



Board of Trustees

CHAIR

James Wilson
Resources for the Future
Emeritus

TREASURER

Chad Sandusky
Physicians Committee
for Responsible Medicine

PAST CHAIR

Steven Lewis
Integrative Policy & Science

Michael Dourson

Toxicology Excellence for
Risk Assessment

Mike Fremont

Rivers Unlimited
(Emeritus)

Sam Kacew

University of Ottawa

Roger O. McClellan

Advisor, Toxicology and Human
Health Risk Analysis

Randall Manning

Georgia Environmental Protection
Division

Jennifer Orne-Zavaleta

U.S. Environmental
Protection Agency

Jerry M. Rice

Georgetown University
Medical Center

Sue Ross

University of Cincinnati
Department of Environmental
Sciences

Comments on Implementation of the Pilot Voluntary Children's Chemical Evaluation Program (VCCEP)

71 Federal Register 67121, November 20, 2006

Submitted by Toxicology Excellence for Risk Assessment (*TERA*)

January 19, 2007

Contact: Jacqueline Patterson, 513-521-7426, Patterson@tera.org

TERA is pleased to offer these comments with regard to the Voluntary Children's Chemical Evaluation Program (VCCEP) pilot program. *TERA* is a non-profit, 501(c)(3) corporation organized for scientific and educational purposes. Our mission is to protect public health by developing and communicating risk assessment information, sponsoring peer reviews and consultations, improving risk methods through research, and educating the public on risk assessment issues. *TERA* provides government and industry sponsors and the public with independent and objective scientific opinion.

TERA has participated in the VCCEP pilot by organizing 11 peer consultations meetings on VCCEP submissions. Our comments are based upon our experience organizing and conducting these peer consultations, as well as our extensive experience with risk assessment and peer review. We would be happy to discuss these comments with EPA and others. We would suggest that EPA also actively solicit input from the dozens of national and international expert scientists who have served as peer consultants for these submissions. They would have valuable insights and suggestions regarding the assessments, methods, and process.

We offer a number of comments and observations for consideration in evaluating the VCCEP pilot. To provide perspective and background for *TERA*'s comments, please see the attached description of the VCCEP peer consultation process.

VCCEP is Unique

The scope of VCCEP is unique in two respects. The first is that the sponsors are asked to provide a summary of the available hazard data, an assessment of all potential routes of exposures to children in the general US population, and to consider both the hazard and the exposure to characterize what is known about the potential risks to children who may be exposed to the chemical. They are then asked to evaluate whether the available data are sufficient or if additional data are needed to characterize risk. Few assessments have taken this focus.

For example, most government risk assessment efforts address only part of the risk assessment paradigm, focusing on either hazard or exposure, or if risk is characterized focusing on a single media exposure, a specific type of exposure, or for a specific contaminated site. Looking broadly at children's potential aggregate exposure to a chemical from everyday living is a valuable assessment activity that needs to be done, and which VCCEP attempts to do. Such attempts, properly reviewed, allow EPA and others to design toxicity testing programs that have maximum impact on the assessment of children's health in a manner that conserves the use of experimental animals.

A second unique aspect of the VCCEP is that the assessments are discussed in an open and public meeting where all may hear the discussions, commentary, and debate on the risk characterization of specific chemicals by scientists of different disciplines and organizations. Any group or individual is allowed to attend and contribute technical comments at the peer consultation. Specifically:

- VCCEP peer consultation panels are composed of experts with chemical-specific, organ specific, and toxicology and exposure risk assessment backgrounds. Such blending of disciplines for the purpose of risk characterization discussions seldom occurs. Secondly,
- VCCEP panels are composed of scientists from different types of organizations, and while organizational representation is not intended, nor organizational opinion solicited, the differing scientific opinions that may exist due to differing organizational viewpoints are valuable.

Moreover, this discussion by experts of different disciplines and organizations takes place outside of any chemical-specific risk management or regulatory decision, which makes the process less vulnerable to political influence. This might be helpful to EPA, industry and other stakeholders.

As a result, the VCCEP peer consultations have led to increased risk assessment understanding among the scores of experts and scientists who have participated in preparation of the assessments or in the meetings. Not only have the authors, panelists, and observers at the meetings benefited, but also have others not in attendance, including members of the public, companies, NGOs and government agencies who can access the submissions, as well as information on the peer consultations and results through the Internet.

The VCCEP process can certainly be improved to better meet its stated goals, but the unique aspect of scientific discussion and debate on chemical-specific risk characterization by scientists

from different disciplines and organizations, outside of ongoing risk management decisions should be recognized. We strongly feel that discussions that occur routinely in VCCEP panels among risk assessors with differing types of expertise should be encouraged elsewhere.

Peer Consultation - Identification of Generic Issues

During peer consultation meetings, panel members have identified a number of “generic” issues or data needs that are independent of specific chemical assessments. Many of these issues are discussed in the peer consultation reports available at www.tera.org/peer. These issues should be considered not only in evaluating the VCCEP pilot, but also for other children’s risk assessment efforts. For example, panel members have noted that VCCEP exposure assessments often have had limited data and must make many assumptions regarding the use of consumer products. Panelists thought there is a need for better understanding of how people commonly use consumer products and how children are involved in their uses (e.g., how and when products are used, under what ventilation conditions, whether people read and follow label directions, the duration of use and the quantity used). Panel members have suggested that validation of at least some of the residential exposure scenarios may be needed. In the hazard and toxicity area, panel members have noted the need for more juvenile toxicity assessments to gain a better understanding of how to interpret and identify toxicity end points and make comparisons among species, as well as a general need for understanding of early life exposure effects on adult disease status and health effects.

Another area often mentioned by panel members was how to address co-exposures to other chemicals. Children are not exposed to single chemicals in isolation, but to multiple chemicals at the same time in the form of chemical mixtures. For example, they are exposed to gasoline more often than they are to single gasoline components, such as benzene or toluene. The VCCEP sponsors and peer consultation panel members recognized this as a shortcoming to the VCCEP design of single chemical evaluation.

Revision of Submissions

Peer consultations and peer reviews are generally used to comprehensively evaluate an assessment (its completeness, appropriate data selection, validity of assumptions and approaches used, and strength of the conclusions) and to recommend revisions and improvements. During the VCCEP peer consultation meetings, panelists often suggested additional text or analyses, revisions, and clarifications to the sponsors’ submission document. The VCCEP process however, does not provide for revision of the assessments prior to EPA’s review and data needs decisions. In the future, it might be more efficient to have sponsors revise their assessments to address panel comments (and public comments) prior to EPA review.

Communicating Results to the Public

The VCCEP pilot was intended to provide EPA and the public “with the means to understand the potential health risks to children associated with exposure to chemicals to which children may be exposed.” The pilot process and scope of the submission documents has provided EPA with information and the means to understand the available data; however, these types of risk

assessments are complex, and, by necessity, the submission documents are written in technical language more appropriate for scientific readers than for the general public. Some submissions contained lay public executive summaries and all the peer consultation meeting reports included executive summaries, but the direct communication of information from the VCCEP process to the public has not occurred to an adequate extent. In the future, once a chemical has completed the process and the EPA Data Needs Decision has been issued, EPA should consider providing a layperson summary.

Advantages of the Core/Ad Hoc Panel Mix

The VCCEP peer consultation panels have been made up of two types of members: “core” members with relevant general knowledge who participate in all meetings and “ad hoc” members who are selected for individual meetings to provide specific expertise needed for a particular chemical, exposure scenario, or toxic endpoint. This arrangement of core and ad hoc has decided advantages. The main advantage of this arrangement is that the core panelists provide continuity and promote efficiency as they become increasingly familiar with the process and goals of the VCCEP, resulting in more time for relevant scientific discussions. The ad hoc members bring relevant chemical-specific and issue-specific expertise to each meeting, and the use of ad hoc members avoids development of “group thinking” by the peer consultation panel as a whole. Although current Office of Management and Budget guidance for peer review discourages repeated use of the same reviewers, this suggestion is not relevant for ongoing programs such as VCCEP, where fostering a consistent approach to evaluating issues regarding children’s health for chemicals of differing toxicities and exposures is desirable.

Benefits from the VCCEP Pilot

The VCCEP pilot has helped to progress the development of children’s chemical risk assessments. A few key benefits resulting from the VCCEP pilot are listed below. EPA and others should make full use of the VCCEP pilot to learn from this experience and improve children’s risk assessment efforts.

- The VCCEP pilot Federal Register notice (65 FR 81700) provided general guidance for the format and content of the submissions, but did not dictate specific approaches to use. Because specific guidance was lacking, the industry submissions used a variety of approaches. This provides an opportunity to evaluate these different approaches to determine how these types of assessments might best be approached.
- The submissions and subsequent peer consultation discussions have identified general areas where data and analytical tools are lacking. For example, risk characterization tools such as margin of exposure and hazard quotients were used, but better tools in risk characterization should to be developed for the higher tiers.
- The peer consultation discussions highlighted the general lack of exposure data for significant exposure scenarios that are important to children, such as household consumer products and exposures in schools.

- The submissions and peer consultations have expanded risk assessors thinking and discussion on how children may be exposed.

TERA scientists involved in the VCCEP peer consultations recently published a paper in *Risk Analysis* (Williams et al., 2006) that described the VCCEP process and reviewed findings from the first nine chemicals. The paper identifies some common themes and key issues from the submissions that would be worth further evaluation.

The VCCEP pilot has given all participants (industry, NGOs, consultants, EPA, and the public) expanded experience in preparing and reviewing complex assessments for children. The submissions have reviewed available data and considered further data needs in the context of both exposure and hazard, and with consideration of wise use of experimental animals. Prior to this exercise, there was no consistent approach to assess comprehensively children's exposure and risk, nor was this type of assessment being done. We encourage EPA, industry, and our other colleagues to continue with these efforts to improve children's risk assessment.

Sincerely,

Daniel Briggs, Ph.D., DABT
Adjunct Toxicologist

Michael Dourson, Ph.D., DABT
Director

Jacqueline Patterson, M.En.
Peer Consultation and Review Program Manager

Reference

Williams, P.R, J. Patterson, and D. Briggs. 2006. VCCEP Pilot: Progress on Evaluating Children's Risks and data Needs. *Risk Anal.* 26:3, pp. 781-801.

Attachment Background on VCCEP Peer Consultation Process

In the December 26, 2000 Federal Register (65 FR 81700) EPA announced the Voluntary Children's Chemical Evaluation Program (VCCEP) pilot program. This program is intended to provide data to enable the public to understand the potential health risks to children associated with certain chemical exposures. The key questions of the program are whether the existing data on a given chemical are sufficient to adequately characterize the potential hazards, exposures, and risks to children and prospective parents, and, if not, what additional data are necessary.

TERA is an independent non-profit organization with a mission to protect public health through the best use of toxicity and exposure information in the development of human health risk assessments. *TERA* was awarded a Cooperative Agreement by EPA to develop the concept and practice of peer consultation for risk assessment. One of the activities undertaken by *TERA* under this agreement is conducting peer consultations for the VCCEP pilot program. *TERA*'s responsibilities include identifying and recruiting scientists with relevant expertise to comprise a peer consultation panel, identifying and managing conflict of interest and bias issues of the panel candidates, organizing and conducting the peer consultation panel meetings, and drafting and finalizing the meeting reports.

The peer consultation meetings are open to the public and provide a science-based discussion on the data needs for the chemical, utilizing not only the assessment submitted by the sponsor, but also the expertise and knowledge of the panel members. Members of the peer consultation panels are selected by *TERA* based on their expertise in scientific disciplines relevant to the chemicals, test methodologies, risk assessment, and pertinent scientific issues. Nominations for panel members are invited from all interested parties and the general public. *TERA* selects the panel members from among those nominated and also from among other qualified experts whom *TERA* independently identifies.

TERA selects panel members to reflect a balance of the relevant scientific expertise needed to carefully review the sponsor submission. Panels reflect a broad and diverse range of knowledge, training, and perspective, including a diversity of affiliations (e.g., academic, consulting, government agencies, non-government organizations, and industrial/commercial).

An essential part of panel selection is the identification and disclosure of conflicts of interest and biases. *TERA* uses procedures that follow the peer review guidance of the U.S. Office of Management and Budget, the National Academy of Sciences, and the U.S. EPA. Prior to selecting the panels, *TERA* requests each panel candidate to complete a 12-page questionnaire to determine whether their activities, financial holdings, or affiliations could pose a real or perceived conflict of interest or bias. *TERA* staff review and discuss this information with the candidates prior to selection and disclose any pertinent information at the meeting and in the meeting report.

Panel members also are selected to bring a wide range of views and perspectives to the peer consultations, reflecting the interest in VCCEP by a wide range of stakeholders. However, panel members serve as *individuals*, representing their own personal scientific opinions. They do not

serve as representatives of their companies, agencies, funding organizations, or other entities with which they are associated. Their opinions should not be construed to represent the opinions of their employers or those with whom they are affiliated...

Stakeholders and members of the public are invited to attend the peer consultation meetings, and they are invited to provide oral and written technical comments on the assessment document for the panel's consideration. Recent panel meetings have been made available via free real-time web casts which allow those with a computer and Internet service to see and hear the meeting in progress from anywhere in the world.

TERA develops a list of questions and discussion topics to guide the panel in its discussions. General questions regarding completeness and interpretation of data are included, as well as more specific questions relevant to the hazard, exposure, or risk characterization of the specific VCCEP chemical being evaluated. Individual panelists share their opinions and defend them with scientific data and analysis. In order to avoid influence on the panel, sponsors and other parties are asked to refrain from discussing issues related to the submission with panel members.

At the end of each peer consultation meeting, the individual panel members are asked to identify what he or she considers to be scientific data needs for the chemical, and the rationale for these needs. The peer consultation panel in the early meetings differentiated data gaps from data needs. *Data gaps* were defined as areas that could benefit from additional data, additional studies, additional analysis, or clearer presentation, while *data needs* were defined as data gaps requiring additional work before the potential risk to children can be adequately characterized. Not all data gaps will be considered data needs, and many panelists consider the risk characterization results when deciding whether a data gap is a data need.

TERA scientists take notes of the meeting discussions and prepare a draft meeting report summarizing the panelists' discussions, conclusions, and recommendations. The draft report is reviewed by the panel. The sponsors also are allowed to see the draft report, but they are allowed to comment only on the clarity and completeness of the presentations and statements they made at the meeting. The final meeting reports are made available to the public on *TERA*'s Peer Review and Consultation website (<http://www.tera.org/peer/welcome.htm>).