

National and State Societal Costs of Schizophrenia in the US in 2024

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 Supplemental content

IMPORTANCE Schizophrenia imposes a substantial burden on individuals and society. Population-specific cost estimates are essential to inform evidence-based policy, allocate resources, and support recovery-focused care that improves outcomes.

OBJECTIVE To estimate national and state-level burden of schizophrenia to inform population-specific care and services in the US in 2024.

DESIGN, SETTING, AND PARTICIPANTS This was an observational prevalence-based cost-of-illness model estimating total excess direct medical, direct nonmedical, and indirect costs of schizophrenia by combining inputs from a targeted literature review and an analysis of Medical Expenditure Panel Survey data, adjusted to 2024 US dollars. The setting included independent households, supportive housing, long-term care and skilled nursing facilities, unhoused settings, and prisons and jails. Disease-related costs were estimated for adults living with schizophrenia spectrum disorders.

EXPOSURES Health care, supportive housing, homelessness, social security disability benefits, justice system, employment, productivity, quality of life, mortality, and caregiver impact across settings of care.

MAIN OUTCOMES AND MEASURES Prevalence-based national and state cost of schizophrenia by category or sector.

RESULTS The societal cost of schizophrenia in 2024 was estimated at \$366.8 billion in the US for 3 070 739 adults (1.17%) across all settings (68.4% independent households, 18.6% supportive housing, 5.0% long-term care or skilled nursing facility, 4.7% incarcerated, 3.3% unhoused). Direct costs (\$75.0 billion) were attributable to health care (\$36.7 billion), supportive housing and homelessness (\$35.2 billion), justice system interactions (\$11.9 billion), and social security disability benefits (\$5.1 billion). Indirect costs (\$291.8 billion) resulted from lost wages (\$55.4 billion) and reduced quality of life (\$41.4 billion) and life expectancy (\$47.5 billion). Indirect costs for caregivers of individuals with schizophrenia included unpaid wages for time providing care (\$104.6 billion) and impact on caregiver health, productivity, and out-of-pocket costs (\$60.5 billion). Per-person costs of schizophrenia were estimated at \$119 436 nationally in 2024. State-level per-person costs ranged from \$110 975 in Utah to \$126 225 in Alaska.

CONCLUSIONS AND RELEVANCE In 2024, the national and state-level costs of schizophrenia in the US estimated from a societal perspective suggest a substantial burden of disease on individuals, families, and society. These findings provide an important framework to guide prevention, care, and management strategies to reduce costs and improve public health outcomes.

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Schizophrenia spectrum disorders (schizophrenia) are serious neuropsychiatric diseases, characterized by hallucinations, delusions, disordered thinking, and cognitive impairment.¹⁻³ Symptoms emerge in adolescence or early adulthood and have lifelong impacts on individuals, families, and society.¹⁻³ Schizophrenia affects approximately 1% of the population and is a leading cause of disability globally.⁴ Suboptimal care and treatment are associated with functional challenges and disability, which lead to reduced life expectancy, high unemployment and underemployment, homelessness, frequent encounters with the justice system, heavy use of supportive services (eg, housing and transportation), and increased caregiver burden.⁵⁻¹⁴

The resulting direct and indirect economic burden of schizophrenia is high, with estimates of annual costs in the US more than doubling between 2013 and 2019 from \$155.7 billion to \$342.3 billion.^{15,16} These prior estimates underscore the need for societal action but fail to account for important population and regional heterogeneity. For example, estimates using retrospective, claims-based analyses often exclude the uninsured or do not fully capture health care-related utilization (HCRU) for the partially insured.¹⁶⁻¹⁸ Nationally representative surveys exclude institutionalized and unhoused individuals.¹⁹ Prospective, longitudinal investigations are limited in sample size, geography, and generalizability.²⁰ In addition, prior estimates relied on outdated or incomplete cost and prevalence data, with limited adjustments for key population characteristics (eg, age and residential setting), limiting utility for local policymakers.¹⁵

This study builds on prior reports of the societal burden of schizophrenia by incorporating updated disease prevalence and cost data, quantifying disease-related costs not captured in earlier models, and generating state and per-person estimates. These geographically targeted analyses complement national totals and provide policymakers and health systems with actionable, population-specific information not available in previous studies.

Methods

Overview

This economic evaluation was not subject to institutional review under 45 Code of Federal Regulations part 46 as human participants and identifiable private information were not involved. This study followed the Consolidated Health Economic Evaluation Reporting Standards (CHEERS) reporting guidelines.

A multidisciplinary approach was leveraged to quantify direct medical, direct nonmedical, and indirect societal costs of schizophrenia nationally and by state and the District of Columbia. Targeted literature reviews identified overall and location-specific prevalence and disease-attributable outcomes and costs. An empirical analysis of pooled data from the Medical Expenditure Panel Survey (MEPS) informed excess direct medical and indirect employment costs for community dwelling individuals.²¹ Excess costs (ie, disease related or incremental) were defined as the additional costs

Key Points

Question What was the economic burden of schizophrenia in 2024 in the US?

Findings In this economic evaluation representing an estimated 3 070 739 adults living with schizophrenia spectrum disorders in the US, the 2024 societal burden of schizophrenia was estimated at \$366.8 billion, with per-person costs of \$119 436. Health care made up less than half of direct costs and just 9% of the total; indirect costs including lost productivity, premature mortality, and unpaid caregiving accounted for the largest share.

Meaning These findings suggest a substantial, multisector schizophrenia-related economic burden with state-level variation, highlighting the need for coordinated care and cross-sector responses.

incurred by adults with schizophrenia compared with those without the condition. A prevalence-based, cross-sectional model from a societal perspective then combined these inputs to estimate the total economic burden of schizophrenia among US adults (18 years and older) across community, institutional, and unhoused residential settings for the calendar year 2024 (**Figure 1**). Cost inputs were inflated to 2024 US dollars (\$2024) using an appropriate index: the Personal Consumption Expenditures (PCE) Price Index, the Personal Health Care Component of the PCE Price Index (PHCE), the Consumer Price Index-Urban Wage Earners and Clerical Workers, or the Business Sector: Hourly Compensation for All Workers (HCOMP-BS) (eAppendix 1 and the eFigure in **Supplement 1**).²²⁻²⁵ Outcomes were estimated by domain: health care, supportive housing and homelessness, social security disability benefits, justice system interactions, employment, morbidity and mortality, and caregiver burden (eAppendix 2 in **Supplement 1**).

Data Sources

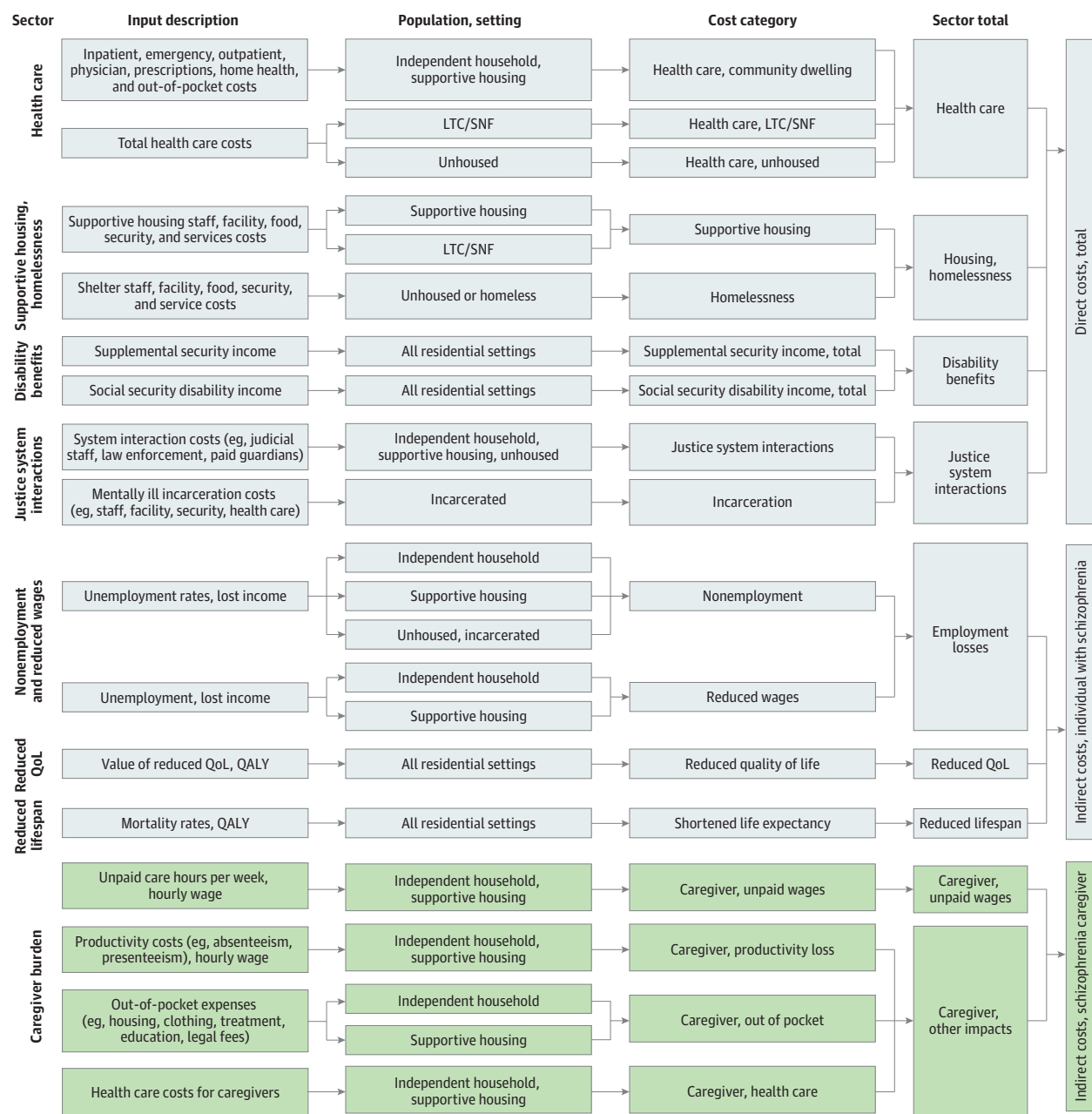
Targeted Literature Reviews

Literature searches were limited to US-based, English-language studies published after 2011 that identified disease-attributable HCRU, housing and homelessness, social security disability benefits, justice system interactions, employment and productivity, morbidity and mortality, and caregiver burden within the peer-reviewed and gray literature (eAppendix 1 and eTable 1 in **Supplement 1**). Preference was given to studies published since 2020 and with national or multisite designs. Where available, state-specific data was identified. Gray literature included governmental (eg, datasets, reports, publications, and surveys) and other publicly available sources (eg, white papers, reports, datasets).

Community Health Care and Employment Costs

An analysis of a pooled (2006-2015) sample from MEPS with costs adjusted to \$2015 by the PHCE used a quasi-experimental, matched, case-control design. Years after 2015 were excluded because MEPS discontinued schizophrenia-specific identifiers. Cases (ie, diagnosed schizophrenia) were identified by the clinical classification system to estimate excess health care costs and productivity losses attributable to

Figure 1. Framework for Estimating the Societal Costs of Schizophrenia in the US



Left to right, the figure shows how cost inputs are adjusted to 2024 dollars, converted to excess costs, applied to the relevant prevalent population with schizophrenia by residential setting (independent household, supportive housing, long-term care [LTC] or skilled nursing facility [SNF], unhoused,

incarcerated, unhoused), grouped into cost categories and domains, and summed to national and state direct, indirect, and total costs for 2024. Model sources by input and calculation descriptions are provided in eTable 10 to 18 in Supplement 1. QALY indicates quality-adjusted life-year; QoL, quality of life.

schizophrenia among those in a community setting using weighted regressions, adjusting for demographics, geography, and insurance coverage (eTable 2-9 in Supplement 1).^{21,26} Final HCRU estimates were adjusted to \$2024 by the PHCE and productivity losses by the HCOMP-BS.^{23,25} These estimates informed direct medical costs and indirect employment costs among those living in a community setting (ie, independent household or supportive housing).

Main Outcomes and Measures

Prevalence by Setting

An estimated population-wide prevalence of 1.17% combined published, age-based estimates for adults aged 18 to 64 years with a downward adjustment for early mortality risk and early-onset dementia among those 65 years and older.^{27,28} This population-wide estimate was distributed across places of residence based on the total number of adults in each setting and

the estimated prevalence of schizophrenia among that setting's subpopulation.^{5,28-35} Settings included independent households, supportive housing (eg, supervised apartment programs, boarding homes, halfway houses, treatment programs, or psychiatric diversion facilities), long-term care and skilled nursing facilities (long-term care [LTC]/skilled nursing facility [SNF]), unhoused, and prisons or jails. Any remaining adults with schizophrenia were assumed to be living in independent households (eTable 10 in [Supplement 1](#)). This study did not estimate costs of disease by demographic categories, including race and ethnicity, as many of the source references did not report demographic information.

Direct Costs

Direct medical costs included schizophrenia-related HCRU, professional services, and remediation costs attributable to schizophrenia (eTable 11 in [Supplement 1](#)). Health care costs are based on the MEPS analysis for community dwelling individuals in independent households and supportive housing. Literature-based estimates quantified medical costs among those in LTC/SNF and the homeless.^{15,36}

Possible incremental direct nonmedical costs incurred by all with schizophrenia were estimated for disease-attributable Supplemental Security Income and/or Social Security Disability Income (SSDI) and justice system interactions (eg, services provided by law enforcement, judicial staff, institutions, and paid guardians).³⁷⁻³⁹ Costs of housing (eg, staff, facility costs, security, and food) were specific to individuals in LTC/SNF and supportive housing settings, shelter stays and remediation costs specific to the homeless, and incarceration costs (eg, staff, facility costs, security, food, and health care) specific to the incarcerated (eTable 12-14 in [Supplement 1](#)).^{37,40-42}

Indirect Costs

Indirect costs among those with schizophrenia such as unemployment and underemployment, reduced quality of life (morbidity), and shortened life expectancy (mortality) were included as lost opportunity costs (eTable 15-17 in [Supplement 1](#)).^{10,43-49} A base case discount rate of 3% was applied to future lost years of life.⁵⁰ Indirect costs for unpaid caregivers included uncompensated labor (ie, mean US wage for caregiver time) and lost productivity (ie, caregiver absenteeism or presenteeism labor cost). Other caregiver impacts included the economic burden of added health care costs and out-of-pocket costs borne by caregivers for everyday expenses (eg, food, transportation, housing, and property damage) and significant life events (eg, homelessness, substance use treatment, or the need for legal, education, or employment support).^{12,16,25,44,49} Caregiver costs were adjusted by HCOMP-BS to \$2024 and estimated for schizophrenia populations residing in the community with a caregiver (eTable 18 in [Supplement 1](#)).^{12,16,25,44,49}

Cost Offsets

Cost-of-living offsets using the US individual poverty threshold were applied to applicable direct and indirect costs to ac-

knowledge individuals with schizophrenia would incur baseline expenses regardless of diagnosis.^{16,42}

State-Level Adjustments

Where state-specific parameter values were unavailable, national estimates were adjusted to state values using Center for Medicare and Medicaid Services Geographic Practice Cost Indices (GPCIs) or Bureau of Labor Statistics reported state average wage-adjusted income and earnings.^{51,52} For the medical cost estimates, an average of the Practice Expense and Physician Wage GPCIs was used to create a state index. The indices were developed by first calculating a population-weighted average across all Medicare administrative contractor areas within the state. Then, these weighted averages were normalized so the average across all states equaled 1. For productivity losses, a similarly normalized index based on each state's average wage relative to the national average was developed.

Statistical Analysis

Societal Cost Estimates

Model parameters were combined to produce an economic burden estimate by cost area for both national and state populations using an excess cost approach.⁵³ Excess costs were estimated using 2 approaches: (1) per-person differentials comparing adults with and without schizophrenia and (2) application of general-population unit costs or rates to the additional number of adults with schizophrenia using a given service. Totals were calculated by multiplying these estimates by the relevant population in each setting to reflect the economic burden of schizophrenia in the US in 2024. As all results reflect excess costs, the term *costs* is used hereafter. A separate scenario analysis to estimate lifetime costs for an individual diagnosed with schizophrenia at age 18 years was conducted by estimating per-person per-year annual costs averaged over a lifetime (eTable 19 in [Supplement 1](#)).

Sensitivity Analysis

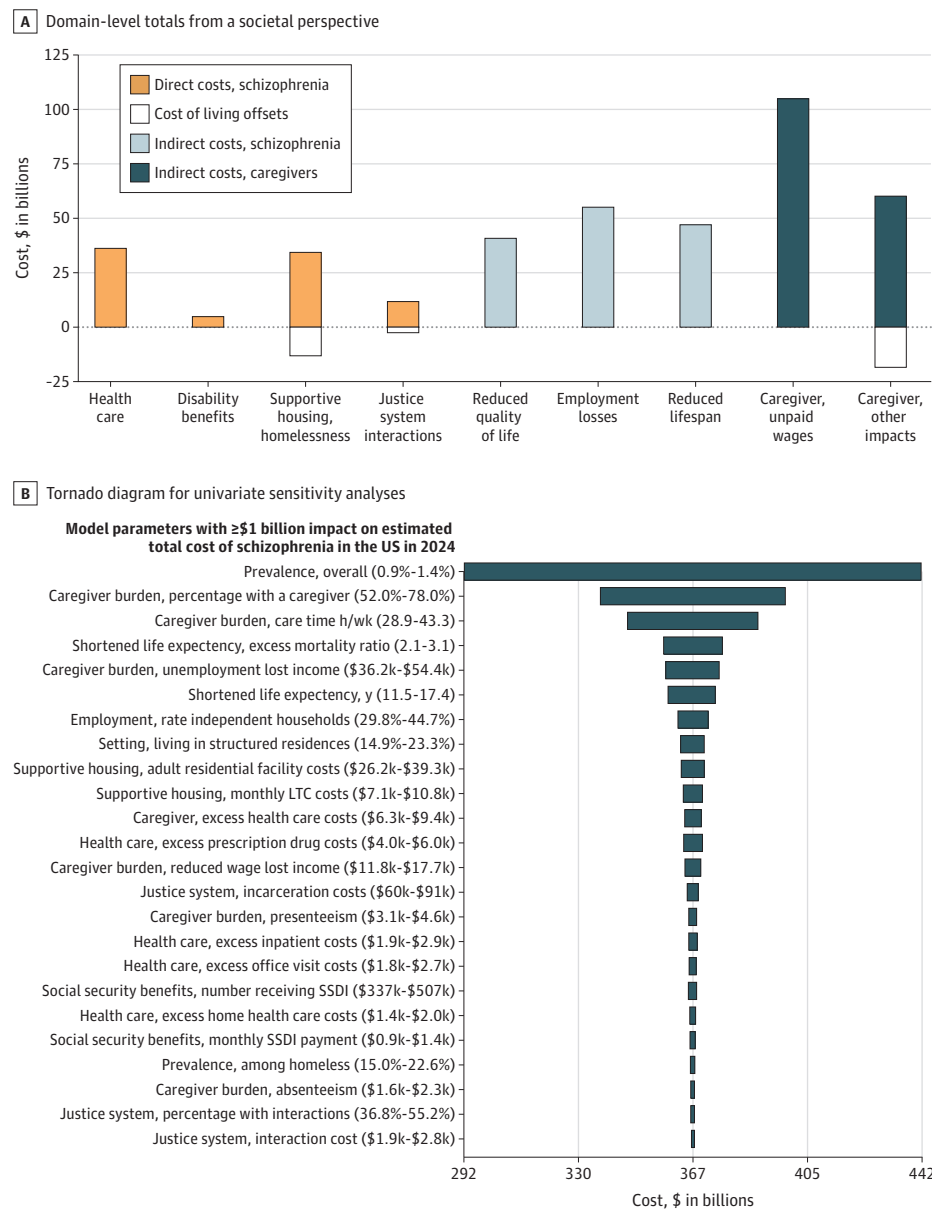
A univariate sensitivity analysis of national estimated burden was conducted to determine how much individual parameters influenced the total societal cost estimates produced by the model. All model parameters were varied by an arbitrary $\pm 20\%$ from the base case with parameters resulting in at least a one-billion-dollar change identified. Data were analyzed from April 2024 to May 2025 using Microsoft Excel, version 2024 (Microsoft Corporation).

Results

National Cost of Schizophrenia

In 2024, the total economic burden attributable to adults living with schizophrenia in the US was estimated at \$366.8 billion for 3 070 739 adults based on an age-adjusted prevalence of 1.17% ([Figure 2](#) and [Table 1](#)). Among the approximately 3.1 million adults living with schizophrenia, it was estimated that 68.4% reside in independent households, 18.6% in community-

Figure 2. Societal Costs of Schizophrenia in the US in 2024



A, Domain-level totals from a societal perspective. Health care includes costs for individuals that are in independent households, supportive housing, unhoused, and in long-term care (LTC) settings. Supportive housing and homelessness include homeless shelter stays, supportive housing (residential and LTC facilities), and associated cost-of-living offsets. Justice system interactions include incarceration costs (eg, housing, living expenses, health care), justice system interactions, and cost-of-living offsets. Caregiver and other impacts include excess costs for caregiver health care, caregiver productivity loss, out-of-pocket costs, and living expense transfer cost offsets.

B, Tornado diagram for univariate sensitivity analyses. All values represent annual average in 2024 and are specific to individuals with schizophrenia unless otherwise noted. The importance of each variable is presented from top to bottom. The maximum and minimum values for each variable, which were varied by $\pm 20\%$, are presented in brackets. The tails of each bar indicate the maximum and minimum total societal cost of schizophrenia for each variable. The dashed line represents the total cost estimate from the reference case (\$366.8 billion). Caregiver burden estimates were only applied to the proportion of individuals with schizophrenia living in independent households or supportive housing with a caregiver. SSDI indicates social security disability income.

based structured residential facilities, 5.0% in LTC/SNF, 4.7% are incarcerated, and 3.3% are unhoused.

Total direct costs in 2024 associated with schizophrenia were estimated at \$75.0 billion, representing 20.4% of the total societal burden of schizophrenia. Notably, health care spending accounted for less than half of these direct costs. Of the total, \$34.3 billion was incurred by community-dwelling individuals (those in independent households or supportive housing), \$1.3 billion by individuals in LTC/SNF, and \$1.1 billion by unhoused individuals. The majority of direct costs included \$35.2 billion for supportive housing and homelessness remediation, \$5.1 billion in supplemental security disability benefits, and \$11.9 billion related to justice system interactions, with \$14.0 billion in cost-of-living offsets.

Consistent with previous estimates, the indirect burden of schizophrenia was more than 3 times that of direct costs, accounting for 79.6% of overall societal burden (\$291.8 billion). Nonemployment and reduced wages for individuals with schizophrenia accounted for \$55.4 billion in societal costs. Quality-of-life impacts were valued at \$41.4 billion, with an additional \$47.5 billion from shortened life expectancy. The economic burden of caregiver-related impacts accounted for \$165.0 billion, including unpaid wages (\$104.6 billion), out-of-pocket expenses (\$36.9 billion), health care costs (\$13.6 billion), and lost productivity (\$10.0 billion). Cost offsets for living expenses and out-of-pocket spending by caregivers for their care recipient contributed to a \$17.5 billion reduction in estimated total indirect and overall societal costs.

Table 1. Societal Cost of Schizophrenia in the US, 2024

| Estimate ^a | US | Alaska | California | Illinois | Louisiana |
|--|--------------------|----------------|-------------------|-------------------|------------------|
| Total population, prevalence, No. (%) | 340 110 998 (100) | 741 485 (100) | 39 394 446 (100) | 12 687 940 (100) | 4 624 135 (100) |
| Adult population | 263 249 065 (77.4) | 569 070 (76.7) | 31 357 812 (79.6) | 10 189 748 (80.3) | 3 647 949 (78.9) |
| Schizophrenia adult population | 3 070 739 (1.2) | 6638 (1.2) | 365 782 (1.2) | 118 861 (1.2) | 42 552 (1.2) |
| Estimated prevalence of schizophrenia by living situation, No. (%) | | | | | |
| Community dwelling, independent household ^b | 2 100 079 (68.4) | 4515 (68.0) | 250 989 (68.6) | 81 631 (68.7) | 28 859 (67.8) |
| Community dwelling, structured residence ^{a,c} | 571 157 (18.6) | 1235 (18.6) | 68 035 (18.6) | 22 108 (18.6) | 7915 (18.6) |
| Long-term care/skilled nursing facility ^a | 154 000 (5.0) | 333 (5.0) | 18 344 (5.0) | 5961 (5.0) | 2134 (5.0) |
| Incarcerated ^d | 143 703 (4.7) | 311 (4.7) | 17 118 (4.7) | 5562 (4.7) | 1991 (4.7) |
| Unhoused or homeless ^d | 101 799 (3.3) | 245 (3.7) | 11 296 (3.1) | 3599 (3.0) | 1653 (3.9) |
| Estimated prevalence of schizophrenia by outcome, No. (%) | | | | | |
| Unemployed, total schizophrenia | 2 061 502 (67.1) | 4276 (64.4) | 241 677 (66.1) | 77 121 (64.9) | 28 736 (67.5) |
| Unemployed, excess schizophrenia | 944 061 (30.7) | 1860 (28.0) | 108 569 (29.7) | 33 867 (28.5) | 13 251 (31.1) |
| Excess mortality | 47 110 (1.5) | 76 (1.1) | 4477 (1.2) | 1803 (1.5) | 760 (1.8) |
| With a caregiver | 1 736 304 (56.5) | 3737 (56.3) | 207 366 (56.7) | 67 430 (56.7) | 23 903 (56.2) |
| Excess societal costs of schizophrenia, \$ thousand | | | | | |
| Total excess societal costs ^e | 366 755 997 | 837 891 | 45 572 807 | 14 245 805 | 4 985 357 |
| Direct excess societal costs ^e | 74 990 291 | 216 322 | 10 104 049 | 216 322 | 10 104 049 |
| Health care, total | 36 693 641 | 102 322 | 4 910 268 | 1 416 626 | 480 449 |
| Health care, community | 34 299 681 | 95 304 | 4 599 703 | 1 327 778 | 446 697 |
| Health care, long-term care/skilled nursing facility | 1 341 921 | 3745 | 179 488 | 51 776 | 17 591 |
| Health care, unhoused | 1 052 040 | 3273 | 131 077 | 37 071 | 16 161 |
| Supplemental security benefits, total | 5 127 004 | 12 556 | 562 301 | 178 532 | 85 176 |
| Supplemental security income | 847 610 | 1832 | 100 966 | 32 809 | 11 746 |
| Social security disability insurance | 4 279 394 | 10 724 | 461 335 | 145 723 | 73 431 |
| Supportive housing and homelessness, total | 35 165 901 | 98 454 | 4 666 892 | 1 353 044 | 466 045 |
| Structured residences | 18 691 540 | 52 164 | 2 500 073 | 721 187 | 245 031 |
| Long-term care/skilled nursing facilities | 14 771 410 | 41 224 | 1 975 739 | 569 934 | 193 641 |
| Homeless shelters | 1 702 951 | 5066 | 191 079 | 61 923 | 27 373 |
| Justice system, total | 11 942 030 | 33 327 | 1 597 298 | 460 766 | 156 550 |
| Justice system interactions | 2 789 826 | 7786 | 373 151 | 107 641 | 36 572 |
| Incarceration | 9 152 204 | 25 542 | 1 224 146 | 353 125 | 119 978 |
| Cost-of-living offsets, (\$ thousand) ^e | (13 938 286) | (30 336) | (1 632 710) | (536 314) | (197 655) |
| Indirect excess societal costs, ^e | 291 765 707 | 621 569 | 35 468 758 | 11 373 151 | 3 994 791 |
| Nonemployment, total | 42 761 333 | 93 626 | 6 017 547 | 1 637 158 | 509 945 |
| Nonemployment, independent households | 25 055 488 | 51 101 | 3 482 770 | 926 641 | 295 294 |
| Nonemployment, supportive housing | 13 170 745 | 30 822 | 1 903 018 | 533 679 | 155 324 |
| Nonemployment, incarcerated or unhoused | 4 535 100 | 11 703 | 631 759 | 176 838 | 59 327 |

(continued)

Table 1. Societal Cost of Schizophrenia in the US, 2024 (continued)

| Estimate ^a | US | Alaska | California | Illinois | Louisiana |
|---|--------------|----------|-------------|-----------|-----------|
| Reduced wages, total | 12 635 958 | 33 319 | 1 912 085 | 564 174 | 146 652 |
| Reduced wages, independent households | 11 564 237 | 30 479 | 1 750 402 | 516 507 | 134 118 |
| Reduced wages, supportive housing | 1 071 720 | 2840 | 161 682 | 47 667 | 12 534 |
| Reduced quality of life value | 41 423 711 | 89 903 | 4 949 867 | 1 603 691 | 572 557 |
| Shortened life expectancy value | 47 459 081 | 76 350 | 4 510 529 | 1 816 664 | 765 590 |
| Caregiver burden, total | 165 033 655 | 366 093 | 20 175 963 | 6 433 563 | 2 241 192 |
| Unpaid wages | 104 587 913 | 225 100 | 12 490 864 | 4 061 730 | 1 439 828 |
| Productivity loss | 9 988 133 | 23 888 | 1 459 679 | 413 974 | 116 826 |
| Health care | 13 581 849 | 37 738 | 1 821 372 | 525 768 | 176 881 |
| Out-of-pocket expenses | 36 875 760 | 79 366 | 4 404 047 | 1 432 091 | 507 657 |
| Caregiver, transfer costs, (\$ thousand) ^e | (17 548 031) | (37 723) | (2 097 233) | (682 098) | (241 145) |

^a Percentage based on actual national model parameter estimate. Alaska, California, Illinois, and Louisiana were chosen to represent the range of cost of living across the US.

^b Includes adults living independently alone, with family, or with others.

^c Includes adults in supervised and partially supervised housing, supportive housing programs, or group homes.

^d Number is based on actual national and state parameter inputs.

^e Costs were adjusted to deduct cost-of-living expenses that an individual with schizophrenia would typically incur had they not been homeless, living in supportive housing or long-term care, housed in a prison or jail, or in need of unpaid caregiver support.

In 2024, schizophrenia-related cost per diagnosed adult in any setting in the US was estimated at \$119 436 (\$24 421 direct, \$95 015 indirect) (Table 2). Among individuals living in independent households, health care was the largest contributor to direct costs (\$12 840), with caregiver burden accounting for the majority of indirect costs (\$84 942).

A scenario analysis to determine lifetime cost, excluding the costs associated with reduced life expectancy, estimated a cost per adult of \$103 980 per year. Based on an adjusted life expectancy of 44.6 years for an individual diagnosed at age 18 years, the adult lifetime economic burden of a person with schizophrenia was \$4.5 million or \$2.5 million in present value discounted at 3%.

Sensitivity analyses identified 24 model parameters that had an impact of at least \$1 billion on the estimated total cost of schizophrenia in the US in 2024 (Figure 2). The most influential parameters (ie, those with an impact of at least \$10 billion on total societal costs in the sensitivity analysis) were disease prevalence (\pm \$145.3 billion), the percentage of individuals with a caregiver (\pm \$59.0 billion), average caregiver hours per week (\pm \$41.8 billion), mortality rate (\pm \$18.7 billion), caregiver nonemployment lost income (\pm \$17.1 billion), and reduced life expectancy (\pm \$15.2 billion). Additional cost parameters with at least a \$5 billion impact on total societal costs were linked to supportive housing (ie, number in setting and costs of living in supportive housing), costs of prescription drugs, employment rates, and caregiver impacts (ie, costs for caregiver health care and productivity losses).

State Costs of Schizophrenia

State-level estimates reflected differences in population size. After adjusting for state-specific data and cost indices, total costs of schizophrenia ranged in 2024 from \$45.6 billion in California ($n = 365\,782$ adults with schizophrenia) to \$0.6 billion in Wyoming ($n = 5331$) (Table 3). Per-person costs varied from \$110 975 in Utah to \$126 225 in Alaska, largely due to cost-of-living differences and local variations in how costs are incurred.

Variability in state-level cost estimates was driven primarily by differences in average wage rates and demographic fac-

tors including the size of adult and unhoused populations (Table 1). For example, homelessness rates of adults with schizophrenia ranged from 2.1% in Colorado to 4.7% in Mississippi. Colorado has fewer people requiring SSDI (8.9% vs 19.6%) and a lower excess annual death rate (1.2% vs 2.0%) compared with Mississippi. Even small differences in local prevalence within a setting influenced model outcomes, including mortality rates and associated costs. In California, 3.1% of adults with schizophrenia experienced homelessness compared with 3.9% in Louisiana, corresponding to fewer additional deaths (1.2% vs 1.8%) (Table 1) and lower economic burden from shortened life expectancy (\$12 331 vs \$17 992) (Table 2).

Discussion

This study provided prevalence-based estimates of the economic burden of schizophrenia in 2024 in the US from a societal perspective, disaggregated to national and state levels. Compared with prior studies, our analysis incorporated updated prevalence and cost data, accounted for residential setting, and produced state- and per-person estimates for the adult population, resulting in a higher overall burden than earlier national estimates. Direct costs made up about 20% of the total, with indirect costs predominating, including productivity losses (15%), shortened life expectancy (13%), reduced quality of life (11%), and uncompensated caregiver labor (29%). Despite conservative assumptions that include only costs clearly attributable to schizophrenia, indirect costs dominate, suggesting the true societal burden may be even greater.

These indirect costs also have direct implications for government finances. For example, 1 study⁵⁴ estimated that lost productivity with schizophrenia results in about \$30.4 billion annually in lost tax revenue. Without early intervention and ongoing management, schizophrenia often leads to acute episodes requiring emergency services, law enforcement involvement, or both.⁵⁵⁻⁵⁷ The estimated \$10.1 billion in justice system-related costs may be largely preventable through targeted, sustainable, community-based interventions.⁵⁸⁻⁶¹ Al-

Table 2. Per-Person Economic Burden for Adults with Schizophrenia, 2024^a

| Per adult with schizophrenia, \$ | US | Alaska | California | Illinois | Louisiana |
|---|----------|----------|------------|----------|-----------|
| Excess total costs | 119 436 | 126 225 | 124 590 | 119 853 | 117 158 |
| Excess direct costs | 24 421 | 32 588 | 27 623 | 24 168 | 23 279 |
| Excess indirect costs | 95 015 | 93 637 | 96 967 | 95 684 | 93 879 |
| Excess direct costs by category and parameter, per affected adult with schizophrenia ^b | | | | | |
| Health care, community dwelling | 12 840 | 16 577 | 14 418 | 12 799 | 12 147 |
| Inpatient hospital | 2404 | 3103 | 2699 | 2396 | 2274 |
| Outpatient | 925 | 1194 | 1038 | 922 | 875 |
| Office visits | 2230 | 2879 | 2504 | 2223 | 2110 |
| Emergency department | 181 | 233 | 203 | 180 | 171 |
| Home health care | 1681 | 2170 | 1888 | 1676 | 1590 |
| Prescription drugs | 5069 | 6545 | 5692 | 5053 | 4796 |
| Out of pocket | 350 | 452 | 393 | 349 | 331 |
| Health care, long-term care/skilled nursing | 8714 | 11 249 | 9784 | 8686 | 8243 |
| Health care, unhoused | 10 334 | 13 342 | 11 604 | 10 301 | 9776 |
| Supplemental security income | 3159 | 3159 | 3159 | 3159 | 3159 |
| Social security disability insurance | 10 150 | 10 555 | 9862 | 9777 | 10 726 |
| Housing, supportive housing | 32 726 | 42 249 | 36 747 | 32 621 | 30 959 |
| Housing, long-term care/skilled nursing | 95 918 | 123 830 | 107 704 | 95 611 | 90 739 |
| Homelessness, shelters | 16 729 | 20 652 | 16 916 | 17 207 | 16 559 |
| Cost-of-living offsets, supportive housing and homelessness ^c | 42 654 | 42 036 | 41 249 | 43 105 | 43 309 |
| Justice system interactions | 1975 | 2550 | 2218 | 1969 | 1868 |
| Incarceration ^d | 63 688 | 82 127 | 71 513 | 63 489 | 60 260 |
| Cost-of-living offsets, incarceration ^c | 12 697 | 12 682 | 12 697 | 12 698 | 12 699 |
| Excess indirect costs by category and parameter, per affected adult with schizophrenia ^b | | | | | |
| Nonemployment | 20 743 | 21 897 | 24 899 | 21 228 | 17 746 |
| Reduced wages | 14 775 | 16 422 | 18 079 | 15 768 | 12 553 |
| Reduced quality of life value | 13 490 | 13 544 | 13 532 | 13 492 | 13 455 |
| Shortened life expectancy value | 15 455 | 11 502 | 12 331 | 15 284 | 17 992 |
| Caregiver, unpaid wages | 60 236 | 60 236 | 60 236 | 60 236 | 60 236 |
| Caregiver, productivity loss | 5753 | 6392 | 7039 | 6139 | 4887 |
| Caregiver, health care | 7822 | 10 099 | 8783 | 7797 | 7400 |
| Caregiver, out-of-pocket | 21 238 | 21 238 | 21 238 | 21 238 | 21 238 |
| Caregiver, transfer costs ^c | (10 107) | (10 094) | (10 114) | (10 116) | (10 088) |

^a Alaska, California, Illinois, and Louisiana were chosen to represent the range of cost of living across the US.

^b Excess cost per affected adult with schizophrenia in setting or by category/parameter.

^c Totals adjusted to deduct cost-of-living expenses that an individual with schizophrenia would typically incur had they not been homeless, living in supportive housing or long-term care, housed in a prison or jail, or in need of unpaid caregiver support.

^d Includes all costs associated with incarceration including health care.

though expanding supportive housing services for individuals with schizophrenia may require higher initial investment, the long-term individual and societal returns may justify these costs. Although this model does not specifically evaluate such investments, the projected \$2.5 million in disease-related lifetime cost for an individual diagnosed at age 18 years suggests the potential value of early and sustained interventions.^{45,62}

Caregiving constituted the largest cost component in the economic burden of schizophrenia, yet it remains underrecognized in policy and planning. Many caregivers forego employment or reduce work hours, resulting in lost wages, productivity losses, and adverse health outcomes. We estimated \$147.5 billion in caregiver-related costs in 2024, including unpaid labor, out-of-pocket spending, and added health care

expenses.^{13,14,63,64} Policies that provide direct financial support, expand access to formal services, or create caregiver-friendly employment conditions could reduce this burden and yield economic returns through greater workforce participation and lower caregiver health care costs.

State-level estimates demonstrated geographic variation in both prevalence and costs. Where available, localized data (eg, homelessness rate) highlight differences in outcomes and per-capita costs and help identify populations where targeted services could reduce burden. Such variability reflects differences in wage structures, service delivery models, and population characteristics, although gaps in state-level data limit comprehensive evaluation of program impacts. Still, these findings support the importance of integrated data systems to support early

Table 3. State-Level Economic Burden for Adults with Schizophrenia, 2024

| Population | Estimated No. | Total cost | | | |
|----------------------|---------------|----------------|-----------------------|---------------------|-----------------------|
| | | Per person, \$ | Societal, \$ thousand | Direct, \$ thousand | Indirect, \$ thousand |
| US | 3 070 739 | 119 436 | 366 755 997 | 74 990 291 | 291 765 707 |
| Alabama | 46 857 | 118 844 | 5 568 632 | 1 084 636 | 4 483 996 |
| Alaska | 6638 | 126 225 | 837 891 | 216 323 | 621 569 |
| Arizona | 66 745 | 118 738 | 7 925 196 | 1 585 157 | 6 340 038 |
| Arkansas | 27 745 | 117 402 | 3 257 353 | 641 068 | 2 616 285 |
| California | 365 782 | 124 590 | 45 572 807 | 10 104 049 | 35 468 758 |
| Colorado | 54 182 | 118 674 | 6 429 993 | 1 331 310 | 5 098 683 |
| Connecticut | 34 240 | 124 071 | 4 248 218 | 904 474 | 3 343 744 |
| Delaware | 9417 | 121 955 | 1 148 389 | 228 172 | 920 217 |
| District of Columbia | 8472 | 132 715 | 1 124 394 | 236 200 | 888 194 |
| Florida | 208 088 | 119 582 | 24 883 595 | 4 948 813 | 19 934 783 |
| Georgia | 98 200 | 116 946 | 11 484 133 | 2 301 168 | 9 182 965 |
| Hawaii | 13 699 | 120 891 | 1 656 076 | 363 700 | 1 292 376 |
| Idaho | 16 735 | 113 755 | 1 903 708 | 385 555 | 1 518 153 |
| Illinois | 118 861 | 119 853 | 14 245 805 | 2 872 654 | 11 373 151 |
| Indiana | 62 282 | 117 322 | 7 307 050 | 1 450 408 | 5 856 642 |
| Iowa | 29 412 | 116 068 | 3 413 800 | 684 625 | 2 729 175 |
| Kansas | 26 726 | 115 976 | 3 099 554 | 617 731 | 2 481 823 |
| Kentucky | 41 821 | 118 628 | 4 961 122 | 945 036 | 4 016 087 |
| Louisiana | 42 552 | 117 158 | 4 985 357 | 990 566 | 3 994 791 |
| Maine | 13 264 | 121 403 | 1 610 258 | 321 662 | 1 288 596 |
| Maryland | 56 514 | 122 560 | 6 926 358 | 1 431 515 | 5 494 843 |
| Massachusetts | 67 184 | 126 113 | 8 472 822 | 1 817 029 | 6 655 793 |
| Michigan | 94 595 | 119 715 | 11 324 483 | 2 290 240 | 9 034 243 |
| Minnesota | 52 494 | 118 339 | 6 212 044 | 1 309 184 | 4 902 860 |
| Mississippi | 27 124 | 117 210 | 3 179 215 | 629 861 | 2 549 354 |
| Missouri | 57 177 | 117 933 | 6 743 085 | 1 334 823 | 5 408 263 |
| Montana | 10 298 | 117 968 | 1 214 814 | 250 672 | 964 141 |
| Nebraska | 17 691 | 114 817 | 2 031 225 | 412 772 | 1 618 452 |
| Nevada | 28 888 | 117 323 | 3 389 181 | 696 983 | 2 692 198 |
| New Hampshire | 13 524 | 120 808 | 1 633 846 | 339 067 | 1 294 779 |
| New Jersey | 86 522 | 124 633 | 10 783 488 | 2 347 492 | 8 435 996 |
| New Mexico | 19 592 | 118 087 | 2 313 513 | 455 745 | 1 857 768 |
| New York | 189 777 | 125 931 | 23 898 831 | 5 074 026 | 18 824 804 |
| North Carolina | 97 919 | 117 800 | 11 534 890 | 2 299 261 | 9 235 629 |
| North Dakota | 7099 | 116 165 | 824 677 | 172 576 | 652 101 |
| Ohio | 109 821 | 119 892 | 13 166 670 | 2 579 497 | 10 587 174 |
| Oklahoma | 36 123 | 117 291 | 4 236 945 | 830 542 | 3 406 402 |
| Oregon | 40 349 | 121 179 | 4 889 503 | 1 010 435 | 3 879 067 |
| Pennsylvania | 123 496 | 121 168 | 14 963 750 | 2 991 865 | 11 971 886 |
| Rhode Island | 10 597 | 122 121 | 1 294 141 | 274 823 | 1 019 319 |
| South Carolina | 48 310 | 117 915 | 5 696 444 | 1 124 197 | 4 572 247 |
| South Dakota | 8048 | 115 565 | 930 112 | 194 848 | 735 264 |
| Tennessee | 64 502 | 118 791 | 7 662 235 | 1 475 667 | 6 186 568 |
| Texas | 261 317 | 115 096 | 30 076 496 | 6 121 699 | 23 954 797 |
| Utah | 28 068 | 110 975 | 3 114 884 | 646 699 | 2 468 184 |
| Vermont | 6304 | 119 704 | 754 568 | 156 313 | 598 255 |
| Virginia | 65 965 | 119 758 | 7 899 865 | 1 620 146 | 6 279 719 |
| Washington | 72 073 | 123 369 | 8 891 630 | 1 862 573 | 7 029 057 |

(continued)

Table 3. State-Level Economic Burden for Adults with Schizophrenia, 2024 (continued)

| Population | Estimated No. | Total cost | | | |
|---------------|---------------|----------------|-----------------------|---------------------|-----------------------|
| | | Per person, \$ | Societal, \$ thousand | Direct, \$ thousand | Indirect, \$ thousand |
| West Virginia | 17 139 | 121 923 | 2 089 675 | 379 483 | 1 710 191 |
| Wisconsin | 55 178 | 117 383 | 6 476 881 | 1 323 421 | 5 153 460 |
| Wyoming | 5331 | 117 473 | 626 214 | 129 024 | 497 190 |

intervention and coordinated care, particularly where targeted investment may yield cross-sector cost offsets.

Comprehensive, current data are essential to refine societal cost estimates, track intervention effectiveness, and guide resource allocation. Sensitivity analyses from this study suggest that changes in factors such as unemployment and caregiver reliance have the potential to shift overall burden, emphasizing the importance of timely localized information. Recognizing this need, Congress passed the Cost of Mental Illness Act in 2022, directing the US Department of Health and Human Services to coordinate national and local data collection to identify opportunities and target funding toward effective programs.⁶⁵ However, the legislation did not include appropriations, and the mandated report has not been produced.

Despite the profound societal burden of schizophrenia, funding for treatment and research also remains low. Federal research funding for schizophrenia from the National Institute of Mental Health (NIMH) has declined in real terms, falling from \$255 million (14% of the NIMH budget) in 2015 to \$206 million (9% of the budget) in 2023.⁶⁶⁻⁶⁸ A sustained research agenda is essential to drive innovation, improve care delivery, and reduce the long-term costs associated with schizophrenia.⁶⁵ Without these investments, existing care models remain underfunded and underdeveloped, and opportunities for groundbreaking discoveries will be missed.

Limitations

This study has some limitations. Although sources were carefully vetted, some were older and may not reflect the current state of care. Health care cost estimates, eg, relied on MEPS data through 2015. Although costs were inflated to \$2024 using

a health care cost index, schizophrenia-specific changes in costs or utilization beyond inflation may not be captured. Certain inputs were unavailable for all states, populations, or settings, and some relied on small samples, limiting generalizability. For example, estimates for law enforcement encounters and supportive housing drew upon gray literature from a few states and localities.^{30,41} Sensitivity analyses varied model parameters by an arbitrary $\pm 20\%$ to assess their impact on total societal costs. Most inputs had minimal effect, with only 3 resulting in more than a 10% change in the projected estimate. When older studies or gray literature were used, alternative sources were reviewed to ensure inputs were comparable or more conservative (ie, lower cost or resource use).^{14,15} This estimate includes only adults with schizophrenia in the US, likely underestimating total burden. These limitations highlight the need for additional nationally and locally representative data across sectors.

Conclusions

Results of this economic evaluation reveal that in 2024, the societal cost of schizophrenia in the US was \$366.8 billion, with 80% driven by indirect costs such as unemployment, premature mortality, and caregiver burden. State-level estimates revealed variability, reflecting the influence of factors such as population size, employment, homelessness, wage rates, and cost of living. These national- and state-level estimates provide a clearer foundation for targeting care, guiding investment, and expanding early intervention to reduce the long-term impact of schizophrenia.

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