

October 9, 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 October 9, 2009 in Sacramento. The SGP discussed and provided input on priority chemicals. The Panel also heard presentations on and provided recommendations related to the cooperative agreement with the Centers for Disease Control and Prevention (CDC), the Maternal Infant Environmental Exposure Project (MIEEP), CECBP's collaboration with the Kaiser Permanente Research Program on Genes, Environment, and Health (RPGEH), and future directions for the CECBP. The SGP's recommendations and suggestions on various topics are summarized below. Meeting materials, including an agenda and the transcript, are available on the biomonitoring website (<https://biomonitoring.ca.gov/events/scientific-guidance-panel-meeting-october-2009>).

CDC Cooperative Agreement

Program staff gave an overview of the cooperative agreement with CDC and explained its objectives. The CDC funding is primarily for the purpose of expanding the state laboratory capability and capacity for biomonitoring studies. Ninety percent of the CDC funding will go to support laboratory activities. The CDC funding is meant to supplement state funding and not supplant it.

One of the objectives of the CDC grant is to assess and track trends for selected chemicals among targeted populations. CECBP will work on this objective primarily through three specific collaborations: Environmental Health Tracking's Imperial County Study, the Cohort of Young Girls' Nutrition, Environment and Transitions (CYGNET) and the Maternal and Infant Environmental Exposure Project (MIEEP). Program staff requested specific input on the chemicals to be included in MIEEP, which is discussed further below.

Potential issues related to sample collection and storage were raised by the Panel. The Panel suggested that Program staff review quality control guidelines and standard protocols and procedures for collecting and storing samples, such as those developed by the International Society for Biological and Exposure Repositories. Program staff indicated that a Sample Management Officer will be hired in order to set up appropriate storage protocols, and that possible storage issues can be discussed again by the Panel once the officer has been hired.

Priority Chemicals

Because the CECBP laboratories do not have the resources to develop methods for all priority chemicals, Program staff requested the Panel's recommendations on which chemicals should be considered for methods development in the near future. The

discussion focused on priority chemicals for which the laboratories do not have an existing method and for which methods development is not yet planned.

Diesel exhaust

The Panel unanimously recommended that Program staff take steps to identify a biomarker of exposure to diesel exhaust and develop a laboratory method for its identification in biomonitoring studies. Following the adoption of the recommendation, there was additional discussion with Program staff about the feasibility of carrying out this recommendation. Challenges include: identifying an appropriate chemical, which is a major research project; expected changes in the composition of diesel exhaust, which make previously considered biomarkers potentially less relevant; and lack of adequate Program funding to take on this research project. Program staff agreed to look into the latest status of research on biomarkers for diesel exhaust and provide an update to the SGP.

Alternative to dialkyl phosphate (DAP) metabolites

The Panel noted that DAP metabolites are nonspecific and recommended considering more specific metabolites of organophosphate pesticides.

Cotinine

The Panel expressed interest in measuring cotinine as a way to quantify tobacco smoke exposure. Program staff noted that measuring cotinine would require a dedicated machine and current resources do not allow for that.

Brominated or chlorinated flame retardants currently not planned for methods development

The Panel expressed interest in measuring more brominated or chlorinated flame retardants for which the Department of Toxic Substances Control (DTSC) laboratory does not currently have methods. Program staff noted that these compounds are not all members of the same chemical class, and many would require completely different methods. The Panel highlighted the tris phosphate type flame retardants and short chain chlorinated paraffins as being of particular interest for future methods development.

Open scan for unknown chemicals

The Panel supported the Program's proposal to screen blood for currently unidentified chemicals, attempt to identify those chemicals, and develop analytic methods to measure them. This analysis for unknowns could be carried out in the future, possibly beginning during the fifth year of funding from the CDC cooperative agreement.

Other emerging chemicals in California

The Panel noted that other chemical hazards may become important in California because of particular programs that will lead to chemical substitution or new chemicals being used. For example, the drive to reduce the use of volatile organic compounds may result in new chemicals being introduced in California. In addition, the increased use of clean energy technologies in the state will potentially introduce new toxic hazards. Program staff encouraged the Panel or any member of the public to bring these emerging chemicals to the attention of the Program.

Maternal Infant Environmental Exposure Project (MIEEP)

Program staff provided an overview of the objectives of MIEEP and the proposed chemicals to be analyzed. Program staff also described the trade-offs of using the State laboratory versus the CDC laboratory. The Panel suggested that the analyses for this project be conducted using the State labs because there would be more value for the Program if the data came from the state labs. This would also allow the state laboratories to demonstrate capacity and capability for these analyses. PAHs were suggested as a measure of exposure to tobacco smoke, since State labs do not have the capability to analyze cotinine. Due to the fact that those sampled in the project are expected to be composed of a majority of Latinas, DDT was also suggested as a possible chemical of interest. The Panel recommended that, since the population sampled will be pregnant women and their infants, estrogenic chemicals, thyroid disrupting chemicals, and neurotoxicants should be included. A home survey was suggested as a possible part of the questionnaire process in order to get a larger quantity of exposure data that would be of high quality. The Panel also suggested administering dietary intake instruments to measure exposures to lead and pesticides.

CECBP Collaboration with Kaiser Permanente Research Program on Genes, Environment, and Health (RPGEH)

Dr. Stephen Van Den Eeden, senior investigator in the Division of Research at Kaiser Permanente presented an overview of Kaiser's Research Program on Genes, Environment and Health. Opportunities for collaboration between Kaiser and CECBP were discussed. The Panel unanimously endorsed collaboration with Kaiser and recommended that the Program continue to explore ways to expand the collaboration.

