

Early Identification of Autism Spectrum Disorder Among Children Aged 4 Years – Early Autism and Developmental Disabilities Monitoring Network, Six Sites, United States, 2016

Morbidity and Mortality Weekly Report

March 27, 2020, Volume 69, Number 3

Bottom Line Up Front:

This MMWR Surveillance Summary reports that Autism Spectrum Disorder (ASD) prevalence among 4-year-old children in the Early Autism and Developmental Disabilities Monitoring (ADDM) Network has increased. This report includes information about trends in ASD prevalence, characteristics of young children with ASD, prevalence by DSM-IV and DSM-5 ASD criteria and whether progress is being made towards decreasing the age of ASD identification.

Background:

In 2010, Centers for Disease Control and Prevention (CDC) began active, population-based, multiple source surveillance for Autism Spectrum Disorder (ASD) among 4-year-old children living in diverse communities, across the United States. These communities are a subset of sites participating in the Autism and Developmental Disabilities Monitoring (ADDM) Network, which has been conducting ASD surveillance among 8-year-old children, since 2000. The states participating in the Early ADDM Network were: Arizona, Colorado, Missouri, New Jersey, North Carolina and Wisconsin. All sites had access to health source records. Arizona, Colorado, New Jersey and North Carolina also had access to special education records. New Jersey, North Carolina and Wisconsin also had access to Early Intervention Program records for children from 0 to 3 years. A combined total of 72,277 preschool-age children's records were reviewed in the 2016 cycle of Early ADDM ASD monitoring.

KEY FINDINGS

- The CDC and investigators in multiple US states using the same ascertainment method have released the findings of a study looking at preschool-aged children with autism in six communities across the United States, in 2016. The new data from this large population tells us several important things:
 - **Prevalence of ASD among 4-year-olds in the Network increased to 1.6% (1 in 64 children)**
 - **ASD estimates varied by site, ranging from .8% (1 in 114) in Missouri to 2.5% (1 in 40) in New Jersey**
 - **Boys with ASD outnumbered girls with ASD by a ratio of 3.5 to 1**
 - **ASD prevalence was highest among Hispanic ASD children identified in New Jersey -- 3.2% which is higher than among white and black ASD peers**
 - **Fewer young children satisfied DSM-5 ASD criteria, compared to DSM-IV criteria. In New Jersey, the difference in prevalence was 2.5%. (by DSM-5 criteria: 1 in 40 children) versus 3.0% per 1,000 (by DSM-IV criteria: 1 in 33 children)**
 - **Twenty nine percent of 4-year-olds who satisfied the surveillance case definition did not have a documented ASD diagnosis. The proportion without an ASD diagnosis varied significantly: from 9% in Missouri to 45% in North Carolina**

KEY MESSAGES

- **Increasing ASD prevalence among young children in the US is an urgent public health concern. Reasons for the increase are not understood**

- Significant race-based disparities persist, including: age of first professional evaluation, age of ASD diagnosis, likelihood of ASD diagnosis from a community professional
- ASD prevalence among white children residing in New Jersey may be declining or plateauing
- More children with ASD were identified by DSM-IV criteria than by DSM-5 criteria, contradicting the expectation that the new definition would enhance the detection of autism in young children

MOST IMPORTANT -- GOING FORWARD

- The continued surge in autism prevalence represents an important public health challenge. Enhanced research into environmental risk factors and triggers is indicated
- Universal ASD screening at 18, 24 and 36 months is recommended to enhance early detection
- Additional ASD monitoring in 4-year old cohorts is necessary to understand the acceleration of autism prevalence among Hispanic children and the possible plateauing of ASD among white children
- Additional research is needed to understand the relative contribution of community level differences in access to health and education services on Early ADDM ASD estimates