Beyond Treatment

How Clubhouses for People Living with Serious Mental Illness Transform Lives and Save Money

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February 2024

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About Fountain House

For more than 75 years, Fountain House has been a beacon of hope and recovery for people living with serious mental illness. Our pioneering clubhouse model of psychosocial rehabilitation has transformed the lives of tens of thousands of New Yorkers and inspired 200 communities across the country to create clubhouses that today benefit more than 60,000 Americans annually.

In 2020, with generous support from the Dauten Family Foundation, Fountain House expanded its capacity to conduct ongoing data analysis and other research to further expand the base of evidence supporting the efficacy of clubhouses and influence public policy. This paper is a product of that effort.

The Research, Analytics, Knowledge, and Evaluation (RAKE) department at Fountain House is a living laboratory operated in partnership with people living with serious mental illness. Researchers work especially closely with Fountain House United, a network of clubhouses across seven states that have committed to collecting and sharing uniform data, creating a shared research agenda, and advocating for policy change.

To learn more about Fountain House and our research, visit **fountainhouse.org**.

Acknowledgments

Suggested Citation: Usman, M., & Seidman, J. (2024). Beyond Treatment: How Clubhouses for People Living with Serious Mental Illness Transform Lives and Save Money. **https://www.fountainhouse.org/beyondtreatment**

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Executive Summary

This report contributes to the much-needed mental health reform efforts taking place at the national, state, and local levels by demonstrating how community-based social support for people living with serious mental illness can transform lives and save money, especially when including the full array of public and social costs. It does so by focusing on one form of social support — the evidence-based practice known as clubhouses, which research shows improves quality of life. It provides data and analysis that shows such a form of therapeutic intervention can save more than $11,000 a person; when extrapolated to the current 60,000 people attending clubhouses (known as members), that amounts to a national savings of almost $700 million annually. This figure could be far higher if more of the 15 million people in the U.S. living with serious mental illness had access to these programs. In addition, by providing an approach that accounts for the full spectrum of social costs, this report provides a much-needed alternative starting point for policymakers to evaluate the economic impacts of different therapeutic interventions.

The United States spends an estimated $280 billion annually on health care, with 60 percent of those dollars funding services for people with a serious[1] mental illness — one severe enough to substantially disrupt or limit their lives (White House 2022).[2] Yet even this number overlooks secondary costs to society that rise exponentially when individuals with a serious mental illness lack the non-clinical treatment and community-based social support needed to manage their mental illness and bolster their ability to thrive. Beyond the direct toll on these individuals, the annual costs to society not incorporated in traditional accounting include an estimated $193 billion in lost wages and $24 billion in disability benefits (Substance Abuse and Mental Health Services Administration 2021). Other unaccounted-for costs include those associated with repeated emergency room visits and the use of law enforcement as a default resort for an individual in crisis.

Accurate cost estimates would not only incorporate such secondary costs but go a step further to compare the full costs and benefits of a particular program or type of service for people with a serious mental illness with the costs society (and individuals) are likely to incur in its absence. This is precisely the information government and the private sector need to make informed decisions about how to effectively allocate limited resources. The economic model and initial findings described in this paper represent an important step in that direction.

1   The National Institutes of Health defines serious mental illness as "a mental, behavioral, or emotional disorder resulting in serious functional impairment, which substantially interferes with or limits one or more major life activities."

2   Recent classification changes that exclude housing and food costs for non-institutionalized individuals artificially suppress the actual cost of mental health services.

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The United States spends most of its health care resources for serious mental illness on clinical treatment (such as medication and therapy), with a fraction allocated to fund the community-based social supports people also need to manage their mental illness. These are policy choices. Other developed nations allocate resources differently: Australia and Denmark, for example, each spend two-thirds on community-based support and a third on clinical treatment (Squires and Anderson 2015). *see figure 1.*

Higher health care and justice-related costs in the United States partly drive the distribution of resources. However, it is equally true — and much less recognized — that American policymakers and the public that elects them do not appreciate the critical role community-based social support plays in the recovery process for people living with serious mental illness. The associated lack of investment in such programs contributes to escalating criminal-legal system and health care costs.

Figure 1. Relative funding for social support vs. treatment: United States compared to other developed countries

40%
Treatment

60%
Social Support

Other Developed Countries

33%
Social Support

United States

67%
Treatment
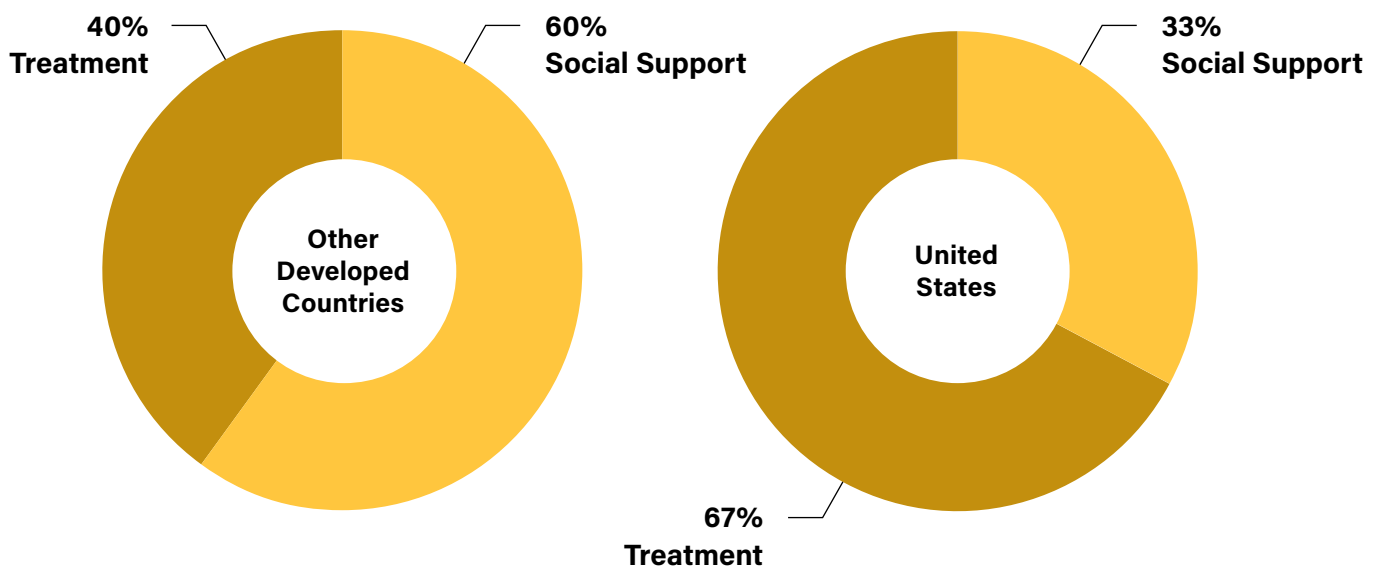
Prior research shows that an investment in social support for people living with serious mental illness may reduce spending on clinical care (Richard G. Frank and Sherry A. Glied, 2019). However, until now, little has been done to quantify the impact of social support on spending across some of the most common drivers of cost — mental and physical health care at all levels, the criminal-legal system, and public benefits — as well as the productivity costs represented by lost wages.

This paper illustrates the level and type of savings that would be possible using a leading model of community-based social support: the clubhouse model of psychosocial rehabilitation. It shows that this model saves a total of $11,374 a year for every individual receiving clubhouse services

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— known as a "member." Moreover, savings are likely to double when people with schizophrenia — who have 28 percent higher hospitalization costs than the average person with serious mental illness — have access to a clubhouse.

The roughly 60,000 people currently participating in clubhouses each year already yield an estimated savings of *at least* $682 million annually. Expanding clubhouses to serve even 5% of the 15.4 million Americans living with serious mental illness (Substance Abuse and Mental Health Services Administration 2023) would significantly improve the life trajectories of those 770,000 people in ways that would create savings to society of more than $8.5 billion a year. *see figure 2.*

Figure 2. The potential economic benefit of clubhouses

$8.5 Billion
Annual Savings

$682 Million
Annual Savings

Current Reach

~60,000 Clubhouse Members

Modest Expansion

770,000 Clubhouse Members
5% of all people living with serious mental illness in the US
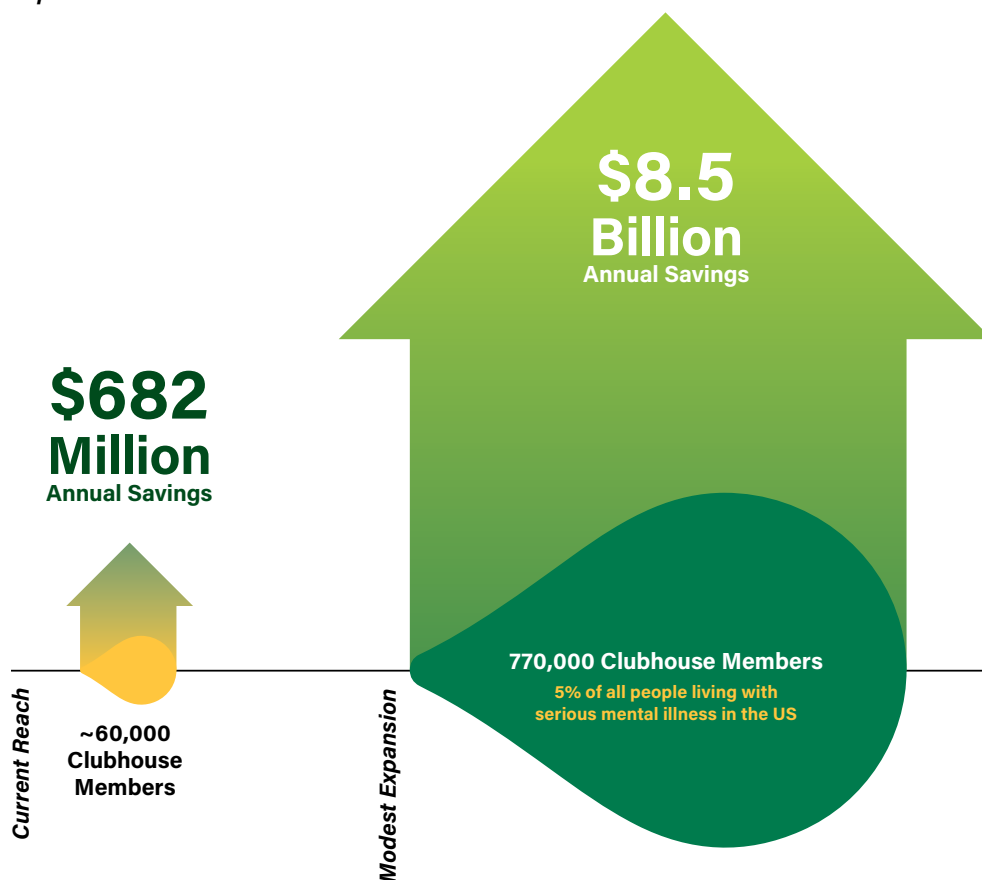
To unlock these savings, policymakers in government and decision-makers in the private sector should directly support or incentivize the expansion of clubhouses and other forms of community-based social support that save money by transforming lives. Specifically, health care reimbursement systems must embrace a value-based payment model that recognizes social support as a critical component of cost-effective mental health care and make decisions about what programs to fund based on a cost-benefit analysis that encompasses the many different costs society incurs when people with serious mental illness lack social support.

We look forward to working with the broad network of researchers, philanthropists, providers, people with lived experience and other advocates, and public leaders to expand and refine this work.

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The Role of Community-Based Social Support in Mental Health

One of the most common consequences of serious mental illness is social isolation. While the stigma associated with mental illness is less than it once was, most people living with a serious mental illness are still relatively isolated (Fortuna et al. 2021; Jenkins, Janich, Wu, & Shafer, 2023). Social isolation makes it harder for them to manage their disease, even with the benefit of an accurate diagnosis and appropriate clinical treatment — not surprising since just 20 percent of health is influenced by clinical care alone (World Health Organization, 2020). And isolation feeds on itself, making it increasingly difficult for people to form new relationships and navigate new environments.

Current responses to treatment and support of people with serious mental illness focus on medication and housing, both of which are crucial, but neglect to foster the social connections that all people rely on to manage life's challenges. The result: Many people living with serious mental illness lack the very thing they need to make the most of available drugs and other clinical treatments — a community to support them.

Figure 3. Clinical care accounts for only 20% of health outcomes, while health behaviors, social and economic factors, and environmental factors determine the remaining 80%
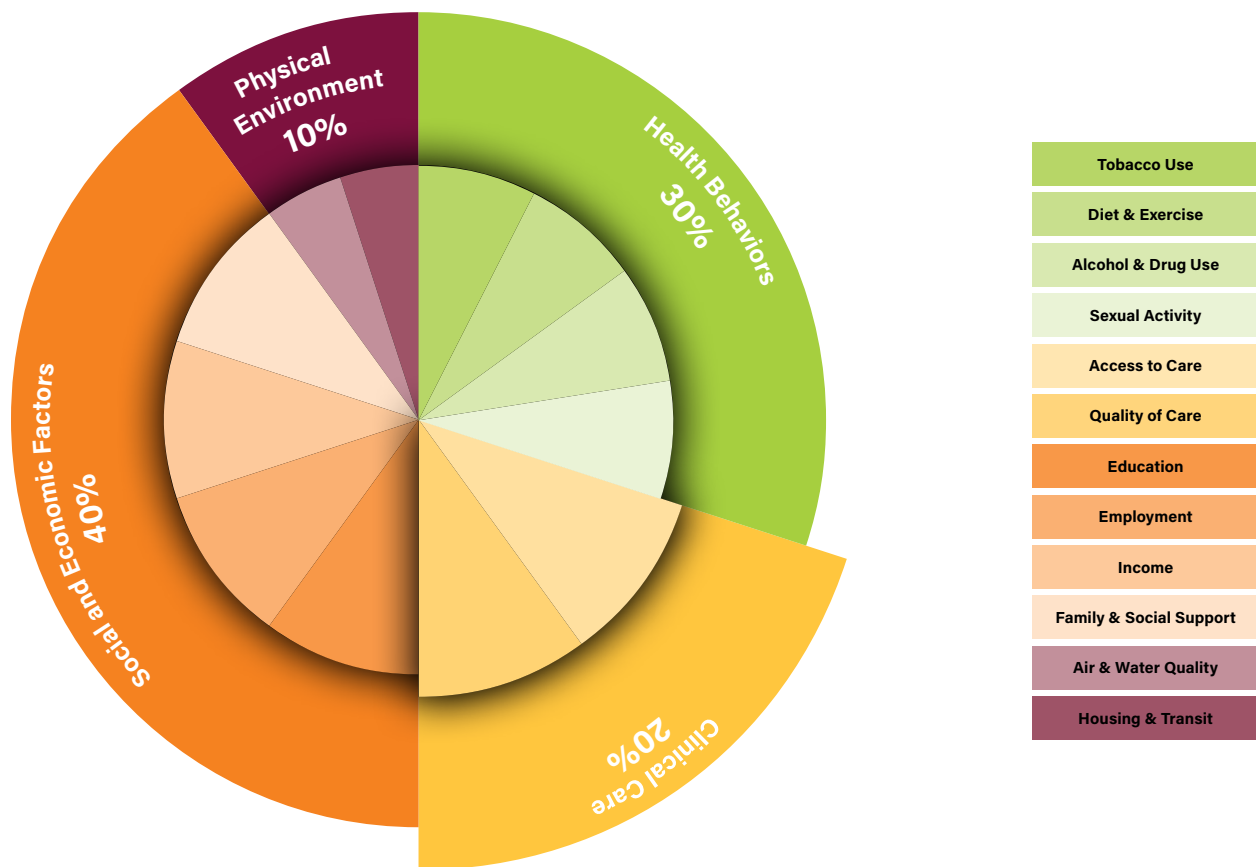
Source: World Health Organization 2022

Community-based social support fosters stability instead of crisis and provides an environment conducive to personal growth that can reduce repeat emergency room visits, hospitalizations, criminal-legal involvement, and financial dependence. While people living with a serious mental illness benefit enormously from the better of these outcomes (and suffer from the worst), society also benefits (or pays).

One of the most well-established modalities of social support for people living with serious mental illness is the clubhouse model of psychosocial rehabilitation pioneered by Fountain House in 1948. *(See "The Clubhouse: Community As Therapy" on p.8.)* A robust body of research evidence amassed over the decades, including randomized controlled trial studies, shows that participation in a clubhouse enhances quality of life and self-esteem, increases employment and educational attainment, and prevents or reduces severe psychiatric symptoms that are disabling and often lead to emergency room visits, hospitalization, and other negative and costly outcomes, including involvement in the criminal legal system. (Fountain House, 2022).[3] Some of these studies also calculate savings in particular areas of spending. In one study, for example, clubhouse members had significantly lower total annual mental health care costs than non-clubhouse members: $10,391 compared with $15,511 (Hwang, Woody, & Eaton, 2017).

The body of evidence supporting the positive effects of clubhouses underscores their potential to transform lives in ways that generate substantial and economic benefits for society – in addition to the clear benefits to members. We focus in this paper on a rigorous approach to estimating the wide-ranging financial benefits of clubhouses as measured against the costs society is likely to incur when someone living with serious mental illness lacks access to this proven model of community-based social support.

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[3] See the supplemental set of references at the end of this paper (References from Fountain House (2022). Brief Summary of Evidence Supporting Clubhouses) for a list of these studies.

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The Clubhouse: Community as Therapy

Clubhouses are an approach to mental health rooted in the fact that community itself is a powerful form of therapy. Since 1948, Fountain House has been directly operating and inspiring the creation of restorative clubhouse environments for adults whose lives have been severely disrupted because of their serious mental illness.

People who choose to come to a clubhouse are not clients or patients; they are "members" who actively contribute to the activities and culture of the clubhouse and support one another. Members decide how frequently to visit, how to spend their time at the clubhouse, and how long to remain an active member. This makes clubhouses distinctly different from day-treatment programs for people with serious mental illness.

At a clubhouse, members immerse themselves in activities that feed their interests and activate their talents, working in small groups or individually to achieve specific goals. Members are essential to the day-to-day operations of the clubhouse: greeting visitors and answering phones, cleaning and repairing areas of the clubhouse, facilitating meetings and assisting with community outreach and other tasks. Through pursuing their interests and helping to run the clubhouse, members develop a sense of belonging, experience individual and shared accomplishment, and begin to appreciate their own value and potential as a member of the clubhouse community and as a person in the world.

The support, fellowship, and opportunities members experience at the clubhouse ready them to engage more fully in life beyond the clubhouse doors. People who have been isolated revive old relationships and form new ones. Periods of long-term unemployment give way to meaningful work, especially because many clubhouses run transitional employment programs that connect members with temporary, part-time jobs as an entry into the workforce. That's what Josh, a Fountain House member, needed to build his confidence, discover his love of hospitality, and thrive in his job as a Guest Service Ambassador. It's what Fountain House member Diona needed to find the right place to live and return to college to study information technology. It's what Rivky — also a Fountain House member — needed to rediscover her love of music and become a working musician.

Mental and physical health improves as members experience stability and satisfaction in their lives and an excitement about the future they haven't felt in years, or ever. Rivky, who came to Fountain House in her mid-20s after a lifetime of debilitating mental illness and associated trauma, captured it well: "It's where my life truly began."

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Modeling the Cost-Savings of Clubhouses

Drawing on prior evaluations of clubhouses as well as research on the social costs of serious mental illness, we constructed an economic model to estimate the per-person, annual cost-savings associated with clubhouse participation. The model essentially compares hypothetical clubhouse members with similarly situated individuals living with a serious mental illness. Such prevalence-based approaches to cost calculations that tie various independent estimates together into a single economic model are abundant at the crossroads of health care economics and epidemiology,[4] and both the Congressional Budget Office and Federal Reserve use the same approach to predict the impact of a particular policy, event, or trend.

Incorporating multiple drivers of cost

Our economic model incorporates several common drivers of cost (*see figure 4*) associated with serious mental illness, beginning with the cost of providing mental health care — both the emergency and inpatient care that is more necessary when serious mental illness is poorly managed — as well as the cost of routine treatments and services, including pharmaceutical costs.

The model also includes costs related to providing physical health care at all levels. Incorporating these costs is important because chronic and potentially life-threatening conditions such as diabetes, heart disease, systemic infections, and even cancer, are more likely to develop or progress unchecked when serious mental illness is uncontrolled, and treatment for unmanaged and late-stage disease is far more expensive than prevention and early-stage care.

Unfortunately, far too many people with mental illness enter health care systems through emergency response and public safety mechanisms, resulting in increased incidence of arrest and progressively deeper involvement in the legal system. For this reason, the model includes common criminal legal system expenses from arrest to court processing to incarceration.

Because social support, generally, and clubhouses, in particular, are associated with improved mental health and stability, clubhouse participants are expected to have lower costs in all of these areas — some significantly lower.

Employment is an area of focus in clubhouses, and increased economic productivity is associated with clubhouse participation (Gorman, 2012). To estimate the expected economic benefits of this clubhouse advantage, the model calculates the opposite: the costs incurred when serious mental illness prevents someone from working or working as much as they might otherwise, and thus renders them more dependent on Social Security Disability Insurance (SSDI) or Supplemental Security Income (SSI) payments and results in significant unrealized productivity (i.e., lost wages).[5]

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4   See, for example, the "Economic Costs of Obesity" (Colditz, 1992), "Economic Costs of Diabetes in the U.S. in 2017" (American Diabetes Association, Yang, et al. 2018), and in the area of mental illness, the "Economic Burden Associated with Untreated Mental Illness in Indiana" (Taylor et. al 2023).

5   Unrealized productivity leads to lower standards of living, suppresses tax revenue, and hinders the growth of business and overall GDP – economic repercussions that could be incorporated in future versions of the economic model.

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Costs in all areas are adjusted for inflation to reflect the purchasing power of the dollar today and expressed as the per person costs accrued over a year. Readers should refer to the Appendix for information about the specific studies we draw on to calculate baseline costs in each of these areas and exactly how those costs are defined and adjusted.

While the model addresses several common drivers of cost, it is not comprehensive. There are subsidiary costs such as lost tax revenue that are not incorporated. There are also costly consequences of untreated serious mental illness, such as homelessness, left unaddressed in the model as currently developed because of insufficient research to draw upon to assess the impact of clubhouses on housing status.

Accounting for variation in individual needs and clubhouse participation

Members' needs vary as do degrees of participation. For this reason, the economic model is designed to generate cost estimates that reflect different types of serious mental illness and levels of health care utilization (general variables), as well as different durations and frequencies of clubhouse participation (clubhouse-specific variables). To facilitate this kind of analysis, the model features a dynamic dashboard that allows users to select among possible variables *(see figure 5).*

The general variables apply to both clubhouse participants and nonparticipants to ensure an "apples to apples" comparison. For type of serious mental illness, users can select among four options: depression, bipolar disorder, schizophrenia, or "overall," where "overall" represents the average or baseline costs. The baseline costs are then adjusted up or down by a factor derived from Stensland's 2012 study on the cost of hospitalization and applied across all cost categories. For example, since schizophrenia is associated with 28 percent higher hospitalization costs than overall serious mental illness, a factor of 1.28 is applied, to varying degrees, to each relevant cost category.

For the level of health care utilization, users select between high, average, or low. This variable, which encompasses all types of health care is drawn from Solis's 2016 study distinguishing between high health care utilizers (more than $18,000 in health care spending annually) and low utilizers (less than $18,000) based on component Medicaid expenditures, including inpatient care, emergency room visits, pharmaceutical care, ambulatory care, and a catch-all bucket for "other" health care. A dynamic factor is applied across cost categories based on the level of health care utilization selected, with the weighted average reflecting the distribution of high and low health care utilizers.

For the clubhouse-specific variables, users select the number of years of participation and number of visits per month. The first of these variables is derived from Russell's 2021 study examining the relationship between duration of clubhouse participation and rates of hospitalization. Data from that study and our own linear regression model suggest a roughly 3 percent reduction in cost across all cost categories for each additional year of participation. The second variable is derived from Solis's 2016 study examining the relationship between frequency of clubhouse participation and health care costs. Data from that study and our own regression

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modeling suggest a 2-3 percent cost savings across all cost categories for each additional day of clubhouse attendance per month.

These different variables in combination generate an array of possible clubhouse member profiles. The following two examples illustrate the estimated cost savings associated with two substantially different member profiles: The first is a member with an unspecified type of serious mental illness (i.e., "overall"), and an "average" level of health care needs who visits three times a month over a period of four years. The second example is a member with schizophrenia and a "high" level of health care needs, who visits a clubhouse five times a month and over a period of five years.[6]

Figure 4. Direct and indirect costs of serious mental illness accounted for in our economic model

Direct Costs

Mental Health Care Costs
- *Inpatient Mental Health Care*
- *All Other Mental Health Care*

Physical Health Care
- *Care at all levels*

Criminal Legal System
- *Law enforcement, court services, incarceration, and other associated costs*

Public Benefits
- *Social Security Disability Insurance (SSDI)*
- *Supplemental Security Income (SSI)*

Indirect (Opportunity) Costs

Unrealized Productivity
- *Lost wages as a result of unemployment*

Figure 5. Economic model variables

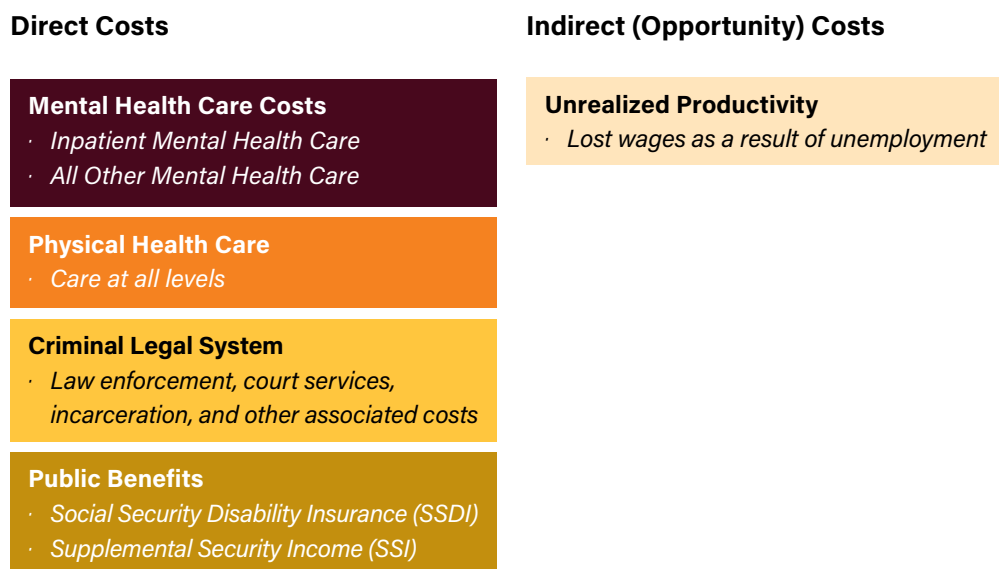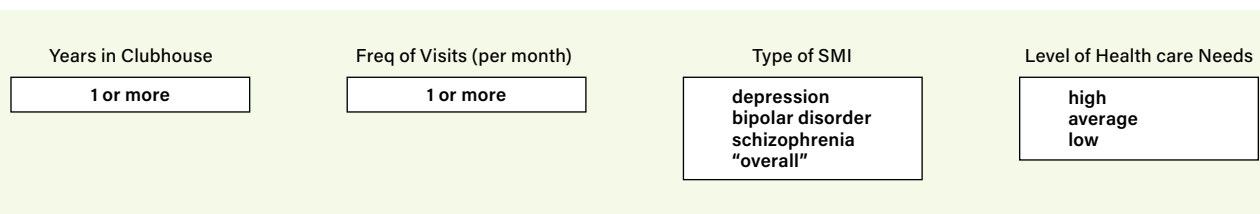| Years in Clubhouse	Freq of Visits (per month)	Type of SMI	Level of Health care Needs
1 or more	1 or more	depression bipolar disorder schizophrenia "overall"	high average low

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6   While it is possible that someone with greater mental health challenges and needs might attend a clubhouse more often and/or for a longer period of time, the model does not assume such a pattern, and the frequency and duration selected here are chosen merely for the sake of example.

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Economic Model In Action: Cost-Savings for a Clubhouse Member with Average Needs

The economic model always starts with the baseline costs for a clubhouse member and non-member. In this hypothetical example, the selected variables indicate that the type of serious mental illness and level of health care needs do not affect the estimated costs because "overall" serious mental illness and "average" health care needs are equivalent to the baseline costs baked into the model. Only the dosage variables related to the duration and frequency of clubhouse attendance affect costs and only for the clubhouse member.

Years in Clubhouse	Freq of Visits (per month)	Type of SMI	Level of Health care Needs
4	3	Overall	Average

Screenshot of economic model dashboard with variables selected
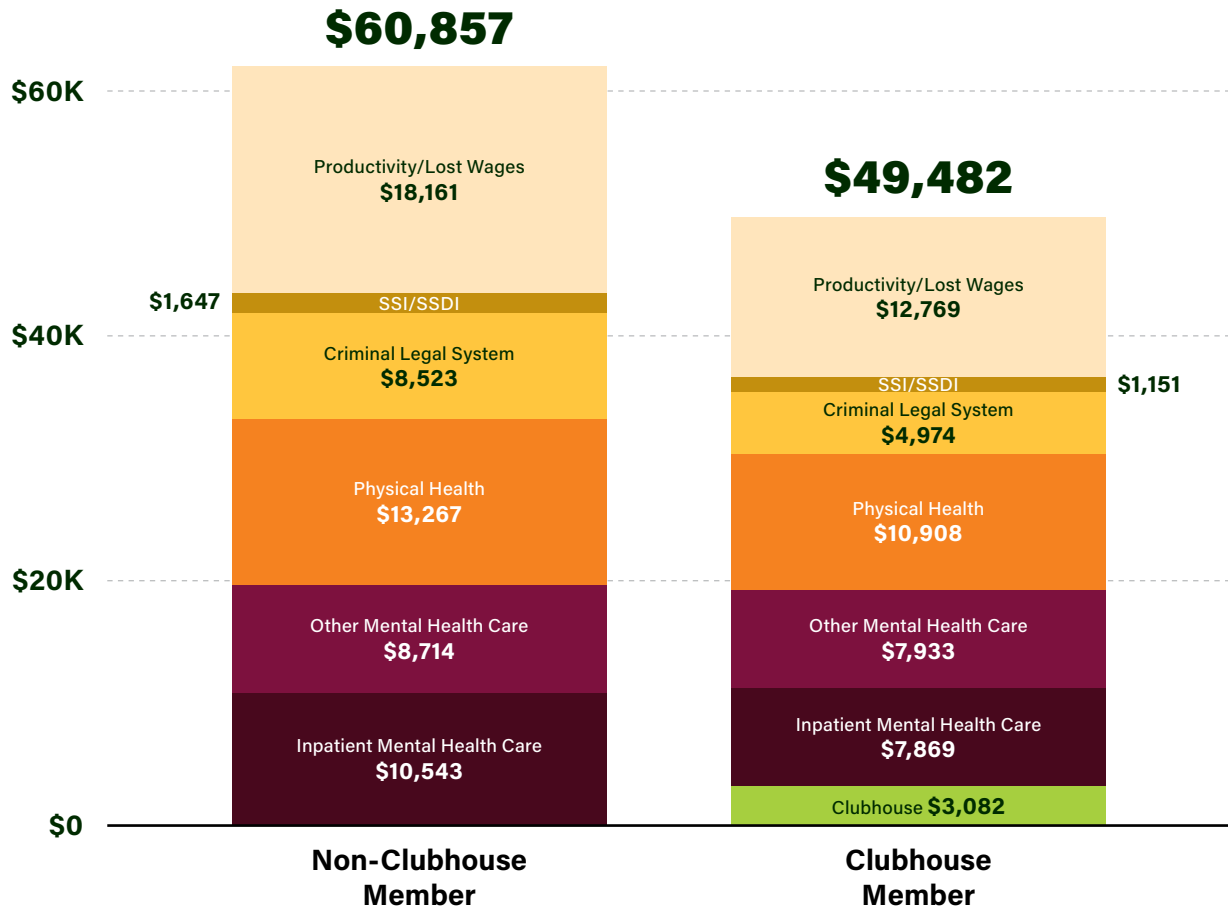
The selected frequency of attendance (3 visits per month) and duration (4 years) represents a prototypical clubhouse member.[7] Clubhouse operational costs naturally increase with more frequent attendance based on a simple calculation of $83 per visit (Solis 2016). Prior studies show that each additional day of clubhouse attendance per month is associated with a 2-3 percent reduction in health care costs (Solis 2016) and each additional year of participation with a roughly 3 percent reduction in hospitalization costs (Russell 2021), findings that we've extrapolated to estimate the impact of clubhouse attendance across other categories of cost.

In this example, clubhouse membership is associated with lower costs in every category and substantially lower productivity, criminal legal system, inpatient mental health care, and physical health care costs (*see figure 6*). The cumulative cost of $49,482 annually for this clubhouse member, compared to $60,857 for a similar non-clubhouse member, represents an overall annual savings of $11,374.

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7   For a prototypical member, the frequency of attendance is equivalent to the average frequency of attendance in Solis's 2016 study of Clubhouses, and the duration of participation is equivalent to the average duration in Russell's 2021 study. It should be noted that the frequency and duration are not driven by the level of health care needs. The level of Clubhouse attendance (i.e. dosage) in this example reflects the average monthly attendance in Solis's 2017 study of Clubhouses and the average duration of attendance in Russell's 2021 study.

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Figure 6. Cost-Savings for a Clubhouse Member with Average Needs

A clubhouse member with average needs represents an annual savings of $11,374

$60,857

$49,482

	Non-Clubhouse Member	Clubhouse Member
Productivity/Lost Wages	$18,161	$12,769
SSI/SSDI	$1,647	$1,151
Criminal Legal System	$8,523	$4,974
Physical Health	$13,267	$10,908
Other Mental Health Care	$8,714	$7,933
Inpatient Mental Health Care	$10,543	$7,869
Clubhouse		$3,082

Scale: $0, $20K, $40K, $60K

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Economic Model in Action: Cost-Savings for a Clubhouse Member with Schizophrenia and High Needs

Not only are the health care costs associated with schizophrenia significantly higher compared to serious mental illness overall, but individuals living with schizophrenia face heightened levels of social stigma and isolation which, as discussed above, can lead to negative outcomes that drive up other costs.

Years in Clubhouse	Freq of Visits (per month)	Type of SMI	Level of Health care Needs
5	5	Schizophrenia	High Health Care Utilizers

Screenshot of economic model dashboard with variables selected

In this hypothetical example, all selected variables affect cost. Schizophrenia is associated with the highest cost compared to other types of serious mental illness; thus, estimated costs for clubhouse members and non-members are adjusted up accordingly. The selection of "high" health care utilization is also applied, increasing the estimated cost in several categories for both members and non-members.
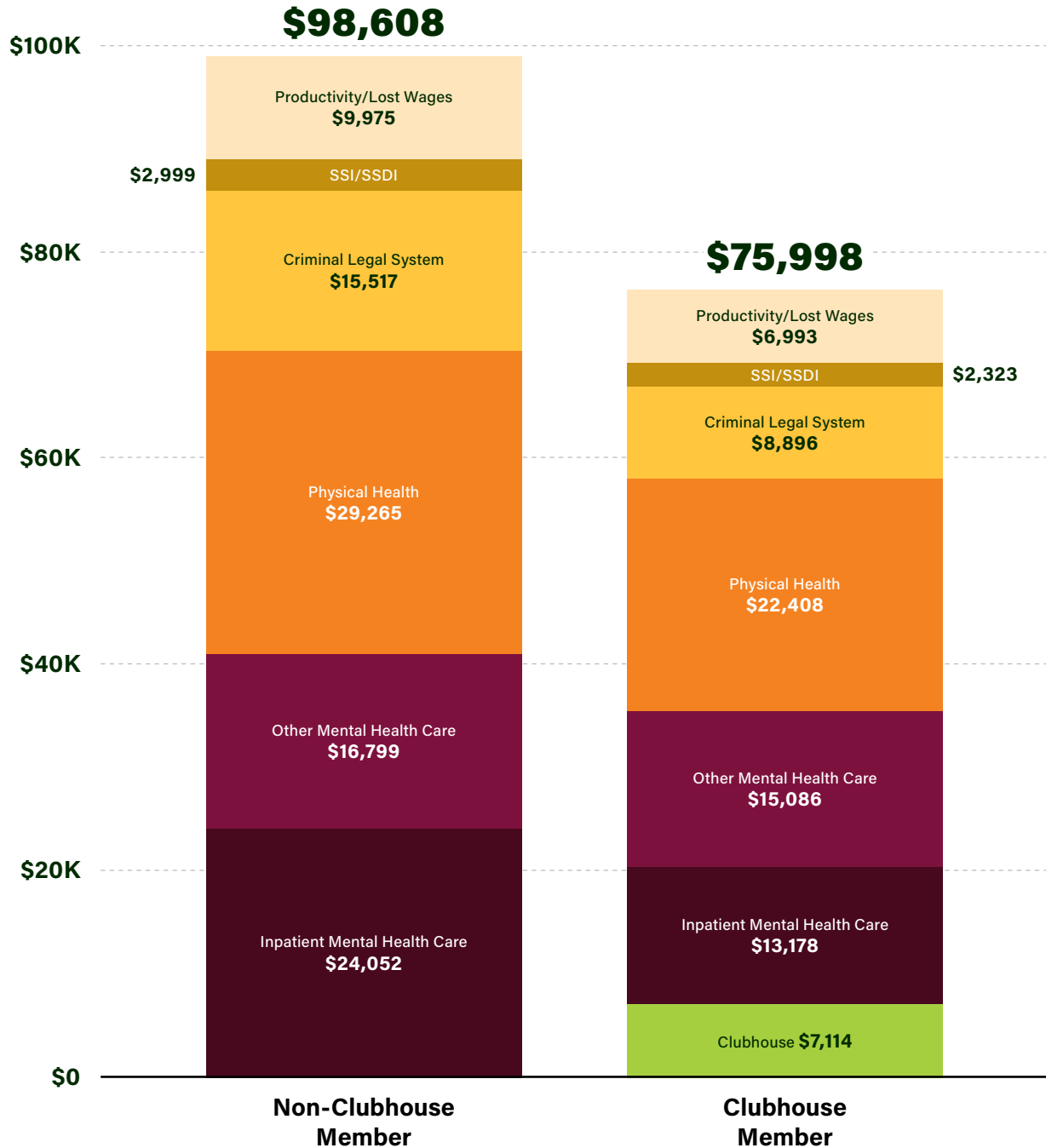
As in the previous example, clubhouse operational costs naturally increase with more frequent attendance. Attendance also affects other costs, even more so than in the first example since the selected frequency of visits (5 per month) and duration of attendance (5 years) is higher.

The annual costs for both clubhouse members and non-members are far greater in this hypothetical example ($75,998 and $98,608 respectively), but the cost-savings associated with membership is also far greater: $22,610 per year (*see figure 7*). In other words, someone with schizophrenia and high health care needs who did not have access to a clubhouse would incur nearly 30 percent greater annualized costs. In this example, costs are lower for the clubhouse member in every category, but savings are driven primarily by steep reductions in inpatient mental health care, contact with the criminal legal system, and unemployment (i.e. lost wages).

While both of these hypothetical examples reflect fairly typical levels of clubhouse attendance (one slightly below average, the other slightly above average), additional analysis not reported in this paper indicates that savings are still significant even at lower dosages, such as a year of attendance, with visits twice a month.

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Figure 7. Cost-Savings for a Clubhouse Member with Schizophrenia and High Needs

A clubhouse member living with schizophrenia with high needs represents an annual savings of $22,610

Non-Clubhouse Member — **$98,608**

- Productivity/Lost Wages $9,975
- SSI/SSDI $2,999
- Criminal Legal System $15,517
- Physical Health $29,265
- Other Mental Health Care $16,799
- Inpatient Mental Health Care $24,052

Clubhouse Member — **$75,998**

- Productivity/Lost Wages $6,993
- SSI/SSDI $2,323
- Criminal Legal System $8,896
- Physical Health $22,408
- Other Mental Health Care $15,086
- Inpatient Mental Health Care $13,178
- Clubhouse $7,114

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Implications for Policy, Practice and Future Research

As the previous two economic case studies show, serious mental illness not only takes an enormous toll on the individuals directly affected, but it also stresses health care and legal systems, is a drain on core public benefit programs, and represents a staggering waste of human potential if left untreated holistically. Our economic model attributes significant cost savings to clubhouses, one of the most well-established and rigorously evaluated forms of social support for individuals living with serious mental illness.

As discussed at the opening of this paper, the estimated savings range from roughly $11,000 annually for a clubhouse member with average health care needs to more than $22,000 annually when serving someone with schizophrenia. Even at the lower level of cost savings, expanding clubhouses to serve just 5% of the 15.4 million Americans living with a serious mental illness (Substance Abuse and Mental Health Services Administration 2022) would yield a savings of roughly $8.5 billion annually.

To unlock these savings, health care reimbursement systems — public and private — must embrace a value-based payment model that recognizes clubhouses and other community-based organizations (CBOs) that effectively address health-related social needs (HRSNs). In addition, health care payers are not the only entities that stand to benefit. Our economic modelling shows considerable savings for criminal legal systems. Lower productivity costs (i.e., greater earnings) associated with clubhouses point to the increased tax revenue that flows to cities, states, and the federal government when people with a serious mental illness work and advance professionally. States and the federal government also benefit from somewhat lower social security disability and supplemental income costs.

Investing in what works and is cost-effective also entails funding research and incentivizing collaboration and data sharing across agencies and systems.

In sum, policymakers in government and high-level decision-makers in the private sector should:

- Support the expansion of clubhouses and other CBOs that address HRSNs for people with serious mental illness and that save money by transforming lives.
- Structure new payment models for organizations that reward improvement in social outcomes as well as person-reported benefits in the real lived experiences of people with serious mental illness.
- Promote research and data sharing across agencies and systems.

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Refining the Model and Research on the Horizon

This first version of our economic model provides compelling evidence of substantial cost savings associated with clubhouses, and Fountain House plans to continue to develop and strengthen the model over time. Fountain House will update the model as relevant studies are published and with real-world data generated by clubhouses across the country. Through Fountain House United, an association of 11 clubhouses in 7 states, Fountain House will begin to collect uniform data related to engagement in clubhouses, social needs, and member-reported outcomes. Fountain House United will also explore gaining access to data maintained by public agencies and public-private partnerships to access payer claims and other data. Fountain House plans to develop a user-friendly interface for the dashboard so that people running clubhouses, researchers, and policymakers can use the economic model to conduct their own cost calculations, selecting among possible variables.

Especially as we populate the model with more and more real-world data mined from the network of clubhouses, the model will become a tool for deepening understanding of the clubhouse model. For example, we'll investigate which aspects of a clubhouse are associated most strongly with reductions in costly health care services (e.g., emergency room visits, inpatient care, etc.) and which have the greatest effect on productivity costs by increasing employment. We also explore how clubhouses combat loneliness — through building community and in other ways — and how reducing loneliness leads to reductions in mental health care utilization and other social costs.

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Conclusion

Despite operating against a backdrop of limited research on the social determinants of mental health — the result of historic underfunding — and other challenges, we were able to cull evidence from the most relevant studies to model common costs associated with differing degrees of serious mental illness (i.e. high, average, and low needs) and the cost-savings associated with differing degrees of clubhouse participation.

While these initial findings are exciting and show substantial cost-savings associated with clubhouses, the value of the economic model is greater than any one program. The model deepens understanding of the widespread costs to society in dollars alone of serious mental illness and provides a template for modeling the cost-savings of any promising mental health intervention — a critical step to build support for funding and scaling what works for 15.4 million Americans living with serious mental illness and reduces social costs as a result.

This economic model has clear implications for our approach to health care payment, measurement, and attention to health-related social needs. As public and private payers in the United State push forward new value-based payment (VBP) models, they should ensure that the definition of "value" encompasses the wide range of economic and social benefits. That requires a measurement framework that rewards organizations for individual and social outcomes beyond preventing costly emergency hospitalizations. The economic model described in this paper is an initial version of such a measurement framework and provides important guidance to state and federal governments as they test and assess new approaches to addressing the health-related social needs (HRSNs) of people with serious mental illness.

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Appendix: Economic Model Methodology and Source Notes

Inpatient Mental Health Care Costs

Relevant Research:

I. *Project to Evaluate the Impact of Fountain House Programs on Medicaid Utilization and Expenditures*, Solis et al 2016

II. An Examination of Costs, Charges, and Payments for Inpatient Psychiatric Treatment in Community Hospitals, Stensland et al 2012

Baseline Cost Description:

1. The baseline inpatient mental health care cost is based on the Inpatient Mental Health Care Medicaid expenses from *(Solis et al, 2016)*. The cost is based on the expected inpatient mental health care Medicaid costs of clubhouse participants, meaning the cost of Clubhouse patients less the expected cost reduction from clubhouse participation.

Cost Adjustments:

1. Costs are inflation adjusted from 2016 to 2022 dollars using the US Bureau of Labor Statistics **CPI Inflation Calculator**.

2. Costs are based on 3 cost categories, average health care utilization, high health care utilization, and low health care utilization, as defined in the assumptions.

3. Costs adjusted to reflect the difference in average costs at community-based hospitals between different serious mental illnesses (SMI). SMI categories include Schizophrenia, Major Depression, Bipolar. (Stensland et al 2012)

4. The resulting cost is used in the dashboard.

Assumptions:

1. CPI based inflation adjustment is an accurate adjustment for inpatient mental health care spend. Also assume inflation adjustment from 2016-2022 $ is appropriate adjustment

2. High health care spend is categorized as > $18,000 per year at time of study

3. Low health care spend is categorized as < $18,000 per year at time of study

4. SMI adjustments derived from (Stensland, 2012) are applicable to inpatient costs derived from (Solis 2016)

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Other Mental Health Care Costs

Relevant Research:

1. *Project to Evaluate the Impact of Fountain House Programs on Medicaid Utilization and Expenditures*, Solis et al 2016

2. An Examination of Costs, Charges, and Payments for Inpatient Psychiatric Treatment in Community Hospitals, Stensland et al 2012

Baseline Cost Description:

1. The baseline non-inpatient mental health care cost is based on the non-inpatient Mental Health Care Medicaid expenses from *(Solis et al, 2016)*. The cost is based on the expected non-inpatient mental health care Medicaid costs of clubhouse participants, meaning the cost of clubhouse patients less the expected cost reduction from clubhouse participation.

Cost Adjustments:

1. Costs are inflation adjusted from 2016 to 2022 dollars using US Bureau of Labor Statistics CPI Inflation Calculator.

2. Costs are based on 3 cost categories, average health care utilization, high health care utilization, and low health care utilization, as defined in the assumptions.

3. Costs adjusted to reflect the difference in average costs at community-based hospitals between different SMIs. SMI categories include Schizophrenia, Major Depression, Bipolar. (Stensland et al 2012).

4. The resulting cost is used in the dashboard.

Assumptions:

1. CPI based inflation adjustment is an accurate adjustment for non-inpatient mental health care spend. Also assume inflation adjustment from 2016-2022 $ is appropriate adjustment

2. Non-inpatient mental health care includes pharmaceutical care, ambulatory care, and emergency care (Solis 2016)

3. High health care spend is categorized as > $18,000 per year at time of study

4. Low health care spend is categorized as < $18,000 per year at time of study

5. SMI adjustments derived from (Stensland, 2012) are applicable to non-inpatient costs derived from (Solis 2016)

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Physical Health Care Costs

Relevant Research:

1. *Project to Evaluate the Impact of Fountain House Programs on Medicaid Utilization and Expenditures*, Solis et al 2016

2. An Examination of Costs, Charges, and Payments for Inpatient Psychiatric Treatment in Community Hospitals, Stensland et al 2012

Baseline Cost Description:

1. The baseline physical health care cost is based on the "other" Health Care Medicaid expenses from *(Solis et al, 2016)*. The cost is based on the expected "other" mental health care Medicaid costs of clubhouse participants, meaning the cost of Clubhouse patients less the expected cost reduction from clubhouse participation.

Cost Adjustments:

1. Costs are inflation adjusted from 2016 to 2022 dollars using US Bureau of Labor Statistics CPI Inflation Calculator.

2. Costs are based on 3 cost categories, average health care utilization, high health care utilization, and low health care utilization, as defined in the assumptions.

3. Costs adjusted to reflect the difference in average costs at community-based hospitals between different SMIs. SMI categories include Schizophrenia, Major Depression, Bipolar. (Stensland et al 2012).

4. The resulting cost is used in the dashboard.

Assumptions:

1. CPI based inflation adjustment is an accurate adjustment for inpatient mental health care spend. Also assume inflation adjustment from 2016-2022 $ is appropriate adjustment

2. High health care spend is categorized as > $18,000 per year at time of study

3. Low health care spend is categorized as < $18,000 per year at time of study

4. "Other" Medicaid costs from (Solis 2016) can be described as physical health care costs.

5. SMI adjustments derived from (Stensland, 2012) are applicable to inpatient costs derived from

   (Solis 2016)

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Criminal Legal Costs

Relevant Research:

1. *The Economic Burden of Schizophrenia in the United States* (Kadakia 2022)

2. *The Economic Burden of Bipolar Disorder in the United States: A Systematic Literature Review* (Bessonova 2020)

3. *Cost and cost-effectiveness of hospital vs residential crisis care for patients who have serious mental illness (*Fenton 2002)

Baseline Cost Description:

1. Law enforcement costs related to schizophrenia are estimated from the results of (Kadakia 2022).

2. Law enforcement costs related to bipolar disorder are estimated from the results of (Bessonova 2020).

3. Costs from these 2 studies are adjusted, based on the adjustment factors by SMI type (described previously), to produce approximate general SMI law enforcement costs.

4. The general SMI cost estimates from the 2 studies are then averaged to create an overall, non-clubhouse cost estimate. This value is then used as the baseline, non-clubhouse law enforcement cost.

Cost Adjustments:

1. Each cost is adjusted for inflation based on the US Bureau of Labor Statistics **CPI Inflation Calculator estimates to 2022 dollars**.

2. Estimated Law Enforcement cost is adjusted based on the SMI type using the SMI adjustment factors previously described.

3. Estimated law enforcement cost is adjusted based on the level of health care needs specified. This adjustment is based on a factor derived from the level of health care costs previously described, adjusting for high, low, and average health care needs.

4. The resulting cost is used in the dashboard.

Assumptions:

1. The cost estimates from (schizophrenia, Kadakia 2022) and (bipolar disorder, Bessonova 2020) are representative of general SMI law enforcement costs. It is assumed that the factors used to normalize these costs are applicable. It is also assumed that averaging these costs produces an accurate estimation of overall SMI costs.

2. The inflation adjustment factor used is representative of inflation in law enforcement costs.

3. SMI adjustment factor used is representative of differences in law enforcement costs based on SMI type

4. Health care need adjustment factor used is representative of differences in law enforcement costs based on health care utilization.

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SSI/SSDI Costs

Relevant Research:

1. *The Economic Burden of Schizophrenia in the United States* (Kadakia 2022)

Baseline Cost Description:

1. SSI/SSDI costs related to schizophrenia are estimated from the results of (Kadakia 2022).
2. These results are then normalized based on the Schizophrenia adjustment factor (from SMI adjustment factors, previously discussed).
3. The SMI adjusted result is then inflation adjusted to 2022 $ and used as the baseline, non-clubhouse cost for SSI/SSDI.

Cost Adjustments:

1. Each cost is adjusted for inflation based on the US Bureau of Labor Statistics **CPI Inflation Calculator estimates to 2022 dollars**.
2. Estimated SSI/SSDI cost is adjusted based on the SMI type using the SMI adjustment factors previously described.
3. Estimated SSI/SSDI cost is adjusted based on the level of health care needs specified. This adjustment is based on a factor derived from the level of health care costs previously described, adjusting for high, low, and average health care needs.
4. The resulting cost is used in the dashboard.

Assumptions:

1. The cost estimates from (schizophrenia, Kadakia 2022) and (bipolar disorder, Bessonova 2020) are representative of general SMI SSI/SSDI costs. It is assumed that the SMI factors used to normalize these costs are applicable. It is also assumed that averaging these costs produces an accurate estimation of overall SMI costs.
2. The inflation adjustment factor used is representative of inflation in SSI/SSDI costs.
3. The SMI adjustment factor used is representative of differences in SSI/SSDI costs based on SMI type.
4. Health care need adjustment factor used is representative of differences in SSI/SSDI costs based on health care utilization.

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Productivity/Lost Wages

Relevant Research:

1. Gorman 2012
2. DiMasso 2001
3. SAMSA-2020/SAMSA-2021/SAMSA-2022
4. Insel 2008

Baseline Cost Description:

1. The total loss of productivity due to SMI is estimated based on Insel (2008).
2. This result is divided by the 2019 SMI population (source unknown) to establish a loss of productivity per individual with SMI.
3. This result is adjusted for inflation based on the BIS values.

Cost Adjustments:

1. Each cost is adjusted for inflation based on the US Bureau of Labor Statistics CPI Inflation Calculator estimates to 2022 dollars.
2. Estimated employment cost is adjusted based on the SMI type using the inverse of the SMI adjustment factors previously described.
3. Estimated employment cost is adjusted based on the level of health care needs specified. This adjustment is based on the inverse of the factor derived from the level of health care costs previously described, adjusting for high, low, and average health care needs.
4. The resulting cost is used in the dashboard.

Assumptions:

1. The cost estimates from (schizophrenia, Kadakia 2022) and (bipolar disorder, Bessonova 2020) are representative of general SMI SSI/SSDI costs. It is assumed that the SMI factors used to normalize these costs are applicable. It is also assumed that averaging these costs produces an accurate estimation of overall SMI costs.
2. The inflation adjustment factor used is representative of inflation in SSI/SSDI costs.
3. The inverse of the SMI adjustment factor used is representative of differences in employment costs based on SMI type. This adds an additional assumption, that the difference in cost related to SMI type, will have an inverse relationship on employment cost relative to the impact it has on other costs.
4. Health care need adjustment factor used is representative of differences in SSI/SSDI costs based on health care utilization. This adds an additional assumption, that the difference in cost related to health care utilization, will have an inverse relationship on employment cost relative to the impact it has on other costs. For example, high health care utilization would result in higher criminal justice cost, but lower employment cost.

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