

A Report from the NCS- Chemical Exposures Working Group

P. Barry Ryan
NCSAC Liaison
March 4, 2004

Members

- **Co-Chairs-** Larry Needham, Haluk Ozkaynak, and Robin Whyatt
- **Participating Members**
 - Gerry Akland
 - Tina Bahadori
 - Dana Barr
 - Asa Bradman
 - Roy Fortmann
 - Sally Liu
 - Scott Masten
 - Maria Morandi
 - Luke Naeher
 - Mary Kay O'Rourke
 - Kent Thomas
 - Richard Wang
- **ICC Liaison-** James Quackenboss

Activity

- Group has been very active for the past ~18 months
- I joined as NCSAC Liaison in August- **Just trying to catch up**
- Tables of Activities

Exposure to Chemical Agents

Working Group- **Status Report**

	Completed as requested (y/n), source document	What has been completed	What hasn't completed	What should still be completed by the Working Group
Proposed hypotheses	Hypothesis tab (eRoom)	Phthalate exposure and male reproductive development		
	Hypothesis tab (eRoom)	Air pollutant & aeroallergen exposures and asthma		
	Hypothesis tab (eRoom)	Cumulative exposure to environmental carcinogens and cancer risk		
	Hypothesis tab (eRoom)	Exposure to non-persistent insecticides and cognitive and physical neural function		

Exposure to Chemical Agents Working Group- **Status Report**

Hypothesis refinements	December, 2002 Study Assembly Inter-WG meetings (notes were posted to the ICC eRoom for the Protocol retreat)	Birth defects 1-1,2; Neurotox 2-1; Injury 3-1,2,3; Asthma 4-1,2 & 4-5,6; Obesity 5-3,4,5,6 Puberty 5-7		
	March, 2003 NCSAC minutes	Support for the NCS Fertility and Early Pregnancy WG on pre-conception sampling and recruitment costs		
Workshops	Technology WS report.	Participated in Technology WS, Environmental breakout group, May 2003		
	Rural WS agenda		Attending Rural WS, March 2004	

Exposure to Chemical Agents Working Group- **Status Report**

Pilot studies	See White Paper (R31)	Literature review and development of summary tables by RTI under Contract with EPA.	Integration of literature review and methods summaries with White Paper.	This integration might be done by RTI if they are working on reformatting and revising the White Paper. The revised version should be reviewed by the WG.
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Exposure to Chemical Agents

Working Group- **Status Report**

<p>Response to ICC questions</p>		<p>CE1. What chemicals or biological (e.g., allergens) agents would you recommend be measured in order to test the current set of core hypotheses? Please consider both exposure measures directly related to the hypotheses, and major confounding factors.</p> <p>CE4. How can existing monitoring data (e.g., for air pollutants and allergens) and information obtained from questionnaires/diaries or other methods be used to help estimate exposures for time periods and for individuals that are not directly monitored? Please provide information on the specific questions that can be used, and the utility of these questions in other studies.</p>	<p>CE2. What techniques are available to measure these at different life-stages in the development of the child? Please identify the advantages and disadvantages of using these methods in residential or other settings, and identify likely costs and subject burden limitations associated with the collection, processing, and analyses of these samples. Please provide specific criteria to be applied in selecting measures for the NCS. Given that criteria may be in conflict or mutually exclusive, what are the relative priorities for these criteria?</p>	<p>CE3. When and how often do these samples need to be collected, given possible relationship to health outcomes and temporal variability in concentrations or exposures? {There is some concern among the WG co-Chairs that this may be beyond the scope of this WG, and is better suited for outcome-oriented WG's.)</p>
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Exposure to Chemical Agents Working Group- **Status Report**

Measures (outcome, exposure)	December, 2002 Study Assembly inter-WG meetings (see footnote 1 on page 1); Dec. 2003 NCSAC breakout group meeting notes	Chapter 2 of the White Paper addresses exposure measures associated with each of the “core” hypotheses; Chapt. 3 identifies approaches available to measure these exposures; Chapt. 4 identifies biological measures; Chapt. 5 has questionnaires and diaries.	Working Group meeting in March 2004 to help rank alternative approaches to measure exposures at different life stages (or identify criteria to rank these).	
Timing of measures				

Notes:

The ECAWG has been actively working to complete draft sections of their White Paper. They held a working meeting in October to draft sections of the white paper, and have been having routine conference calls to provide updates on progress. A review draft of their White Paper was provided to the NCSAC liaison, who will provide an update on the paper and recommend it has been forwarded to the ICC and Program Office for our review and comment. We have discussed having a Contractor work with the draft White Paper to develop a consolidated outline and revise the paper and tables. (I have discussed using the RTI contract for this with Carole Kimmel and Pauline Mendola; we are currently drafting a Work Assignment and Government Cost Estimate before asking for approval by the Pilot Study Committee and the ICC.)

Exposure to Chemical Agents Working Group- **Status Report**

White Papers	Pilot study proposal; Sept., 2003 NCSAC minutes;	Review draft for NCSAC meeting, March 2004	Reformatting of white paper entitled "Measurement and Analysis of Exposures to Environmental Pollutants and Biological Agents During the National Children's Study" to common format; proposed to be done with assistance from RTI under NCS Contract with US EPA. WG to review integrated outline, and revisions to white paper.	Development and submission of manuscripts based on portions of White Paper.
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Primary Focus

- **White Paper:**

- **Measurement and Analysis of Exposures to Environmental Pollutants and Biological Agents during the National Children's Study**

Approximately 200 pages

Table of Contents-

- **Section 1. Introduction**
- **Section 2. Relevant chemical and biological agents for different study hypotheses- Listing of Specific Hypotheses and Exposure Measurements Needed to Assess Them.**
- **Section 3. Methods for measurement of exposures and candidate environmental chemicals and aeroallergens- Discussion of Measurement Methods Strengths and Weaknesses. By Pollutant Class.**
- **Section 4. Methods for measurement of chemicals in biological media- Comprehensive Overview and Review of Biological Monitoring State of the Art.**
- **Section 5. Survey collection instruments for use in the National Children's Study- Evaluation of Exposure-Related Questionnaire Instruments**
- **Section 6. Study design issues related to exposure measurements for the National Children's Study- An Assessment of Where Exposure Fits into the NCS**
- **Appendices**

White Paper Review

- Reviewed by Two Members of NCSAC
 - Graham and Ryan
- Need Direction from NCSAC
 - Feedback through Liaison
- Need Focus- Through Hypotheses and Thematic Working Groups
 - What Pollutants
 - What Time Periods
- WG Can Then Provide More Focused Response