

# Working Discussion of a Community Biomonitoring Study

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# Background

Recommendations from 12/4/08 SGP meeting:

- a) Staff to pursue pilot study focused on maternal/fetal (cord blood) exposures
- b) Descriptive rather than hypothesis-driven
- c) Leverage offer by CDC laboratory to analyze limited number of biological specimens for up to 10 groups of chemicals

# What have we done?

- Numerous discussions and planning with faculty at University of California, Berkeley and UCSF School of Medicine
- Developed a near-final letter of intent for foundation funding

# Maternal-Infant Environmental Contaminant Biomonitoring Study

## Goals:

1. To measure and compare levels of over 100 chemicals in pregnant women and cord blood (representing *in utero* exposures).
2. To examine potential sources of exposure to a subset of these chemicals
3. To develop and test approaches to providing participants with biomonitoring results

# Collaborators

- California Environmental Contaminant Biomonitoring Program (CECBP)
- Program on Reproductive Health and the Environment, University of California, San Francisco (UCSF)
- School of Public Health, Health Research for Action (UCB)
- School of Public Health (UCB)



# Pilot Study - 50 pregnant women

Will serve as foundation for a larger study of 500 maternal-infant pairs that can be generalized to a larger California population

Pilot study population:

- Languages – English and Spanish
- Receiving prenatal care and intending to deliver at either UCSF Parnassus campus or San Francisco General Hospital



# Pilot Study Design

- Data and Biospecimen Collection

	32 weeks	36-38 weeks	Delivery	Post Delivery
Consent	X			
Questionnaire		X		
Maternal Urine		X		
Maternal Blood			X	
Cord Blood			X	
Medical records abstraction				X
				7

# Pilot Study Activities

## Year 1:

- Develop inter-institutional MOUs
- Secure approvals of Institutional Review Boards
- Develop/test questionnaires, protocols and procedures
- Recruit and enroll pregnant women
- Collect and process samples at UCSF and SFGH
- Ship to CDC and CDPH for chemical analysis
  - CDC analysis of up to 10 chemical classes
  - CDPH can analyze for heavy metals and dialkyl phosphates (DAPs)
- Develop and test materials and methods for reporting results to participants

# Pilot Study Activities

## Year 2

- Provide results to participants
- Data analysis
  - Compare levels in maternal and umbilical cord samples
  - Correlate levels with potential sources
- Generate public and scientific reports
- Incorporate findings into full study protocol and proposal

# Candidate Chemicals for Analysis

- As discussed during 12/08 SGP meeting, CDC may assist in the analysis of up to 10 classes of compounds included in the federal biomonitoring program
- Potential candidates suggested by panel member Dr. Solomon included:
  - Heavy metals \*
  - Phthalates
  - Pesticides
    - Organophosphates (specific metabolites\*)
    - Pyrethroids
  - Environmental phenols (such as bisphenol A and triclosan)
  - Polybrominated diphenyl ether flame retardants
  - Perfluorinated Compounds
  - Perchlorate
  - Cotinine (possibly?)
  - VOCs or another pesticide class (possibly?)

No final decision – staff also considering co-planar PCBs

\* Lead, Mercury, Cadmium and DAPs can be analyzed by CDPH lab

# Pilot Study: Challenges

- Logistics
  - Location for consent and questionnaire administration
  - Coordination with hospital staff
  - Tracking samples across multiple laboratories (Parnassus, SF General, CDPH, CDC)
- Developing results communication methods
- Budget and funding

# Questions?

- Selection of chemicals?
- Timeline for implementation?
- Modeling for potential representativeness of CA population?
- Others?