Trends in Autism Prevalence Over Time:
Findings from the CDC’s 2008 ADDM Network Prevalence Report

Marshalyn Yeargin-Allsopp, MD
Chief, Developmental Disabilities Branch,
National Center on Birth Defects and Developmental Disabilities,
Centers for Disease Control and Prevention

June 21, 2012
CHE Partnership Call
Autism spectrum disorders (ASDs) are a group of developmental disabilities characterized by impairments in social interaction and communication and by restricted, repetitive, and stereotyped patterns of behavior.

Challenges in tracking the prevalence of ASDs include:

- Complex nature of the disorders
- Lack of biologic markers for diagnosis
- Changes in diagnostic practices over time
ADDM Network Methods

- Multisite, multisource, records-based surveillance methodology

  Screening and abstraction of records at multiple data sources in community

  All abstracted evaluations reviewed by trained clinicians to determine ASD case status
## ADDM Network 2000-2008

**Identified Prevalence of ASDs**  
*Combining Data from All Sites*

<table>
<thead>
<tr>
<th>Surveillance Year</th>
<th>Birth Year</th>
<th>Number of ADDM Sites Reporting</th>
<th>Prevalence per 1,000 Children (Range)</th>
<th>About 1 in X Children...</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>1992</td>
<td>6</td>
<td>6.7 (4.5-9.9)</td>
<td>1 in 150</td>
</tr>
<tr>
<td>2002</td>
<td>1994</td>
<td>14</td>
<td>6.6 (3.3-10.6)</td>
<td>1 in 150</td>
</tr>
<tr>
<td>2004</td>
<td>1996</td>
<td>8</td>
<td>8.0 (4.6-9.8)</td>
<td>1 in 125</td>
</tr>
<tr>
<td>2006</td>
<td>1998</td>
<td>11</td>
<td>9.0 (4.2-12.1)</td>
<td>1 in 110</td>
</tr>
<tr>
<td>2008</td>
<td>2000</td>
<td>14</td>
<td>11.3 (4.8-21.2)</td>
<td>1 in 88</td>
</tr>
</tbody>
</table>
Change in Identified ASD Prevalence Among ADDM Sites

Identified ASD Prevalence per 1,000

- 2002
- 2006
- 2008

Alabama, Arizona, Arkansas, Colorado, Florida, Georgia, Maryland, Missouri, New Jersey, N Carolina, Pennsylvania, S Carolina, Utah, Wisconsin, All Sites Combined
Change in Identified ASD Prevalence by Sex

(*Percent change in 13 sites completing both 2002 & 2008 surveillance years)

- Both Sexes
- Male
- Female

Identified ASD Prevalence per 1,000 Surveillance Year

- Both Sexes: *82%
- Male: *78%
- Female: *63%
Change in Identified ASD Prevalence by Race/Ethnicity

(*Percent change in 13 sites completing both 2002 & 2008 surveillance years)

- **All Race/Ethnicity**
- **White**
- **Black**
- **Hispanic**

**Identified ASD Prevalence per 1,000**

- **2002**
- **2004**
- **2006**
- **2008**

- **Identified ASD Prevalence**
  - All Race/Ethnicity: *
  - White: *
  - Black: *
  - Hispanic: *
Change in Identified ASD Prevalence by Intellectual Ability

(*Percent change in 7 sites* completing both 2002 & 2008 surveillance years)

*Includes sites having information on intellectual ability available for at least 70% of children who met the ASD case definition*
### Change in Proportion of Children with Previously Documented ASD Classification

(Combining data from 10 sites completing 2002, 2006 and 2008 surveillance years)

<table>
<thead>
<tr>
<th>Surveillance Year</th>
<th>2002</th>
<th>2006</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>% with Previously Documented ASD Classification</td>
<td>72%</td>
<td>77%</td>
<td>79%</td>
</tr>
</tbody>
</table>

- Proportion of children meeting the ASD surveillance case definition with a documented ASD classification in their records increased over time in 7 of 10 sites completing all three surveillance years.
### Earliest Known ASD Diagnosis
**Median Age and Proportion by Diagnostic Subtype**
**ADDM Network, 2008**

(Combining data from 14 sites completing 2008 surveillance year)

<table>
<thead>
<tr>
<th>Subtype of Earliest Diagnosis:</th>
<th>Autistic Disorder</th>
<th>ASD/PDD</th>
<th>Asperger Disorder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distribution of Subtypes:</td>
<td>44%</td>
<td>47%</td>
<td>9%</td>
</tr>
<tr>
<td>Median Age of Earliest Diagnosis:</td>
<td>48 Months</td>
<td>53 Months</td>
<td>75 Months</td>
</tr>
</tbody>
</table>

**Limitations:**
1) Diagnostic information obtained from evaluation records may not capture the exact age of each child’s earliest diagnosis
2) Instability of diagnostic subtypes over time
Summary of Findings

• Identified prevalence of ASDs continues to rise in most ADDM Network communities.

• Combining data from all sites:
  – 1 in 88 eight-year-old children identified with an ASD
    • 23% increase, 2006-2008
    • 78% increase, 2002-2008
  – Rate of increase higher among Hispanic children, black children, and children without intellectual disability

• Identified prevalence of ASDs varies widely
  – 1) across sites,
  – 2) by sex,
  – 3) by race/ethnicity
Thank You!

For more information, please contact

Marshalyn Yeargin-Allsopp, myeargin-allsopp@cdc.gov

For more information please contact Centers for Disease Control and Prevention
1600 Clifton Road NE, Atlanta, GA 30333
Telephone, 1-800-CDC-INFO (232-4636)/TTY: 1-888-232-6348
E-mail: cdcinfo@cdc.gov   Web: www.cdc.gov