A Very Brief Overview of the National Children’s Study

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These slides are adapted from materials provided by the NCS Program Office. Errors and opinions are my own
National Children’s Study Goal

- The National Children’s Study (NCS) will examine the multiple effects of environmental influences on the health and development of 100,000 children across the United States, following them from before birth until age 21, by providing high quality data to analyze scientific hypotheses.

- The NCS is a Congressionally mandated activity coordinated among Federal agencies including the EPA, CDC, and NIH, with the Eunice Kennedy Shriver National Institute of Child Health and Human Development serving as the program lead.
National Children’s Study Sample

- All Births in the Nation
  - Sample of Study Locations
  - Sample of Study Segments
  - Sample of Study Households
  - Sample of Study Women

- ~4 million births in 3,141 counties
- 105 Locations
- Selection of neighborhoods
- All or a sample of households within neighborhoods
- All eligible women in the household
The NCS includes:
- NCS Vanguard Study
- NCS Main Study
- NCS Substudies

The Vanguard Study is designed to evaluate
- Feasibility (technical performance)
- Acceptability (the impact on participants, study personnel, and infrastructure)
- Cost (personnel, time, level of effort and money)

The Vanguard Study began in January 2009 with 2 sites, additional 5 sites began enrollment in April 2009; 37 total

Vanguard Study includes testing of alternative sampling strategies (including provider-based)
Current Schedule of Visits
(Vanguard Study)

Preconception (high probability pregnancy)
one face to face visit, phone follow-up

Other data collections
- Diary
- Phone
- Mail in samples
- Observational data
- Settings outside the home
- Community samples

<table>
<thead>
<tr>
<th>Clinical Setting</th>
<th>Home</th>
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<table>
<thead>
<tr>
<th></th>
<th>1st Trimester</th>
<th>3 years</th>
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<tbody>
<tr>
<td>2nd Trimester</td>
<td>2nd Trimester</td>
<td>5 years</td>
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<tr>
<td>3rd Trimester</td>
<td>3rd Trimester</td>
<td>8 years</td>
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<tr>
<td>Delivery Visit</td>
<td>Delivery Visit</td>
<td>12 years</td>
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<tr>
<td>6 months</td>
<td>6 months</td>
<td>16 years</td>
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<tr>
<td>12 months</td>
<td>12 months</td>
<td>20 years</td>
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## Priority Exposures and Health Outcomes

<table>
<thead>
<tr>
<th>Priority Exposures</th>
<th>Examples</th>
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<tbody>
<tr>
<td>Physical Environment</td>
<td>Housing quality, neighborhood</td>
</tr>
<tr>
<td>Chemical Exposures</td>
<td>Pesticides, phthalates, heavy metals, PBA</td>
</tr>
<tr>
<td>Biologic Environment</td>
<td>Infectious agents, endotoxins, diet</td>
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<tr>
<td>Genetics</td>
<td>Interaction between genes and environment</td>
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<tr>
<td>Psychosocial milieu</td>
<td>Family structure, socio-economic status, parenting style, social networks, exposure to media and violence</td>
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<tr>
<th>Priority Health Outcomes</th>
<th>Examples</th>
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<tbody>
<tr>
<td>Pregnancy Outcomes</td>
<td>Preterm, Birth defects</td>
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<tr>
<td>Neurodevelopment &amp; Behavior</td>
<td>Autism, learning disabilities, schizophrenia, conduct and behavior problems</td>
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<tr>
<td>Injury</td>
<td>Head trauma, Injuries requiring hospitalizations</td>
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<tr>
<td>Asthma</td>
<td>Asthma incidence and exacerbation</td>
</tr>
<tr>
<td>Obesity &amp; Physical Development</td>
<td>Obesity, diabetes, altered puberty</td>
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</tbody>
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In a sample of 100,000 children:

The NCS estimates:

- 30,000 will be overweight; 17,000 with obesity
- 5,000 with learning disorders
- 5,000 with asthma
- 1,000 with autism spectrum disorders
- 320 with childhood cancers
- 125 with Down syndrome
- 50 with Fragile X syndrome

We might also expect:

- 40,000 born to unmarried parents
- 20,000 poor each year
- <1,000 in foster care each year