

**NATIONAL CONVERSATION ON PUBLIC HEALTH AND CHEMICAL EXPOSURES
SCIENTIFIC UNDERSTANDING WORK GROUP**

**Meeting No. 8 Summary
Teleconference
July 12, 2010**

Meeting Objectives:

- Review the current recommendation drafts and decide whether to:
 - include each in the draft work group report (and with what changes); or
 - mention the needs for improved understanding on this topic in the text of the report but not make it a specific recommendation.
- Discuss the key messages that should be included in the introduction to the work group report
- Plan next steps

Upcoming Meeting	When and Where	Suggested Agenda Items
<i>National Conversation on Public Health and Chemical Exposures Scientific Understanding Work Group (Scientific Understanding) call</i>	August 3, 2010 1:00p.m.–5:00 p.m. EST	Review new recommendations, provide general comments on introductory sections, and revise recommendations

I. Action Items

Wrap Up and Next Steps for Work Group	By Whom	By When
1. Revise work group recommendations	Gail Bingham will coordinate revisions to the recommendations	July 28, 2010
2. Compile and edit work group report	Kim DeFeo	July 28, 2010

II. Meeting Summary

Welcome, Roll Call, Meeting Objectives and Agenda

Kevin Teichman, chair of the Scientific Understanding Work Group, welcomed everyone to the call and thanked the work group members for their work to date. Gail Bingham, a facilitator, reviewed the agenda. Ms. Bingham reminded the group that purpose of the call would be to determine which of the 13 recommendations to include in the final work group report. With any remaining time, the group should review the key messages listed in the introduction of the draft report.

Ms. Bingham asked the Scientific Understanding Work Group members who had helped redraft the recommendations to summarize them, including the recommended action(s), the actor(s), and the resulting improvements in scientific knowledge.

In response to questions, Ms. Bingham reminded the work group that it can put forth up to 12 recommendations to the *National Conversation on Public Health and Chemical Exposures* Leadership Council (Leadership Council). She also noted that those recommendations that can be accomplished in the near future are appropriate for submission, as are those consisting of larger, longer-term goals. In either case, being concrete and specific about the action and the intended outcomes is desirable. The draft work group report is due to the Leadership Council by the end of August; the final report will be due in October. The Leadership Council will not edit the work group reports but will draw from them and other input in drafting the action agenda. Each work group report will be included as an appendix to the action agenda.

Discussion of Recommendations

Recommendation 4: Fill Data Gaps

Margaret Shield gave a summary of this recommendation. She noted that one of key scientific challenges today is not having complete information about chemicals that are used in commerce. This recommendation seeks to address this problem by recommending that federal agencies, such as the U.S. Environmental Protection Agency (EPA) and others, identify the minimum data set of health and safety information needed for each chemical in order to be able to make reasonable conclusions about the safety of that chemical. This process should be completed in the near term. This data set should be reviewed and adjusted periodically. In the medium term, EPA should develop a prioritization method to identify those chemicals posing the greatest hazard that would then trigger alternatives assessment or further testing. The public availability of information in databases should be examined to evaluate implementing this recommendation. Also, mechanisms for public feedback on the accuracy of chemical information supplied by chemical manufacturers should be evaluated.

In the discussion that followed, a Scientific Understanding Work Group member suggested that the group seek a “targeted data set” on each chemical rather than a “minimum data set.” Another member stressed the importance of putting the onus on manufacturers to share information on the chemicals they produce. Another member expressed interest in expanding the recommendation’s focus to include mold and mycotoxins, and suggested that the EPA should collect information on mycotoxins.

Recommendation 5: Databases

This recommendation focuses on making the information about chemical toxicity and exposures more easily available to the public by integrating databases so that a user can search for information across various databases. This recommendation also urges the creation of a knowledge-based search engine to help users easily access the information they seek. A member asked how this could be done while protecting confidentiality. Another member mentioned that the Department of Homeland Security is protecting confidential business information by using different levels of permissions for different users. Dr. Teichman mentioned that this recommendation complements a similar one being developed by the *National Conversation on Public Health and Chemical Exposures* Monitoring Work Group.

Recommendation 13: Technologies

Doris Cellarius reported on this revised recommendation. She noted that we need to find ways to enhance *in vitro* toxicity testing in order to ensure that it has the biological relevance that *in vivo* testing provides. Another work group member mentioned that the *Toxicity Testing in the*

21st Century: A Vision and a Strategy report is good but that it focuses on genetics and polymorphisms and not on other important factors such as age differences and sex differences. It was discussed that research programs directed towards developing and evaluating new technologies should be reassessed every 3–5 years. Inter-agency coordination is critical. The National Toxicology Program could take the lead on this research along with the EPA. A work group member suggested that the group tighten up the recommendation's language and delineate actions as short-, intermediate-, and long-term.

The group decided that instead of mentioning any particular chemical in its recommendations, it would work to ensure that recommendations are applicable to any chemical and compound. The group agreed to specify that exposure to mycotoxins is a concern.

A member asked how much focus needs to remain on validating these new technologies versus starting to use these approaches. Work still needs to be done on validating these technologies.

Recommendation 6: Vulnerability Characteristics

Ms. Cellarius reviewed the draft recommendation regarding the vulnerability characteristics of communities and noted that there are many things that affect a community's vulnerability. The recommendation suggests increased research into community vulnerability. Researchers should collaborate with communities in identifying the characteristics that make them vulnerable to chemical exposures. Using the NIEHS Partnerships Program to facilitate this research was suggested. Another Scientific Understanding Work Group member pointed out that, although NIEHS collaborates with communities, an investigator still has to initiate the grant process (rather than a community member).

Recommendation 7: Gene-environment interaction

Fred Miller summarized this recommendation and suggested that environmental exposure studies need to be added to genetic investigations and vice-versa. He discussed the need for a prospective cohort study of the interaction between genes and the environment, as proposed by Francis Collins. The group discussed the need to look at the effects of environmental exposures in terms of genes.

Recommendation 8: Individual Susceptibility

Claudia Miller provided an overview of this recommendation, which details the need for inpatient hospital facilities in which to conduct research on chemical susceptibility. Establishing such "environmental medical units" (EMUs), which would be free of chemical exposures, would allow patients to reach a clean baseline and allow researchers to examine any changes in their symptoms or gene expression as a result. Such EMUs would be important for research as they would help us to better understand the underlying mechanisms that lead to chemical intolerance. Conducting such research would also enable us to identify risk factors for susceptibility.

This recommendation suggests that CDC/ATSDR should start using the Quick Environmental Exposure and Sensitivity Inventory (QEESI) in exposure investigations within a year. It also recommends creating a trans-NIH working group on chemical intolerance, establishing an inter-agency taskforce on Toxicant-Induced Loss of Tolerance (TILT), and assembling an EMU planning group to discuss implementation of EMUs.

Recommendation 9: Ethnic Communities

This recommendation's goal is to ensure that issues specific to certain vulnerable communities (e.g., Native American and immigrant communities) are addressed in exposure assessments

and remediation plans. A Scientific Understanding Work Group member gave an example: if a Native American community uses willow bark as an analgesic and provides this bark to babies to suck on when teething, it would be important to sample this bark when conducting an exposure assessment. These kinds of exposures are often missed in the typical assessment. It was agreed that this recommendation should be broad enough to capture all vulnerable communities and their specific routes of exposure.

The group agreed to incorporate this recommendation into two other recommendations: Recommendation 3 (Improve Risk Assessment) and Recommendation 6 (Vulnerability Characteristics). Doing so would strengthen Recommendation 3 by ensuring it stresses the importance of developing exposure scenarios that are culturally sensitive, and would strengthen Recommendation 6 by including a focus on factors like socio-economic status and proximity to pollution.

Recommendation 1: Scientific Criteria for the Application of the Precautionary Principle

George Alexeeff provided an overview of this updated recommendation. This recommendation recognizes that indicators that a chemical might be harmful may exist even in the absence of full scientific review (for example, a substance with a structure similar to asbestos may be considered potentially harmful even without full analysis). This recommendation suggests that criteria be established to help us judge when indications of harm constitute a sufficient threshold to trigger taking precautionary measures.

Members noted that most of the impediments to implementing this recommendation are political, not scientific. Deciding how to prioritize chemicals for precautionary action is, however, a scientific question. The group agreed that EPA, the National Academy of Sciences, and the Council on Environmental Quality, in coordination with other agencies and the assistance of local and state agencies, should take the lead on this recommendation.

Recommendation 2: Alternatives Assessment

Dr. Alexeeff provided the group with an overview of alternatives assessment. The issues that need to be considered when thinking about using alternatives assessment include the following: How clean does a chemical need to be to be considered a safer alternative? How do we rank chemicals according to their safety? Considering the lifecycle analysis of a chemical before deciding that one is “better” than another is also important. We need research to help us identify models for successfully using alternatives assessment. The group agreed this was an important, and timely, recommendation.

Recommendation 3: Risk Assessment

The group that revised this recommendation discussed how making improvements to risk assessment could be compatible with the precautionary principle. The group agreed that risk assessment, though not the most effective decision making paradigm, has an important role, which can be improved as per the recommendations in the National Research Council's *Science and Decisions: Advancing Risk Assessment* report.

Recommendation 10: Public Health Assessments

Steve Lester shared that the drafting group working on this recommendation wanted to evaluate the procedures currently used by the government to do health studies and consultations and examine why they are ineffective. In order to improve these evaluations, the drafting group recommends that a panel investigate this question and that the guidance manual used for Public Health Assessments and cluster investigations be improved. Ed Murray, senior liaison, shared with the group that some changes relating to Public Health Assessments are currently

underway at ATSDR right now in response to the findings of the Government Accountability Report.

Wrap Up and Next Steps

The Scientific Understanding Work Group did not have time to discuss two of the recommendations and the themes presented in the draft report; these will be discussed on the upcoming call on August 3, 2010. The *National Conversation on Public Health and Chemical Exposures* Leadership Team will revise the draft recommendations based on the group discussion on this call and will send out a revised draft to the group. A request was made by a work group member to add a new recommendation. Ms. Bingham responded that in her next e-mail she would include instructions on writing up any new recommendations for consideration on the next work group call.

III. Participation

Members Present

George Alexeeff, California EPA
Nancy Beck, Physicians Committee for Responsible Medicine
Mark Buczek, Supresta- Retired
Doris Cellarius, citizen
Susan Hanson, Shoshone-Bannock Tribe
Jean Harry, National Institute of Environmental Health Sciences
Kristi Jacobs, Food and Drug Administration
Rebecca Head, Monroe County Health Department
Stephen Lester, Center for Health, Environment, and Justice
Claudia Miller, University of Texas Health Science Center at San Antonio
Fred Miller, National Institute of Environmental Health Sciences
Lisa Nagy, The Preventive and Environmental Health Alliance
Richard Niemeier, National Institute for Occupational Safety and Health
Melissa Perry, Harvard University
Stuart Schmitz, Iowa Department of Public Health
Rich Sedlack, The Soap and Detergent Association
Margaret Shield, Local Hazardous Waste Management Program, King County

Regrets

Cherri Baysinger, Missouri Department of Health and Senior Services
Frank Bove, Agency for Toxic Substances and Disease Registry
Bob Hamilton, Amway Corporation
Wade Hill, Alliance of Nurses for Healthy Environments
Jeff Jacobs, American College of Occupational and Environmental Medicine
Frank Mirer, Hunter College Urban Public Health Program
Russell White, American Petroleum Institute

Facilitation and Staff Team Members Present

Kevin Teichman, Chair, EPA
Ed Murray, ATSDR
Gail Bingham, RESOLVE facilitator
Kim DeFeo, NCEH/ATSDR staff

Final Document

Others Present

Pete Fargo, EPA

Ed Washburn, EPA