

Research Letter | Psychiatry

Autism Spectrum Disorder and Life Expectancy Among Medicaid Beneficiaries

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Introduction

As a complex lifelong condition, autism spectrum disorder (ASD) represents an important public health challenge with substantial costs to the US health care system.¹ Research on ASD has been largely concentrated in understanding its biology; identifying genetic markers and environmental risk factors; establishing screening, diagnosis, and surveillance programs; and evaluating treatments and interventions.² In recent years, there has been an increasing recognition of the need to support research aimed at improving the quality of life and long-term health outcomes for individuals with ASD.³

Mortality data are crucial for understanding the long-term prognosis and natural history of ASD. Although systematic reviews indicate that the overall mortality rate for people with ASD is 2 to 3 times the rate of the general population,^{4,5} life expectancy disparity in the autistic population has not been examined because of insufficient age-specific mortality data. To close this knowledge gap, we used the enhanced Medicaid data system to calculate life expectancies and identify causes of death associated with excess mortality for Medicaid beneficiaries with ASD.

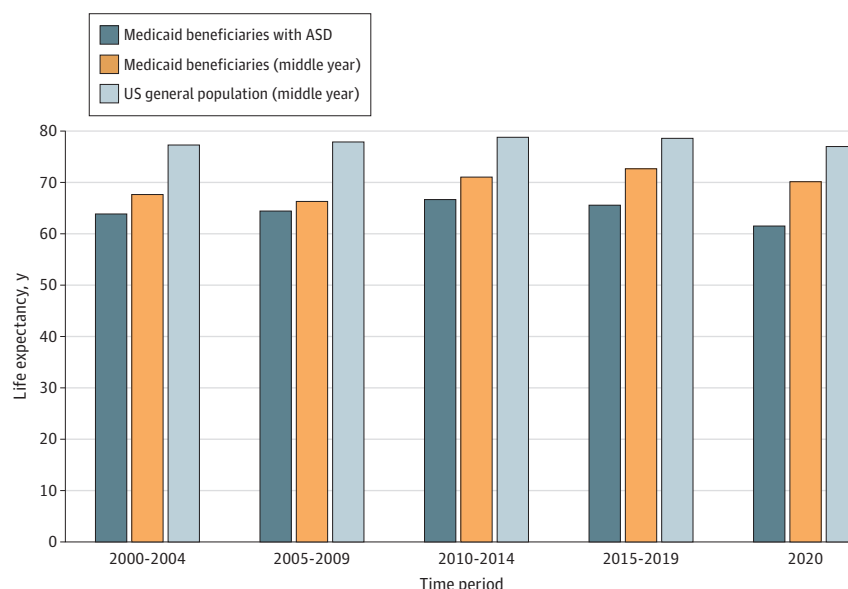
+ Supplemental content

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Methods

For this cross-sectional study, we used data from the Transformed Medicaid and Children's Health Insurance Program Statistical Information System, including mortality data through linkage to the National Death Index, for all Medicaid beneficiaries across 50 states and the District of Columbia,

Figure. Bar Graph of Life Expectancies for Medicaid Beneficiaries With Autism Spectrum Disorder (ASD) Compared With All Medicaid Beneficiaries and the General Population by Time Period



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from 2000 to 2020. We calculated life expectancies for Medicaid beneficiaries with ASD and for the overall Medicaid beneficiary population using the life table method.⁶ To identify causes of excess mortality associated with ASD, we calculated age- and sex-standardized mortality ratios (SMRs) using the 2010 Medicaid beneficiary population as the standard population. The data source, study population, and statistical analyses are described in detail in the eMethods in Supplement 1. Analyses were conducted between October 10, 2024, and July 16, 2026, using SAS, version 7.1 (SAS Institute). The research protocol was reviewed and approved by the institutional review board of Columbia University Irving Medical Center. Because individual participants could not be identified to obtain consent and this study involves no more than minimal risk, a waiver of informed consent was granted. We followed the STROBE reporting guideline.⁷

Results

During the 21-year study period, a total of 2 048 046 individuals with ASD were enrolled in Medicaid; of them, 76.1% were male, 23.9% female, 16.7% Hispanic, 14.6% non-Hispanic Black, 48.5% non-Hispanic White, and 20.2% other race and ethnicity (including American Indian or Alaska Native,

Table. Age- and Sex-Standardized Mortality Ratios (SMRs) for Medicaid Beneficiaries With Autism Spectrum Disorder by Underlying Cause of Death

Underlying cause of death (ICD-10 codes)	No. of observed deaths	No. of expected deaths ^a	SMR (95% CI)
Overall	18 268	12 727.2	1.44 (1.41-1.46)
Certain infectious and parasitic diseases (A00-B99)	663	652.7	1.02 (0.94-1.09)
Septicemia (A40-A41)	435	210.3	2.07 (1.81-2.26)
Neoplasms (C00-D49)	1951	2611.0	0.75 (0.71-0.78)
Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism (D50-D89)	130	92.6	1.40 (1.16-1.65)
Endocrine, nutritional, and metabolic diseases (E00-E89)	999	668.7	1.49 (1.40-1.59)
Malnutrition (E40-E46)	87	11.5	7.56 (5.96-9.14)
Mental, behavioral, and neurodevelopmental disorders (F01-F99)	1005	342.0	2.94 (2.76-3.12)
Diseases of the nervous system (G00-G99)	2057	744.2	2.76 (2.64-2.88)
Diseases of the circulatory system (I00-I99)	3258	2703.3	1.21 (1.16-1.25)
Diseases of the respiratory system (J00-J99)	2034	978.8	2.08 (1.99-2.17)
Influenza (J10-J11)	76	7.2	10.55 (8.17-12.92)
Pneumonia (J12-J18)	663	216.8	3.06 (2.82-3.29)
Pneumonitis due to solids and liquids (J69)	549	79.3	6.92 (6.34-7.50)
Diseases of the digestive system (K00-K95)	986	657.6	1.50 (1.41-1.59)
Diseases of the musculoskeletal system and connective tissue (M00-M99)	108	69.5	1.55 (1.26-1.85)
Diseases of the genitourinary system (N00-N99)	472	306.9	1.54 (1.40-1.68)
Congenital malformations, deformations, and chromosomal abnormalities (Q00-Q99)	767	172.2	4.45 (4.14-4.77)
Symptoms, signs, and abnormal clinical and laboratory findings, not elsewhere classified (R00-R99)	594	196.4	3.02 (2.78-3.27)
Injury, poisoning, and other external causes (S00-Y99)	2489	2475.9	1.01 (0.97-1.04)
Falls (W00-W19)	150	68.1	2.20 (1.85-2.55)
Nontransport accidents and their sequelae (W20-W31, W35-W64, W75-W99, X10-X39, X50-X59, Y86)	639	142.7	4.48 (4.13-4.83)
Accidental drowning and submersion (W65-W74)	294	90.2	3.26 (2.89-3.63)
Accidental exposure to smoke, fire, and flames (X00-X09)	99	46.7	2.12 (1.70-2.54)
Other codes for special purposes (U00-U85) ^b	755	55.4	13.63 (12.65-14.59)

Abbreviation: ICD-10, International Statistical Classification of Diseases and Related Health Problems, Tenth Revision.

^a Based on age- and sex-specific death rates for the Medicaid beneficiary population in 2010.

^b Groups with <100 deaths: diseases of the eye and adnexa (H00-H59); diseases of the ear and mastoid process (H60-H95); diseases of the skin and subcutaneous tissue (L00-L99); pregnancy, childbirth, and the puerperium (O00-O9A); and certain conditions originating in the perinatal period (P00-P96).

Asian, and Native Hawaiian and Other Pacific Islander). Overall, life expectancy at birth for Medicaid beneficiaries with ASD was 64.9 (95% CI, 64.6-65.1) years, which was 5.6 years shorter than for the overall Medicaid beneficiary population and 13.8 years shorter than for the US general population. Life expectancy for those with ASD varied little with sex (64.6 [95% CI, 64.3-64.9] years for males and 65.0 [95% CI, 64.5-65.4] years for females) or race and ethnicity (64.9 [95% CI, 63.7-66.1] years for Hispanic, 63.7 [95% CI, 63.0-64.3] years for non-Hispanic Black, 64.8 [95% CI, 64.5-65.1] years for non-Hispanic White, and 66.7 [95% CI, 66.0-67.4] years for other). The life expectancy deficit in autistic women (−8.2 years compared with female Medicaid beneficiaries and −16.0 years compared with the US female population) was greater than in autistic men (−1.9 years compared with male Medicaid beneficiaries and −11.6 years compared with the US male population).

Between 2000 to 2004 and 2015 to 2019, life expectancy for Medicaid beneficiaries with ASD increased 1.7 years (from 63.9 years to 65.6 years), but the disparities with the Medicaid beneficiary population and the US general population remained (**Figure**). In 2020 (the first year of the COVID-19 pandemic), life expectancy declined across all 3 population groups, with the largest reduction (4.1 years relative to the 2015-2019 period) occurring among those with ASD (**Figure**).

Medicaid beneficiaries with ASD had a significantly higher mortality risk than the Medicaid beneficiary population (SMR, 1.44; 95% CI, 1.41-1.46). Excess mortality among Medicaid beneficiaries with ASD was found in most categories of diseases and health problems, and was most pronounced with influenza (SMR, 10.55; 95% CI, 8.17-12.92), followed by malnutrition (SMR, 7.56; 95% CI, 5.96-9.14), pneumonitis due to solids and liquids (SMR, 6.92; 95% CI, 6.34-7.50), nontransport accidents and their sequelae (SMR, 4.48; 95% CI, 4.13-4.83), accidental drowning and submersion (SMR, 3.26; 95% CI, 2.89-3.63), and pneumonia (SMR, 3.06; 95% CI, 2.82-3.29) (**Table**).

Discussion

In this serial cross-sectional study of Medicaid beneficiaries, life expectancy at birth for those with ASD was approximately 65 years, nearly 6 years less than for the Medicaid beneficiary population and 14 years less than for the US general population. The shortened life expectancy for Medicaid beneficiaries with ASD was due to excess mortality from a variety of diseases and health problems. Compared with the general population, autistic women face a greater deficit in life expectancy than autistic men do, due to more psychiatric comorbidities and resulting excess mortality.^{4,5,8,9}

Our study has several notable limitations. Because Medicaid is a means-tested public insurance program for low-income individuals and individuals with disabilities, beneficiaries with ASD are likely to have lower socioeconomic status and more severe symptoms than autistic individuals who are not enrolled in Medicaid, possibly biasing life expectancies reported in our study toward underestimation.¹⁰ Moreover, Medicaid beneficiaries with ASD are disproportionately children, young adults, and males compared with the reference populations, a potential concern for residual bias from unmeasured confounding in the SMRs. Despite these limitations, our findings have important implications for developing targeted interventions to reduce preventable excess mortality among people with ASD.

ARTICLE INFORMATION

Accepted for Publication: July 17, 2026.

Published: September 10, 2026. doi:10.1001/jamanetworkopen.2026.33251

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Author Contributions: Mr Russell had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.

Concept and design: Li, DiGuseppi, Ing.

Acquisition, analysis, or interpretation of data: All authors.

Drafting of the manuscript: Li.

Critical review of the manuscript for important intellectual content: All authors.

Statistical analysis: Russell, Ing.

Obtained funding: Li, Blanchard.

Administrative, technical, or material support: Li, Ing.

Supervision: Li, Ing.

Conflict of Interest Disclosures: Dr DiGuseppi reported receiving funding from the National Institutes of Health (NIH) during the conduct of the study. Dr Ing reported receiving royalties from UpToDate outside the submitted work.

Funding/Support: This work was funded by NIH grant 5R01HD108138 (G.L.); NIH grant KL2TR001874 through the Irving Institute for Clinical and Translational Research (A.B.); and Centers for Disease Control and Prevention grant 5R49CE003555 (G.L.).

Role of the Funder/Sponsor: The funders had no role in the design and conduct of the study; collection, management, analysis, and interpretation of the data; preparation, review, or approval of the manuscript; and decision to submit the manuscript for publication.

Meeting Presentation: Preliminary results of this study were presented at the 2025 annual meeting of the International Society for Autism Research; Seattle, Washington; May 1, 2025.

Data Sharing Statement: See [Supplement 2](#).

Additional Contributions: The authors thank Barbara H. Lang, MPH (Columbia University Department of Anesthesiology), for her administrative and editorial assistance. Her assistance was provided as part of her role at Columbia University, and she did not receive any additional compensation for this work. She has provided written permission to be named.

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SUPPLEMENT 1.**eMethods****eReferences****SUPPLEMENT 2.****Data Sharing Statement**