Supplemental Online Content

Wang F, Haynes A, Dabelea D, et al. Type 1 diabetes incidence and prevalence in the US. *JAMA Netw Open*. 2026: 9(8):e2627732. doi:10.1001/jamanetworkopen.2026.27732.

This supplemental material has been provided by the authors to give readers additional information about their work.

eMethods

Subnational estimates of type 1 diabetes incidence

The SEARCH for Diabetes in Youth (SEARCH) study has monitored type 1 diabetes incidence in young people <20 years of age in several states and populations of the USA (California, Colorado, Ohio, South Carolina, Washington, and selected Native American communities in Arizona and New Mexico) since 2002, which together represent ~6% of the US population of this age (1, 3). In addition to variation in type 1 diabetes incidence between states/populations, the SEARCH study has reported substantial differences in both the incidence and temporal trends in incidence between its five study-defined self-reported race/ethnicity groups: American Indian, Asian/Pacific Islander, Hispanic, non-Hispanic Black and non-Hispanic White youth (1, 4). To estimate subnational type 1 diabetes incidence accounting for state-level heterogeneity in population age distribution and race/ethnicity composition, annual type 1 diabetes incidence reported by the SEARCH study by overall age group (< 20 years) and race/ethnicity group were used as inputs into the Type 1 Diabetes Index model for the years 2002/3 to 2018. Incidence for intermediate years were estimated using linear extrapolation based on annual growth rates.

Annual state-specific population estimates were derived from two complementary sources to ensure broader coverage across 1990–2024. For 1990–2020, we used the CDC WONDER Bridged-Race Population Estimates, which provide annual census-origin state-level estimates by age, sex, race, and Hispanic origin (5). For 2021–2024, we used the U.S. Census Bureau Vintage 2024 Population Estimates by age, sex, race, and Hispanic origin (6).

To ensure consistency across the two sources, we harmonized the population denominators into five mutually exclusive race/ethnicity categories, following the framework used by the SEARCH. Specifically, the “Asian” and “Native Hawaiian/Other Pacific Islander” categories in the Vintage 2024 series were combined into a single “Asian/Pacific Islander”

group. This approach allowed continuity in race/ethnicity groupings across 1990–2024 while preserving comparability within state.

For the period of 2003 to 2018, state-specific type 1 diabetes incidence was calculated by applying the age and race/ethnicity-specific incidence to the equivalent population denominator for each state. For years prior to the SEARCH study, we assumed constant incidence at the 2003 level and applied it to state-specific population denominators. For years following the SEARCH study, we assumed constant incidence at the 2018 level and applied it to the corresponding population denominators. Type 1 diabetes incidence estimates for ≥20-year-olds were calculated by applying the "adult incidence curve" component of the Type 1 Diabetes Index model, which shows that type 1 diabetes occurs at all ages (3 [Appendix 4, Supplementary materials]). State-specific population ethnicity distributions were assumed to be at 1990 levels before 1990.

Subnational estimates of type 1 diabetes-associated mortality

State-level lifetable data for the general population for age and year were obtained from the US State Life Tables, dating from 2022 back to 1959 for Alaska and Hawaii, and 1941 for all other states (7), with rates being kept constant before and after this period. As no published or publicly available data were identified for type 1 diabetes-associated mortality rate at subnational levels, the Type 1 Diabetes Index Standardised Mortality Rate (SMR) for the USA was used and assumed to be constant across all states (3).

Subnational estimates of prevalent cases

Subnational estimates of prevalent cases were calculated by the Markov model in the Type 1 Diabetes index using state-level population data, type 1 diabetes incidence estimates and lifetable inputs (3).

Alignment to national estimates

Model adjustments were applied so that the sum of state-level incident cases, population denominator data and prevalent cases aligned with their corresponding national estimates as reported in the Type 1 Diabetes Index model (3).

eReferences

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