

Biomonitoring California Update

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Biomonitoring California
Scientific Guidance Panel Meeting
November 2, 2010
Sacramento, California

Program Updates

- Logo
- Funding
- Staffing Changes
- CDC Cooperative Agreement Objectives
- Ongoing Projects
- New Collaboration: Kaiser
- Outreach and Engagement
- National Biomonitoring System

BIOMONITORING
CALIFORNIA



BIOMONITORING CALIFORNIA



MEASURING CHEMICALS IN CALIFORNIANS

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
 - DTSC included in Year 2 funding

Staffing Changes

- New Hires:
 - Two Environmental Laboratory Scientists
 - One Staff Programmer Analyst
 - One Administrative Assistant
- To be hired:
 - Health Educator
 - Two Environmental Laboratory Scientists
- Vacancy:
 - Research Scientist

Cooperative Agreement Objectives

1. Expand laboratory capability and capacity
2. Demonstrate success of laboratory quality management system
3. Assess and track exposure trends
4. Assess exposures in a representative group of Californians
5. Collaborate with stakeholders and communities

Ongoing 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 – Imperial and Tulare Co.
- MARBLES: Markers of Autism Risk in Babies–Learning Early Signs
- MIEEP: Mothers and Infants Environmental Exposure Project
 - (Chemicals in Our Bodies Project)
- FOX: Firefighter Occupational Exposures Project

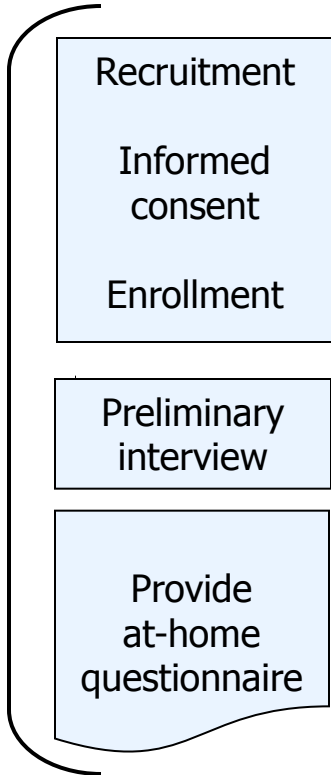
Ongoing Projects - MIEEP

- Field testing June 2010
 - 9 pregnant women
 - Native American Health Center, Oakland
- Final IRB approvals received June 2010
- Research assistants hired and trained
- Report back materials
 - Tested for usability in English
 - Spanish to be completed soon



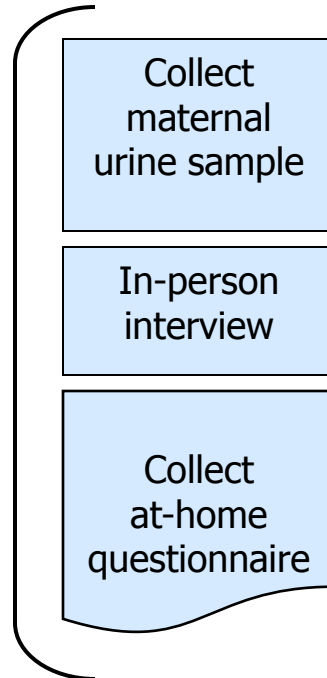
28-34 weeks gestation

First Encounter



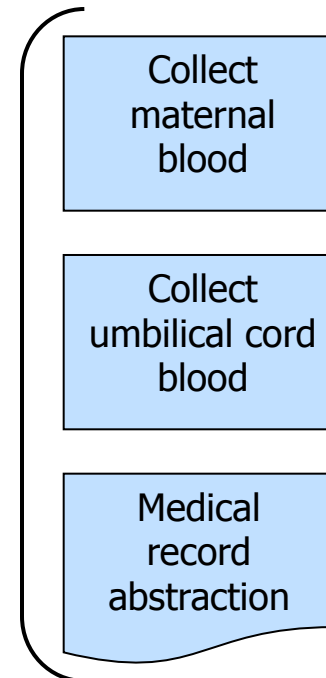
34-38 weeks gestation

Second Encounter

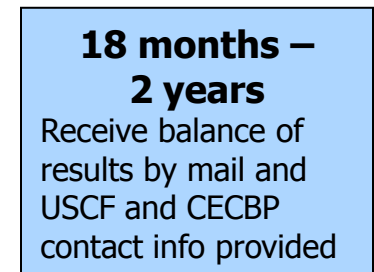


At delivery

Third Encounter



After delivery



Ongoing Projects - MIEEP



This brochure tells you about 25 things you can do every day to be healthy and keep chemicals out of your body.

Most things in our lives are made with chemicals. Chemicals are used to make our food and drinks, the products we use, the homes we live in, and the cars, buses and trains we travel in.

Because of the way chemicals are used, chemicals also pollute our air, water and food.

Many chemicals get inside our bodies when we breathe polluted air, eat polluted food, drink polluted drinks or when products get on our skin. Some of the chemicals that get inside our bodies can harm our health.

We can't keep all chemicals out of our bodies. But, we can protect ourselves and our families from some of the chemicals that can harm our health.



Aire

- ✧ **Abra las ventanas** por algunos minutos (o durante más tiempo) todos los días para que entre aire fresco a la casa. El aire del interior de las casas tiene más sustancias químicas que el aire libre. Prenda el ventilador de la campana de la cocina o abra la ventana cuando cocine.
- ✧ **Elija productos sin fragancia.** Los desodorantes de ambiente, los productos de limpieza, los jabones para la ropa, las velas y los productos de belleza que tienen perfume o fragancia introducen sustancias químicas en el aire de la casa. Lea la lista de ingredientes para asegurarse de que el producto que compre no tenga "perfume" o "fragrance".



Alimentos

- ✧ **Coma más frutas y verduras.** Las frutas y verduras frescas son la mejor opción, pero las congeladas también son excelentes. Siempre que sea posible, intente evitar frutas, verduras, frijoles y otros alimentos que vengan en latas.
- ✧ **Elija productos lácteos descremados o semi descremados y coma menos carnes rojas.** Los alimentos de alto contenido graso y las carnes rojas tienen más sustancias químicas.
- ✧ **Coma las mejores especies de pescado.** Algunas buenas opciones son las truchas (en inglés, *trout*), las sardinas (*sardines*), las anchoas (*anchovies*), el salmón de mar abierto (*wild salmon*), y los mariscos. Si come atún (*tuna*), compre la variedad chunk light en vez de la llamada white albacore, pero no consuma más de 5 onzas de atún por semana. No coma tiburón (*shark*), pez espada (*swordfish*), blanquillo (*pilefish*), caballa (*king mackerel*), mero (*grouper*), pez aguja (*marlin*) o pargo alazán (*orange roughy*).
- ✧ **Compre alimentos orgánicos** siempre que pueda. Los alimentos orgánicos se cultivan y producen sin utilizar sustancias nocivas.
- ✧ **Coma menos comidas rápidas y alimentos grasosos que vengan en recipientes de papel o cartón** (como pizza, palomitas de maíz para cocinar en el microondas, y comidas congeladas). Las comidas rápidas tienen más sustancias químicas porque tienen más grasas. Los recipientes de papel y cartón también tienen sustancias químicas que pueden contaminar la comida.
- ✧ **Use ollas, sartenes y fuentes de acero inoxidable o de hierro.** Si usa productos de teflón, no los caliente cuando estén vacíos.



Bebidas

- ✧ **Beba el agua de la llave.** San Francisco tiene agua corriente de muy buena calidad, con muy pocas sustancias químicas. Además, es mucho más económica que el agua embotellada. Si no ha abierto la llave durante algunas horas, deje correr el agua por un minuto antes de usarla para beber o cocinar. No utilice agua caliente de la llave para preparar bebidas calientes o cocinar. El agua caliente puede hacer que se desprenda plomo (una sustancia tóxica) de las cañerías y contamine el agua.
- ✧ **Elija bebidas envasadas en botellas de vidrio o plástico.** Trate de evitar bebidas envasadas en latas o vasos de papel. Lea la sección sobre plásticos de este folleto para averiguar cuáles son las mejores botellas plásticas.

MIEEP Status



- 40 participants recruited
- 20 participants have given birth
- 21 maternal samples and 16 cord blood samples collected
- 31 take-home surveys collected

Factors Affecting Recruitment


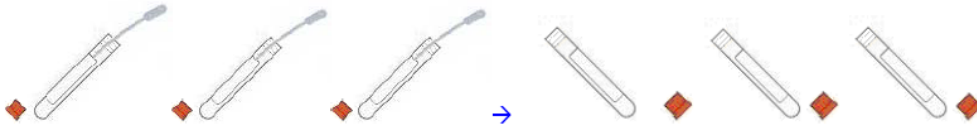

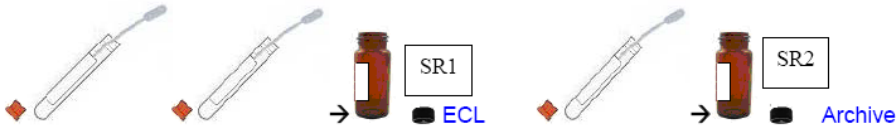


- Fewer births
- Time limitations
- Coordination with and reliance on labor and delivery clinic staff
- Successful recruitment, sample collection, and shipping, despite obstacles!

Whole Blood Specimens

- First shipment received September 15, 2010
- Lead, mercury, cadmium analyses




Protocols: Processing

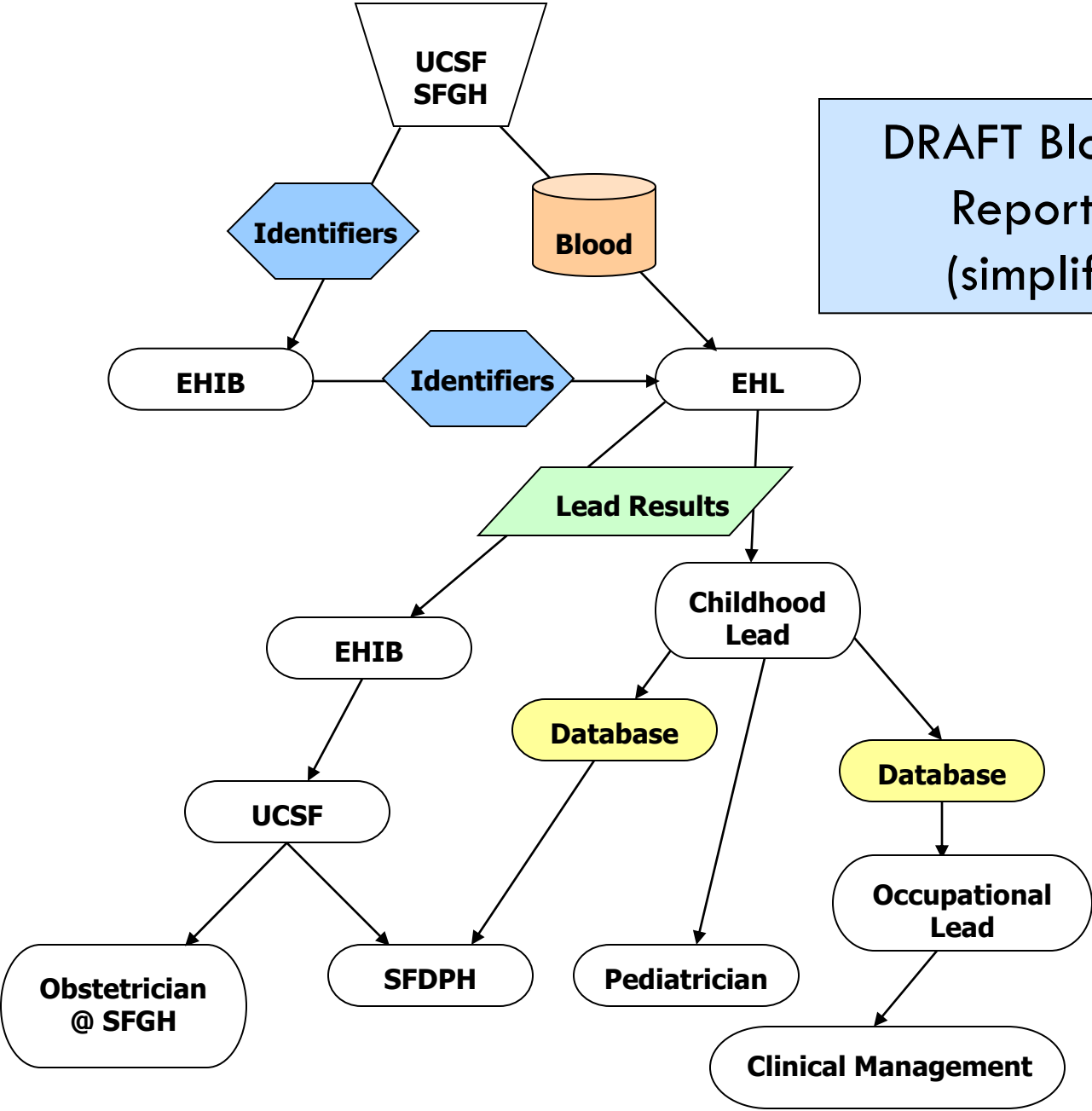
Processing 10mL red tops	
<p>1. DO NOT SHAKE OR INVERT. DO NOT LET BLOOD COME IN CONTACT WITH RUBBER STOPPER DURING ANY OF THESE STEPS.</p>	<p>2. Allow 10mL red top tubes to clot at room temperature for a minimum of 20 to 30 minutes (MAX 24 hours).</p> <p>BENCH TOP 20-30 MIN</p>
<p>3. Centrifuge tubes at 2000 RPM for 15 minutes.</p> <p>CENTRIFUGE 2000 RPM, 15 MIN</p>	<p>4. Label three clean 10 mL red top tubes.</p> 
<p>5. Under a biosafety cabinet hood, uncap the centrifuged and clean 10mL red tops. Transfer clear serum from centrifuged red top tube using a prebaked glass Pasteur pipette.</p> <p>UNDER HOOD</p> 	
<p>6. Recap the two new red tubes. Centrifuge tubes at 2000 RPM for 10 minutes.</p> <p>CENTRIFUGE 2000 RPM, 10 MIN</p>	<p>7. Label two solvent rinsed 10mL amber glass vial.</p> 
<p>8. Under a biosafety cabinet hood, uncap the centrifuged 10mL red tops and amber glass vial. Transfer clear serum from each centrifuged red top tube using prebaked glass Pasteur pipette.</p> <p>UNDER HOOD</p> 	
<p>9. Recap amber glass vial and store in freezer at -20°C in cardboard storage box until ready to ship.</p> <p>FREEZER</p> 	<p>10. Place red tops, gloves, pipettes, etc. in biohazard hard plastic container (for sharps) for proper disposal.</p> 

Protocols: Shipping

Instructions for Shipping Whole Blood (lavender tube) to California Department of Public Health, Environmental Health Laboratory Branch
 Guidance in Accordance with Packaging Instructions International Air Transport Authority (IATA) 650 Biological Substance Category B
 For detailed instructions see CDPH's – Revised Whole Blood (lavender tube) Shipping Protocols, dated 10/20/2010

<p>1.</p>  <p>Place the tubes upright in a styrofoam tube holder. (Can cut the Styrofoam tube holder to correspond with number of lavender top tubes being sent.) Use a sealable plastic bag that can hold the Styrofoam tube holder and tubes upright. Place absorbent material sufficient to contain the volume of the tubes in the shipment into the sealable plastic bag. Each 4 inch square is sufficient for 5 mL of blood (cut to size as needed). Place the tubes within the holder into the plastic bag with absorbent material and seal.</p>	<p>2.</p>  <p>Wrap bubble wrap around the sealed plastic bag(s) and place package into a 95kPa rated polybag and seal if the specimens are air shipped. For ground transport, using a sealable, leakproof outerbag is sufficient..</p>	<p>3.</p>  <p>Place a layer of frozen gel packs/blue ice in the bottom of the insulated shipper box.</p>
<p>4.</p>  <p>Place the sealed double-bagged package in the shipping box in an upright position. Fill any void space with bubble wrap, airbags, or crumpled paper to prevent movement during transit. Place a layer of gel packs/blue ice on top of the sealed 95kPa polybag.</p>	<p>5.</p>  <p>Place the insulated lid on the inner box.</p>	<p>6.</p>  <p>Place the Whole blood submission/Chain of custody form, and a copy of the lavender tube blood collection log for samples included in the shipment, on top of the insulated box. If needed, fill any void space between the boxes to prevent movement during transit.</p>
<p>7.</p>  <p>Seal the outer box and attach the following labels: GSO shipping address label; Diagnostic Specimen label; This side up label; Fragile - Handle with Care label; and Biohazard label.</p>	<p>8.</p>  <p>Email/call EHLB and include the date and time of pickup and the tracking number.</p> <p>Shirley Cao shirley.cao@cdph.ca.gov; (510) 396-6168 Josie Alvaran josephine.alvaran@cdph.ca.gov; (510) 620-2892</p>	

DRAFT Blood Lead Level Reporting Schema (simplified version)



Ongoing Projects - FOX

- Field Testing July 2010
 - 14 firefighters
 - Instruments modified based on feedback
- Final IRB approvals received October 2010
- Additional updates to be provided by Dr. Israel



New Collaboration – Kaiser

- Kaiser Research Program on Genes, Environment, and Health
 - Currently discussing details of collaboration
 - Pilot projects proposed include:
 - Adult Cohort
 - Pregnancy Cohort



Outreach and Engagement

- Biomonitoring Brochure
 - Usability testing complete in English and Spanish
 - Brochure well-received, minor changes made
- Website
 - Hosted by OEHHA
 - Under review with Health Research for Action
 - Revisions aim to improve access to the public

National Biomonitoring System

- Joint, parallel, multidisciplinary efforts
 - Association of Public Health Laboratories (APHL)
 - Council of State and Territorial Epidemiologists (CSTE)
 - Association of State and Territorial Health Officials (ASTHO)
- Goal: Provide nationwide guidelines for states to use in developing state biomonitoring programs
- Biomonitoring California staff actively participate

Coming up next...

- Memorandum of understanding with Kaiser
- Complete recruitment for MIEEP and FOX
- Data management
- Lab analyses
- Request for information (RFI)

Questions?

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