

IMPLEMENTATION OF THE CALIFORNIA ENVIRONMENTAL
CONTAMINANT BIOMONITORING PROGRAM

**Appendix C of
Report to the California Legislature**

California Department of Public Health
in collaboration with
California Environmental Protection Agency's
Office of Environmental Health Hazard Assessment and
Department of Toxic Substances Control

January 2010



Arnold Schwarzenegger
Governor
State of California

Kimberly Belshé
Secretary
California Health and Human
Services Agency

Mark Horton
Director
California Department of Public Health



Appendix C: Recommendations from Scientific Guidance Panel Meetings

(For all of the Scientific Guidance Panel meeting agendas, presentations, handouts and more please visit: <http://www.oehha.ca.gov/multimedia/biomon/agendas.html>)

December 4-5, 2008 Meeting of the Scientific Guidance Panel of the California Environmental Contaminant Biomonitoring Program

Panel Recommendations and Meeting Conclusions

At a meeting held in Sacramento, California on December 4 – 5, 2008, the Scientific Guidance Panel (SGP or Panel) of the California Environmental Contaminant Biomonitoring Program (CECBP) heard presentations by staff and comments from the public. The SGP considered several issues during its deliberations, and made several recommendations to the CECBP and decided on topics for the next meeting, as follows:

1. The SGP recommended that Program staff pursue their plan to analyze archived biological specimens from one or more researchers who responded to a Request for Information.
2. The SGP encouraged Program staff to pursue a pilot study focusing on paired maternal/child exposures, designed so that the results could be generalized to a wider California population. Panel members favored a descriptive study rather than a hypothesis-driven study. It was also suggested that such a study take advantage of the Memorandum of Understanding (MOU) between CECBP and CDC's National Center for Environmental Health Laboratory (NCEHL) whereby NCEHL will analyze a limited number of biological specimens collected by the CECBP for some selected chemicals.
3. SGP members requested that Program staff present a draft pilot study plan at the next SGP meeting.
4. The SGP recommended adding "diesel exhaust" as a designated chemical for inclusion in the CECBP.
5. The SGP recommended adding "brominated and chlorinated organic compounds used as flame retardants" as designated chemicals for inclusion in the CECBP.
6. The SGP requested additional information be provided to the Panel on cyclosiloxanes prior to the next meeting. The SGP will consider whether to recommend adding cyclosiloxanes as designated chemicals for inclusion in the CECBP.
7. The SGP postponed to a future meeting whether to recommend designated chemicals related to the use of antimicrobials and synthetic hormones in animal husbandry.
8. The SGP requested that materials be developed on pesticides for consideration as potential designated chemicals. The focus will be placed on residential and high-use agricultural pesticides.

9. The SGP will discuss at their next meeting criteria to recommend priority chemicals for inclusion in the CECBP. The SGP may add additional criteria to the list of existing criteria.
10. The SGP would like Program staff to provide information on possible priority chemicals at the next SGP meeting. At the next meeting, the SGP will consider recommending some chemicals for inclusion as priority chemicals.
11. Recommending designated and priority chemicals is an ongoing process of the SGP and will continue to be addressed at future meetings.

March 2-3, 2009 Meeting of the Scientific Guidance Panel of the California Environmental Contaminant Biomonitoring Program

Panel Recommendations and Meeting Conclusions

The Scientific Guidance Panel (SGP) of the California Environmental Contaminant Biomonitoring Program (CECBP) met on March 2-3, 2009 in Sacramento. CECBP staff made presentations on a variety of issues and the public provided comments to the Panel. The SGP deliberated on and made recommendations regarding designated and priority chemicals¹. The Panel also provided comments on CECBP study design issues. The SGP's specific recommendations and suggested topics for the next meeting are summarized below.

Panel recommendations regarding designated² and priority chemicals:

1. The SGP recommended that the following chemical classes be added as designated chemicals for inclusion in the CECBP:
 - Antimicrobials approved for use in food animal production
 - Synthetic hormones approved for use in food animal production
 - Cyclosiloxanes
2. The SGP recommended that the following chemicals and chemical classes be added as priority chemicals for inclusion in the CECBP:
 - Cadmium
 - Lead
 - Mercury
 - Arsenic
 - Bisphenol A
 - 2,4,4'-Trichloro-2'-hydroxyphenyl ether (Triclosan)
 - Perchlorate
 - Diesel exhaust
 - Cotinine
 - Brominated and chlorinated organic compounds used as flame retardants
 - 3-Hydroxybenzo[a]pyrene
 - 6-Hydroxychrysene
 - 3-Hydroxyphenanthrene
 - Organophosphate insecticides already designated³

¹ A copy of the enabling legislation, which includes the criteria for selecting designated and priority chemicals, can be found here:

http://oehha.ca.gov/multimedia/biomon/pdf/sb_1379_bill_20060929.pdf

² For a complete list of the CECBP designated chemicals, see

<http://oehha.ca.gov/multimedia/biomon/pdf/CECBPDesignatedChemicals.pdf>

³ Priority chemicals in this class include only those members that are already designated.

- Polybrominated diphenyl ethers (PBDEs)⁴
- Pyrethroid pesticides already designated³
- Phthalates already designated³

Panel input regarding CECBP study design:

1. The SGP encouraged the CECBP to consider emphasizing thyroid disruptors in the Maternal-Infant Environmental Contaminant Biomonitoring Project.
2. SGP members encouraged CECBP staff to include chemicals in the Maternal-Infant Environmental Contaminant Biomonitoring Project that are likely to be detected in the individuals tested.
3. SGP members support CECBP efforts to report results to individuals, to the larger communities from which these participants come, and to the medical community. SGP members offered to review and provide input on draft materials that would be used for results communication, once they become available.

Panel suggestions regarding discussion topics related to chemical selection for the next meeting:

1. The SGP identified pesticides as a priority for discussion at the next meeting. The Panel suggested discussing pesticides as potential designated or potential priority chemicals at the next meeting, including:
 - Pesticides that are of highest use in California and/or are used on pets or for other household purposes
 - Pesticides that are not on the CDC list⁵ to be considered as potential designated chemicals:
 - Classes of pesticides on the CDC list that are not fully designated (e.g., pyrethroids, organophosphates)
 - Specific pesticides of potential concern that are not on the CDC list and therefore not designated (e.g., fumigants, select organochlorines, select carbamates)
 - Pesticides on the CDC list to be considered as potential priority chemicals:
 - Carbamates already designated
 - Organochlorines already designated
2. SGP members would like to investigate the following types of chemicals and chemical classes as potential designated chemicals:
 - Plasticizers
 - Chloramine disinfection byproducts
 - Glycol ethers
 - Linear siloxanes

⁴ PBDEs are members of the priority class “brominated and chlorinated organic compounds used as flame retardants.”

⁵ The CDC list of chemicals can be found here:

<http://www.oehha.ca.gov/multimedia/biomon/pdf/CDCChemicalsListHandout.pdf>

- Chemical classes on the CDC list that are not fully designated:
 - Phthalates

- 3. SGP members would like to consider the following chemicals and chemical classes as potential priority chemicals:
 - Perfluorinated chemicals on the CDC list and already designated
 - Cyclosiloxanes
 - Antimicrobials approved for use in food animal production
 - Synthetic hormones approved for use in food animal production

- 4. Additional topics the SGP would like to see discussed at the next meeting include:
 - Update on laboratory capacity relevant to designated and priority chemicals.
 - Update on requesting methods development from manufacturers, or other sources, using Assembly Bill 289 (Chan, Chapter 699, Statutes of 2006) and other means.
 - Overview on portfolio of options by which the state can gather information on substances newly entering commerce and substances that are expected to increase in use.

July 28-29, 2009 Meeting of the Scientific Guidance Panel of the California Environmental Contaminant Biomonitoring Program

Panel Recommendations and Meeting Conclusions

The Scientific Guidance Panel (SGP) of the California Environmental Contaminant Biomonitoring Program (CECBP) met on July 28 and 29, 2009 in Oakland. The SGP deliberated on and made recommendations regarding designated and priority chemicals. The Panel also provided comments on issues related to reporting biomonitoring results to individuals. The SGP's specific recommendations and suggestions on various topics are summarized below. Meeting materials, including an agenda and the transcript, are available on the biomonitoring website (<http://oehha.ca.gov/multimedia/biomon/cecbp071409.html>).

Panel recommendations regarding designated⁶ and priority⁷ chemicals:

1. The SGP recommended that the following chemicals and chemical classes be added as "designated chemicals" for inclusion in the CECBP:
 - Pyrethrins and pyrethroids (as a chemical class)
 - Iprodione
 - Fipronil
 - Othilinone
2. The SGP recommended that the following chemicals and chemical classes be added as "priority chemicals" for inclusion in the CECBP:
 - Cyclosiloxanes (as a chemical class)
 - Perfluorinated compounds already designated⁸
 - Dichlorodiphenyltrichloroethane (DDT)
 - para-Dichlorobenzene (1,4-dichlorobenzene)
 - 2,4-Dichlorophenoxyacetic acid (2,4-D), salts and esters
3. The SGP recommended that N,N-diethyl-3-methylbenzamide (DEET) not be added as a priority chemical for inclusion in the CECBP at this time.

Panel suggestions regarding general strategies for selecting chemicals for discussion at future SGP meetings:

Panel members provided CECBP staff with input on several issues related to selecting chemicals to include in the CECBP. Panel suggestions are summarized below. For full details of this discussion, consult the transcript from July 28 (available at: <http://oehha.ca.gov/multimedia/biomon/pdf/SGPTranscript072809.pdf>).

1. CECBP staff should not necessarily wait for biomonitoring results from the

⁶ For a complete list of the CECBP designated chemicals, see <http://oehha.ca.gov/multimedia/biomon/pdf/designatedchemaug2009.pdf>

⁷ For a complete list of the CECBP priority chemicals, see <http://oehha.ca.gov/multimedia/biomon/pdf/prioritychemsaug2009.pdf>

⁸ Priority chemicals in this class include only those members that are already designated.

Centers for Disease Control and Prevention (CDC) to become available before bringing chemicals to SGP as potential priority chemicals. The Program should evaluate this issue on a chemical-by-chemical basis. There may be compelling reasons to bring a chemical forward for discussion in the absence of CDC biomonitoring results.

2. If CDC biomonitoring results are available, they should be evaluated by the Program in order to decide whether to bring a chemical forward for consideration as a potential priority chemical. In general, CECBP staff should focus less attention on chemicals that are rarely detected by the CDC. However, there will be exceptions to this general guidance. For example, if laboratory methods have advanced or if there are significant differences in use and/or exposure in California, the chemical may warrant consideration for inclusion in the program, and it would be important to bring the chemical forward to the SGP.
3. Chemicals that have shared metabolites with CECBP designated or priority chemicals should not necessarily be automatically be assigned the same status. This decision should be made on a chemical-by-chemical basis. CECBP should give particular attention to parent compounds that give rise to a shared metabolite that is known to be toxic and has exposure potential. In these cases, the class of parent compounds may be brought forward for consideration.
4. There may be compelling reasons for CECBP staff to bring limited/declining use or banned chemicals to the SGP for possible inclusion in the Program. These reasons could include continued use of these chemicals in other parts of the world (leading to potential exposures to Californians) or the potential for biomonitoring to evaluate the efficacy of public health actions aimed at these chemicals.
5. CECBP staff may want to consider bringing chemicals with exposure that is difficult to quantify forward for discussion at SGP meetings if biomonitoring could be a useful means of assessing exposure to these chemicals.
6. In recognition of the fact that analytical methods are constantly evolving and improving, current analytical method limitations should not preclude a chemical from being brought to the SGP for consideration for inclusion in the CECBP.

Panel input regarding CECBP reporting biomonitoring results to participants:

The Panel heard a number of presentations on topics related to communicating biomonitoring results to participants. The Panel recommended that Program staff keep the information provided during the presentations and discussion in mind when planning future results communication activities. Highlights of the panel comments and suggestions are provided below. For full details of this discussion, consult the transcript from July 29 (available at:

<http://oehha.ca.gov/multimedia/biomon/pdf/SGPTranscript072909.pdf>).

1. It is important to begin dialogue with community groups early in the development of a community-based study.
2. One-on-one meetings between study researchers and study participants to communicate results are commonly used in small studies and allow for fuller discussion and education. Given the logistics of a statewide study and limited

Program resources, the Panel discussed methods other than in-person reporting. Web-based methods of reporting results were suggested as one option for disseminating a basic level of information to study participants.

3. When biomonitoring reference levels are available, they should be used as a standard for comparison for individual and group results.
4. Health care providers should be involved in biomonitoring studies and local health officers may be able to identify appropriate health care providers in the community. There was a wide-ranging discussion of many issues related to results communication. These involved community-based participatory research, clinical ethics, and comparisons between a public health model and a clinical model for results communication. The Panel expressed interest in discussing these issues further at future meetings.

Panel suggestions regarding discussion topics for future meetings:

1. The SGP recommended that Program staff continue to evaluate and bring forward pesticides to which the public is thought to have considerable exposure, based on volume and/or type of use.
2. In addition to chemicals and chemical classes that have been mentioned at previous SGP meetings (e.g., chloramine disinfection byproducts, glycol ethers, phthalate replacements), some new chemicals were suggested for consideration as potential designated and potential priority chemicals including:
 - a. Manganese (potential designated chemical)
 - b. Low-VOC (volatile organic compound) solvents (e.g., 1-bromopropane) (potential designated chemical or chemical class)
 - c. Dichloroanilines (potential designated chemical class)
 - d. Acrylamide (potential priority chemical)
3. Panel members believe that questionnaires and other exposure assessment methods are a critical component of any biomonitoring project and they expressed an interest in seeing the CECBP draft questionnaire for evaluating participants' exposures.