The North Carolina Autism and Developmental Disabilities Monitoring Network

NC ADDM is part of a national effort to estimate the number of children with autism spectrum disorders (ASD) and intellectual disabilities (ID), funded by the Centers for Disease Control and Prevention (CDC). Our goal is to review health and education records to provide the most accurate data possible on the prevalence of these disorders to inform programmatic and fiscal planning that supports the education and health of children with these disabilities.

These data also allow us to investigate factors associated with variability in prevalence, investigate concerns that ASD prevalence is increasing, and monitor prevalence trends over time. The data in this report reflect children who were 8 years old in 2012 (born in 2004) in central North Carolina (NC). NC counties include Alamance, Caswell, Chatham, Davidson, Durham, Forsyth, Guilford, Orange, Randolph, Rockingham, and Wake.

NC Highlights on the Prevalence of Autism Spectrum Disorders*

<table>
<thead>
<tr>
<th>Central NC</th>
<th>All 8 year olds in region # (% of total)</th>
<th>ASD Prevalence per 1,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>All 8 year olds</td>
<td>38,913 (100%)</td>
<td>16.9</td>
</tr>
<tr>
<td>By Race-Ethnicity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>53.4% (20,714)</td>
<td>18.9</td>
</tr>
<tr>
<td>Black</td>
<td>24.5% (9,635)</td>
<td>15.5</td>
</tr>
<tr>
<td>Hispanic</td>
<td>16.8% (6,472)</td>
<td>9.1</td>
</tr>
<tr>
<td>Asian-Pacific Islander</td>
<td>4.9% (1,923)</td>
<td>18.4</td>
</tr>
<tr>
<td>American Indian &amp; Alaskan Native</td>
<td>0.4% (157)</td>
<td>~</td>
</tr>
<tr>
<td>By Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boys</td>
<td>50.6% (19,580)</td>
<td>27.5</td>
</tr>
<tr>
<td>Girls</td>
<td>49.5% (19,333)</td>
<td>6.0</td>
</tr>
</tbody>
</table>

~To protect confidentiality, prevalence not reported for small groups

2012 ASD Prevalence in Central NC

- In central NC, 656 children were identified with ASD from among 38,913** children 8 years of age.
- The 2012 prevalence of ASD among children born in 2004 in central NC was 16.9 per 1,000 children:

1 in 59 children
1 in 36 boys & 1 in 167 girls

- NC prevalence is slightly higher than, but generally similar to, the estimate of 14.5 per 1,000 (or 1 in 68) children that reflects all 11 sites conducting surveillance under the standardized CDC protocol. Estimates across the 11 sites range from 8.2 per 1,000 to 24.6 per 1,000.

ASD Prevalence per 1,000 8-year old Children

Early Signs of ASD

- Early identification of ASD relies on recognition of deficits in social communication and social interactions, along with restricted interests or repetitive patterns of behavior.
- General development and language delays are often the first signs of concern noted, but the age at which these signs are first documented varies.

* 2012 definition of ASD is based on DSM-IV® criteria, which were relevant for diagnosing children through this period.
** Denominator is based on US census
Among the 8-year old children ADDM identified with ASD in central NC:

- 60% received a comprehensive evaluation by 36 months of age
- 59% had a previous diagnosis of ASD documented in a record
  - Among those with a documented diagnosis, 39% received the diagnosis by 36 months of age.
- 33% of children identified with ASD were served by school only; 55% were served by multiple agencies
- 83% of children identified with ASD were receiving special education services in school. For 58% of those, the primary service classification was for ASD

**Age Developmental Concerns Were First Noted for Children with ASD**

- General: 92%
- Social: 70%
- Language: 86%
- Play: 46%

**Intellectual Disability among Girls and Boys with ASD**

- Intellectual Disability Range (IQ < 70): Girls 42%, Boys 42%
- Borderline Range (IQ 71-85): Girls 30%, Boys 32%
- Average/Above Average Range (IQ > 85): Girls 28%, Boys 24%

Among the 8-year old children with ASD in central NC who were identified by ADDM:

- 92% presented with general developmental concerns, 70% with social concerns, 86% with language concerns, and 46% with play concerns
- 42% presented with general developmental concerns by 12 months of age and 77% by 24 months of age
- 42% of girls and 32% of boys had a co-occurring intellectual disability
- 23% of girls and 24% of boys had borderline intellectual disability
- 35% of girls and 44% of boys had average/above average intellectual ability

*NC ADDM relies on successful collaboration between the University of North Carolina at Chapel Hill, The Department of Public Instruction, TEACCH Autism Program, Children’s Developmental Services Agencies (CDSA), Early Intervention Branch, Women’s & Children’s Health Section, Division of Public Health, NC Department of Health and Human Services.*

For more information, visit:  
NC ADDM at [http://ncaddm.unc.edu](http://ncaddm.unc.edu); NC Act Early at [www.ncactearly.com](http://www.ncactearly.com);  
CDC MMWR [www.cdc.gov/mmwr/index.html](http://www.cdc.gov/mmwr/index.html)