Electronic health record data may predict early autism

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Autism detection using electronic health record (EHR) data achieves

clinically meaningful accuracy by age 30 days, which improves by age 1 year, according to a study published online Feb. 2 in *JAMA Network Open*.

Matthew M. Engelhard, M.D., Ph.D., from Duke University in Durham, North Carolina, and colleagues evaluated the predictive value of early autism detection models based on EHR data collected before 1 year of age. The analysis included data from 45,080 children (1.5 percent meeting autism criteria) seen at the Duke University Health System before age 30 days between January 2006 and December 2020. These data were used to train and evaluate L2-regularized Cox proportional hazards models.

The researchers found that model-based autism detection at age 30 days achieved 45.5 percent sensitivity and 23.0 percent positive predictive value (PPV) at 90.0 percent specificity, while detection by age 360 days achieved 59.8 percent sensitivity and 17.6 percent PPV at 81.5 percent specificity and 38.8 percent sensitivity and 31.0 percent PPV at 94.3 percent specificity.

"This automated approach could be integrated with caregiver surveys to improve the accuracy of early autism screening," write the authors.

Some authors disclosed ties to the pharmaceutical and technology industries.

More information: Matthew M. Engelhard et al, Predictive Value of Early Autism Detection Models Based on Electronic Health Record Data Collected Before Age 1 Year, *JAMA Network Open* (2023). DOI: 10.1001/jamanetworkopen.2022.54303

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