

Biomonitoring California Update

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Biomonitoring California
Scientific Guidance Panel Meeting
March 16, 2011
Oakland, California

Program Updates

- Funding
- Staffing changes
- Program timeline
- Strategies for statewide sampling
- Lab analyses
- Ongoing projects
- Outreach and engagement

Continued Funding

- Toxic Substances Control Account (TSCA)
 - Funding maintained for 2010-2011 at \$1.9 million

- CDC Cooperative Agreement
 - Renewed for 2010-2011 at \$ 2.6 million
 - Project Officer: Lovisa Romanoff, MS

Staffing Changes

- New Hires:
 - Two Environmental Laboratory Scientists
 - Administrative Assistant
 - Health Educator
- Two Visiting Scholars
- Vacancies:
 - Two Research Scientists

Program Timeline

2006

Senate Bill 1379 is passed, establishing The California Environmental Contaminant Biomonitoring Program (CECBP)



2007

State General Fund contributes \$5.2 million, supporting 13 FTEs and one-time equipment costs

Biomonitoring listserv established
Program website created



2008

Scientific Guidance Panel (SGP) selected
First SGP meeting held

2008

Work with CDC's National Center for Health Statistics on state-wide sampling design and resources

Three public input sessions

Workshop on Chemical Selection

SGP meetings held in June and October

Toxic Substances Control Account (TSCA) Funding: \$1.9 million

Request for Information distributed to researchers

2009



2009

SGP meetings held in March, July, and October

New Equipment:

ICP-MS for metals
HPLC-MS/MS for PFCs
HPLC-MS/MS for phthalates
HRGC-MS for OH-PAHs
HRGC-MS/MS for PBDEs and PCBs

TSCA funding stable at \$1.9 million

Awarded 5-year CDC Cooperative Agreement:

- \$2.6 million in funding per year
- 8 new staff hired in 2009



Pilot Project: Maternal and Infant Environmental Exposure Project (MIEEP) formed; collaboration with UCSF and UC Berkeley

Lab analysis of Tulare County samples

2010

2010

New Equipment:

GC-MS/MS for OP metabolites & pyrethroids
HPLC-MS/MS for environmental phenols

TSCA funding stable
at \$1.9 million

Recruitment starts for MIEEP

CDC funding stable at \$2.6 million
•5 new staff hired in 2010

Occupational Pilot: Firefighter
Occupational Exposures (FOX)
Project formed, with UC Irvine

Lab analysis of RFI and CYGNET samples

Recruitment starts for FOX

Public Involvement Plan



SGP meetings held in
February, May and
November

2011

2011

Revise and test results report back template

New Equipment:
ICP-MS for metals in urine
SPE System for ECL
SPE System for EHL

“What is Biomonitoring?” brochure

Regional Sampling:
Biomonitoring Exposures Study with Kaiser Permanente Research Program for Genes, Environment, and Health

Ongoing lab analyses of FOX and MIEEP Samples

SGP Meeting and Workshop held in March



2012

SGP Chemical Selection

<i>Designated chemicals</i>		<i>Priority chemicals</i>
Diesel exhaust	Dec. 2008	
BFRs and CFRs*		
Antimicrobials used in food production	Mar. 2009	Arsenic, cadmium, lead, mercury
Synthetic hormones used in food production		Bisphenol A, Triclosan
Cyclosiloxanes*		Perchlorate
		Diesel exhaust
		Tobacco smoke (cotinine)
	BFRs and CFRs*	Three PAH metabolites
		Organophosphorus insecticides**
		Pyrethroid pesticides**
		Phthalates**
Pyrethroid pesticides*	Jul. 2009	Cyclosiloxanes*
Iprodione, Octhiline, Fipronil		Perfluorinated chemicals**
		DDT, 2,4-D, p-Dichlorobenzene
Pendimethalin	Feb. 2010	PCBs**
Triclocarban	May 2010	Parabens**
Manganese	Nov. 2010	

* Entire class of chemicals

** Those chemicals in this class that were already designated

Strategies for Statewide Sampling

- **National Health and Nutrition Examination Survey (N-HANES) Model**
Contracted with CDC National Center for Health Statistics to develop statewide representative survey
 - Pros:
 - Scalable operations plans
 - Develop California database of chemical results
 - Infrastructure to maintain program
 - Cons:
 - Cost of program: estimated \$9-10 million per year
 - Cost of IT systems to support this program: one-time costs of approximately \$18 million; \$3 million annual operation

Strategies for Statewide Sampling

- Dried blood spots
 - Pro: collected from over 99% of infants born in CA
 - Con: group (pooled) analyses
- Maternal alpha-fetoprotein in serum
 - Pro: collected from 70-80% of pregnant women
 - Con: group (pooled) analyses
- Regional Sampling
 - Pro: can be expanded to capture trends
 - Con: resource intensive

Laboratory Accomplishments

- Completed Projects
 - CHAMACOS: Center for the Health Assessment of Mothers and Children of Salinas
 - CYGNET: Cohort Study of Young Girls' Nutrition, Environment, and Transitions
 - Environmental Health Tracking – Tulare County
 - MARBLES: Markers of Autism Risk in Babies–Learning Early Signs
- Currently developing criteria to evaluate outside requests for sample analyses

Ongoing Collaborations

- MIEEP: Maternal and Infant Environmental Exposure (Chemicals in Our Bodies) Project
- FOX: Firefighter Occupational Exposures Project
- BEST: Biomonitoring Exposures Study



MIEEP Pilot

- Mothers and infants were identified by the SGP as a susceptible population
- Collaboration with UCSF and UC Berkeley
- Not a hypothesis driven study; number of participants determined by resources
- Designed to demonstrate ability
 - To capture samples in a labor and delivery setting
 - To test protocols for sample collection, data collection, and sample management

MIEEP Update



- Recruiting extended through April 2011
- Over 70 participants recruited
- Received:
 - Urine from 58 mothers
 - Blood from 55 mothers and 43 cord bloods

FOX Pilot

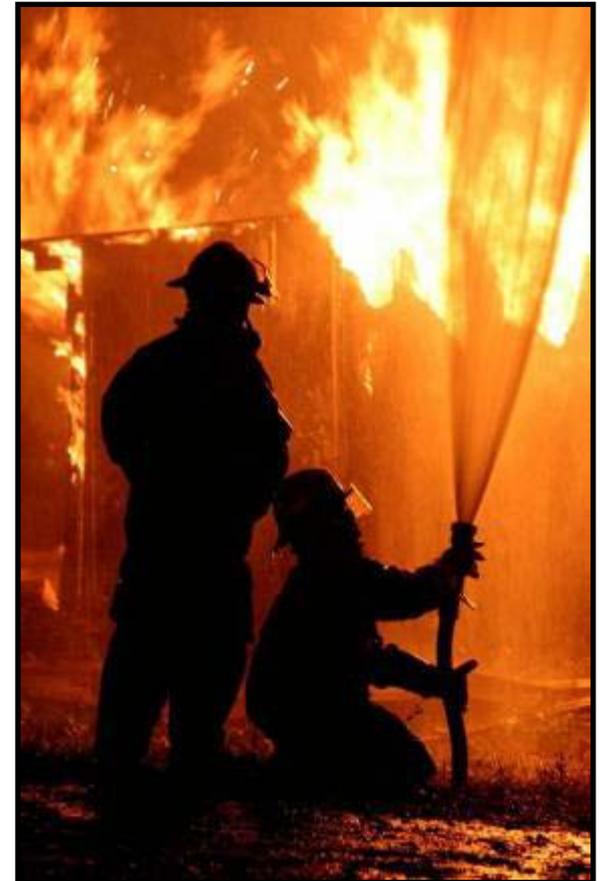
- Firefighters were identified as an occupational cohort likely to be exposed to chemicals of interest
- Tests protocols and procedures in
 - Worker cohort
 - Distant location



FOX Update



- Enrollment/biosample collection
 - **Completed!!!**
 - 101 participants
- Fire station dust collection completed
- Ongoing
 - Biological sample analyses
 - Dust sample analyses
 - Data analysis
 - Best practices for reporting results
 - Field test template materials



Outreach and Engagement

- Public Involvement Activities
- Brochure
- Legislative Report



Stakeholder Input: Design of Public Involvement Activities

- Needs assessment survey results
 - Meeting preferences
- Outreach on draft Public Involvement Plan
- Next steps

Survey Summary:

Meeting Preferences

- **Respondents:** N=95, About half from government or academia
- **Meeting location:** Oakland, Sacramento preferred
 - Southern CA may be under-represented in listserv
- **Webinar:** Webinar or teleconferences favored over in-person meetings
- **Time:** Morning and early afternoon preferred
- **Meeting format:** Half presentations and half public comment preferred by most

Public Involvement Plan Outreach

- Teleconferences – 26 participants
- Survey – 55 respondents
- Comments via email – 5 sets

Results: More than 200 specific suggestions, e.g.,

- How to reach out to more diverse groups
- Best ways to share findings with the public
- Concerns about materials used to return results to individuals

Next Steps

- Draw on comments and survey results in revising Public Involvement Plan
- Conduct additional needs assessment using online surveys and in-person interviews
- Complete the revised Public Involvement Plan by June 2011

Biomonitoring Brochure

Chemicals in Everyday Life



We come into contact with many chemicals each day. They are used in industry and agriculture. They are in common products, such as cosmetics, toys, and plastics.

Some of these chemicals get into our air, water, soil, dust, and food. As a result, all of us have chemicals in our bodies. We may have more or fewer chemicals—depending on the products we use, the jobs we do, and the places we live.

Chemicals and Our Health

Some chemicals can harm our health. They can cause birth defects, learning problems, weight gain, cancer, asthma, and other illnesses. However, many chemicals have not been well studied, so we do not know if they affect our health.

What is Biomonitoring?

Biomonitoring (bi-o-MON-i-tor-ing) is a way to measure the chemicals in a person's body. It can tell us which chemicals are there and how much.

Scientists usually test for chemicals in samples of blood and urine. There are only a few labs that can do this testing.

Like other parents, Tony wants to protect his son's health. "We need to learn which chemicals our kids are exposed to."



Why is Biomonitoring Important?

Biomonitoring helps us learn which chemicals get into our bodies.

This information can be used to:

- Learn more about how chemicals affect our health.
- Help keep harmful chemicals out of our environment and the products we buy.

Taking Part in a Biomonitoring Project

Biomonitoring California is a state government program. You may be asked to take part in one of the *Biomonitoring California* projects. If you agree to participate:

- You will be asked to provide blood, urine, or other samples for testing.
- You can see your results.
- Your results will be confidential.
- You will learn if you have chemicals in your body that might be harmful. However, safe amounts for most chemicals are not known.
- You will learn ways to help keep some chemicals out of your body.



Anna was asked to be part of a biomonitoring project with other pregnant women.

Legislative Report

- The CECBP 2010 Report to the Legislature is now available at:
<http://www.oehha.org/multimedia/biomon/121410LegRpt.html>
- The Program is currently preparing the next report, due January 2012

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Questions?

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