

# Supplemental Information

SUPPLEMENTAL TABLE 4 Cohort Overview and Participant Specifications

Cohort	Overview	Inclusion Criteria	Exclusion Criteria	Cohort-Specific Primary Outcomes	ECHO Outcome Area (s)
A	<p>The 35th Multicenter Airway Research Collaboration, a program of the Emergency Medicine Network, is a 17-center, prospective cohort study that enrolled from 2011 to 2014 during peak bronchiolitis season (November to April). Sites solicited volunteers from inpatient wards and the ICU, and infants were initially hospitalized for bronchiolitis. Long-term follow-up is ongoing and will continue until participants reach age 6 years.</p>	<ol style="list-style-type: none"> <li>Age &lt;1 y</li> <li>Admitted to hospital with physician-diagnosed bronchiolitis</li> <li>Parents have and provide personal contact information and expect it will not change for at least 12 mo</li> <li>Parents have and provide primary care physician contact information and expect it will not change for at least 12 mo</li> <li>Able to provide informed consent 24 h after admission to hospital or ICU</li> <li>Parent speaks English or Spanish</li> </ol>	<ol style="list-style-type: none"> <li>Enrolled in current study during earlier bronchiolitis admission</li> <li>Parent did not agree to collection or future use of infant nasopharyngeal aspirate or blood sample</li> <li>Child transferred to participating hospital &gt;48 h after the original time of admission</li> <li>Time since child transferred to a participating site hospital &gt;24 h</li> <li>Met study end point (2 corticosteroid treatments in 6 mo or 4 episodes of wheeze in past year)</li> <li>Known heart-lung disease, immunodeficiency, immunosuppression, or gestational age &lt;32 wk</li> <li>Insurmountable language barrier</li> </ol>	<ol style="list-style-type: none"> <li>Recurrent wheezing by age 3 y</li> <li>Physician-diagnosis of asthma by age 5 y</li> <li>Asthma diagnosis and phenotypes at 6 y by examination</li> </ol>	Airways
B	<p>The ECHO Prenatal Alcohol and SIDS and Stillbirth Northern Plains cohort includes women and children from the extant Safe Passage Study and comprises a unique mix of rural and American Indian or Alaskan native populations with documented high prenatal exposure to alcohol, tobacco, and drugs. Women were recruited in pregnancy from participating obstetrics and gynecology clinics and other entities (eg, the Supplemental Nutrition Program for Women, Infants, and Children) from August 2007 to January 2015.</p>	<ol style="list-style-type: none"> <li>Pregnant female patient of any race or ethnicity carrying 1 or 2 fetuses during pregnancy</li> <li>Age <math>\geq</math> 16 y, inclusive at time of consent</li> <li>At time of recruitment visit, participant is between 6 + 0/7 wk and &lt;20 + 1/7 wk gestation or participant is 20 + 1/7 wk gestation, has not had &gt;2 prenatal visits, and the current visit is not the delivery admission</li> <li>Must speak English</li> <li>Able to provide informed consent</li> </ol>	<ol style="list-style-type: none"> <li>Women carrying <math>\geq</math>3 fetuses during the pregnancy</li> <li>Planned abortion</li> <li>Moving out of catchment area before estimated date of delivery</li> <li>Unable to provide informed consent</li> <li>Health care provider advised against participation</li> </ol>	<ol style="list-style-type: none"> <li>SIDS</li> <li>Stillbirth</li> <li>Fetal alcohol spectrum disorders</li> </ol>	Airways, neurodevelopment, obesity, perinatal outcomes
C	<p>The Exposome Contributors to Child Health Originating from the National Fetal Growth Study is a nationally representative cohort of women and fetuses studied repeatedly during pregnancy. Healthy women, women with normal wt, and women with obesity without concurrent medical conditions or complicated obstetrical histories were enrolled during the first trimester from 10 centers across the United States from July 2009 to January 2013.</p>	<ol style="list-style-type: none"> <li>Children of women (both with normal wt and obesity)</li> <li>Viable singleton pregnancy of women aged 18–40 y</li> </ol>	<ol style="list-style-type: none"> <li>Neurobehavioral outcomes (many)</li> <li>Bioelectrical impedance analysis</li> <li>Cardiometabolic assays</li> <li>Child BMI z score and wt-for-height z score</li> </ol>	<ol style="list-style-type: none"> <li>Airways, neurodevelopment, obesity, perinatal outcomes</li> </ol>	Airways, neurodevelopment, obesity, perinatal outcomes

SIDS, sudden infant death syndrome.

**SUPPLEMENTAL TABLE 5** Chronic Illness Frequencies

	<i>n</i>	%
Preterm birth	134	10.7
LBW	90	7.2
Asthma	68	5.4
Obesity	28	2.2
Eczema	24	1.9
Hay fever and/or respiratory allergies	12	1.0
ADHD	9	<1
Digestive problems	8	<1
Behavior problems	4	<1
ASD	3	<1
Anxiety	2	<1
Depression	1	<1
Epilepsy	1	<1

Twelve percent of children had 1 chronic illness, 7% had 2 chronic illnesses, and 1% had  $\geq 3$  chronic illnesses.

**SUPPLEMENTAL TABLE 6** Multivariable Regression Random-Effects Models Regressing Child Chronic Illness, Demographics, Family Environmental Stressors, and Child Stress on General Health and Life Satisfaction

	General Health			Life Satisfaction		
	$\beta$	95% CI	<i>P</i>	$\beta$	95% CI	<i>P</i>
Chronic illness	-1.19	-2.38 to 0.00	.05	-.19	-1.24 to 0.85	.72
Age	-.19	-0.51 to 0.14	.26	-.03	-0.31 to 0.26	.85
Sex (male = 1)	-.84	-1.67 to -0.01	.05	-.44	-1.17 to 0.29	.24
Race						
African American	-2.01	-4.41 to 0.38	.10	.48	-1.63 to 2.59	.66
Other race	.98	-0.32 to 2.28	.14	.81	-0.34 to 1.95	.17
Hispanic origin	-2.10	-3.74 to -0.46	.01	.29	-1.16 to 1.73	.70
Single parent	-1.96	-3.56 to -0.37	.02	-.50	-1.91 to 0.91	.49
Maternal mental health	-.53	-1.52 to 0.45	.29	.01	-0.86 to 0.88	.98
Income						
\$20 000-\$40 000	.78	-0.65 to 2.21	.29	1.22	-0.04 to 2.48	.06
\$40 000-\$60 000	1.77	0.45 to 3.09	<.01	1.43	0.27 to 2.59	.02
$\geq$ \$60 000	3.51	2.03 to 4.98	<.001	2.65	1.35 to 3.95	<.001
Child stress						
Moderate	-2.51	-3.58 to -1.44	<.001	-2.03	-2.98 to -1.09	<.001
High	-6.68	-7.73 to -5.64	<.001	-6.74	-7.66 to -5.82	<.001
Cohort B	3.35	1.69 to 5.01	<.001	-.94	-2.40 to 0.52	.21
Cohort C	3.73	1.56 to 5.89	<.01	-.90	-2.81 to 1.01	.36
$\sigma_u$	5.34	—	—	4.81	—	—
$\sigma_e$	5.29	—	—	4.51	—	—
$\rho$	.51	—	—	.53	—	—

General health and life satisfaction outcomes are scored on the PROMIS T-score metric (mean = 50, SD = 10). —, not applicable.

**SUPPLEMENTAL TABLE 7** Multivariable Regression Models Without Perinatal Chronic Illnesses for General Health and Life Satisfaction Outcomes

	General Health			Life Satisfaction		
	$\beta$	95% CI	<i>P</i>	$\beta$	95% CI	<i>P</i>
Chronic illness <sup>a</sup>	-4.80	-7.10 to -2.49	<.001	-1.09	-2.81 to 0.63	.21
Age	.83	-2.36 to 4.02	.61	2.27	-0.11 to 4.65	.06
Sex (male = 1)	-1.27	-3.42 to 0.88	.24	-.61	-2.22 to 0.99	.45
Race						
African American	-2.71	-5.60 to 0.18	.07	-.50	-2.66 to 1.66	.65
Other race	-4.28	-8.06 to -0.49	.03	-3.49	-6.32 to -0.67	.02
Hispanic origin	-2.83	-5.64 to -0.02	.05	-.93	-3.03 to 1.17	.38
Single parent	-2.13	-5.16 to 0.91	.17	-1.47	-3.73 to 0.80	.20
Maternal mental health	.47	-2.52 to 3.46	.76	1.96	-0.28 to 4.19	.09
Income						
\$20 000–\$40 000	-2.38	-6.31 to 1.54	.23	-.31	-3.24 to 2.62	.84
\$40 000–\$60 000	.22	-4.13 to 4.56	.92	-1.27	-4.51 to 1.97	.44
≥\$60 000	1.53	-2.11 to 5.17	.41	-1.82	-4.54 to 0.90	.19
Child stress						
Moderate	-3.02	-5.75 to -0.30	.03	-1.88	-3.92 to 0.15	.07
High	-7.65	-10.48 to -4.81	<.001	-5.96	-8.07 to -3.84	<.001
Cohort B	—	—	—	—	—	—
Cohort C	5.19	1.61 to 8.77	<.01	-1.37	-4.05 to 1.30	.31

Models are based on GEEs with cohort fixed effects regressing child chronic illness (without perinatal conditions), demographics, family environmental stressors, and child stress on general health and life satisfaction. General health and life satisfaction are scored on the PROMIS T-score metric (mean = 50; SD = 10). —, not applicable.

<sup>a</sup> Does not including perinatal illnesses.