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Leonard D. Schaeffer Center
for Health Policy & Economics

THE COST OF MENTAL ILLNESS:
CONNECTICUT FACTS AND FIGURES

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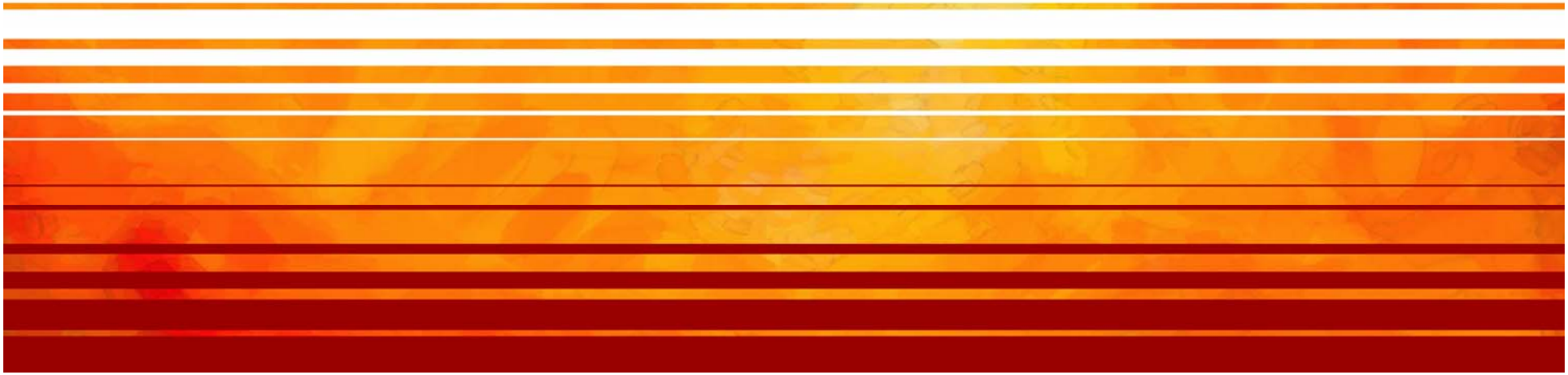
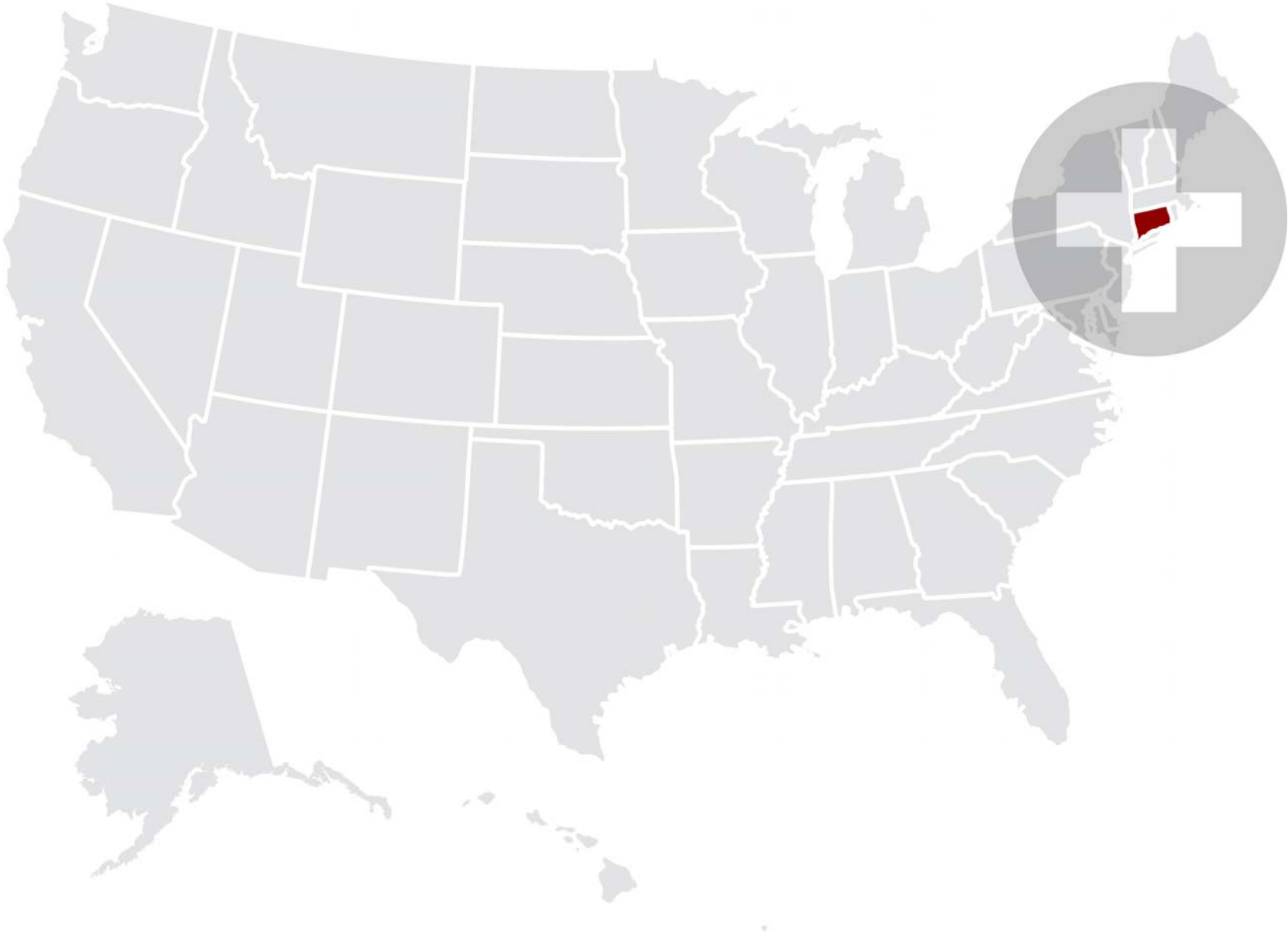


CONNECTICUT



INTRODUCTION

Improving access to high-quality medical and behavioral health care for patients with mental illness remains one of the most vexing problems facing the health care system in the United States.

While Connecticut's behavioral health care system is considered to be among the nation's top regarding access to care, demand has been rising, and funding cuts are straining the system[1].

This chartbook offers an overview of the behavioral health system in United States and Connecticut with respect to:

1) the population in need 2) the workforce available to serve 3) funding difficulties faced 4) the interaction with the criminal justice system and 5) the economic impact associated with treatment of individuals suffering from mental illness.

[1] http://ctmirror.org/2016/11/07/theres-a-lot-of-anxiety-mental-health-system-braces-for-more-cuts/

Key Objectives:

QUANTIFY THE POPULATION LIVING WITH MENTAL ILLNESS IN CONNECTICUT AND THE U.S.

REVIEW MENTAL HEALTH CARE COVERAGE, UTILIZATION & COSTS

- Medicaid & mental health care needs
- Unmet mental health care needs
- Hospital utilization & charges
- State mental health funding for community-based programs

DESCRIBE SUPPLY OF BEHAVIORAL HEALTH CARE PROFESSIONALS

EXAMINE INTERACTION BETWEEN THE CRIMINAL JUSTICE SYSTEM & PERSONS SUFFERING FROM MENTAL ILLNESS

SUMMARIZE TOTAL ECONOMIC EFFECT OF SERIOUS MENTAL ILLNESS

QUANTIFYING THE POPULATION LIVING WITH MENTAL ILLNESS IN CONNECTICUT AND THE U.S.

KEY POPULATIONS OF INTEREST

SERIOUS PSYCHOLOGICAL DISTRESS (SPD)

When someone experiences serious psychological distress, he or she may have a diagnosed or undiagnosed mental health condition, such as major depressive disorder, bipolar disorder, or schizophrenia (described below). Serious psychological distress is determined by six questions on the Kessler-6 screening instrument, which measures the frequency of symptoms of depression, anxiety, and emotional distress during a specific time period

MAJOR DEPRESSIVE DISORDER

A mental illness that severely impairs a person's ability to function, characterized by the presence of depressed mood, feelings of worthlessness, guilt, or helplessness, reduced concentration, ability to think, sleep problems, loss of interest or pleasure in activities, and/or recurrent thoughts of suicide

BIPOLAR DISORDER

A mental illness characterized by extreme shifts in mood and energy levels. During manic episodes, a patient has abnormally high energy and activity levels that lead to impairment in daily functioning or requires hospitalization to prevent harm to self or others. Delusions or hallucinations can also occur. Manic episodes may be alternated with major depressive episodes

SCHIZOPHRENIA

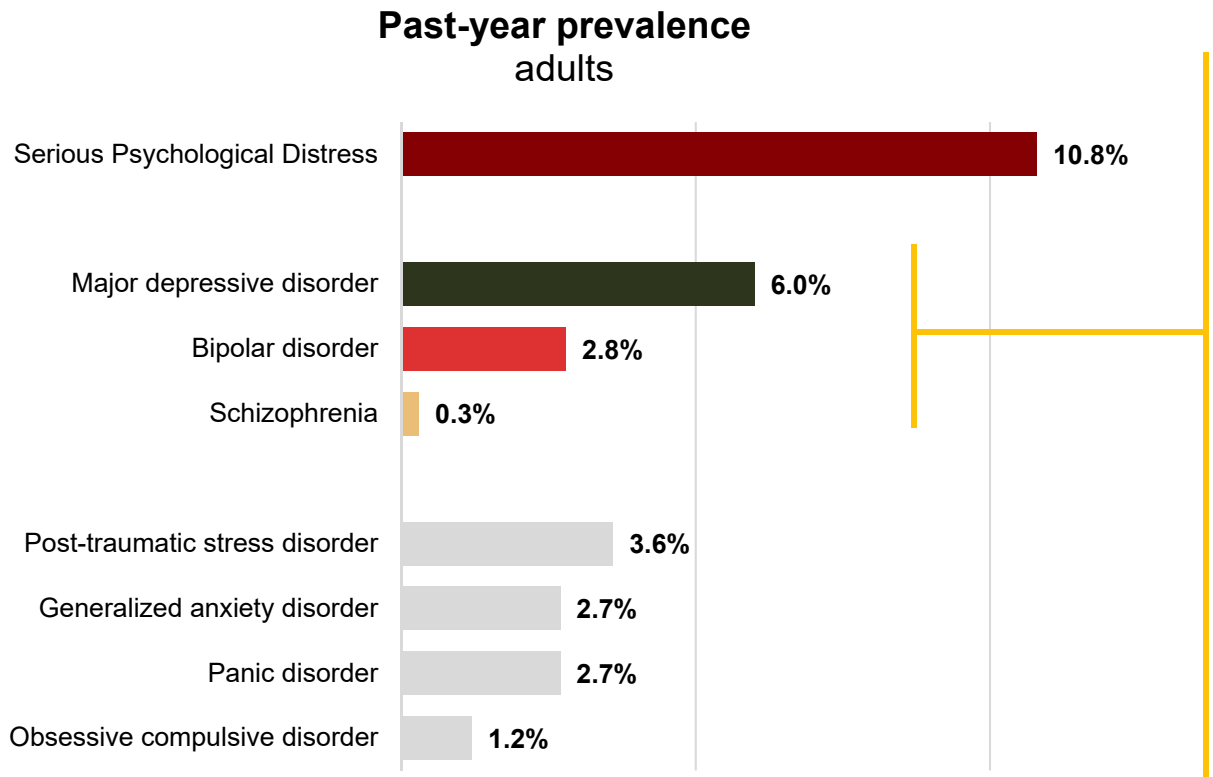
A debilitating mental illness that distorts a patient's sense of reality. Symptoms of schizophrenia include hallucinations, delusions, confusion, cognitive and mood impairments, and extremely disorganized thinking

RISK FACTORS: GENETIC & EXTERNAL FACTORS

Many different genetic factors may increase risk, but no single genetic variation causes a mental illness by itself; Specific interactions between the individual's genes and environment are necessary for a mental illness to develop

Prevalence of mental illness

UNITED STATES 2016



Many mental health conditions are fairly common in the general population.

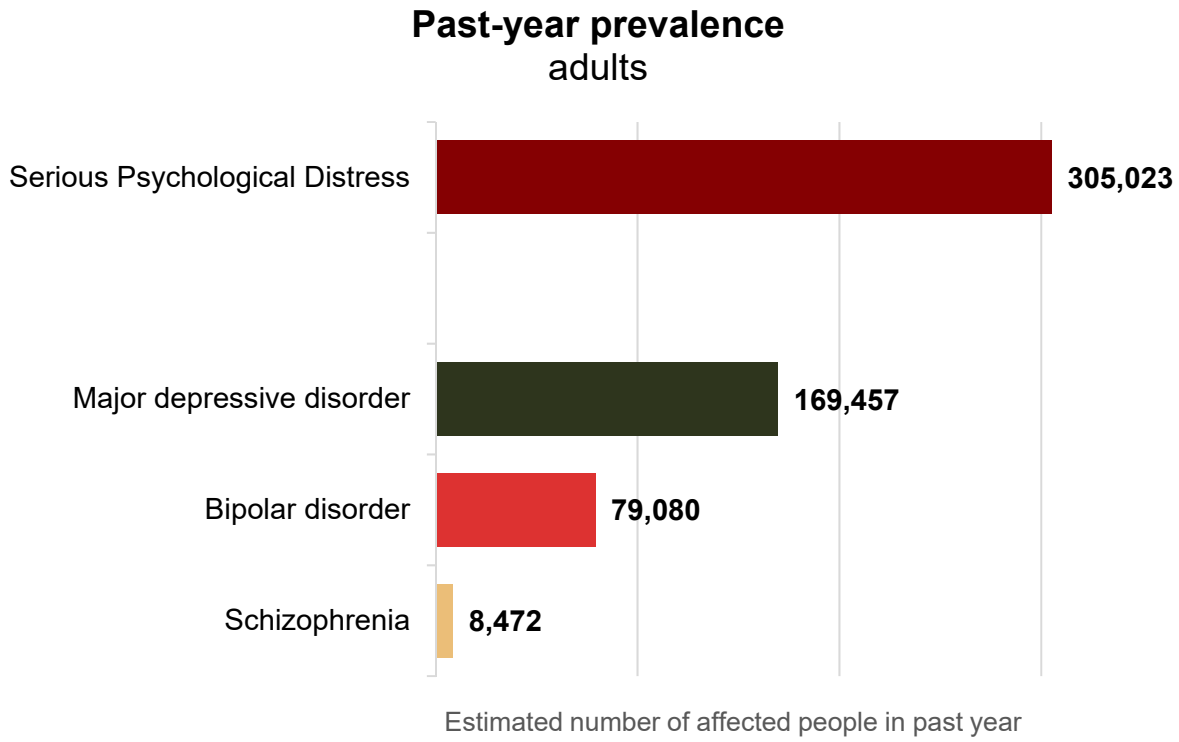
Whereas any of these conditions can severely limit someone's normal daily activities, three disorders are often labeled as ***serious mental illness: major depressive disorder, bipolar disorder*** *and* ***schizophrenia****. These three disorders will be the focus of this chartbook*

NB: Due to symptom overlap, diagnoses of mental illnesses are not mutually exclusive

Source: National Survey on Drug Use and Health (NSDUH) 2016 (SPD), NSDUH Mental Health Surveillance Study 2008-2012 (major depressive disorder) and National Institutes of Mental Health (other conditions – see appendix for original sources)

Estimated number of people living with mental illness

CONNECTICUT 2016



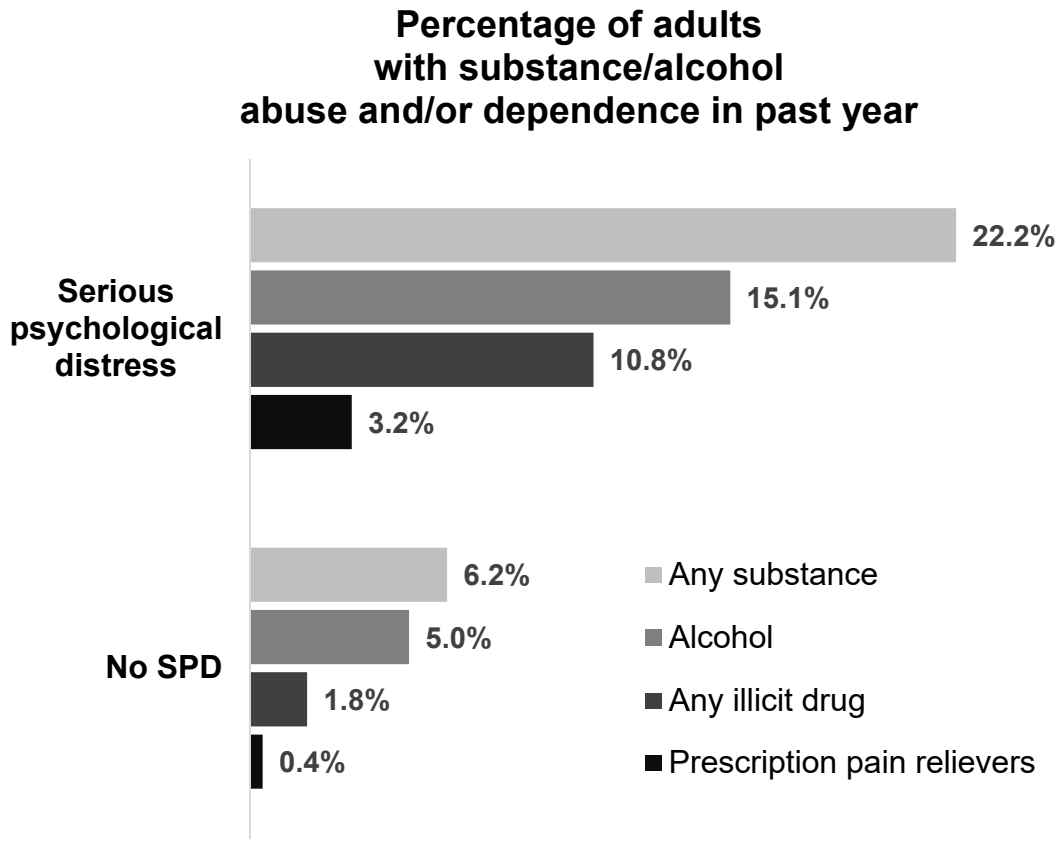
We estimate that more than 300,000 adults in Connecticut experienced serious psychological distress in the past 12 months.

Note that a patient can receive multiple diagnoses of a serious mental illness due to a high degree of overlap between the mental health conditions.

Source: National Institutes of Mental Health, National Survey on Drug Use and Health (NSDUH) 2016, and NSDUH-MHSS 2008-2012. Estimated number of people affected based on total state population of 2,824,290 (18 years and over), Census Bureau data (2016)

Substance abuse in people with serious psychological distress

UNITED STATES 2016



People who experienced serious psychological distress in the past 12 months are more likely to abuse or be dependent on alcohol or illicit drugs during that same time period

Source: National Survey on Drug Use and Health (2016)

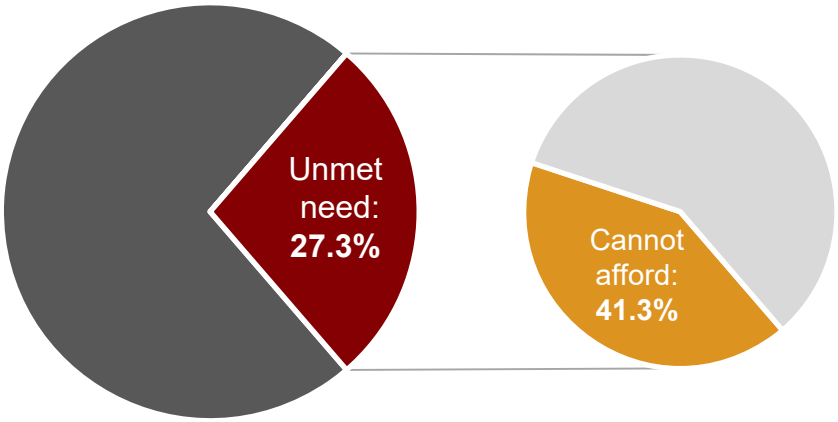
MENTAL HEALTH CARE COVERAGE, UTILIZATION & COSTS

Unmet mental health care needs

There is significant unmet need for mental health care in the U.S.

UNITED STATES 2016

Among adults who experienced **serious psychological distress** during the past year:



27.3% indicates an **unmet need of mental health treatment**

And 41.3 % of these people did not receive mental health treatment, **because they could not afford it**

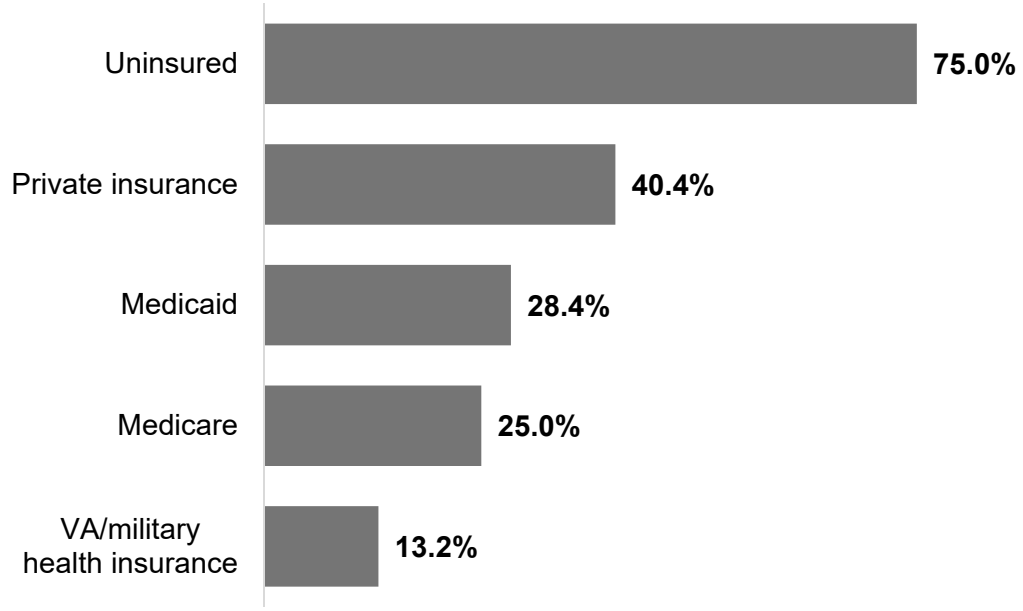
More than a quarter of adults who experienced serious psychological distress in the previous year in the U.S. reported an unmet need for mental health care. Almost half of the people with a perceived unmet need reported that they did not receive treatment because they could not afford it.

Source: National Survey on Drug Use and Health (NSDUH) 2016

Unmet need of mental health treatment due to costs

UNITED STATES 2016

Percentage of adults with past-year serious psychological distress and unmet need of treatment,
who could not afford mental health care



The extent to which cost was a factor in driving unmet need for mental health care varied by insurance status. People without health insurance were most affected by the inability to afford mental health treatment (75%), while those with VA/military health insurance coverage were least affected (13%).

Source: National Survey on Drug Use and Health (NSDUH) 2016

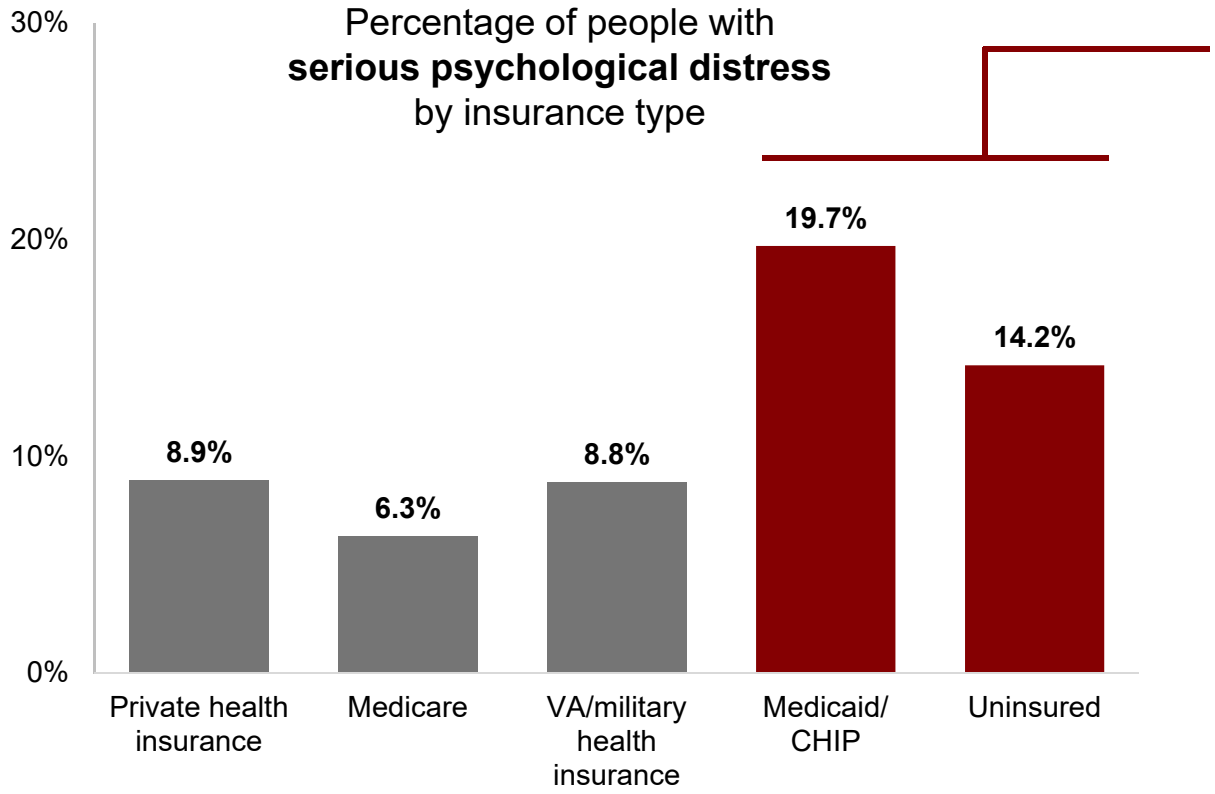
MENTAL HEALTH CARE COVERAGE, UTILIZATION & COSTS

Medicaid & mental health care needs

Medicaid provides a safety-net for people with low income or qualifying disabilities, and a large percentage of people with Medicaid coverage experience behavioral health issues. However, it is often a financial burden for physicians to accept Medicaid patients since reimbursement rates are generally lower than for other patients. This can lead to access barriers for patients with Medicaid coverage that prevent them from receiving the behavioral health care they need.

People with mental illness have greater reliance on the safety net

UNITED STATES 2016

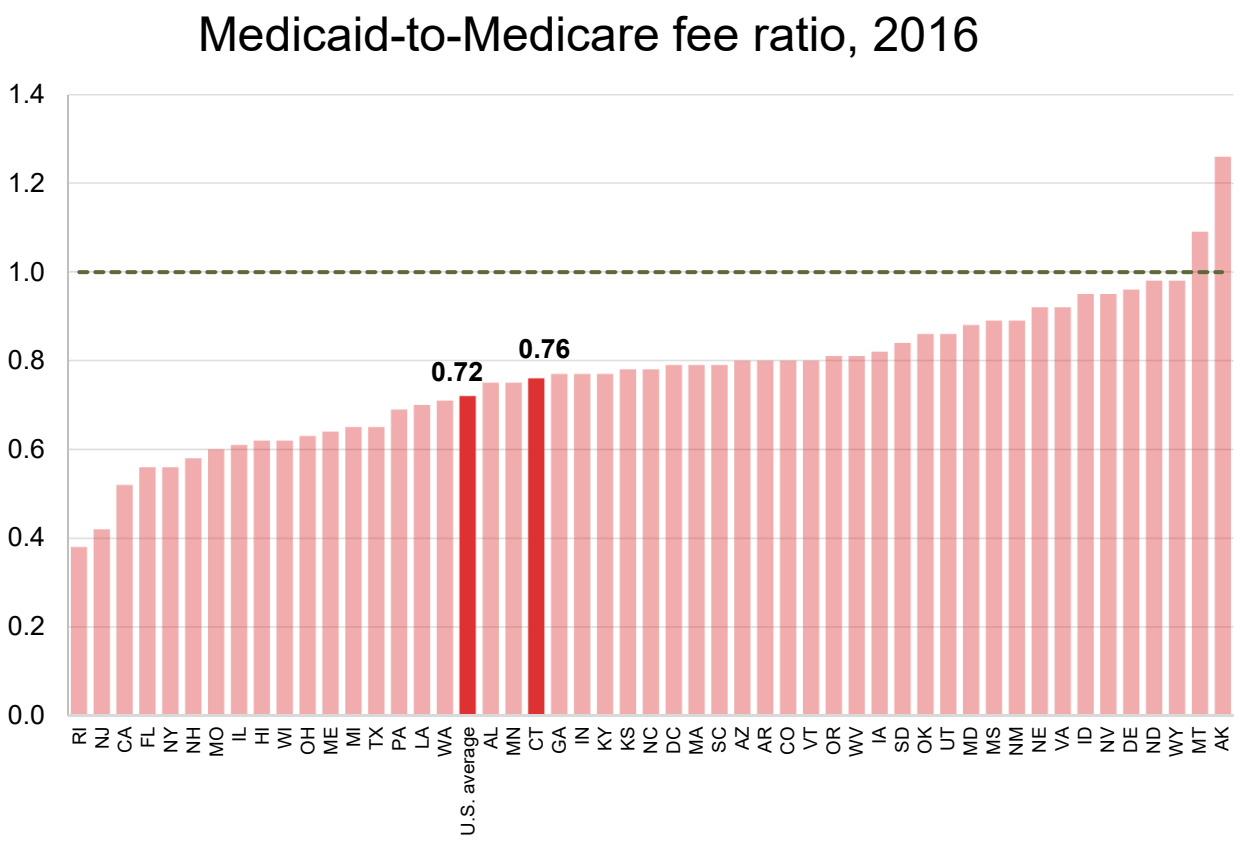


*In the **Medicaid and uninsured population**, a higher percentage of people reported serious psychological distress (SPD) during the past year compared to people with Medicare, VA/military, or private health insurance coverage.*

Source: National Survey on Drug Use and Health (NSDUH) 2016

Medicaid reimbursement rates to physicians are low

CONNECTICUT AND UNITED STATES 2016



***Low reimbursement rates** are a disincentive for individual physicians to accept patients with Medicaid coverage and mental health problems. Compared to Medicare fee levels, Medicaid reimbursement rates are low in most states.*

Although Connecticut's fee ratio is slightly higher than the U.S. average, Medicaid fees are still below Medicare fees.

This can be a barrier for these patients to obtain access to mental health care.

***New England states*

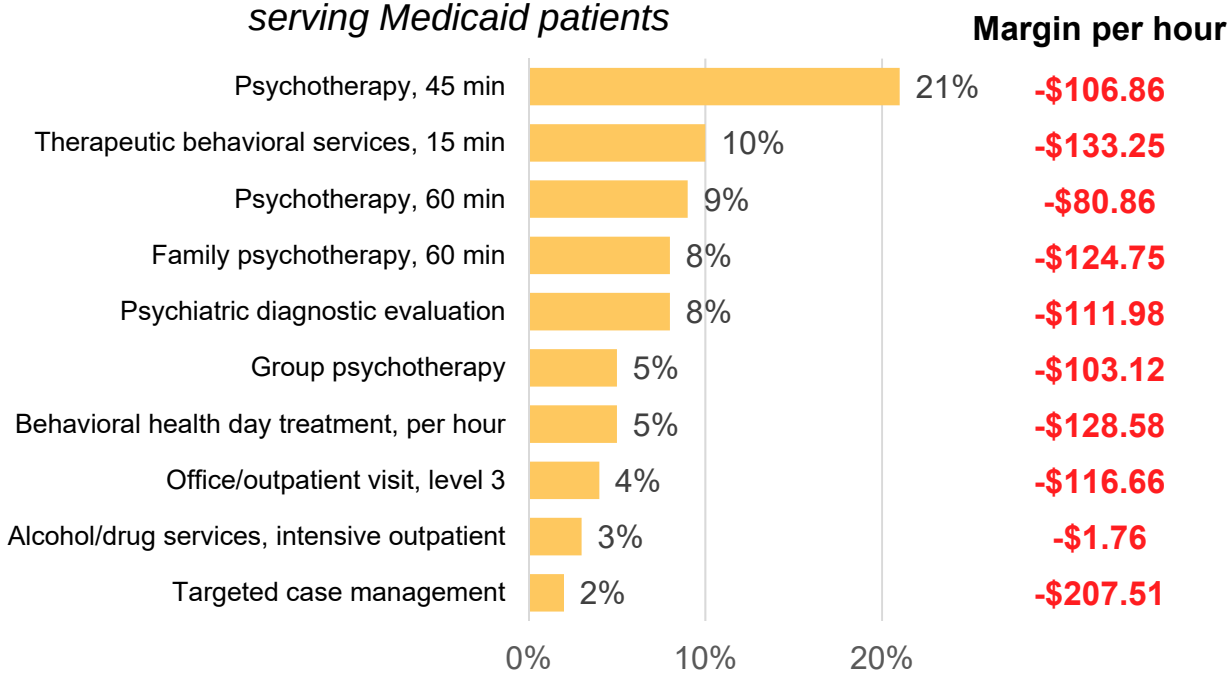
Source: Kaiser Family Foundation, Medicaid-to-Medicare Fee Index, FY 2016

Medicaid reimbursement rates for behavioral health services by community providers are low

CONNECTICUT 2014

Top 10 procedures by volume

selection of CT community providers serving Medicaid patients



The 10 most utilized behavioral health services account for 75% of total service hours by community providers.

*The service delivery cost for these procedures is higher than the revenue under Medicaid rates, resulting in **negative margins** and providers operating at a loss.*

*The **annual loss** for these procedures is more than $27 million for approximately 250,000 service hours.*

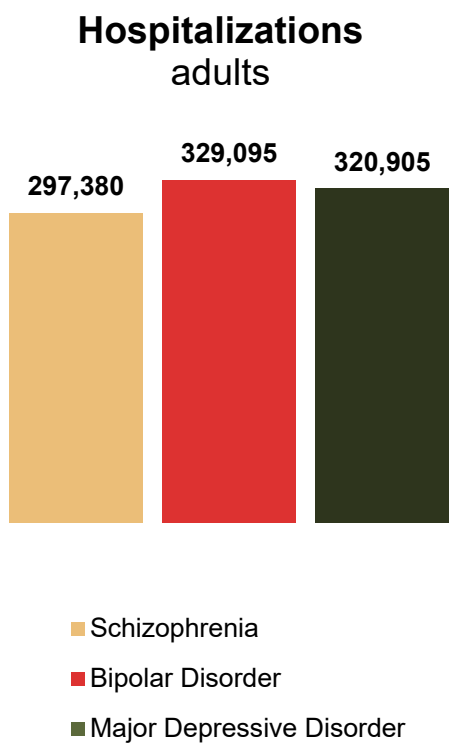
Source: Prioritizing Community Based Services in CT, CT Community Providers Association, February 2015

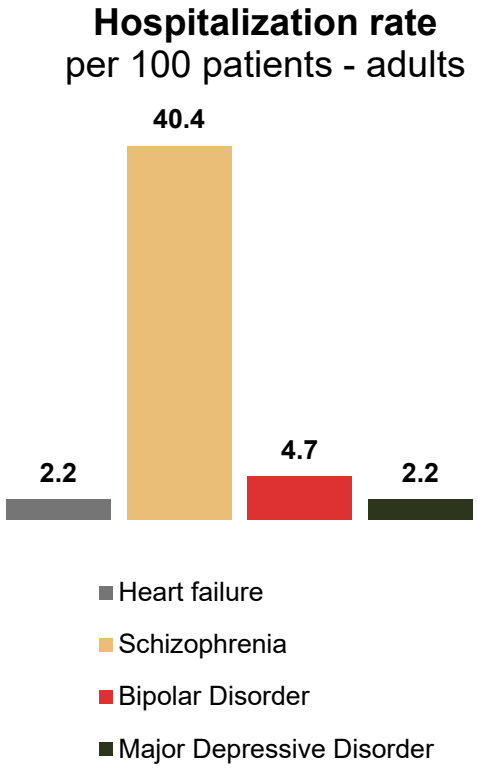
MENTAL HEALTH CARE COVERAGE, UTILIZATION & COSTS

Hospital utilization & costs

Hospitalizations for mental illness

UNITED STATES 2014





In the U.S. the total number of hospitalizations is highest for adult patients with a principal diagnosis of bipolar disorder, whereas patients with a schizophrenia diagnosis have a much higher rate of hospitalizations.

In the U.S. there are approximately 47 serious mental illness-related hospitalizations for every 100 adult patients. The rate for each SMI is more than 18 times as high as for patients with heart failure as principal diagnosis.

3.2% of all hospitalizations are due to SMI

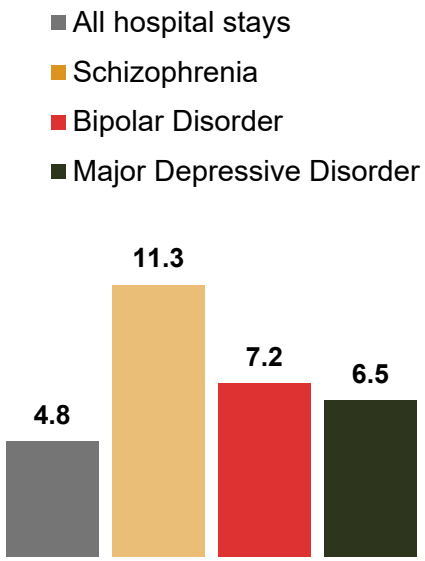
Source: Healthcare Cost and Utilization Project (HCUPnet) 2014

Estimate of hospitalization rate: based on total state population (Census bureau data, 2014)
Prevalence estimates reported previously, and from Heart Disease and Stroke Statistics 2016 Update: A Report From the American Heart Association

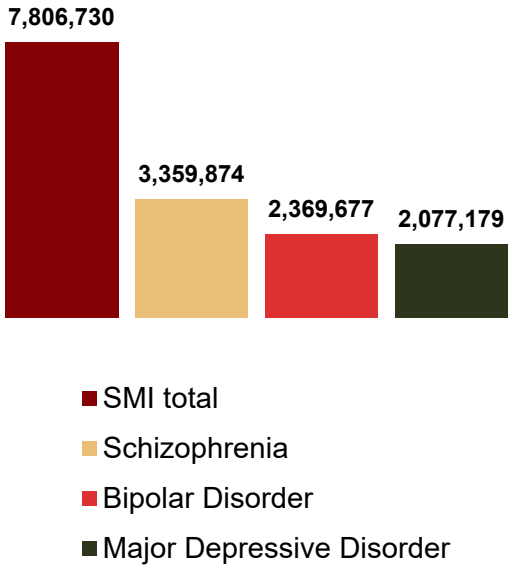
Length of stay for mental illness hospitalizations

UNITED STATES 2014

Average length of hospital stays (days)
adults



Total number of hospital days in 2014
adults



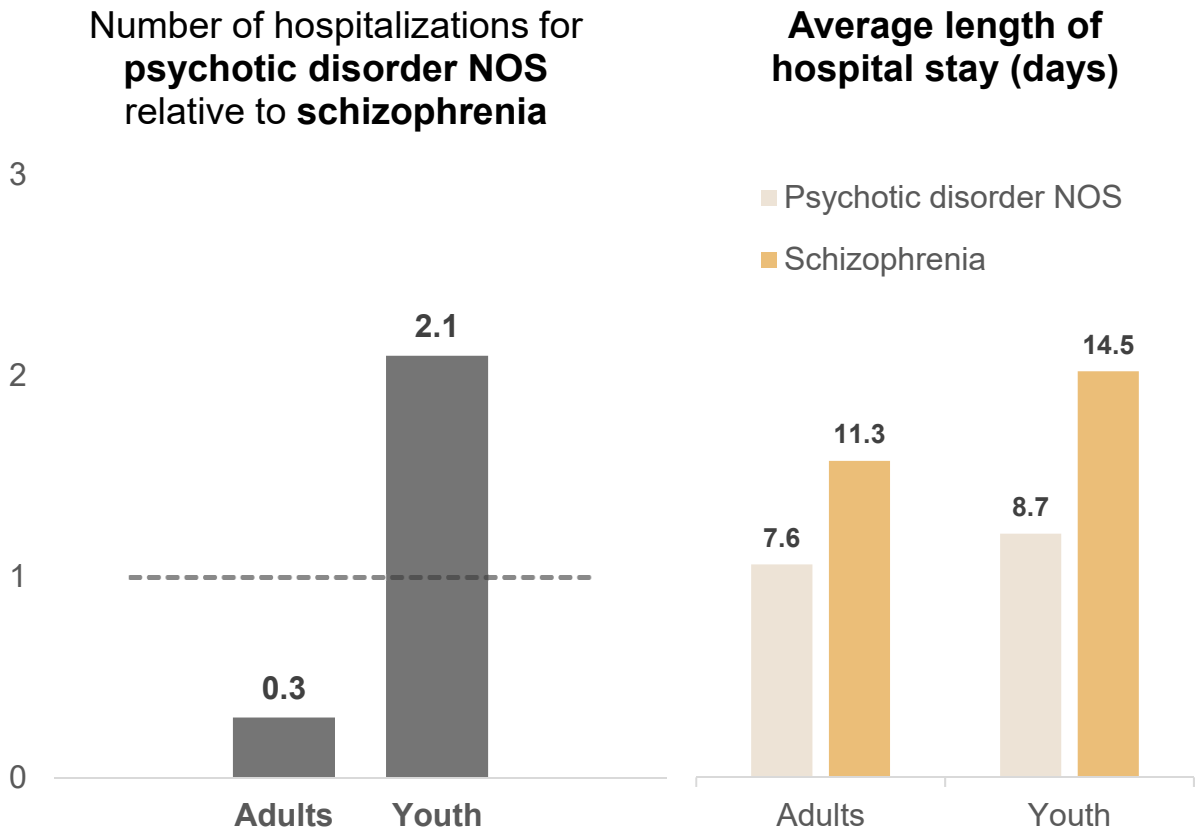
In the U.S., the average hospital stay duration for adult patients with serious mental illness is high compared to all hospital stays, especially for patients diagnosed with schizophrenia.

The total time spent in the hospital by adults with a primary diagnosis of schizophrenia, bipolar disorder or major depressive disorder almost reaches eight million days each year in the U.S.

Source: Healthcare Cost and Utilization Project (HCUPnet) 2014

Hospitalizations of young patients with psychosis

UNITED STATES 2014



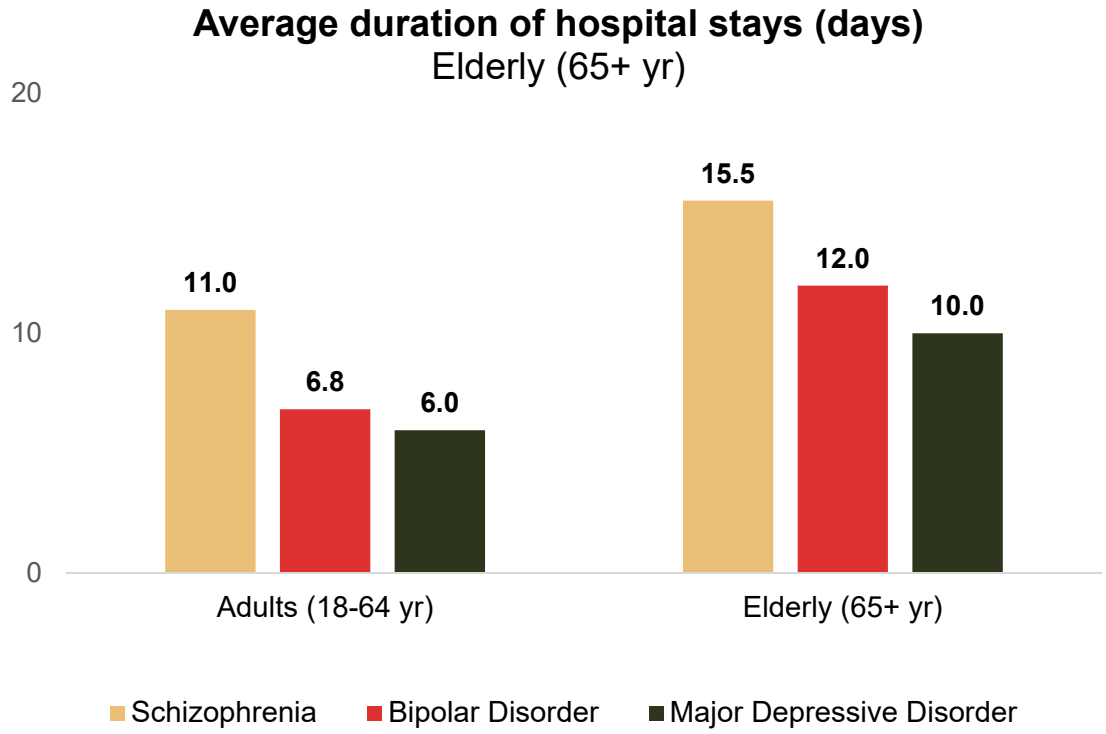
In contrast to in adults, "psychotic disorder, not otherwise specified (NOS)" is diagnosed more often than schizophrenia in the younger population (1-17 years) during hospitalizations, possibly to prevent stigmatization.

Regardless of the primary reason for a hospitalization, the average length of stay for younger people in the U.S. is at least a day longer than for adults, illustrating the challenges in treating and establishing an environment with appropriate follow-up care for this especially vulnerable population

Source: Healthcare Cost and Utilization Project (HCUPnet) 2014

Hospitalizations of elderly patients with serious mental illness

UNITED STATES 2014

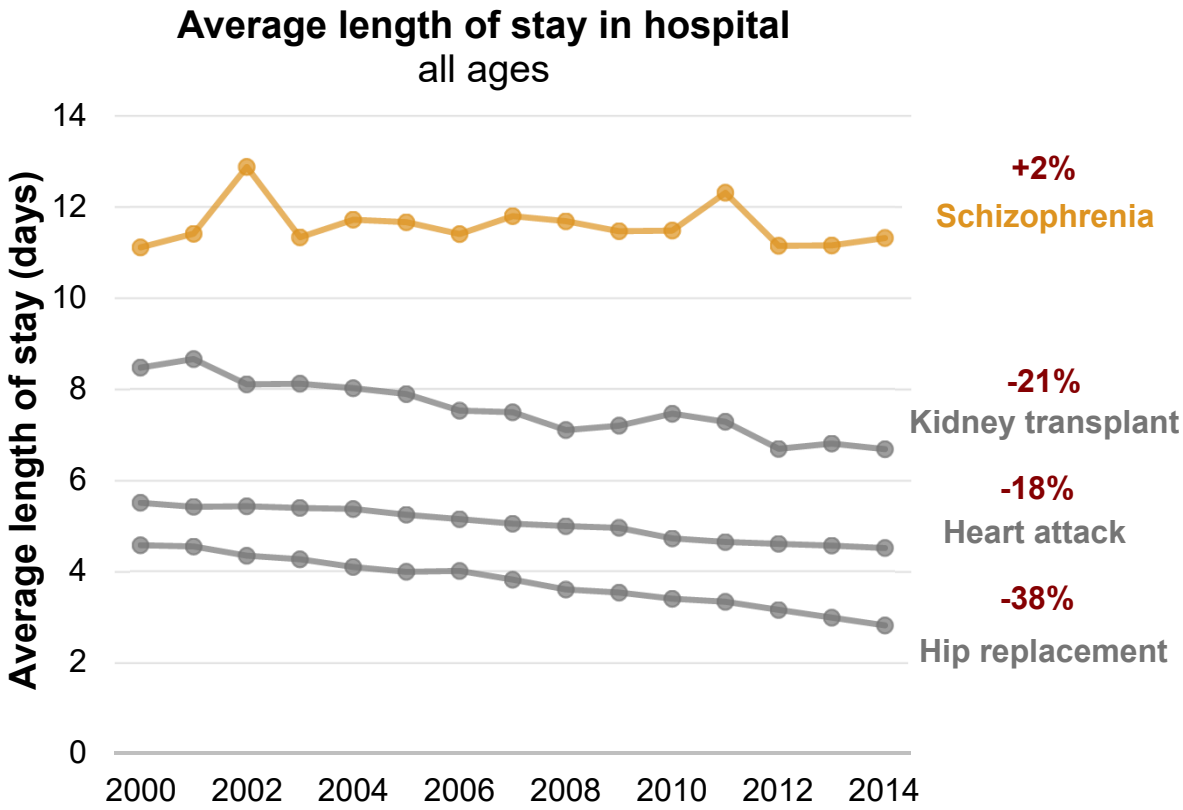


The length of stay in the hospital for serious mental illness in elderly patients is at least 40% higher on average than for younger adults with a similar diagnosis. Treatment of medical comorbidities due to aging, as well as difficulty finding long-term care environments may be at the root of this disparity.

Source: Healthcare Cost and Utilization Project (HCUPnet) 2014

Trends in length of stay for schizophrenia hospitalizations

UNITED STATES 2000-2014

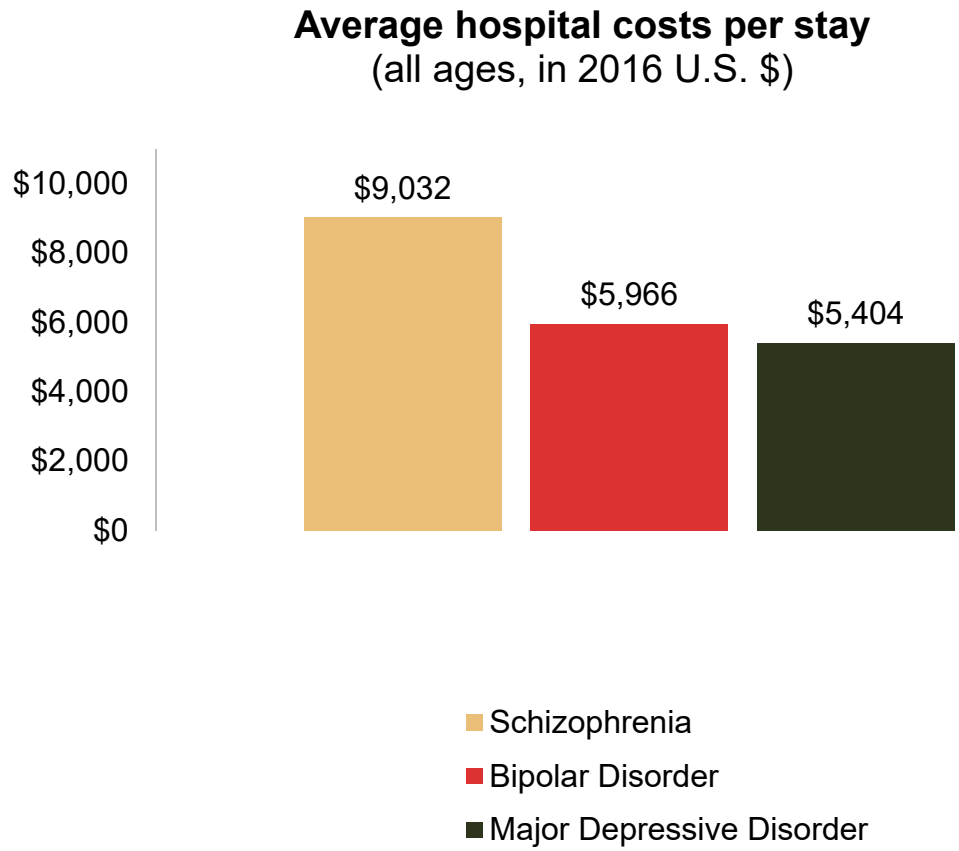


The average length of stay for a schizophrenia hospitalization was longer than those for kidney transplants, heart attacks or hip replacement surgeries. Moreover, the average duration for these other conditions all declined by at least 18% from 2000 to 2014 while for schizophrenia the duration has not changed by much.

Source: Healthcare Cost and Utilization Project (HCUPnet) 2014

Average hospital costs for mental illness hospitalizations

UNITED STATES 2014

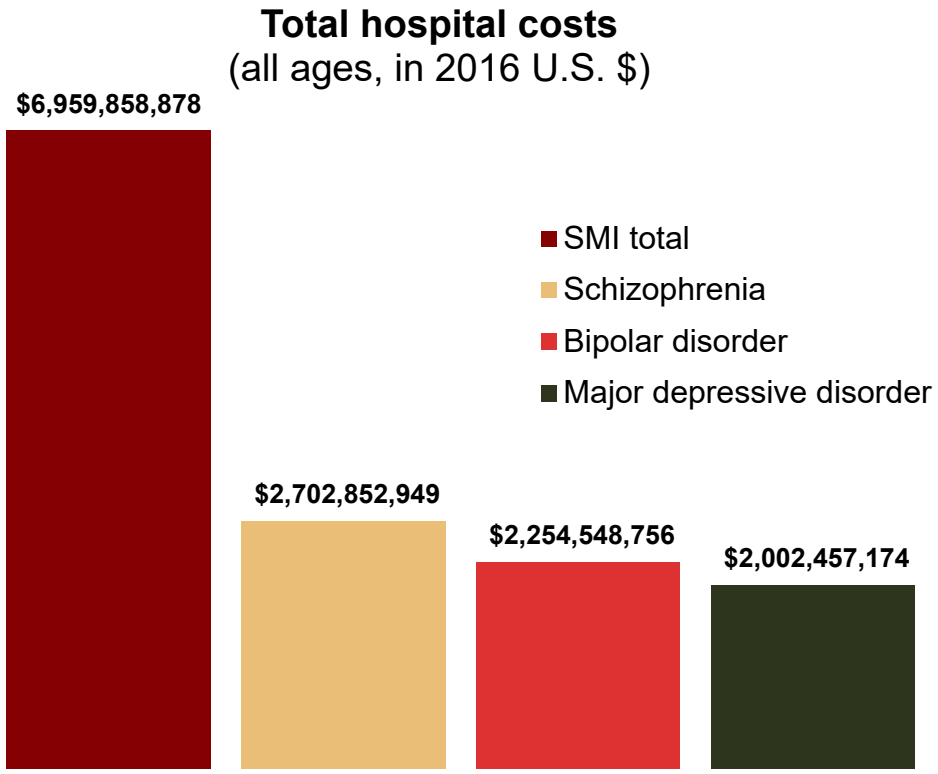


*The average costs for a hospitalization in the U.S. ranged from $5,400 to $9,000 per stay for patients with serious mental illness. This is despite **a general absence of procedures or surgeries** during a hospitalization for symptoms of serious mental illness.*

Source: Healthcare Cost and Utilization Project (HCUPnet) 2014

Total hospital costs for mental illness hospitalizations

UNITED STATES 2014



The total costs for serious mental illness hospitalizations almost reached $7 billion in the U.S. in 2014.

Source: Healthcare Cost and Utilization Project (HCUPnet) 2014

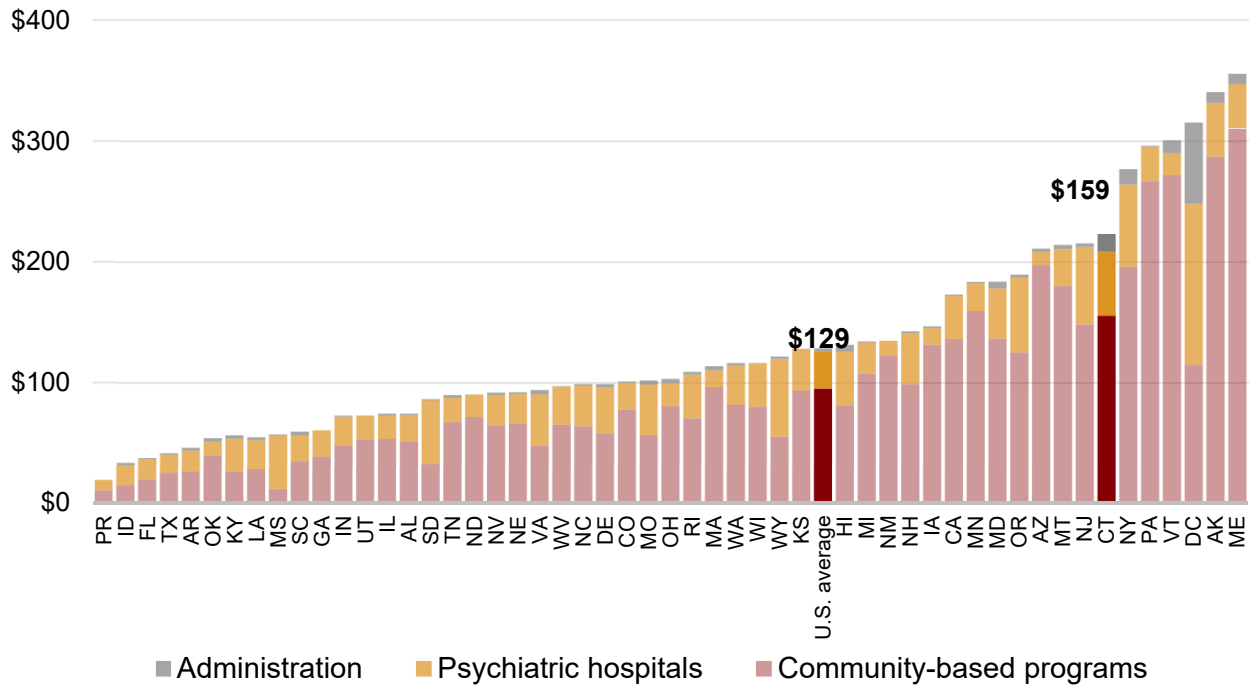
MENTAL HEALTH CARE COVERAGE, UTILIZATION & COSTS

Investment in community-based programs

State mental health agency spending

CONNECTICUT AND UNITED STATES 2013

Per capita
State mental health agency expenditures
(in 2016 U.S.$)



The Connecticut Department of Mental Health and Addiction Services spends a higher per capita amount on mental health services compared to state mental health agencies in the rest of the U.S.

Of the agency's clients in 2016, 52.4% have a diagnosis of serious mental illness, and 67.5% a substance use/abuse disorder.

On average, 89.7% of their 2909 available inpatient and residential beds were in use in 2016.

Expenditures include (U.S. average):

- *72% Community-based mental health programs funded and/or operated by state mental health agencies*
- *26% Mental health services in state psychiatric hospitals*
- *2% Administration/training/ research/evaluation to support these services*

***New England states*

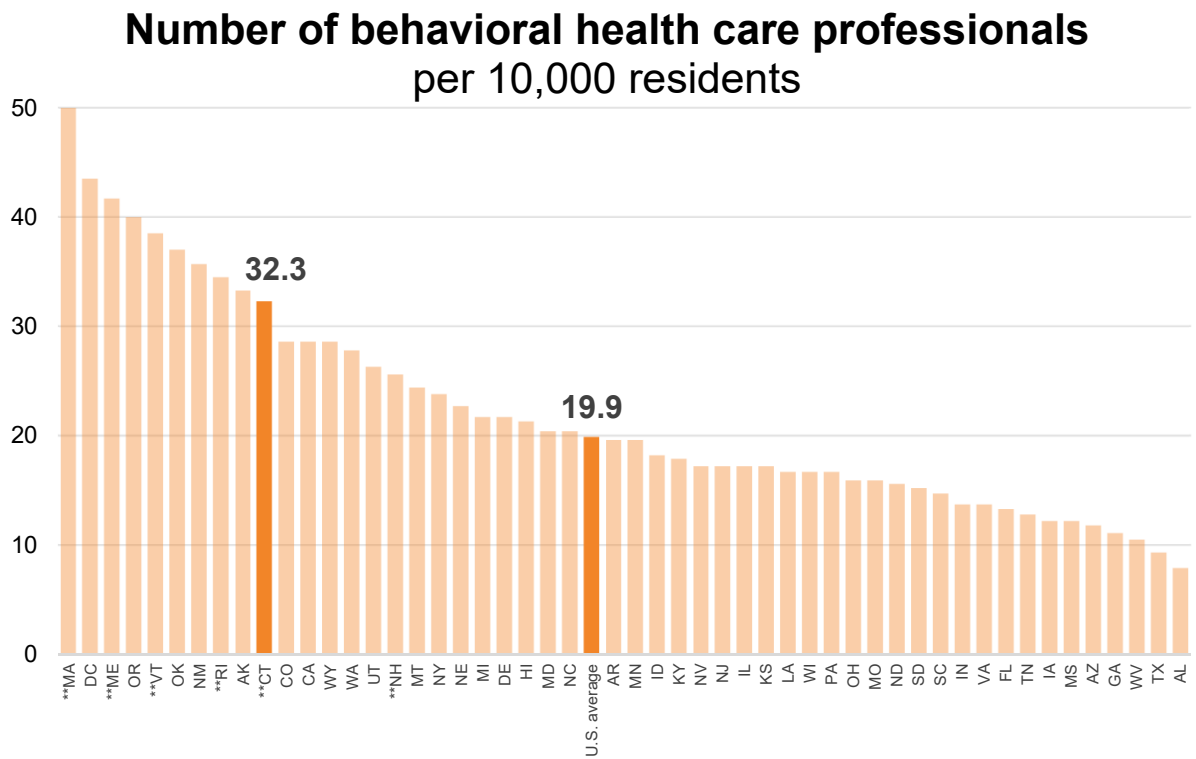
Source: State Mental Health Agency-Controlled Expenditures for Mental Health Services, FY 2013 National Association of State Mental Health program Directors Research Institute, Inc (NRI)

Connecticut Department of Mental Health and Addiction Services, Annual Statistical Report 2016

AVAILABILITY OF BEHAVIORAL HEALTH CARE PROFESSIONALS

Availability of behavioral health care professionals

CONNECTICUT AND UNITED STATES 2017



There are approximately 32 behavioral health care professionals for every 10,000 residents in Connecticut, which is higher than the average in the U.S.

Note that the U.S. average does not represent the optimal number of behavioral health care professionals.

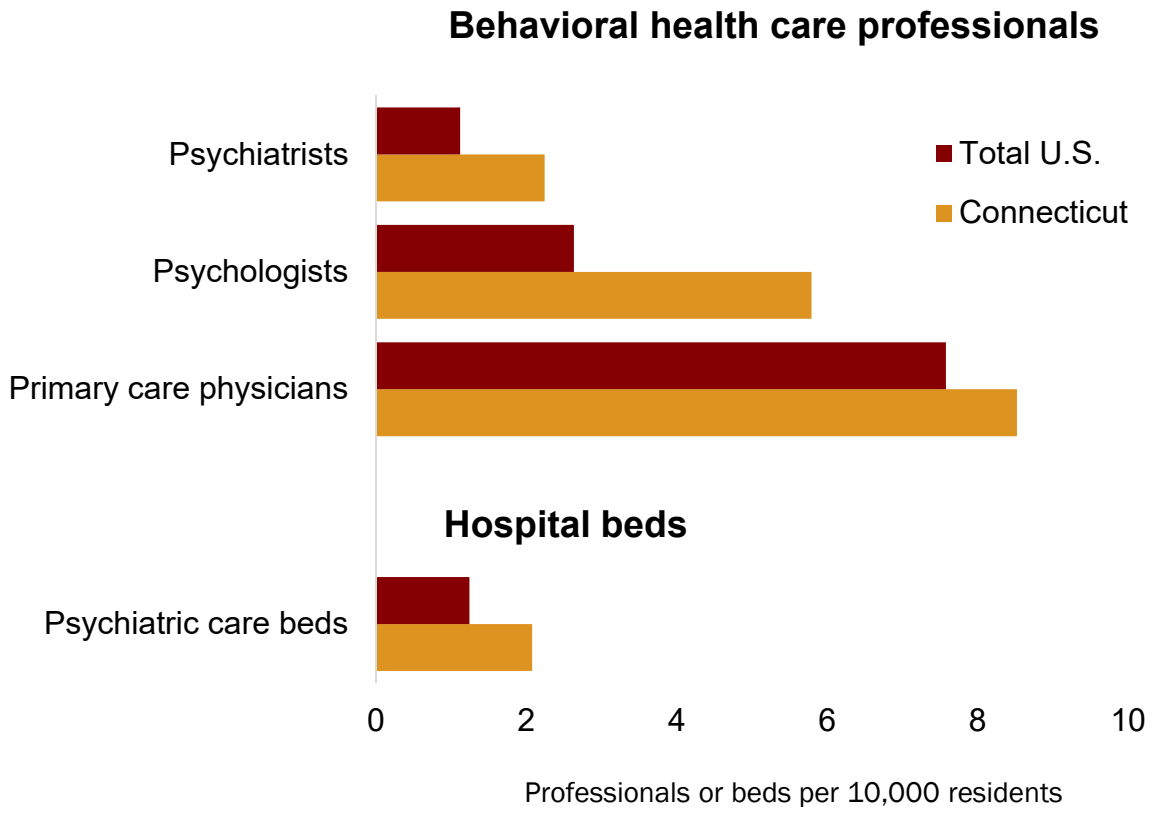
***Behavioral health care professionals include**: psychiatrists, psychologists, licensed clinical social workers, counselors, marriage and family therapists, and advanced practice nurses specializing in behavioral health care*

***New England states*

Source: County Health Rankings & Roadmaps, by the Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute.

Availability of behavioral health care professionals and hospital beds

CONNECTICUT AND UNITED STATES 2013



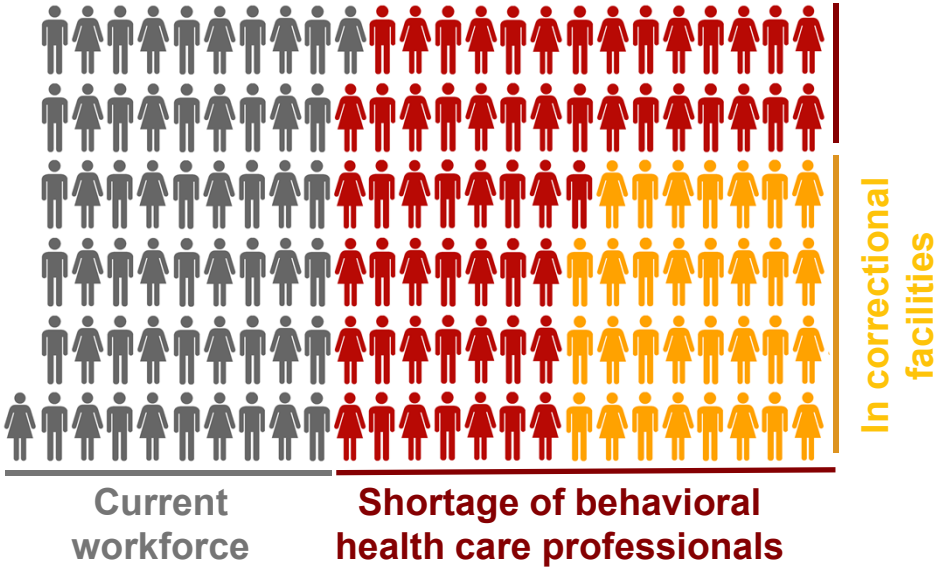
Per resident, Connecticut has more primary care physicians, behavioral health care professionals, and hospital beds dedicated to psychiatric care compared to the U.S. average.

Note that the U.S. average does not represent the optimal number of behavioral health care professionals or hospital beds. Although the optimal number of beds is unknown in our current health care infrastructure, there are estimates that 5 beds per 10.000 residents are minimally required assuming sufficient availability of outpatient programs for long-term treatment.

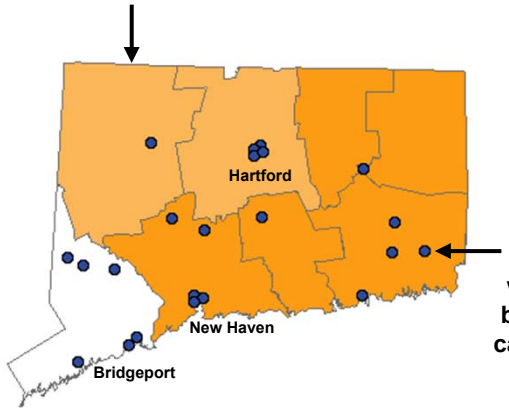
Source: Area Health Resource Files 2013 (psychiatrists, physicians and psychiatric care beds), and 2005-2013 Demographics of the U.S. Psychology Workforce, American Psychological Association (psychologists)

Shortage of behavioral health care professionals

CONNECTICUT 2018



Geographic high needs area (orange; darker color = more severe shortage)



Specific facility with shortage of behavioral health care professionals (blue dots)

Currently, Connecticut has 56 full-time equivalent behavioral health care professionals in designated shortage areas and facilities with behavioral health care professional shortages. In order to address the shortage issue, 89 more full-time professionals are needed in these areas, 31 of whom in correctional facilities.

Behavioral health care professionals:
psychiatrists, clinical psychologists, clinical social workers, psychiatric nurse specialists, and marriage & family therapists

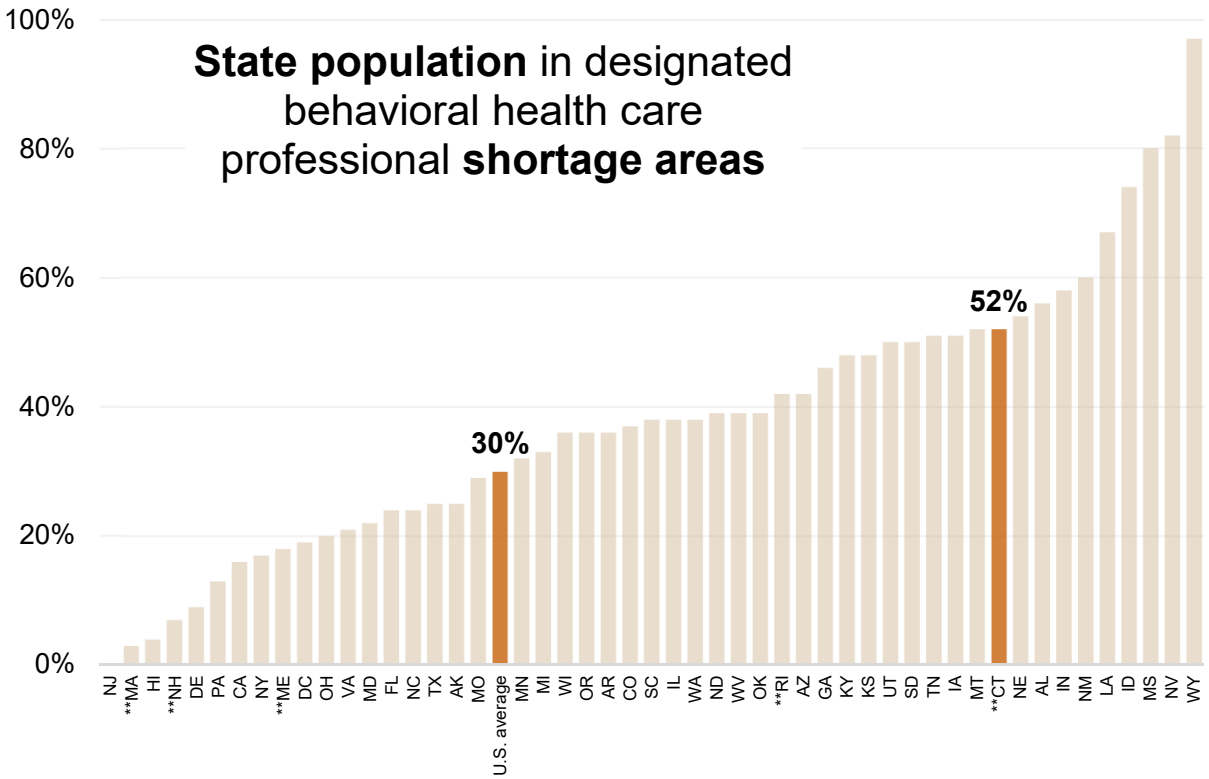
Facilities:
Federal & state correctional institutions, state & county mental hospitals, community mental health centers, and other public or nonprofit private facilities

Geographic high needs area based on population-to-provider ratio, poverty levels, elderly and youth ratio, alcohol and substance abuse prevalence, and travel time to nearest source of care outside area

Source: Health Professional Shortage Areas (HPSA), HRSA Data Warehouse, 03/16/2018

State population in behavioral health care professional shortage areas

CONNECTICUT AND UNITED STATES 2018



1,870,191 people in Connecticut (52% of the state population) reside in designated shortage areas and/or are served by a facility with shortages of behavioral health care professionals. This is higher than the U.S. average of 30%.

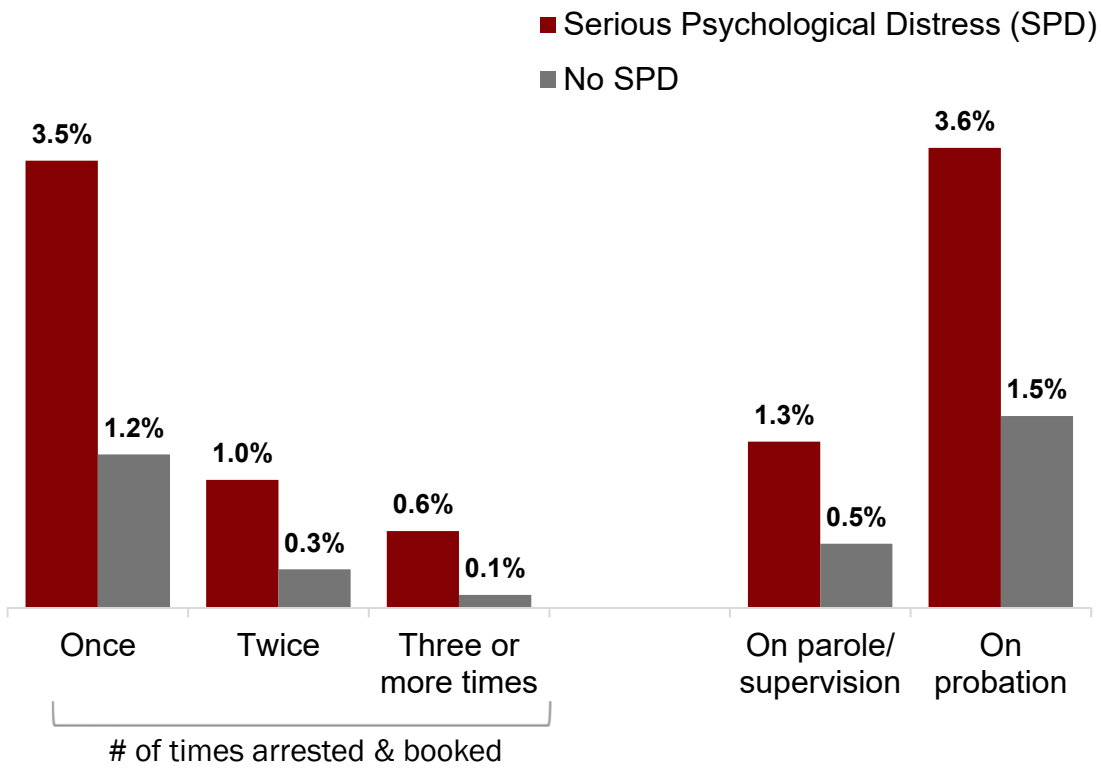
***New England states*

Source: Health Professional Shortage Areas (HPSA), HRSA Data Warehouse, 03/16/2018, and Census Bureau data (2017)

MENTAL HEALTH CONDITIONS & THE CRIMINAL JUSTICE SYSTEM

Contact with criminal justice system

UNITED STATES 2016

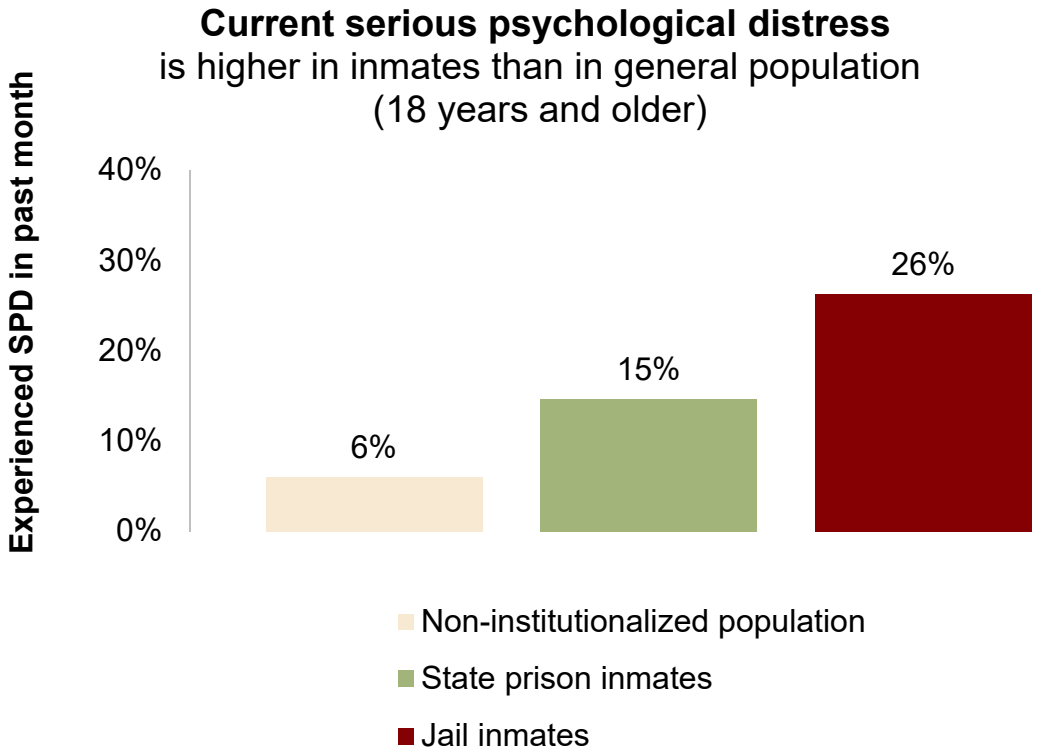


People who experienced serious psychological distress (SPD) are more likely to have been arrested or be on parole or probation in the past year.

Source: National Survey of Drug Use and Health (NSDUH) 2016
Survey does not include current institutionalized population

Mental health issues in prison and jail populations

UNITED STATES



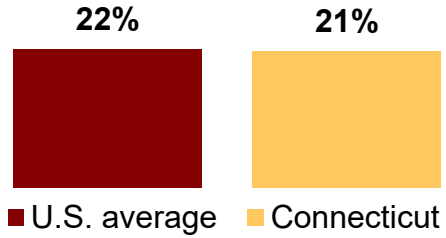
A large percentage of the U.S. adult prison and jail inmate population currently experiences serious psychological distress compared to the non-institutionalized population.

Additionally, these mental health issues are observed at higher rates in local jails than in prisons.

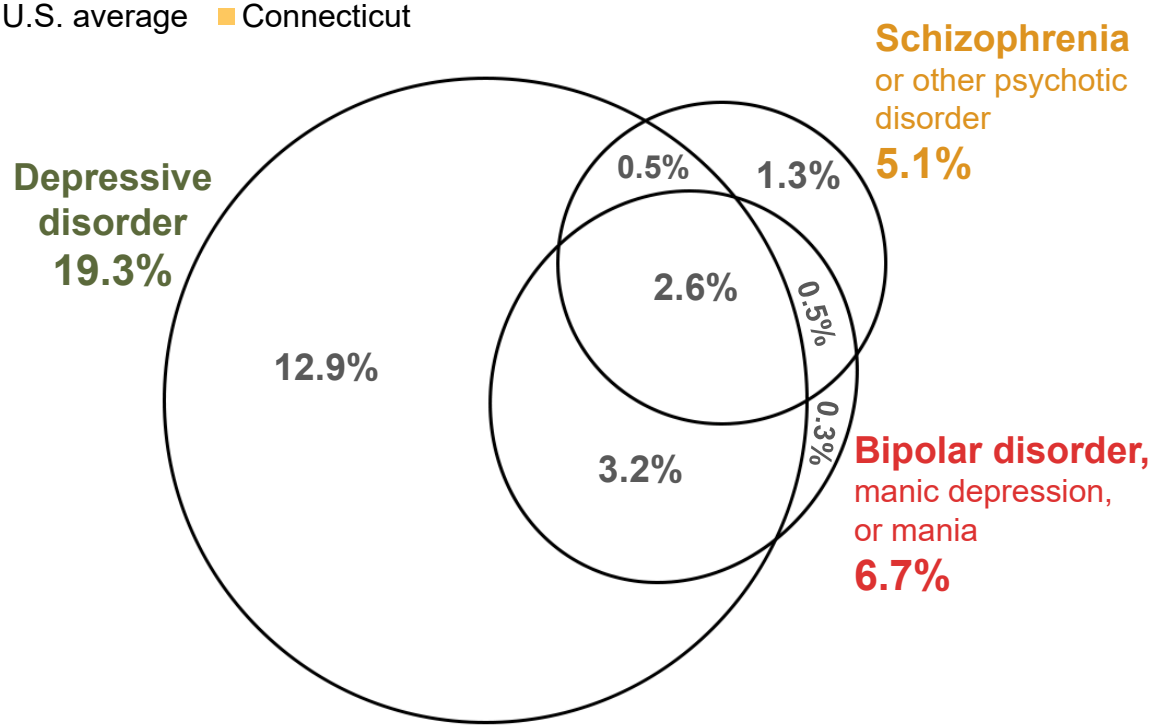
Source: National Survey of Drug Use and Health (NSDUH) 2016
Bureau of Justice report: Sexual Victimization in Prisons and Jails Reported by Inmates, 2011-12, based on data from the National Inmate Survey

State prison population with serious mental illness

CONNECTICUT



Connecticut state prison inmates
previously diagnosed with
a serious mental illness:



In Connecticut state prisons, approximately 21% of prison inmates previously have been diagnosed with a serious mental illness, which is similar to the overall U.S. prison population. Many patients have been diagnosed with two or three mental illnesses, confirming the presence of overlap in symptoms in this population.

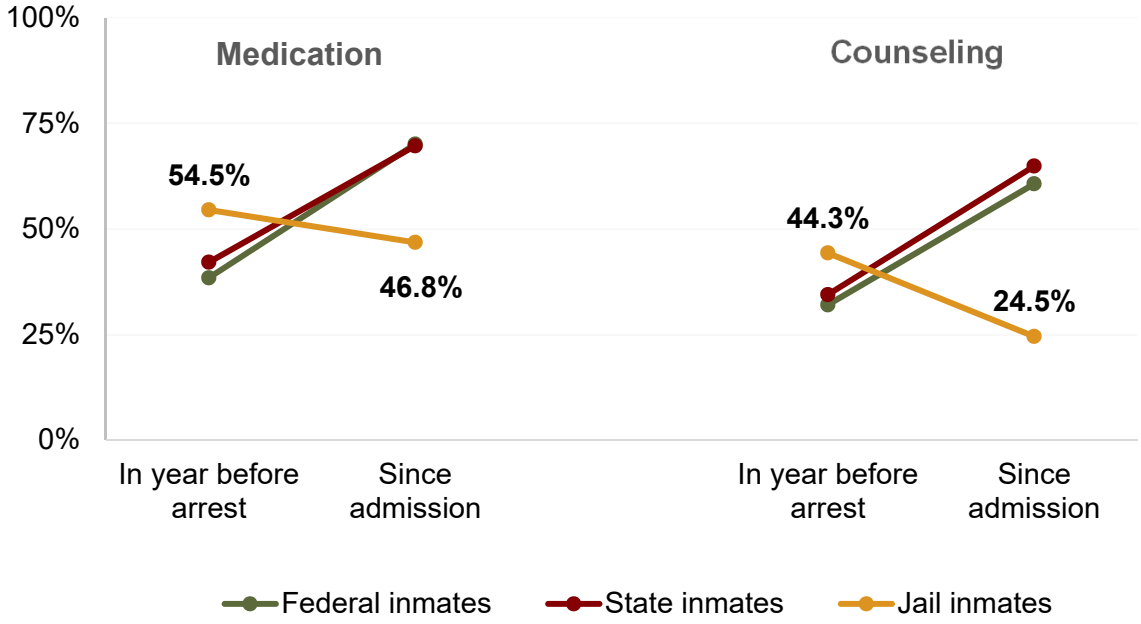
Source: Survey of Inmates in State Correctional facilities, BJS, 2004. Includes juveniles
Due to rounding, percentages of separate parts may not add up to the total percentage

Change in treatment before and during incarceration in prison and jails

UNITED STATES

Lack of access to mental health treatment in local jails

Among inmates with a previously diagnosed serious mental illness and who have ever received respective treatment before incarceration



Source: SISFCF (Survey of inmates in states and federal correctional facilities) 2004 & SILJ (Survey of inmates in local jails) 2002

The increase in mental health care treatment in federal and state prisons after admission to prison suggests that these institutions are making up for the gaps in mental health treatment in the general health care system.

At the same time, local jail inmates do not have the same access to medication and counseling while incarcerated as federal and state prisoners.

Mental health conditions include prior diagnosis of depressive disorder, bipolar disorder, and/or schizophrenia. Medication and counseling data includes treatment for any mental illness.

Estimated number of

Connecticut state prison inmates in 2016

previously diagnosed with serious mental illness:

3,270

Estimate of overall annual costs in 2016:

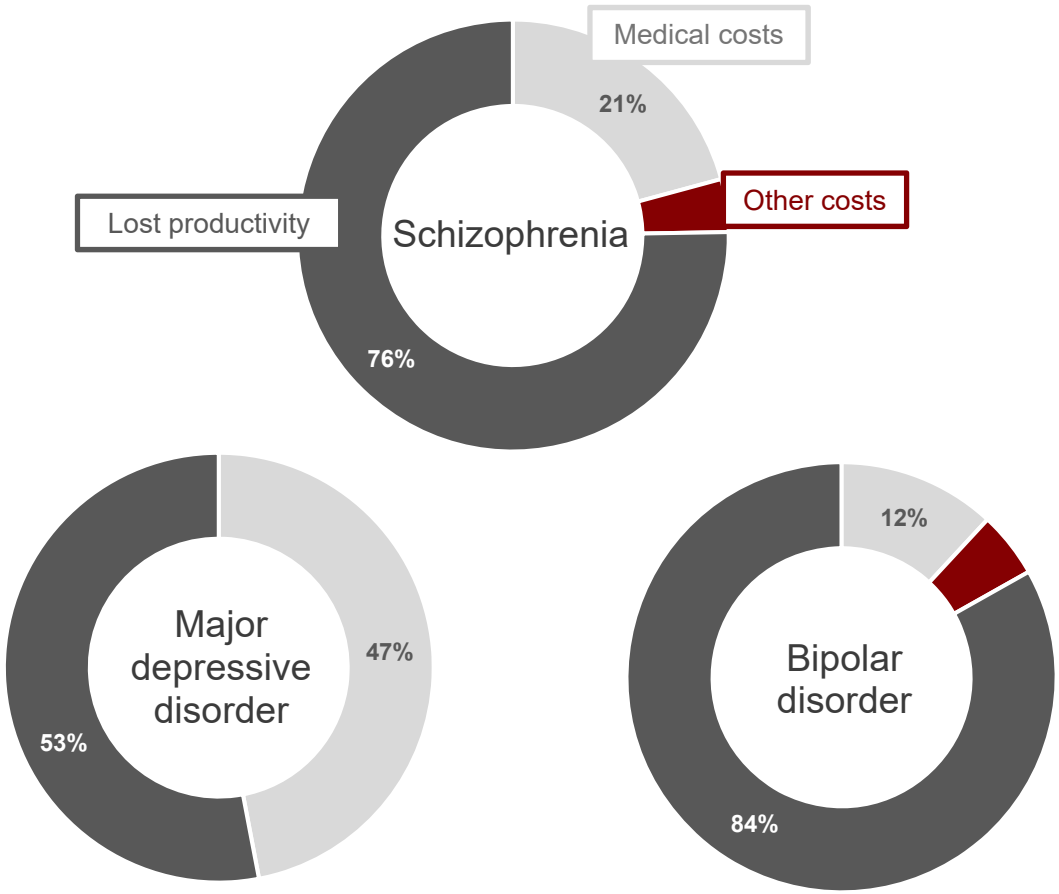
$ 166,444,800

Overall annual costs based on 2016 average of all state prison inmates in Connecticut
Sources: Annual Survey of State Government Finances 2016
Survey of Inmates in State/Federal Correctional facilities, BJS, 2004
Connecticut Open Data

TOTAL ECONOMIC BURDEN OF SERIOUS MENTAL ILLNESS

Lost productivity is the largest contributor to economic burden of serious mental illness

UNITED STATES



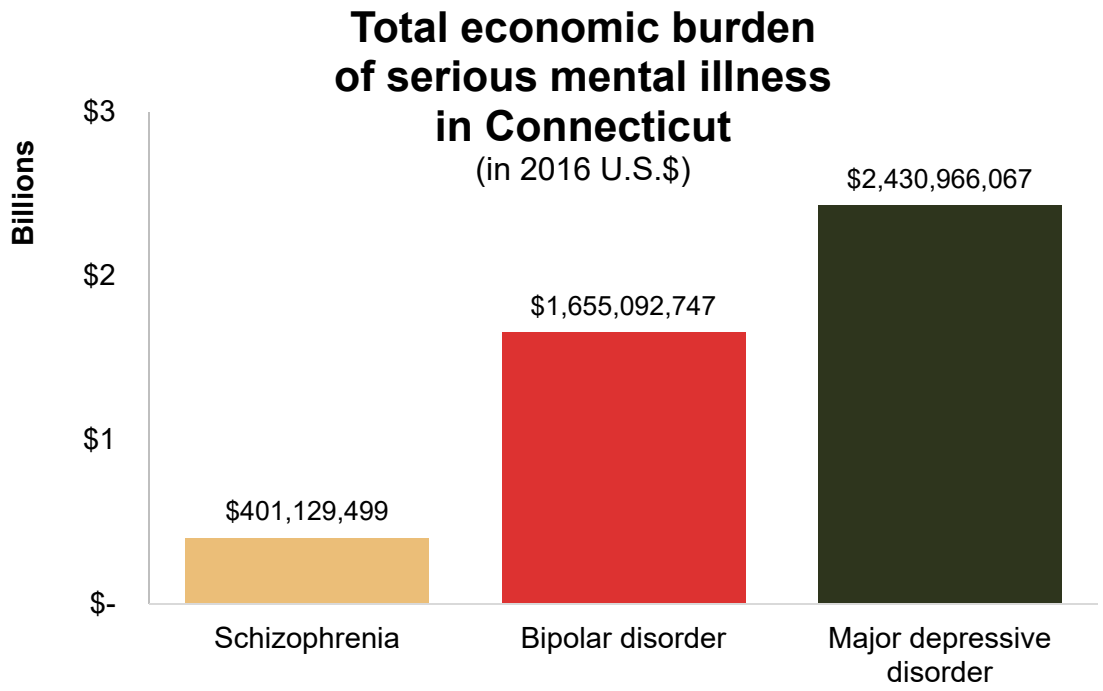
*Most of the total economic burden of serious mental illness is due to **lost productivity** (unemployment, lost compensation (incl. caregivers), or early mortality). Only 12 to 47% of the total burden is resulting from direct **medical costs** (including substance abuse treatment), and an even smaller percentage from law enforcement, incarceration, shelters, or research & training (**other costs**).*

This highlights the large potential economic and societal benefits from improving treatment for serious mental illness even if it means spending more on care.

Source: MacEwan JP, Seabury S, et al. Pharmaceutical innovation in the treatment of schizophrenia and mental disorders compared with other diseases. Innov Clin Neurosci. 2016 Aug 1;13(7-8):17-25. See appendix for original sources

Economic burden of serious mental illness

CONNECTICUT 2016



The economic burden of schizophrenia, bipolar disorder, and major depressive disorder in adults in Connecticut is estimated to be at least ***$400 million for each serious mental illness***

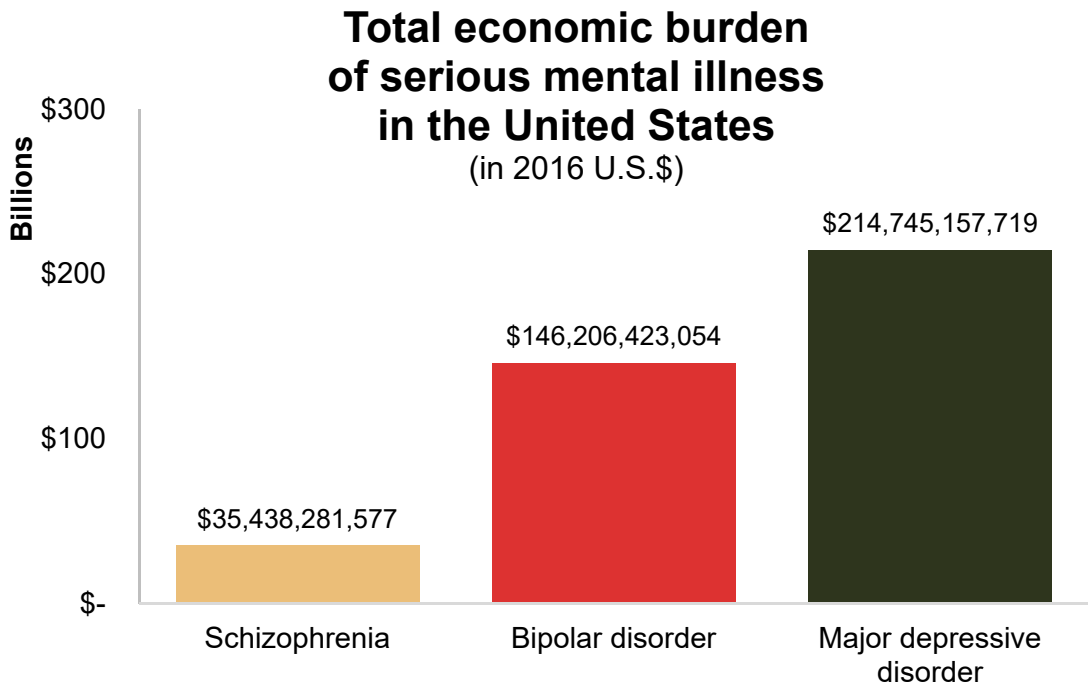
And $4.4 billion for the 3.

Due to symptom overlap, diagnoses of mental illnesses are not mutually exclusive, therefore, patients with two or more diagnoses may be represented in multiple categories.

Source: MacEwan JP, Seabury S, et al. Pharmaceutical innovation in the treatment of schizophrenia and mental disorders compared with other diseases. Innov Clin Neurosci. 2016 Aug 1;13(7-8):17-25. See appendix for original sources

Economic burden of serious mental illness

UNITED STATES 2016



The economic burden of schizophrenia, bipolar disorder, and major depressive disorder in adults in the U.S. is estimated to be at least ***$400 Billion for all of them***

Due to symptom overlap, diagnoses of mental illnesses are not mutually exclusive, therefore, patients with two or more diagnoses may be represented in multiple categories.

Source: MacEwan JP, Seabury S, et al. Pharmaceutical innovation in the treatment of schizophrenia and mental disorders compared with other diseases. Innov Clin Neurosci. 2016 Aug 1;13(7-8):17-25. See appendix for original sources

IN SUM

- Nationally serious psychological distress affects 10.8% of adults annually
- Major Depression affects 6%, Bipolar Disorder 2.6% and Schizophrenia 1.1%
- Medicaid is a major financier of mental health services
- Medicaid does not render behavioral health services completely affordable
- Most outpatient behavioral health services for Medicaid patients lose money
- Extended hospitalizations are common for patients with Serious Mental Illness
- In Connecticut, despite having an overall high provider to resident ratio, there is a mismatch in distribution leaving 50% of the population living in a shortage area
- People living with mental illness are much more to be arrested and placed in correctional facilities where shortages of behavioral health professionals are severe
- Those arrested are unlikely to have been receiving treatment
- Annual total economic cost for Major Depression, Bipolar Disorder and Schizophrenia is $4.4 Billion in Connecticut
- The data and methods are described in more detail in the appendix: http://healthpolicy.usc.edu/Keck_Schaeffer_Initiative.aspx

***Draft** - subject to change*

[1] http://ctmirror.org/2016/11/07/theres-a-lot-of-anxiety-mental-health-system-braces-for-more-cuts/

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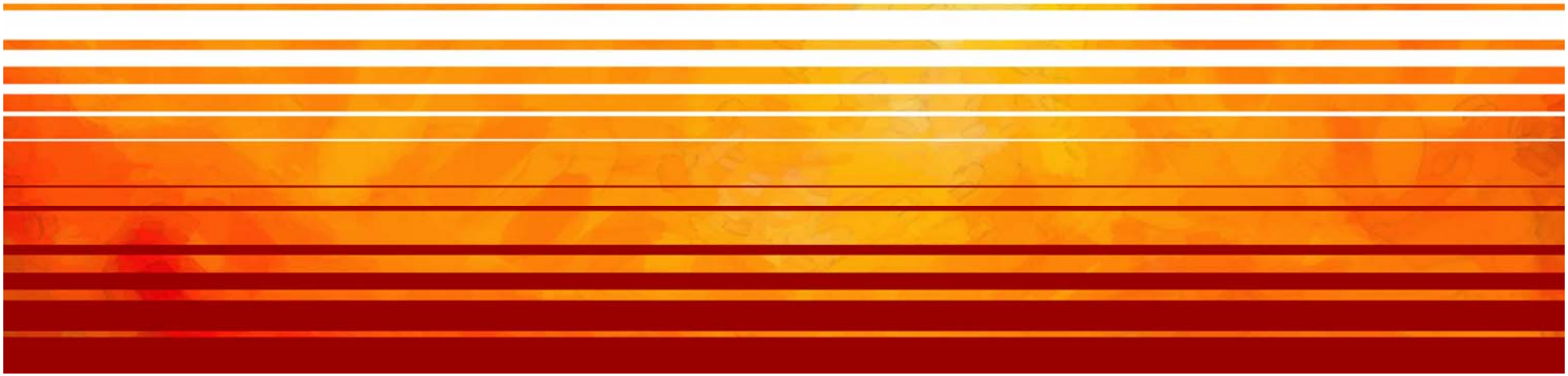
We also acknowledge comments and contributions to this work from the
National Council for Behavioral Health and the Behavioral Health + Economics Network.

References, data sources and methods are described in more detail in the online appendix.
This chartbook and the appendix can be downloaded at:
http://healthpolicy.usc.edu/Keck_Schaeffer_Initiative.aspx

USC Schaeffer

Leonard D. Schaeffer Center
for Health Policy & Economics



INTRODUCTION

Key findings include:

- In the U.S., the hospitalization rate of patients with serious mental illness is very high compared to other hospitalizations, which imposes a large cost on the health care system due to the relatively long length of stay, despite the general absence of procedures.
- Despite the relatively large per-capita number of behavioral health care professionals in Connecticut compared to the U.S. average, there is still a shortage of providers, particularly in the criminal justice system.
- People living with mental illness are more likely to encounter the criminal justice system, resulting in a large number of arrests and incarcerations. The overall annual cost of incarcerating people with serious mental illness in state prisons in Connecticut exceeds $165 million.

The data presented in this chartbook are publicly available and represent the most recent numbers to which we had access. The term “behavioral health” is used to describe data related to mental illness and substance abuse, whereas “mental health” does not include substance abuse.

The data and methods are described in more detail in the appendix: http://healthpolicy.usc.edu/Keck_Schaeffer_Initiative.aspx