Working Discussion of a Community Biomonitoring Study

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California Environmental Contaminant Biomonitoring Program
Scientific Guidance Panel Meeting
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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 \textit{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

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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?