- Provide opportunities to learn about:

~ Challenges and successes of deploying a network of air monitors, as well as how to access data from them

~ How modeling is conducted and what the outcomes mean

~ How to interpret air quality measurements and modeling information using the preferred health indices

~ How to become integrated into the incident command system (ICS)

~ How to develop effective and coordinated messages to the public in a rapidly evolving emergency situation

OUTCOMES

- Education
- Relationship building and statewide networking
- Partnering
- Appreciation of the issues and their complexity
- Understanding of the roles of all parties
- Education on best practices
- Identifying cross cutting issues, strengths and weaknesses, and addressing gaps and needs

OVERVIEW OF SUMMIT

The two-day 2008 CARPA training summit focused on three main areas or themes:

Data – Measurement, modeling, meteorology, and other assessment of air data

Data to Message – Translation of air data into health actions

Message – Delivery of simple, clear, and actionable messages to the public

The first day of the summit included panels run sequentially of expert practitioners for each of the three themes. As a result all attendees became acquainted with the issues relevant to each theme. On the second day of the summit, participants attended three concurrent break out sessions to discuss data, data to message, and message to focus on a particular topic in more detail. The primary outcome of these sessions was the identification of current thinking, methods, and practices; gaps and needs; cross cutting issues; and next steps to develop a consistent approach to emergency response in California. Wall charts and work sheets for **data**, **data to message**, and **message** were available to participants throughout the conference to record comments about best practices, gaps and needs, cross cutting issues, and next steps. The full agenda can be viewed at (http://arb.ca.gov/carpa/summit08/agenda.htm) and links to all conference presentations are included in Appendix 2.

A tabletop exercise was held on the afternoon of the second day to give participants the opportunity to "try on" emergency roles without the urgency or stress of a real incident. The exercise focused on coordinating actions at the local, state, and federal levels and across disciplines.

The summit also included several presentations focused on governmental perspectives and roles; emergency response systems and procedures; and lessons learned from disasters.

Wayne Nastri
Regional Administrator,
USEPA Region 9

James Goldstene
Executive Officer,
CARB

Mark Horton, MD
Director,
CDPH

DATA

SESSION I - DAY ONE - "DATA" PRESENTATION

Moderator: Jeff Cook, *Emergency Response Coordinator, California Air Resources Board (ARB)*
Ron Baskett, *Director of Operations, Lawrence Livermore National Laboratory (LLNL) – National Atmospheric Release Advisory Center/IMAAC*
Jason Low, *PhD, South Coast Air Quality Management District (AQMD)*
Paul Nony, *PhD, Manager of Toxicology, Center for Toxicology and Environmental Health*
William Robberson, *PE, Regional Response Team Coordinator, US Environmental Protection Agency (USEPA), Region 9*

CARPA Steering Committee members invited panelists who are considered leaders in each of their fields. They gave a broad overview of leading techniques available, their principles of operation, and their strengths and weaknesses (see link to presentations in Appendix 2 and questions and answers in Appendix 3). Topics discussed included monitoring, sampling, and lab techniques; plume modeling; a large air district's perspective on emergency response; and data management and decision making. Information presented in each of the topic areas may be considered as among the "best available".

DATA
BREAK OUT SESSION I - DAY TWO
"DATA" PRESENTATION

Moderator: John Kennedy, *Homeland Security Coordinator, USEPA*

Panel I

Sim Larkin, *PhD, Scientist, United States Forest Service, Pacific Northwest Research Station*
Jeff Cook, *Emergency Response Coordinator, ARB*
Michael Poore, *Chief Chemist, Monitoring and Laboratory Division, ARB*
Tim Dye, *Vice President of Meteorological Programs and Outreach, Sonoma Technology Inc.*

Panel II

Ron Baskett, *Director of Operations, LLNL – National Atmospheric Release Advisory Center/IMAAC*
Philip Campagna, *Chemist, USEPA, Environmental Response Team*
Stephen Wall, *PhD, Chief, Outdoor Air Quality Research Program, California Department of Public Health (CDPH)*
William Robberson, *PE, Regional Response Team Coordinator, USEPA Region 9*

Panelists discussed in detail the aspects of data collection (monitoring, sampling, laboratory, and modeling) using one panel for particulate matter and one for gaseous pollutants. The panelists addressed analytical tools, modeling, data quality control and quality assurance, portable instrumentation and comparability of results among instruments, monitoring strategies, onsite versus central laboratories, data review, data management, and access to information. (See link to presentations in Appendix 2 and questions and answers in Appendix 3).

DATA
DATA OUTCOMES

This section provides a summary of gaps/needs; current thinking, methods, and practices, cross cutting issues, and next steps based on presentations, dialogue in Break Out Session I, and entries on the wall chart and work sheets.

GAPS/NEEDS

1. Monitoring

a. Train air districts, environmental health department staff, and others outside the first responder community in real-time monitoring and other forms of assessment for emergency response in their communities. Training should include the selection of instruments, the fundamentals of their operation, instrument concentration ranges, factors that adversely affect the instruments, and how to download data.

2. Sampling

a. Template for air quality sampling plan that could be used by air monitoring personnel to manage existing samplers and the deployment of portable and mobile analyzers or samplers.

3. Sampling and Analysis

a. List of 'tested and preferred' emergency air monitors and sampling methods.

4. Contaminant identification

a. Identify critical compounds in an air release, including particulate matter and gas constituents. Include standard list of compounds expected to be found in specific scenarios.

b. Develop a best approach to evaluating the by-products of chemical mixtures or combustion.

5. Laboratory

a. List laboratory analytical techniques for the most common and high risk particulate and gaseous compounds.

b. An inventory of the type and location of chemical calibration standards and where they are available. Develop means of quantifying the chemical composition of particulate constituents. Also, develop understanding of the degradation of chemicals in samples.

6. Quality assurance/quality control

a. Identify QC elements for samplers, analyzers, and laboratory assessments used in emergency response and identify key QC factors that have the greatest effect on data quality. Develop a streamlined QC protocol based on these key factors.

b. Develop protocols for identifying and dealing with questionable data that has already passed key QC checks.

DATA

7. Data

a. Ensure the data collected during response are retained by the party generating it, and can be recalled during and after an incident. Determine the need for, operation of, and value in creating a consolidated air quality data base during an incident.

b. Develop template or guidance on key elements of a Chain of Custody program for samples collected in the field and analyzed in the laboratory.

c. Develop means of tracking and naming location of portable samplers.

8. Equipment

a. Develop a template for selection of samplers, analyzers, and laboratory practices that ensure the time intervals and detection limits are consistent with Acute Exposure Guideline Levels (AEGL), Emergency Response Planning Guidelines (ERPG), Temporary Emergency Exposure Limits (TEEL), and Provisional Action Limits (PALs) indicators.

b. Develop information on how emergency response equipment data may differ from "permanent" stations for correct comparisons later.

c. Identify effect on network instrumentation when exposed to extremely high concentrations and develop guidance under such circumstances.

d. Develop standardized, pre-staged emergency air monitoring fly-away kits for particulate matter, chemical/hazmat, and key agency contacts (EPA, Forest Service, ARB, AQMD, Air Pollution Control Districts/APCD)

e. Maintain inventory developed for CARPA conference of mobile/portable data-gathering tools (monitoring and sampling equipment), available labs (mobile and fixed), including equipment, staffing, roles, and capabilities.

f. Identify proper calibration methods and means of calibrating instruments.

9. Emergency Response

a. Develop generic emergency response plan for airborne emission emergencies, including initial steps for response. Include what's happening on-site early on and establish what to do first/how to progress, ways of maintaining air quality situational awareness such as activities and data generated by others.

DATA

10. Interaction with others

a. Interview responsible party (individual, business, etc) and value responsible party's input and information. Have responsible party available throughout incident.

b. Outreach to healthcare and shelter providers. Get data/information out quickly to first responders to inform decisions on evacuation zones, potential sensitive receptors (schools, hospitals), and hazardous conditions.

c. Identify and utilize local resources. Consider using CARPA as a formal MAC (multi-agency coordination entity).

d. Develop references for local air districts, including first responder contacts, toxicology departments, etc.

11. Training

a. Provide lessons learned website for CARPA (see EPA Web site lesson learned section on www.epaosc.net). Accessible and standardized training and education for all involved agencies. Training on how to integrate into ICS/ all sections. Training on data management, so there is cohesion when many sources come together. Pre-season fire training from CARPA. Identification of other training needs.

12. Web Page

a. Enhance public CARPA web page to include useful resources, outcomes of conference, projects underway, findings, templates, 'tested and preferred' practices, and other important tables, contact lists and inventories (www.arb.ca.gov/carpa/carpa.htm).

DATA
CURRENT THINKING, METHODS, AND PRACTICES

Refer to presentations in Appendix 2.

CROSS CUTTING ISSUES

1. Coordination

- Create dialogue with health community early on to enhance coordination. Before collecting data, ask toxicologists what data they need and what questions they need answered. Find out early if they are looking for acute effects or long-term, carcinogenic health effects; this drives what you will monitor. Toxicologists and chemists versed on the possible by products of combustion or chemical interaction need to advise on what to look for and the suitability of the data collection methods against the selected health exposure guidelines. Interagency coordination for target levels (actions).

2. Emergency Organization –

a) Develop suggested template of Standardized Emergency Management System (SEMS)/National Incident Management System (NIMS) training for air responder agencies.

b) Establish a scientific advisory team that is activated when an incident occurs.

c) Identify the key recipients of air quality data, and develop protocol for transferring information to them.

3. Funding

- Maximize output from minimal dollar input. Funding for smaller counties. Funding to implement programs. Share and leverage resources with partner agencies.

DATA

NEXT STEPS/OTHER ISSUES

1. Additional Action Items

- Determine which of the action items from the Gaps and Needs should be added/melded with the items below. The items below have not been merged with the Needs and at this point are listed independently.

2. AQI

- Develop coordinated Air Quality Index (AQI) protocol for whole state. Provide guidance when to use AQI values less than official 24-hour average values, i.e., one to three hours, and eight hours.

3. VOC

- Compose lists of Volatile Organic Compounds (VOCs) according to incident-specific scenarios and recommend suitable instruments.

4. Data

- Control/standardize expectation for air quality data monitoring. Create database showing who sampled what on site so that information is available for future use and reference.

5. Emergency Organization

- Consider a possible command center for air emergency assets and information. Make CARPA a formal resource for advising multi-agency coordination in the pre-planning stages and during incidents, and for coordination with Incident Command. Need for self evaluation by each agency regarding their appropriate role and place in the Incident Command System. Need for organization and interaction between Environmental Unit and incident organizational structure.

6. Training

- Develop a central lessons-learned website for emergency air response community. Hold workshop preceding fire season to refresh and prepare the air quality community relative to information/data/protocols.

7. Working Group

- Consider an "Air" technology work group to address issues of best technology and equipment; standardization among agencies; and interoperability of equipment, methods, and QA/QC. Develop database of CARPA expertise and capabilities. Database for agency and individuals' expertise/discipline and experience. Establish regional inter-agency group to meet and coordinate, share information, and maintain consistency between regions.

8. CARPA

- Develop a "white paper" for professional organization to help drive CARPA funding.

DATA TO MESSAGE

SESSION II - DAY ONE - "DATA TO MESSAGE" PRESENTATION

The hope for the "Data to Message" presentations on Day One was to reach out across disciplines to provide some real world examples of the application of risk assessment, toxicology, and public health to major air releases and air quality emergencies. The focus was largely on the challenges of using health data and health-based action levels to make rapid decisions about health and safety during emergencies. These presentations were the foundation for a more specific discussion on the translation of air data to health actions on Day Two.

Richard Nickle, MPH, Emergency Response Coordinator

US Public Health Service/ Agency for Toxic Substances and Disease Registry

Interpreting environmental data and applying that interpretation to specific events, especially emergencies, can be a significant challenge. One method of meeting this challenge is the use of health-based action levels. In this presentation, the approach taken by the ATSDR Emergency Response Team in developing environmental action levels is described.

DATA TO MESSAGE

Femi Adeshina, PhD, Senior Scientist

National Homeland Security Research Center, United States Environmental Protection Agency

The general public and specific infrastructures may become contaminated with hazardous substances following a terrorist attack. However, there are currently no appropriate health-based guidelines for building evacuation and re-entry or for longer-term exposure scenarios. Pursuant to Homeland Security Presidential Directives # 8 and 9, the U.S. EPA National Homeland Security Research Center (NHSRC) is developing health-based provisional advisory levels (PALs) for priority agents to address such conditions.

Susan Stone, MS, Environmental Health Scientist

Human Studies Division, US Environmental Protection Agency

This presentation described the Air Quality Index (AQI), its structure and function, and supporting health evidence. An overview was provided on the health basis for the AQI for PM2.5 and how the index can be part of a larger response to emergency situations. This information is contained in the updated "Wildfire Smoke – A Guide for Public Health Officials" that can be used in any situation where particulate matter levels present an immediate and rapidly changing hazard to the public.

(See link to presentations in Appendix 2 and questions and answers in Appendix 3).

DATA TO MESSAGE

BREAK OUT SESSION II - DAY TWO

"DATA TO MESSAGE" PRESENTATION

Moderator: Shelley DuTeau*x, PhD, MPH, Emergency Response Coordinator, Office of Environmental Health Hazard Assessment*

Richard Nickle, *MPH, Emergency Response Coordinator, US Public Health Service/ Agency for Toxic Substances and Disease Registry*

Femi Adeshina, *PhD, Senior Scientist, National Homeland Security Research Center, United States Environmental Protection Agency*

Susan Stone, *MS, Environmental Health Scientist, Human Studies Division, US Environmental Protection Agency*

Ellen Raber, *MS, Program Deputy Manager, CBRNE (Chemical, Biological, Radiological, Nuclear, Explosive) Countermeasures Program, Lawrence Livermore National Laboratory*

Rupali Das, *MD, MPH, Occupational Health Branch, California Department of Public Health*

PRESENTATION SUMMARIES

FRAMING "DATA TO MESSAGE" ISSUES

- Definition of Data to Message: The integration of air quality and monitoring data with public health (or occupational health) actions
- These actions can be anything that increases safety of a population at risk during an emergency.
- As public health experts, health officers, toxicologists, scientists, and representatives of local government, is consensus one of our goals? And, if so, how do we achieve it? What are the consequences of telling different groups two different messages?
- What are the things we need to help facilitate protective actions?
- How do we best interact with "Messaging"?

Shelter-in-Place Decisions and Challenges

Richard Nickle, MPH, ATSDR

Mr. Nickle used ALOHA to model a tank car ammonia release to illustrate decision making needs for shelter-in-place (i.e., time for order to take effect; time that order will be in place; lapse between release event and decision to evacuate or shelter in place; and potential risk of exposure if sheltering is done improperly.)

ALOHA (Areal Locations of Hazardous Atmospheres) is a modeling program that estimates threat zones associated with hazardous chemical releases, including toxic gas clouds, fires, and explosions. A threat zone is an area where a hazard (such as toxicity, flammability, thermal radiation, or damaging overpressure) has exceeded a user-specified Level of Concern (LOC). It is available for free at http://www.epa.gov/emergencies/content/cameo/aloha.htm.

The following assumptions were used: 1) a one hour release; 2) air conditioning turned off; 3) air exchange rate was one air change/hour.

Result: Under these conditions, indoor air toxics concentrations were at concentrations associated with no reversible damage level after one hour.

- If a sealed room is used (duct taping of openings), and the air exchange rate is reduced to 0.5 air changes/hour, indoor air concentrations may be below the level associated with any reversible effects.
- Another option is "enhanced shelter." Picking a room that is well-sealed (i.e., weather-stripping, insulation) can reduce air changes to 0.1 per hour.

Sheltering in place is important because it is much quicker than evacuation. However, be aware of the needed notification interval. If a shelter-in-place order goes into effect too long after the initial release, the concentration indoors may be at a peak and sheltering inside may effectively enclose individuals with toxic chemicals, thus increasing the likelihood of unintended exposure. Likewise, if the shelter-in-place order is in force too long, the outdoor concentrations may have dissipated while indoor concentrations are still high.

Take home messages:

- Get people inside quickly (within 10 minutes of release).
- Shelter-in-place orders should be measured in hours (not days) for maximum effectiveness during emergencies.

Worker Health Considerations

Rupali Das, MD, California Department of Public Health

Risk levels available to use in emergencies for the general public include:

- Department of Energy (DOE) Temporary Emergency Exposure Limits (TEELs)
- American Industrial Hygiene Association (AIHA) Emergency Response Planning Guidelines (ERPGs)
- Environmental Protection Agency (EPA) Acute Exposure Guideline Levels (AEGLs) (best)

However, workers have a different set of risk levels set up for their unique exposure:

- Maximum concentration of chemical in air (defined exposure)
- Workers are considered healthy for setting standards
- May not protect all workers due to individual susceptibility
- Many occupational standards are decades old

There are many commonly used occupational levels

- Time Weighted Average (TWA) - 8-10 hours; Ceiling values - 15 minutes; Short Term Exposure Limit (STELS) – 1 hour.
- Agencies – National Institute of Occupational Safety and Health (NIOSH) - federal; American Conference of Governmental Industrial Hygienists (ACGIH); Occupational Safety and Health Administration (OSHA) - only one with regulatory power; Centers for Disease Control and Prevention (CDC) - chemical warfare-type agents
- NIOSH – Immediately Dangerous to Life or Health (IDLH) – a level for escape – need PPE (protective personal equipment) if entering zone

DATA TO MESSAGE

Target for Protection Actions – Response and Recovery workers

- Rely heavily on the use of PPE
- IDLH and Occupational Exposure Limits (OEL) are used as thresholds for making PPE decisions.
  Red > IDHL > AEGL-2 self-contained breathing apparatus (SCBA) Level A
  Yellow < AEGL-2 PPE determined by protection factor and chemical quantity
  Green < Recommended Exposure Limit (REL), <AEGL-1 no PPE required
- Special Situation – if IDLH/OEL not available

During the initial phase of an air release, there may be no quantitative exposure data on which to base protection action decisions, and commercial detection equipment that is commonly available may not be sensitive enough to detect levels below the IDLH. Under these circumstances Level A or B personal protective equipment may be needed.

- PPE limits agility, speed, mobility, dexterity
- Additional exposure controls may be needed
- Consider limiting exposure times, providing breaks, having local exhaust ventilation for indoor releases

Issues regarding chemical biological agent response and recovery

Ellen Raber, Lawrence Live rmore National Laboratory

The Department of Homeland Security has asked Lawrence Livermore National Laboratory to develop plans for response and restoration for the event of an intentional release of chemical warfare agents or toxic industrial chemicals. These plans are designed to:

1. Enhance rapid recovery
2. Minimize economic impact
3. Have capability to make defensible public health decisions concerning re-opening key areas/infrastructure facilities following an agent release

The goals for developing consistent approaches to cleanup and clearance guidelines prior to an event are to improve preparedness (including with the first response community), restore areas to normal operation, and establish better understanding of interagency roles.

Preplanning and preparedness is the key to the success of responding to and recovering from an intentional chemical attack. As such, it is imperative to:

- understand the threat
- develop plan (agency roles) and procedures
- know specific capabilities (technologies, resources, information and data)

(See link to presentations in Appendix 2).

DATA TO MESSAGE

DATA TO MESSAGE OUTCOMES

Following the short panel presentations, participants asked questions and entered into dialog about how toxicology and public, occupational, and environmental health professionals interact during an emergency. By opening a dialog across disciplines and levels of government, we took the first steps to capture the best approaches to protecting health during air emergencies, including:

- Identifying decision-making steps that promote the best outcomes for protecting health during an emergency.
- Defining consistent terminology and public health practices.
- Increasing awareness of the tools and practices that differ across disciplines.
- Understanding that certain processes may have to change to insure the most appropriate response to health issues during an emergency.
- Identifying the need to streamline certain decision making steps, or even agree upon certain action levels prior to an emergency because of the lack of time during an actual event.
- Understanding that there will be disagreement in the interpretation of data as it relates to public health risk.

The following summarizes the current thinking, methods, and practices and gaps/needs identified during Break Out Session II and comments posted on the wall charts and work sheets.

HEALTH-BASED ACTION LEVELS

Overview: The AEGLs are the most preferred health-based standards for use in major air quality/air release emergencies.

CURRENT THINKING, METHODS, AND PRACTICES

- AEGLs are peer reviewed and allow for different exposure durations.
- AEGLs have good overlap with EPA provisional advisory levels (PALs) – available on request.
- Other standards (IDLH, ERPG, TEEL, STELs) may be used depending on the circumstances.

DATA TO MESSAGE

GAPS/NEEDS

- The current health-based action levels do not cover all chemicals, especially the AEGLs and PALs.
- PALs are good for sustained exposures, but not readily available.
- Consensus on level of protection will differ depending on the situation.
- Providing prioritized action levels for use in emergency response from the alphabet soup of action levels would be helpful for responders, data collectors, and modelers in the initial hours before health agencies are fully engaged.
- Some toxic releases have no associated standards and there are chemicals that do not have exposure levels.
- A working knowledge is needed of action levels (for evacuation, clearance, re-entry, etc) versus detection limits of instruments collecting the data is needed. What if action levels are well below what can be detected with current instrumentation?
- Neighborhoods vulnerable to toxic releases should be pre-identified and shelter-in-place operations and messages pre-planned.

SURVEILLANCE

Overview: Information from emergency room admissions and poison control centers can capture public exposure information and describe symptoms.

CURRENT THINKING, METHODS, AND PRACTICES

- Using real-time (syndromic) data is a way to determine if there is a toxic exposure or release that is not yet reported.
- It is good to partner with Poison Control Centers in the planning phase, especially to establish methods for sharing surveillance data.

GAPS/NEEDS

- We have not yet used this resource to its potential.
- Consider including Poison Control Centers in emergency drills and conferences.

WORKER HEALTH CONSIDERATIONS

Worker health is a serioius consideration during any air emergency. The primary agency in charge of worker health and safety during an air emergency is the California Occupational Health and Safety (CalOSHA) Agency which is not currently part of CARPA. The California Department of Public Health, Occupational Health Branch, HESIS, and the Office of Environmental Health Hazard Assessment would be available to provide technical support to CalOSHA during an air emergency.

DATA TO MESSAGE

CURRENT THINKING, METHODS, AND PRACTICES

- Consider occupational exposure levels or AEGLs for PPE decisions for first responders.
- Use other measure to reduce exposures (rest periods, ventilation).

GAPS/NEEDS

- Be aware of message consistency for all workers during an emergency, not just first responders.

HEALTH MESSAGING

Overview: Session participants identified the need to have an integrated effort between the scientists who analyze the health impacts of hazardous air releases and the public information officers who manage the distribution of that information. Output should meet the needs of diverse audiences, including the affected community, local government, first responders, schools, and workers, as well as the media, coordinating agencies, and our own management.

CURRENT THINKING, METHODS, AND PRACTICES

- Talk not only about the potential health outcomes, but also about potential exposure scenarios and any data uncertainties.
- Keep the key messages short and to the point.
- Prepare scripts in advance that can be edited; keep templates from past events for ease of updating.
- Use interagency coordination to increase awareness of the messages being distributed by all involved parties.
- Analyzing data is always slower than the public demand for information. Coming out with messages sooner rather than later (even just to say we are collecting data) will help show concern for communities and decrease the possibility of spurious messages filling in the information void.
- The State's role should include facilitating consensus among experts and authorities so that clear and accurate public messages can be delivered.
- There needs to be consistency between what the public is told to do in terms of health protective actions, and what outdoor response and recovery workers are doing (such as utility, physical plant employees). We don't want to tell the general public that it is unsafe to be outside when they see county workers working outdoors with no protection.
- Regardless of how much information we have, we never have it for every location and every circumstance. We need to be able to explain this to the concerned people who always feel the situation is worse where they are.
- To be effective, messages about sheltering in place need to be distributed very quickly (within 10 minutes or less of a release).

DATA TO MESSAGE GAPS/NEEDS

- There needs to be a strong focus on preventing a disconnect between air and health agencies. At a minimum, the messages need to be coordinated between the two entities, but it is preferred that the two issue joint statements.
- Better tools are needed to deal with a multi-day air quality event, especially when there is waning public attention and compliance with health actions.
- Consider new ways to distribute messages (to the media, the public, other agencies, management); work with the communication professionals to use the latest web-based and telecommunication tools to maximize the impact of health messages.
- Reverse 911 can (re)energize the message.
- Send email notifications of advisory messages to pre-established list of smoke sensitive and concerned members of the community.

AIR QUALITY & AIR RELEASE DATA NEEDS

Overview: Health officials and those assisting with health protective actions during air emergencies need a better understanding of air monitoring equipment (e.g., what chemicals they detect, detection limits, etc). Session participants would like to be brought into the process early enough to help determine what data are needed to necessary decisions.

CURRENT THINKING, METHODS, AND PRACTICES

- Establish what data are needed and how the data will be used prior to the collection of air quality data.
- Ask the public health community what data are needed to facilitate protection decision making.
- Determine ahead of time if instruments are available to detect the chemicals that are at highest risk for release at the concentrations necessary to facilitate decision-making.
- Data needs should be built into pre-planning for major air release incidents.

GAPS/NEEDS

- There needs to be strong focus on coordination between air and health agencies so that the data collected can be effectively used to inform public health messages.

DATA TO MESSAGE
INTEGRATING INTO EMERGENCY MANAGEMENT

Overview: County health professionals are often the go-to source for decisions about public health disasters. It has only been in the last few years that local health officers and directors of environmental health have been asked to respond to emergencies with air quality impacts, such as wildfires. Local health officials (with the support of state and federal agencies) can champion public, occupational, and environmental health needs into Incident Command decisions during emergencies.

CURRENT THINKING, METHODS, AND PRACTICES

- Local agencies are the first to resond to an amergency and are in charge of the response. CalEMA is the state agency that coordinates the introduction of state agency resources as needed and requested by local agencies. The SEMS/NIMS system is used to ensure smooth coordination of local, state, and federal agencies during the response.
- CARPA is attempting to be proactive in making other agencies aware of existing capabilities.

GAPS/NEEDS

- First responders and public health people consider incidents differently. We need to find a way to get these two groups to work together. We need to integrate into the incident command (IC) and with other decision makers to make sure their actions do not increase health risks during an emergency.
- Even though the event (fire, spill) is over, there is still a need to monitor and be cognizant of air quality issues as the response shifts to recovery.

DATA TO MESSAGE
NEXT STEPS & OTHER ISSUES:

- Participate in emergency drills — essential for networking, identification of resources, and pre-planning for actual disasters.
- Coordinate emergency plan revisions, and participate in review of Area Hazardous Materials Plans (through Certified Unified Program Agencies/ CUPAs), Community Emergency Response Teams (CERT) plans, and Regional Response Plans.
- Improve outreach to Native American tribes.
- Help communities identify the top 10 chemicals in the area (by volume and toxicity) and identify the best action levels, potential evacuation zones, steps for sheltering-in-place and how to improve your residence as a safe zone, crucial media messages about symptomology and effects, and data needs for helping make protective action decisions.
- Integrate more with public health at the local level.
- Find the right balance between the public wanting conservative health measures and the need for limiting economic damage; determine how best to set an acceptable level of risk for achieving these goals.
- Share a common definition of "actionable."
- Know who to contact when you do not have any associated standards for the released chemicals.
- Use the National Response Team, ATSDR, and the Federal Emergency Management Agency (FEMA) websites for more information.

MESSAGE

SESSION III - DAY ONE
"MESSAGE" PRESENTATION

Moderator: Dimitri Stanich, *Public Information Officer, California Air Resources Board*
Jay Alan, *Communications Deputy Director, California Office of Homeland Security*
Kelly Huston, *Deputy Director of Communications, Governor's Office of Emergency Services*
Leo Kay, *Communications Director, California Air Resources Board*
Kerry Shearer, *Communications and Media Officer, Sacramento County Public Health Communications Office*

Emergencies that adversely impact air quality affect large areas with differing sections of society. Multiple agencies are asked to contribute resources and information to protect the public health. Often though, these agencies mobilize redundant resources and send out similar or conflicting information. This panel related personal experiences in responding to emergencies in a Public Information capacity and encouraged early creation and/or coordination with Joint Information Centers (JIC). JICs facilitate the connection between information collected by emergency responders and the media that inform the public. (See link to presentations in Appendix 2 and questions and answers in Appendix 3).

BREAK OUT SESSION III - DAY TWO
"MESSAGE" PRESENTATION

Moderator: Dimitri Stanich, *Public Information Officer, California Air Resources Board*
Jay Alan, *Communications Deputy Director, California Office of Homeland Security*
Kelly Huston, *Deputy Director of Communications, Governor's Office of Emergency Services*
Lisa Fasano, *Communications Director, Bay Area Air Quality Management District*
Leo Kay, *Communications Director, California Air Resources Board*
Kerry Shearer, *Communications and Media Officer, Sacramento County Public Health Communications Office*

The panel detailed many of the concerns that confront a public information officer (PIO) responding to air quality emergencies. Emergency PIOs are trained to deliver messages to people enduring enormous stress and whose ability to understand messages may be dramatically reduced. To facilitate that situation, individuals at each rung in the chain of emergency response must help craft messages that are extremely simple, clear, and informative. Those who interpret the data, health officers and air quality specialists, must be prepared to synopsize their analysis. The need to be accurate must be coupled with the need to quickly inform the public with need-to-know information. Also, messages must be coordinated by the many agencies that will be responding to media requests. This avoids conflicting information and redundant efforts.

The seminar's participants also worked in small groups to share current thinking, strategies and practices, as well as gaps and topics for future discussion. This was collected and shared with the other break out sessions. (See link to presentations in Appendix 2.)

MESSAGE

MESSAGE OUTCOMES

This section provides a summary of gaps/needs, current thinking, methods, and practices, cross cutting issues, and next steps based on presentations; dialogue in Break Out Session III; and entries on the wall chart and work sheets.

The theme throughout the section was coordination. Prior to responding to an emergency, teams should coordinate resources of experts, information, and media contacts. Simple consolidation of resources and personnel is easier prior to an emergency and will create a platform from which to serve the public's informational and directional needs. Those responding to media need a readily accessible list of experts who can provide information during an air quality emergency. Everyone must strive to reduce complex information into easily communicated messages.

MESSAGE DEVELOPMENT AND CONTENT

GAPS/NEEDS

- If experts disagree, work toward the goal of a consistent message.
  - o Find common ground quickly and defer professional disagreements to when time allows. Priority is ensuring public safety.
- Convey who the sensitive individuals are.
  - o Establish public messages that target first those most sensitive to pollutant concentrations: the young, elderly, and those with respiratory or cardiovascular conditions.
- Convey key messages together, i.e., air quality & heat during the summer.
  - o The multiplicity of threats in messages.
  - o Need to remain alert.
- During a wildfire, standardize response efforts (technical, health and messaging) on the Air Quality Index (AQI) for Particulate Matter (PM2.5).
- Educate areas that do not routinely participate in AQI about its components.
- Establish communication lines prior to an event.

MESSAGE

CURRENT THINKING, METHODS, AND PRACTICES

- Standardized format and tone for all public information,
  - o location,
  - o nature of risk,
  - o estimated scope and duration of risk,
  - o who is threatened,
  - o what actions should they take.
- Use lay terms.
  - o Language must be clear and direct; free of acronyms and industry shorthand.
- Health threat – dangerous to your health.
- Shelter in place – get indoors and stay there until threat passes.
- Focus on key issues, not peripheral issues.
  - o Only messages of action and needed information should be used
  - o Limited time must be used effectively.
- Itemize known and unknown. Don't overstate what you know!

CROSS-CUTTING ISSUES

- Content and clarity of messages. For example, "safe" is a highly charged word. What is meant by "safe"?
  - o Digest information and relay messages that inform.
- "Exposure to this threat is very dangerous and everyone should avoid exposure by staying indoors and closing all windows and vents."
- "The major threat from these fires is to those in the immediate vicinity and those in the smoke path should limit their exertion and avoid being outside."
- Need for multiple perspectives on issues/events.
  - o Offer resources for more information.
- Websites
- Other experts
- How to expedite message creation.
  - o General public is ultimate recipient of every message.
  - o Everyone on response teams must recognize that the public will want information to protect them and alleviate anxiety.
- Create messages that answer these needs.

MESSAGE

NEXT STEPS/OTHER ISSUES

- Everyone that responds to air quality emergencies should take some media training classes. This will support those in front of cameras and provide insight on crafting messages for the public.
- Stress diminishes the capacity to interpret messages.
- Time for communicated messages will be very limited.

MESSAGE DELIVERY AND MEDIA STRATEGY:

GAPS/NEEDS

- Addressing geographic and language barriers.
  - o People in remote disaster areas will have different media accessibility.
  - o Consider multicultural outreach.
- Invite minority group media outlets.
- Convey consistent messages to the public.
  - o Discuss messages with others responding to the emergency.
  - o Reiterate the need for simple, concise messages that will direct and inform.
- Handling media is an art and science that requires training.
  - o Get training.
  - o Establish potential speakers before crisis arises.
- Collaboration with media.
- Visuals for media particulate matter concentrations.
- Need outreach to Native American tribes.

MESSAGE

CURRENT THINKING, METHODS, AND PRACTICES

- Involve "outside" parties in your media strategy. For example, use the corporation's PIO involved in the incident to give you information for the JIC.
- Stay ahead of the information; be the first to relay information to the public.
- Use a trusted person to relay the message.
- Use bilingual spokespeople.
- Use multiple pathways to relay information to the public.
- Identify audiences for your message: media, public, special needs
- Educate your media contacts
- Keep your message focused (3-9-27 — three messages, nine sentences, twenty-seven seconds)

CROSS-CUTTING ISSUES

- Create a strategy to address misconceptions. In the event of delayed reporting to the public, agencies will have to deal with the public perception of poor relay of information. The public will want to know why the agencies didn't know the information immediately or relay it to the public immediately.

NEXT STEPS/OTHER ISSUES

- Create intersection for "data to message" and "message" to coordinate accurate and timely messages. How do data analysts (toxicologists) and the PIOs coordinate messages created in the JIC?

MESSAGE
EMERGENCY MANAGEMENT

GAPS/NEEDS

- When working with a public or private entity, recognize the influence/effect they may have on the city, region, and nation.
- The JIC works together during the event, but there is a point in time when the incident is stable and the JIC no longer communicates like it did in the heat of the incident. Need to maintain contact with the JIC even after the incident is stable.
- Without a JIC, media cannot be "controlled"; media will park satellite vans everywhere; media will talk to everyone (contractors, consultants...)
  - o Media will seek stories outside JIC
- It's best to recognize that and offer alternative stories

CURRENT THINKING, METHODS AND PRACTICES

- Share resources, messages and information
- Early coordination with multiple agencies for a PIO is necessary.
- Establish communication lines with media
- Know your local reporters and get them to recognize you as a reliable source of information.

CROSS-CUTTING ISSUES

- Inventory the JIC. Who is going to be there, and who do you want to be there to get the answers that you need?

NEXT STEPS/OTHER ISSUES

- Get media training.
- Contact California Emergency Management Agency for training in Joint Information Centers.

MESSAGE RESOURCES

GAPS/NEEDS

- Responders need to know where to find air quality data by geographic area during an incident
- Need for adequate gear: laptops, cameras, videos
- Central webpage for all emergency events
- Standardized format for all public information
- Access to communication tools (e.g., YouTube) at work.

CURRENT THINKING, METHODS AND PRACTICES

- Provide a mechanism for the community to provide feedback.
- Establish PIO group/resources to draw from.
- Work with schools in advance.
  - o Messages will be brought home to families.
- Cross agency information needs to be created, in some instances, prior to incident.
- PIOs need actionable information.
  - o Actionable: information that can be used without additional interpretation
- Pre-identify response/reaction to top 10 chemicals in the crisis.
- Central webpage/clearinghouse for all emergency events
- Develop software that takes real data and translates it to a plume that is web accessible, perhaps superimposed on Google Earth. Then by coordination, recommended action is provided, i.e., evacuate, stay there, etc.
- Further information needed on various multimedia on the internet.

CROSS-CUTTING ISSUES

None identified

NEXT STEPS/OTHER ISSUES

- Prepare resources before you have to respond.

MESSAGE TRAINING

GAPS/NEEDS

- Getting the tools to train appropriate personnel.

CURRENT THINKING, METHODS AND PRACTICES

- Contact local college campuses for teachers that can offer media training
- Contact PIOs at other related agencies for coordination and resource sharing

CROSS-CUTTING ISSUES

None identified

NEXT STEPS/OTHER ISSUES

- Get education/training on getting the message to the public. The California Emergency Management Agency has JIC training available.
- Contact PIOs at other related agencies for coordination and resource sharing!!

NEXT STEPS AND ACTION ITEMS

The CARPA Steering Committee met after the conference to identify next steps and action items.

ORGANIZATIONAL STRUCTURE & PURPOSE

CARPA will continue as an ad hoc organization for the time being. The CARPA Steering Committee will evaluate the group's status in a year.

The Steering Committee defined CARPA as an alliance to address/provide:

- Planning/ Preparedness
- Guidance
- Technical support
- Membership

There was consensus among the Steering Committee to keep CARPA focused on the three conference themes of Data, Data to Message, and Message and to establish a standing subcommittee for each. Each of the current group leaders (Jeff Cook, ARB/ John Kennedy, USEPA/R9 for Data; Shelley DuTeaux, ARB/Libby Vianu, ATSDR/CDC for Data to Message; and Dimitri Stanich, ARB for Message) is being asked to continue leading the subcommittees and to staff them with conference participants who showed interest and with others as appropriate.

CARPA NEXT STEPS/ACTION ITEMS INCLUDE:

- Conduct a survey of summit participants and ask them to identify their needs according to the three CARPA themes.
- Use survey results to develop CARPA work plan for 2009-10. Each of the three subcommittees will use the survey results to develop and refine their work plans. The Steering Committee will combine the three work plans into a CARPA work plan.
- Identify easily accomplished priority items to implement, including proceedings report, CARPA website, development of additional outreach materials for theme chairs and Steering Committee members to use in their own outreach efforts.
- Following the survey, develop a "tool kit" for the website that would contain contact lists, reference links, CARPA–developed products, and other tools and products that would aid local agencies.
- Develop CARPA list serve.
- Continually update CARPA website and make it a "go to" resource for emergency air response (www.arb.ca.gov/carpa/carpa.htm).
- Consider adopting software to use as an internal web-based tool for CARPA members to conduct business. The software could provide a central place to post documents for review and communicate other CARPA business in preparation for posting on the CARPA website.

APPENDICES

1. CARPA DEFINITION OF ACTIONABLE
2. LIST OF AND LINKS TO SUMMIT PRESENTATIONS
3. SESSION QUESTIONS AND ANSWERS

APPENDIX I

CARPA DEFINITION OF ACTIONABLE

The act of developing and summarizing information, whether it be from a piece of instrumentation or technical assessment that can be used readily, and with little interpretation or qualification, by a public health official to make a statement about the safety of the air during an emergency.

Actionable requires the data be **timely** to promote expedient action, **accurate** enough to suit the health metric used, **accessible** to all levels of government, useable with little or no need for third party interpretation, and **relevant** to the chemical, breakdown product, or resultant mixture of multiple chemicals.

APPENDIX 2

LIST OF AND LINKS TO SUMMIT PRESENTATIONS

DAY 1

Operational Emergency Response Modeling Systems for Use with Major Releases of Airborne Hazards
Ronald L. Baskett, John S. Nasstrom, Gayle Sugiyama, NARAC/IMAAC Program, Lawrence Livermore National Laboratory
http://arb.ca.gov/carpa/summit08/ppt/data_rbaskett1.ppt

Emergency Response: Perspective of a Large Air District
Jason Low, PhD, South Coast Air Quality Management District
http://arb.ca.gov/carpa/summit08/ppt/data_jlow.ppt

Monitoring, Sampling, and Lab Techniques
Paul A. Nony, PhD, Center for Toxicology and Environmental Health, LLC
http://arb.ca.gov/carpa/summit08/ppt/data_pnony.ppt

DAY 2

LLNL Support for the National Atmospheric Release Advisory Center (NARAC), Interagency Modeling, and Atmospheric Assessment Center (IMAAC)
Ron Baskett, NARAC–IMAAC Program
http://arb.ca.gov/carpa/summit08/ppt/data_rbaskett.ppt

US EPA Air Monitoring Equipment for Emergency Response
Philip Campagna, US Environmental Protection Agency
http://arb.ca.gov/carpa/summit08/ppt/data_pcampagna.ppt

Particulate Matter Air Quality Monitoring In Emergency Response
Jeff Cook, California Air Resources Board
http://arb.ca.gov/carpa/summit08/ppt/data_jcook.ppt

Prototyping the Emergency Smoke Response System (ESRS)
Sim Larkin, PhD, US Forest Service AirFire Team
http://arb.ca.gov/carpa/summit08/ppt/data_slarkin.ppt

Emergency Response: Particulate Laboratory Issues
Michael Poore, California Air Resources Board
http://arb.ca.gov/carpa/summit08/ppt/data_mpoore.ppt

Laboratory Perspective: Gas and Vapor Air Releases
Stephen Wall, PhD, California Department of Public Health
http://arb.ca.gov/carpa/summit08/ppt/data_swall.ppt

Beyond Data Collection: Data Management And Decision Making
CDR William Robberson, PE, US EPA Region IX
http://arb.ca.gov/carpa/summit08/ppt/data_wrobberson.ppt

APPENDIX 2

DATA TO MESSAGE

DAY 1

Overview of Health-Based Provisional Advisory Levels (PALs)
Femi Adeshina, PhD, Fellow ACT, U.S. Environmental Protection Agency, National Homeland Security Research Center
http://arb.ca.gov/carpa/summit08/ppt/d2m_fadeshina.ppt

Using the Air Quality Index In Emergency Events Such As Fires
Susan Lyon Stone, MS, US EPA Human Studies Division
http://arb.ca.gov/carpa/summit08/ppt/d2m_sstone.ppt

Health Metrics Tables: Occupational Exposure, Health Guidance Values, Emergency Guidance Values
Richard Nickle, MPH, Agency for Toxic Substances and Disease Registry
http://arb.ca.gov/carpa/summit08/ppt/d2m_rnickle.pdf

DAY 2

Air Quality in Emergency Response Worker Health Considerations
Rupali Das, MD, MPH, California Department of Public Health
http://arb.ca.gov/carpa/summit08/ppt/d2m_rdas.ppt

Integrating Data into Protective Health Actions
Shelley DuTeaux, PhD, MPH, Office of Environmental Health Hazard Assessment
http://arb.ca.gov/carpa/summit08/ppt/d2m.ppt

Issues Surrounding Chemical and Biological Agent Response and Recovery
Ellen Raber, Lawrence Livermore National Laboratory
http://arb.ca.gov/carpa/summit08/ppt/d2m_eraber.pdf

Shelter-in-Place: Decisions and Challenges
Rich Nickle, MPH, ATSDR
http://arb.ca.gov/carpa/summit08/ppt/d2m_rnickle.ppt

MESSAGE

DAY 1

Communicating Air Quality Health Messages
Kerry Shearer, Sacramento County Public Health
http://arb.ca.gov/carpa/summit08/ppt/message_kshearer.ppt

APPENDIX 2

OTHER

DAY 1

CCLHO/CAPCOA Air-Borne Emergency Response Procedure
Charles Mosher, MD, Mariposa County
http://arb.ca.gov/carpa/summit08/ppt/airborne_cmosher.ppt

Introduction to SEMS and Basic ICS
Michael Warren, Governor's Office of Emergency Services
http://arb.ca.gov/carpa/summit08/ppt/icssems_mwarren.ppt

DAY 2

Lessons Learned from Wildfires of 2003 and 2007
Bill Brick, Senior Meteorologist, San Diego County Air Pollution Control District
http://arb.ca.gov/carpa/summit08/ppt/sdlessons_bbrick.ppt

Table Top Exercise
John Kennedy, US Environmental Protection Agency
http://arb.ca.gov/carpa/summit08/ppt/tabletop_jkennedy.ppt

2007 San Diego Wildfires: Lessons Learned
Wilma J. Wooten, MD, MPH Public Health Officer, County of San Diego
http://arb.ca.gov/carpa/summit08/ppt/firestorm07_wwooten.ppt

APPENDIX 3

SESSION QUESTIONS AND ANSWERS

SESSION I - DAY ONE - "DATA"

- *There are some situations where we have no idea what is coming out of a plume. Do you use indicators?*

  We may not know everything that is coming out of a plume. For example, in a train derailment, there are many different products and circumstances are changing quickly. We can use our knowledge of combustion and try to determine what "bad actors" (contaminants) are in the plume.

- *You talked about the AIRNow website and another one you're creating. Is the other website live?*

  The new website is on the South Coast Air Quality Management District's website and is anticipated to go live later in the week of this conference

- *You will have portable monitors connecting to that website. What technology is used to communicate with the website?*

  We have telemetry to communicate with the website. We are comparing different metrics to be sure we are getting reasonable numbers.

- *When you run models in an emergency event, who do you depend on to get field information to ground truth the models?*

  The NARAC and IMAAC would be activated and can receive almost any data format. We can receive data sequentially from the field.

BREAK OUT SESSION I - DAY TWO - "DATA" PRESENTATION

- *AIRShare, AIRNow websites: who accesses these sites? And how does the public know about these resources?*

  The AIRShare website gets about 200 hits a day; this website is geared towards public information officers. AIRNow gets about 50,000 hits a day. These websites are publicized through news releases, distribution of literature, trade shows and conferences.

- *PM2.5 network: why isn't there coverage for the entire state?*

  Data submission is voluntary; participation is dependent on the individual local air districts. The districts have to start streaming data into the AIRNow network of their own accord. Therefore, AIRNow will need outreach to data collectors/local air districts to increase participation.

- *Machines can't handle super high concentrations—data is questionable. Is there a solution?*

  Yes, the Beta Attenuation Mass monitors (BAMs) are challenged due to high concentrations. But the data can still be useful if you understand the reason for the drop-off.

- *Particulate size is not the only important aspect of PM2.5 data. PM can contain all kinds of things: the specifics are important—there is a need for mobile lab that can analyze contents of PM. Speaker wants better job of projecting analytical information into the field, such as the use of a mobile labs.*

  Yes, it's difficult to know what to look for, plus you need the right standards. Problems with mobile labs: you must choose the equipment you mobilize according to the specific hazardous substances you're looking for, which is hard to know without first doing some surveillance at the site first. Once you've determined which equipment to take, setting up your lab will require some time. Instead of all this, why not just send your samples to a formal / fixed lab, where they have more resources to analyze? It takes about as long to do as it does to mobilize and set up your lab in the field, assuming that you fire the samples off quickly and request a quick turn-around time. Perhaps advances will be made in the future to allow for better, timelier on-site analysis. But it's not an efficient approach as of yet.

- *Mobile labs: PM speciation not possible. Wants standards repository.*

  Mobile lab gas chromatograph/mass spectrometer (GC/MS): today, fixed labs can't do much better than mobile labs—their searching capabilities are the same.

  Problem: degradation. But in the case of major chemicals, you can find them quickly (e.g., pesticides).

  Mass Spectrometry (MS): can set up within three hours. Limiting factor = power; mobile generator only lasts 6–8 hours.

  Need for standards repository – Used to be EPA standards, but not now. Need to bring them back.

- *Comment: "Too many people managing data that is not validated."*
- *Desire for "spin-off" workshop or training dealing with technical issues (e.g., get data from instruments to interpreters more efficiently). Local districts need to make the most of the tools and relationships available here at CARPA: request that the air community work to solve these technical problems together, as opposed to trying to deal with them alone— these are shared issues, relevant to all.*

SESSION II - DAY ONE - "DATA TO MESSAGE"

- *When the American Red Cross set up shelters, they would not allow the public to use them as "clean air shelters."*

  There are many considerations for these decisions. There has been some discussion with the California National Guard about mobile tents. It is important to interface with care and shelter assets to help with the placement of shelters.

- *What are "children"?*

  Lungs do not completely develop until 18 years old. Upper elementary/ middle school children typically get the most exposure.

- *Comment:*
  - *As an air district, if you're assisting with response and need to monitor remote valleys, conditions will dictate response.*
  - *Need to integrate with the Incident Command. They will help you get resources.*
  - *With the health officer, you can collectively make decisions and have the Incident Commander back you up.*
- *Comment – When you have heat and particulates all at once, that can affect your messaging.*
- *Use of N-95 – for public messages, recommend not using this – it doesn't protect from gases. Main message is to stay indoors with no air circulating. Think the N-95 gives false hope.*

  N-95's are not meant to protect against vapors or gases, but do protect from particulates.

SESSION III - DAY ONE - "MESSAGE"

- *CalEPA/OEHHA have set up blogs for Continuity of Operations/Continuity of Government. We use a "blog spot" for this. How do we control messages that others put out?*

  You can't control it; you can only monitor what's being said. Try to get your message out first. You can develop your relationships with the media who will be covering the event. The media usually trusts the source they know. Anticipate criticisms ahead of time – what will "they" say and how will we respond?

- *What does "frame the story" mean?*

  You tell the story – don't let someone else tell it for you. Get out there fast. First thing to address – who, what, where, when, why. For credibility, you need to have facts on your side. Rely on the JIC to cut through the noise.

- *I have seen a JIC simplify a message to where it is incorrect. PIOs need to be conscious of scientific wording. It needs to be an iterative process.*

  That is a challenge. In a crisis, people have a lot on their minds. Their ability to understand can be compromised and their understanding at 4 grade levels below their actual education. One way to know if your message is too complicated is if the media asks "OK, just tell me this, what are you telling your family to do?"

- *One state has decided to have a JIC, but will have a "virtual JIC." What do you think?*

  That is OK as long as it is performing the same function. Media will tend to go where the story is. A virtual JIC sometimes means the PIOs are on scene. Sometimes have people at a physical JIC and in the field; they're all part of the JIC.

APPENDIX 3

- *A lot can get lost in filtering a message from a scientist to the public. Also, when you try to have a message in another language, more can get lost in one more translation.*

  You do need to take a look at who is out there as a bilingual spokesperson. You need to get someone with the proper educational level. In interviewing a scientist, reporters feel they need half an hour to get one to two key sentences.

- *An air quality person is not always in the JIC, so sometimes agencies go directly to the press. How can the air quality message get to the top?*

  It's helpful to have representation at the JIC to help with the message. It is also OK for you to craft a message specific to your discipline as long as it's coordinated.

- *Comment – The message needs to be developed on a case-by-case basis. Usually have to condense messages to 3-9-27 (three points, nine seconds, twenty-seven words). Emergency pubic information (EPI) is very different from marketing and regular information. In EPI, you frame the message adamantly – what is most critical thing in the next hour? You can't be pulled off topic.*

CARPA

California Air Response Planning Alliance

www.arb.ca.gov/carpa/carpa.htm