

Living with Disability in the Granite State

VOL. 1 ISSUE 2

POLICY BRIEF: THE CHANGING DYNAMICS OF HOSPITAL CARE FOR MENTAL ILLNESS &
SUBSTANCE USE IN NEW HAMPSHIRE — IMPLICATIONS FOR SUPPORTING CONTINUUMS OF CARE

Brief two of a series highlighting the prospects and challenges for residents to realize their full potential in the Granite State.

This brief is based on a larger, more comprehensive report analyzing New Hampshire's hospital discharge data. To download the full report and learn more about the Access Project, visit us at iod.unh.edu



INSTITUTE ON DISABILITY / UCED
A University Center for Excellence on Disability

The Institute on Disability at the University of New Hampshire was established in 1987 to provide a coherent university-based focus to improve knowledge, policies, and practices related to the lives of persons with disabilities and their families and to promote the inclusion of people with disabilities into their schools and communities.

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Guiding Questions

Over the course of their lives, nearly half of New Hampshire's population is likely to require some level of mental health care or treatment for substance use. To meet the needs of its citizens and to support people to live as independently as possible, it is critical that New Hampshire provides a continuum of care that ensures appropriate levels of health care, including substance use treatment and mental health services.

A continuum of care is based on the premise that all aspects of services, including specialized health care and rehabilitative, social, and residential services are integrated and sufficiently flexible to provide seamless care and support over the lifespan. In an effective continuum of care, services are well coordinated and resources are efficiently utilized.

In considering the continuum of care for people with mental health or substance use treatment needs, the IOD reviewed New Hampshire hospital data; specifically, we looked at the characteristics and needs of persons diagnosed with mental health or substance use conditions who access hospital level care. Questions we sought to answer with the data include:

- ▶ Have the frequency of hospitalizations for mental illness or substance use increased over the last 10 years?
- ▶ How do hospitalization rates vary across the state?
- ▶ What can we learn about individuals who repeatedly seek care for mental illness or substance use?
- ▶ What financial charges are associated with these visits and how have these changed over time?
- ▶ What is the connection between mental illness or substance use and physical health?

In addressing these questions, we seek to better understand the dynamics of hospital care and its implications on public policy. We also hope that our research will provide insight to the other components of the continuum of care for individuals diagnosed with mental illness or substance use.

It is important to note that our research **is not a comprehensive assessment of any one agency or program providing services for the residents of New Hampshire**. It is our hope that this brief will launch further discussion, future research, and action by disability rights advocates, legislators, and the broader public to improve the quality and availability of services across our state.

The Changing Dynamics of Hospital Care for Mental Illness and Substance Use in New Hampshire – Implications for Supporting Continuums of Care

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This document is available in alternative formats upon request

An Introduction to the *Access New Hampshire* Series...

Making New Hampshire an even better place to live is a goal that we all share. For this goal to become a reality depends, in part, on opportunities such as good education and access to jobs with adequate living wages. It also is dependent on helping our citizens, regardless of their age or abilities, to maintain good health and to ensure that they have full access to the supports they need to participate fully in their communities.

The *Access New Hampshire* Series provides an overview to help legislators, state and local agencies, and the broader public understand the extent to which New Hampshire enables all its residents—particularly those living with some form of a disability—to live and participate in their communities. By highlighting key issues—education, health care, employment, and community supports—we hope not only to raise awareness about the barriers confronting individuals with disabilities, but also to initiate a statewide conversation about how to work together to address these challenges. We hope that this series will offer a glimpse of what it means to live with a disability in New Hampshire and encourage continued research and action to ensure that all our residents are included as valued members of their communities.

The contents of this document were in part developed by grants from the U.S. Department of Health and Human Services, Administration on Developmental Disabilities (90DD0618), the New Hampshire Department of Education, and the New Hampshire Department of Health and Human Services, Bureau of Developmental Services (13H080). However, these contents do not necessarily represent the policies or the endorsement of the federal government or the New Hampshire state government.

The Challenge

Service providers in New Hampshire use a broad array of criteria to determine who does or does not qualify for services. The definition of “disability” can vary greatly, depending upon which of the many state and federal agencies are funding specific services or programs. Age is often a critical factor in determining eligibility. Mental health services have different eligibility guidelines for individuals under age 18 than they do for those 18 and older. Individuals with disabilities are entitled to special education, but upon turning 21 may find themselves on a waiting list for services in the adult system. Changes in federal eligibility criteria for Supplemental Security Income (SSI) and state administrative rules that raise income eligibility can result in individuals losing critical services.

Eligibility criteria that differs from agency to agency and program to program makes it difficult for individuals to obtain the services and supports they need to participate fully in their communities. Too often, New Hampshire citizens lose services or experience decreased supports, not because of a change in their needs, but because of gaps in our service systems.

To develop effective public policies capable of addressing the needs of New Hampshire residents, we first must assess the extent to which programs and services are meeting current needs and then determine where gaps exist. This is not easy to accomplish. Although most providers strive to offer services based on nationally recognized “best practices,” many lack the resources to document or prove the efficacy of their interventions. Even with documentation, it is difficult to identify effective programs due to differences in service definitions and accounting measures, reporting tied to federal rather than state standards, and/or data that is difficult to access or too technical for practical application.

The Solution – Step 1: Find the Facts to Identify the Problem

In its policy briefs, the Institute on Disability at the University of New Hampshire aims to achieve a better understanding of the needs of New Hampshire residents across the lifespan. The IOD Living with Disability Series provides an overview of data from agencies across the state, showing documentation of services relative to differing definitions of disability, as well as trends in the population.

For New Hampshire residents with a physical, educational, or mental health disability or who experience life-altering events, we hope to answer the following questions:

- To what extent do existing community supports effectively value and enable the attainment of each individual's full potential?
- To what extent are New Hampshire communities welcoming and inclusive of all their residents?
- In what service areas are supports most effective?
- Where are the greatest challenges to improving services?

Briefs produced for this series are informed by an advisory board whose members include experts in the topic area being examined, as well as advocates for people with

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disabilities. The advisory board helps set direction for the project based on current and emerging issues in New Hampshire. Data selected by the advisory board for review strictly maintains the confidentiality of New Hampshire's residents, provides a statewide perspective, and originates from sources respected for the reliability and quality of their information.

The Solution – Step 2: Create a Circular Flow of Information Among the Public, Advocates, Service Providers, Legislators, and Researchers

The Living with Disability Series is committed to achieving a collective understanding of what is needed to ensure equal access and participation in community life for all New Hampshire residents. In producing this series, we are looking to create an interactive relationship with our readers. We encourage you to share your insights and make suggestions on how we can best move forward in collecting pertinent information and making policy recommendations. To join us in this effort, please visit our website at www.iod.unh.edu.

The Solution – Step 3: Take Action

Living with Disability in the Granite State is just one of many initiatives to improve the lives of citizens in our state. We encourage readers to learn more about supports and services available for people with disabilities in New Hampshire and to become involved in volunteer and career opportunities. Each brief seeks to assist researchers, community organizations, and advocates by identifying emerging questions in the field as well as directing readers to additional data sources and organizations.

Continuums of Care for Individuals with Mental Illness or Substance Use Conditions

An estimated 254,000 of New Hampshire adults and 55,756 children are likely to have experienced mental illness in the past year (NH Center for Public Policy Studies, Aug., 2007). Approximately 11% of children have significant functional impairment due to diagnosable mental or addictive disorders (Shaffer, D., Fisher, P., Dulcan, M. K., Davies, M., Piacentini, J., Schwab-Stone, M. E., Lahey, B. B., Bourdon, K., Jensen, P.S., Bird, H.R., Canino, G., & Regier, D. A., 1996).

Estimates of the prevalence of substance use are no less troublesome. An estimated 15% of the national population will likely experience a substance use disorder (Kessler, Berglund, Demler, Jin, Merikangas, & Walters, 2005). For those who begin abusing substances at an early age, research documents that this is a significant predictor for lifetime drug abuse and alcohol dependence (Grant & Dawson, 2000).

In looking across all DSM-IV criteria for both types of conditions, Kessler, et al (2005) estimate that 46% of us will experience some type of mental health or substance use condition over the course of our lifetimes. When a moderate or severe illness goes untreated, it can impair the person's ability to work, function in school or family, and/or maintain satisfying relationships.

Currently, New Hampshire residents with mental illness or substance use issues can access care through a variety of resources, including: hospitals, primary health care providers, community mental health centers (CMHCs), peer support networks, community service providers, and advocacy groups. New Hampshire mental health services include the following:

- In 2006, hospitals, via specialty, inpatient, or ambulatory care settings provided services to 13,548 individuals with mental illness and 6,602 individuals with substance use conditions (Antal & Mandrell, 2008).
- Primary health care providers offer services to over 100,000 persons each year with mental health diagnoses (NH Center for Public Policy Studies, Aug., 2007).
- New Hampshire's 10 community mental health centers provide essential safety net services which include psychiatric evaluations, medication prescribing and monitoring, psycho-educational services, emergency services, case management, individual and group therapy, employment supports, and residential services. In FY 2006, services were provided to 30,040 adults and 11,313 children (Crompton, 2007).
- Peer support centers provide education about mental illness, support to individuals in crisis, and offer a safe, social environment for individuals with mental health issues. In FY 2007, these centers provided services to almost 3,000 people (Riera, 2008).
- There are a range of community-based organizations that provide mental health services to children and families. Among these, schools have become a major source of mental health care: one in five of Medicaid funded mental health services are provided through schools. In 2005, 4,680 children

received Medicaid-to-School funded mental health related services (NH Center for Public Policy Studies, Sept., 2007).

- Family support and advocacy agencies, such as National Alliance on Mental Illness New Hampshire (NAMI NH) and the Granite State Federation of Families for Children's Mental Health, provide education, support, and advocacy for families. These organizations also advocate at the state and federal level for public policies that support a quality comprehensive mental health service system.

While we can identify available resources, there is little documentation to assess the short- or long-term impact of these services and the degree to which people are able to access *high quality* and *effective* behavioral and substance use care.

Challenges to Providing a Continuum of Care

Congressional passage of the Community Mental Health Act in 1963 provided federal funding for the nation's community mental health service system. In New Hampshire, the 1983 publication of the Nardi-Wheelock Report called for the creation of a statewide system of mental health services and resulted in the State providing support for New Hampshire Hospital residents to return to their communities. As a result of improved access to community-based services, many people with mental illnesses live more satisfying lives, have greater independence, and enjoy stronger connections to their communities. The move to community mental health services is a substantial and positive change from the previous era of institutionalization. The State built its first psychiatric hospital in 1834; for generations New Hampshire State Hospital was the primary provider of mental health services. It was not uncommon for New Hampshire citizens with mental illnesses to spend their entire adult lives within the confines of the institution. As a result of its work in the 1980s to develop a community mental health system, New Hampshire had been recognized as a national model in caring for citizens with mental illness.

Over the past 10 years, however, New Hampshire has been unable to sustain a quality community mental health system. The 2008 report of the New Hampshire-based Commission to Develop a Comprehensive State Mental Health Plan identified several factors that have impacted New Hampshire's ability to provide a continuum of care:

- Increases in spending on mental health treatments has not kept pace with increases in spending on general health care. For example:

- Compensation for treatment of behavioral health diagnoses is made at a lower rate than comparable treatments for medical diagnoses;
- Medicaid reimbursement rates have not kept pace with inflation. While the rates for individual services have increased, the state and federal money expended per person for treatment at mental health centers has been reduced from \$8,243.58 in 1997 to \$4,520.19 in 2007 (NH Center for Public Policy Studies cited in Commission to Develop a Comprehensive State Mental Health Plan, 2008);
- Private insurance has reduced reimbursements and places unfair treatment limitations and financial requirements on mental health benefits;

- Lower rates of compensation experienced by mental health professionals as compared to other health care workers has contributed to high turnover rates at treatment centers;
- Most medical insurance policies do not pay for the coordination of care among physical, mental, and substance use care providers;
- Community-based options for intensive treatment have declined. For example, community resources such as local psychiatric hospital units, group homes with residential treatment, and intensive outpatient services have been shrinking. There is also a shortage of mental health treatment providers in the state, especially in more rural areas;
- The stigma of mental illness continues to be a concern as it prevents people from seeking help. In some cases, general medical practitioners attempt to shield individuals from this stigma by recording diagnoses that reflect physical conditions, rather than mental health conditions such as depression or anxiety disorders.

Other areas of concern cited by members of the project's advisory board include:

- The staff turnover rate at community mental health centers exceeds 20%; there is the potential that in a five-year period the entire staff of a center will have turned over. Reasons for high turnover include: stress associated with the work, inadequate pay, and a statewide shortage of psychiatrists for both adults and children.

- New Hampshire's lack of affordable housing contributes to homelessness. Mental health issues are exacerbated for individuals who are homeless and providing outreach services to this population is particularly challenging.
- The number of community residential beds has not increased in over a decade. In order to provide community-based alternatives to institutionalization, additional beds are needed for individuals being discharged from hospital mental health units.
- There has been an ongoing shrinking of hospital based DRF (designated receiving facility) beds for involuntary emergency admissions –at one point 108 beds were available, currently there are only eight. New Hampshire Hospital is the state's only primary facility that can accept involuntary admissions and then only for those individuals who meet very specific admission criteria as defined by state statute.
- Managed care in the private insurance market has resulted in mental health care that is often episodic with treatment limited to a list of pre-approved services.
- The children's mental health system is fragmented, with services typically provided through local school districts and a patchwork of other private and public providers, making quality oversight and accountability difficult.

A closer look at changes in New Hampshire hospital settings

The challenges detailed here raise the concern that any reduction of services in one part of the continuum will result in individuals seeking care from other providers in the continuum. For example, as availability of community-based accessible services declines, reliance on hospitals to provide emergency care to people with serious psychiatric emergencies is likely to increase.

Data presented in this report reflects information submitted to NH DHHS from the state's inpatient, ambulatory, and specialty hospital care settings from 1997 through 2006. Our data set includes:

Inpatient data on patients at New Hampshire's 26 acute care hospitals, 10 of which currently provide dedicated beds for patients with mental illness. Length of stay for these hospital visits can vary from one to 300+ days.

Ambulatory data primarily for users of emergency departments in New Hampshire hospitals, however, this also may include data on urgent care patients, patients

seen for an outpatient service at a facility or who receive ambulatory surgery, as well as those admitted for inpatient observation. Length of stay for these visits is less than one day. Note that ambulatory care patients admitted for inpatient services are not included in this data.

Specialty data on patients who receive specialized rehabilitative treatment at one of nine New Hampshire hospitals. Length of stay for these hospital visits can vary from one to 1000+ days.

Unless otherwise noted, most of the information provided here relies on the use of the primary diagnostic or E-Code data fields included in a patient's hospital record that identify the reason for a particular hospital visit. The ICD-9 and E-codes used to identify a mental illness or substance use visit were based on a review of the research literature, consultation with health statistics staff, and input from the project's Advisory Board.

The reader should note that the data considered for this brief does not include cognitive and personality changes secondary to medical conditions (e.g., Alzheimer's disease and other dementias, traumatic brain injury, hypothyroidism). Additionally, other areas commonly included in a set of DSM-IV criteria, such as sleep disorders, or conditions that may have a broader social interpretation (including a range of conditions related to sexuality), also are not included. The focus for this brief is on mental health conditions as defined by medically diagnosed conditions of: anxiety, depression, personality disorders, bipolar disorder, paranoia, schizophrenia, other affective disorders, poisoning by substances (e.g. analgesics, opiates, antidepressants), or self-inflicted injuries. Substance use includes conditions related to alcohol abuse and licit or illicit drug use, including alcohol dependence, alcoholic psychoses, drug dependence and psychoses, toxic effects from alcohol, and poisoning from substances. Note that there is a small amount of overlap between codes used to identify mental illness and substance use conditions. These codes, relating primarily to ICD-9 and E-Codes for poisoning by certain substances, account for 10% of conditions defined as mental illness and 25% of conditions defined as substance use among ambulatory care visits in 2006.

Prevalence rates are based on patient counts and have been adjusted to account for population growth estimates provided by the Health Statistics and Data Management Section, Bureau of Disease Control and Health Statistics, Division of Public Health Services, New Hampshire Department of Health and Human Services. Unless otherwise noted, when information on visits (rather than patients) is presented, these numbers are

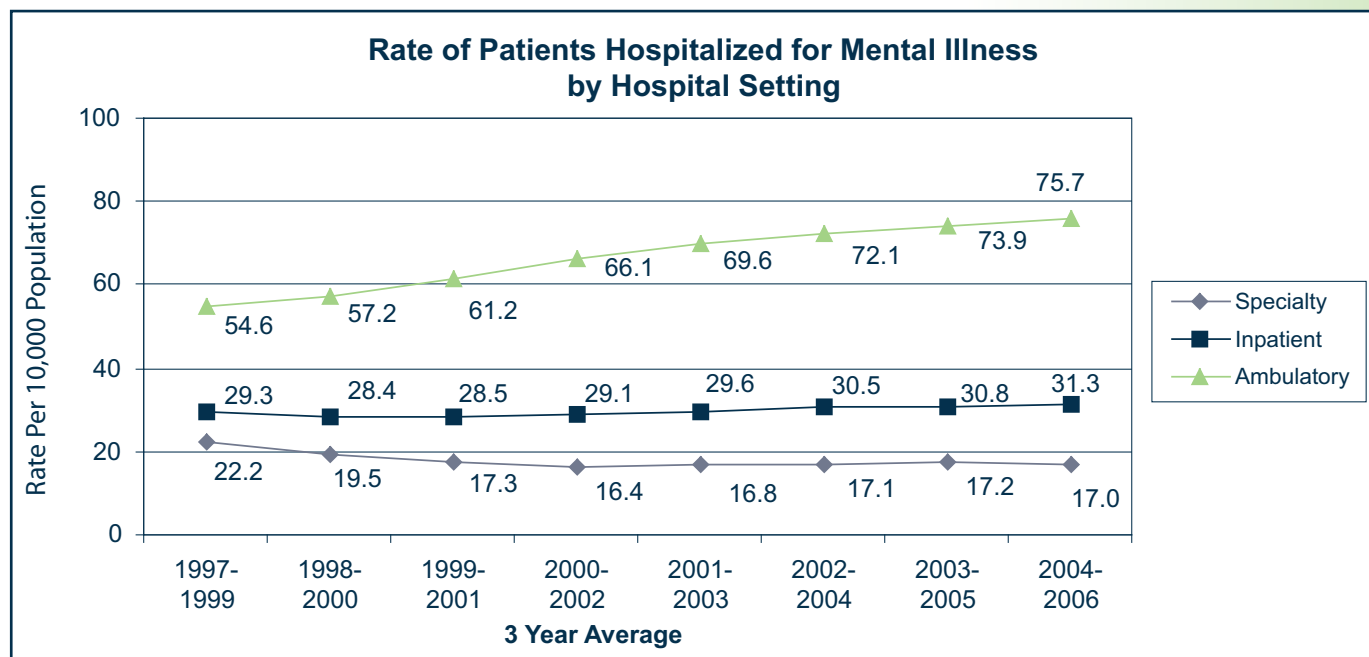
provided as a raw count of visits. Reader's Note: In several instances, numerical data in this report has been rounded to the closest whole number for the reader's convenience. Charges have been adjusted for inflation based on the Consumer Price Index – Urban (CPI-U-RS) with 2006 = 100. **Charge data do not equal actual hospital costs.** The charge information provided on the hospital discharge files provides only a proxy indicator for costs which can be tracked over time. Based on work from the NH Public Policy Center, hospital charges in 2005 were estimated to be more than double actual cost (NH Center for Public Policy Studies, Mar. 2007). The ratio of charges to cost will vary by hospital and procedure (and is likely to change over time).

Hospitalization Rates for Individuals with Mental Illness or Substance Use Conditions

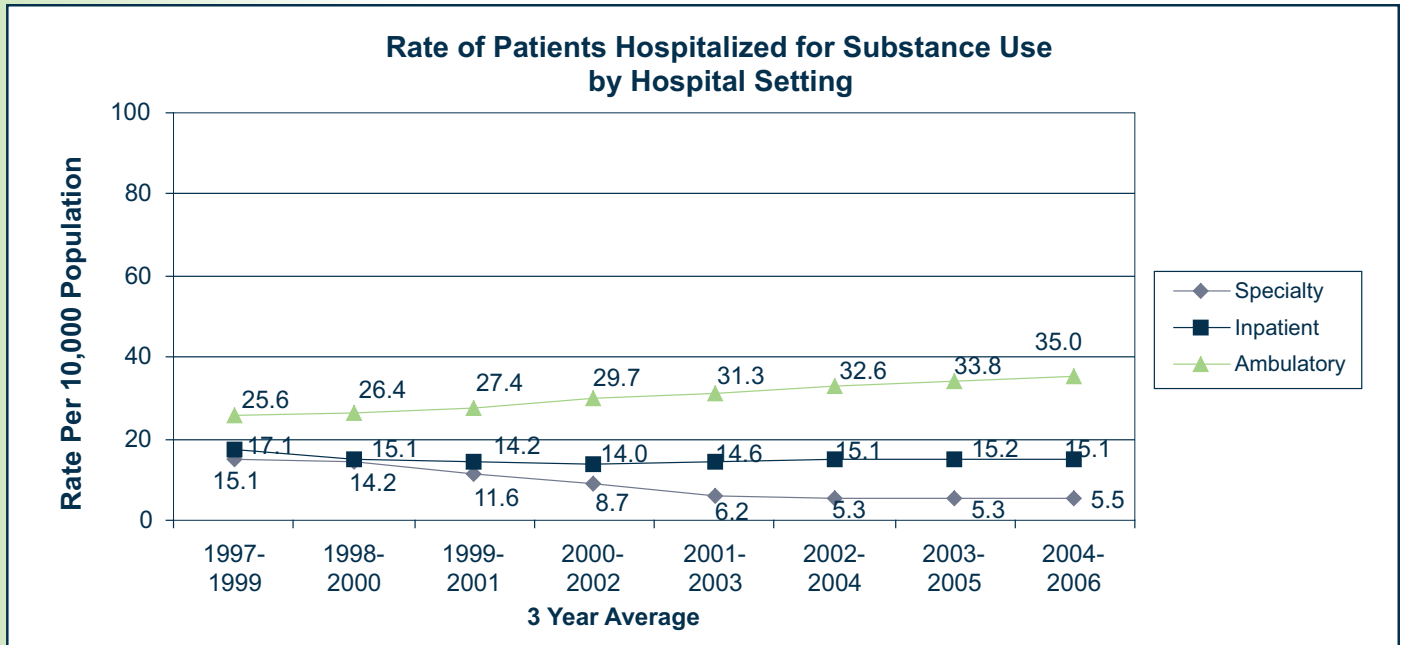
Over the last 20 years there have been substantial shifts in the continuum of care for patients with mental illness or substance use conditions. One of the most notable has been a movement away from institutionalized care to home and community-based care. For example, the closure of specialty hospitals has resulted in a substantial drop in the number of New Hampshire patients seen in specialty care settings. Over the past decade, the following specialty hospitals have closed: Seaborne Hospital (Dover -CLOSED 1998), Seminole Point Hospital (Sunapee -CLOSED 1998), Charter Brookside Behavioral Health Systems (Nashua -CLOSED 2000), and Beech Hill Hospital (Dublin -CLOSED 2001).

Between 1997 and 2006 the rate of all New Hampshire patients, regardless of condition, receiving services in inpatient, ambulatory, or specialty care settings increased by 12% (from 2,622 to 2,943 per 10,000 people). During this same period, patients receiving care across these three settings for mental illness conditions increased 13% (from 89 to 101 per 10,000) and patients admitted for substance use decreased by 4% (from 51 to 49 per 10,000).

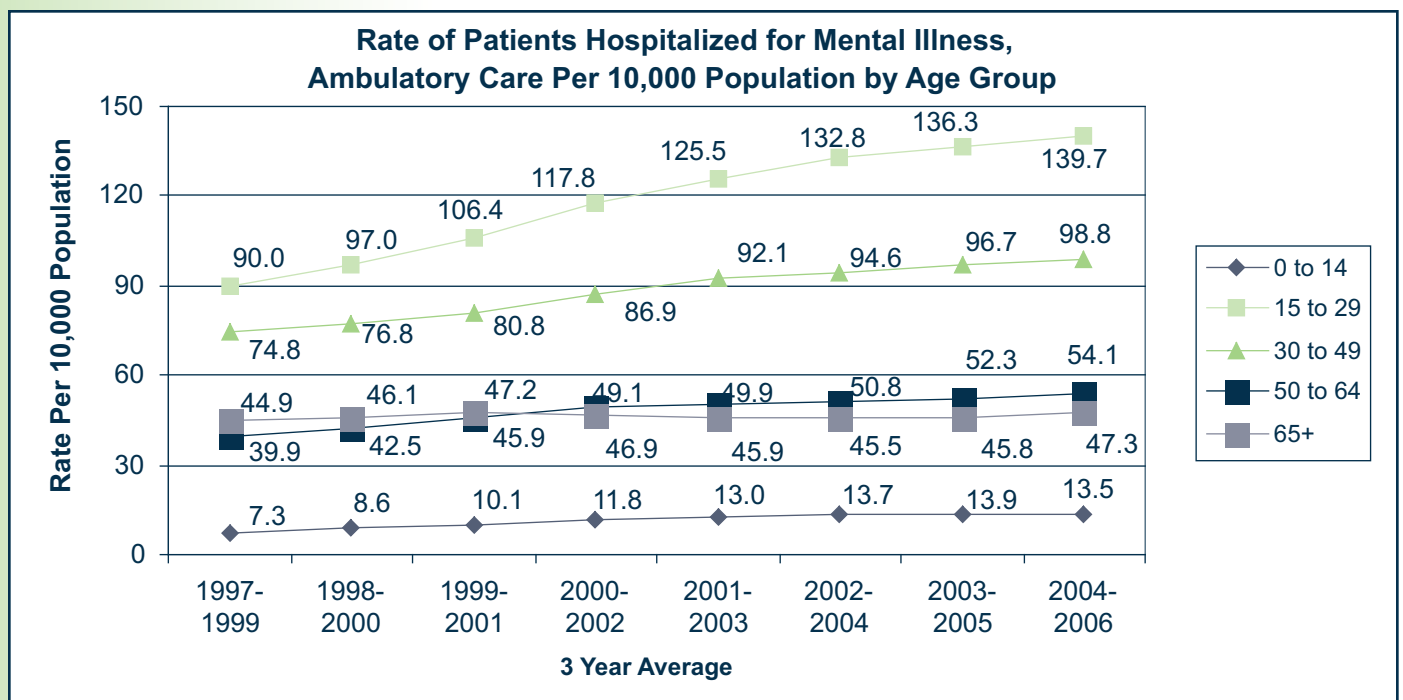
When analyzing this data by hospital setting, we documented a shift in the provision of care from the more intensive specialty and inpatient services to ambulatory care settings.



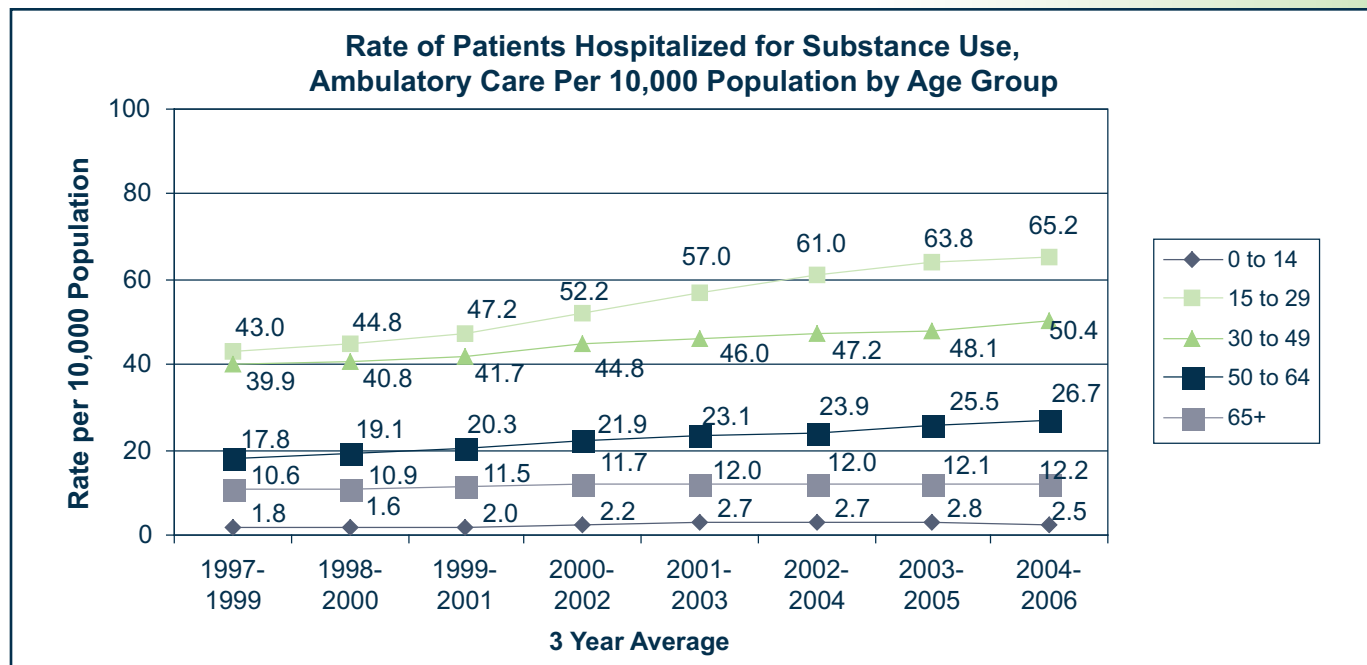
Between 1997 and 2006, hospital rates for mental illness held relatively stable among inpatient settings (averaging 29.7 per 10,000 residents) and dropped in specialty settings (from 22 to 17 per 10,000). Within ambulatory settings, however, the prevalence rate increased substantially, from 55 to 76 per 10,000 people. A similar pattern can be seen among patients with substance use conditions. Between 1997 and 2006, hospital rates for substance use held relatively stable among inpatient settings (averaging 15 per 10,000 residents) and dropped in specialty settings (from 15 to 5 per 10,000). Within ambulatory settings, the prevalence rate increased from 26 to 35 per 10,000 people.



Between 1997-2006, the rate of ambulatory care admissions increased substantially, particularly among those 15 to 49 years of age. Among 15-29 year olds, hospitalizations for mental illness increased from 90 to 140 per 10,000 people (+55%). Among 30-49 year olds, hospitalizations for mental illness increased from 75 to 99 per 10,000 (+32%). Additionally, the hospitalization rate for patients over age 65 has kept pace with population growth; this is also a major concern, as the number of elders is expected to double by 2020.



A similar finding was shown for patients with a primary diagnosis of substance use. The group with the greatest increase was among 15-29 year olds (+22 per 10,000) followed by 30 to 49 year olds (+9). Less than 2 points of rate change were documented among those age 0-14 and those age 65 plus.



Key Findings: What You Need to Know

Between 1997-2006, the rate of ambulatory care admissions for individuals with either mental illness or substance use conditions increased substantially while there was little change within inpatient settings. The high rate of increase in ambulatory care settings among individuals 15-49 years for either of these conditions is particularly concerning. For example, among 15-29 year olds, mental illness hospitalizations increased from 90 to 140 per 10,000 people (+55%). Lastly, although the rates among elderly populations did not increase substantially, the fact that the rate may continue to hold steady over the next 10 years is troubling given the expected doubling of this population by 2020.

Policy Implication: There needs to be an accurate assessment of New Hampshire's mental health system to determine whether it can meet the state's growing demand for effective mental health care and substance use treatment. This assessment should include an inventory of resources such as community mental health centers, hospitals, mental health professionals, and physicians. Recent evidence cited in the 2008 report of the New Hampshire-based Commission to Develop a Comprehensive State Mental Health Plan suggests that our state's mental health and substance use care system needs to take a broad array of steps to ensure we are ready to meet changing demand.

Health Insurance for Individuals Hospitalized for Mental Illness Or Substance Use Conditions

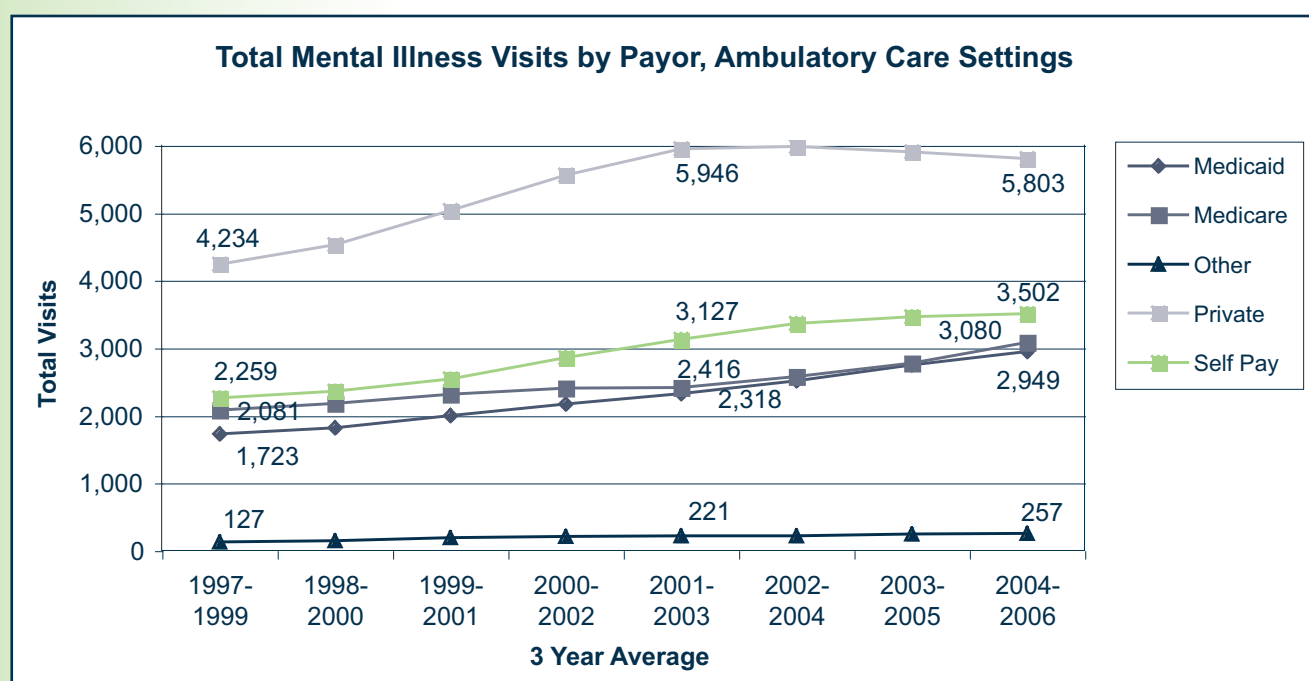
In reviewing utilization rates for hospital services for mental illness or substance use, we tracked the specific service charges¹ and looked at where changes are occurring to determine if there are potential implications for the broader system of coverage and the ability of individuals to access care over time.

For primary diagnoses related to mental illness or substance use, total charges across the three hospital settings have dropped over the past 10 years, from \$144 to \$136 million among patients with mental illness and \$48 to \$44 million among patients presenting with substance use conditions. During this same time period, hospital charges for all conditions have increased substantially, from a yearly average of \$2 billion in 1997-1999 to \$3.6 billion in the 2004-2006 period.

The decrease in charges among patients presenting with mental illness or substance use conditions is in large part driven by the cut in services in specialty care settings and partially offset by changes in charges in inpatient and ambulatory care settings. As noted earlier, the number of specialty care hospital patients has dropped from 22 to 17 per 10,000 among patients with mental illness, and 15 to 5 per 10,000 among patients with substance use conditions.

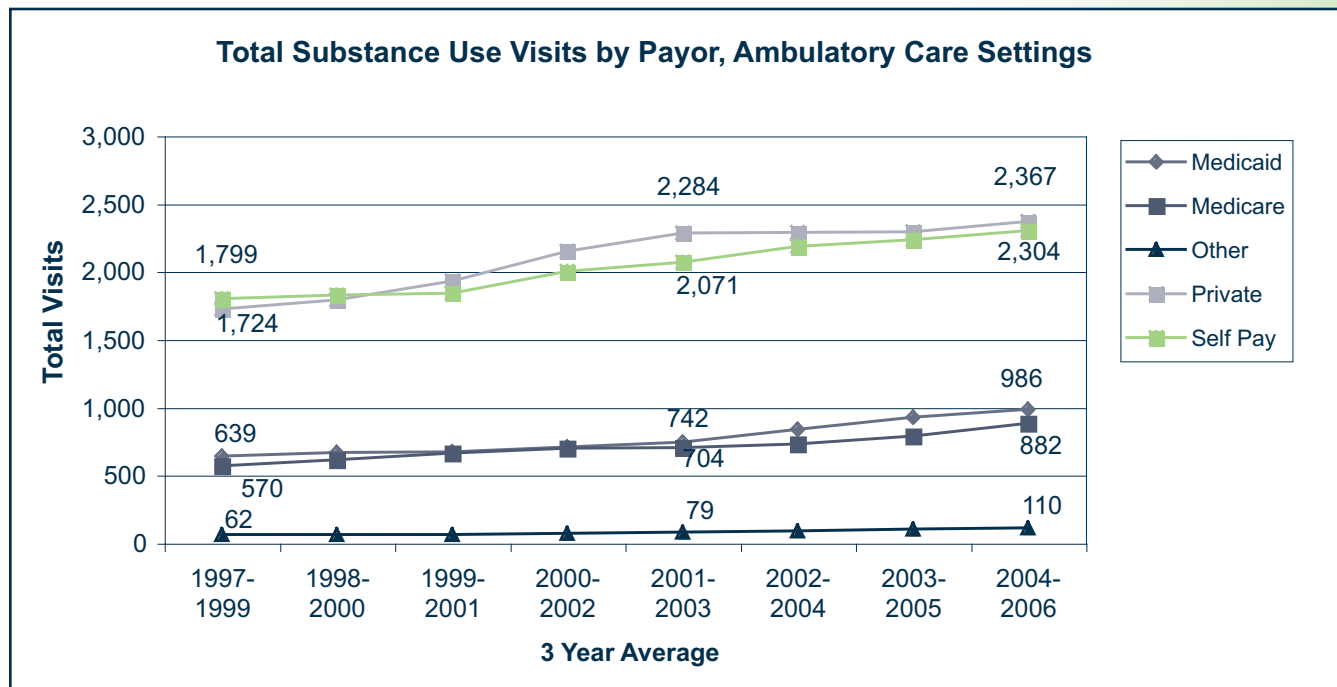
Based on the available data of payment sources for charges incurred, the greatest increase in ambulatory care visits for conditions related to mental illness was among those with private insurance (increased by 1,568 visits), followed by self-pay (1,243), Medicaid (1,226), Medicare (998), and other sources (131).

However, while mental illness visits charged to private insurance demonstrated the greatest increase over a 10 year time period, there has been a decrease in visits charged to private insurance since the 2001-2003 time period. Since then, the greatest increases were for visits charged to Medicare (+664 visits), Medicaid (+375), self pay (+375), and other sources (+37), while visits among private insurers dropped by 144.



¹ Information on charges provides only a reflection of the true cost of providing a service. Depending on the hospital, procedure provided, and year, charges may over-estimate cost by over 100%.

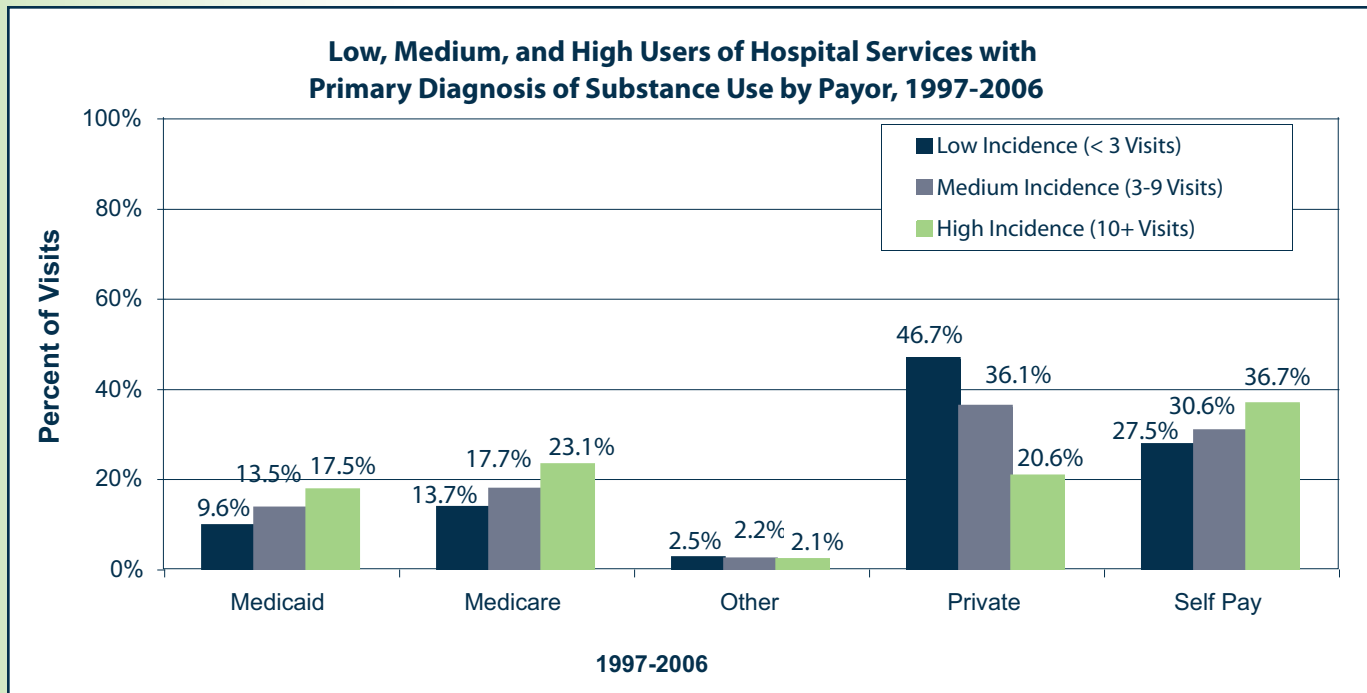
For coverage of visits involving substance use, the greatest increase between 1997-2006 was in private insurance (+643) and self pay (+505), followed by Medicaid (+347), Medicare (+313), and other sources (+48). Similar to patients with mental illness conditions, visits covered by private sources tended to flatten out following the 2001-2003 time period, increasing by only 4% since then. Coverage of these visits by other sources saw a substantial increase over this time period, increasing between 11%-39%.



The recent drop-off of visits among the privately insured raises concerns, as private insurance is by far the largest payor for hospital visits. Across all hospital settings in 2006, 87,800 patients were covered by Medicare (187,251 visits), 54,438 by self pay (100,469 visits), 31,661 by Medicaid (75,172 visits), and 28,133 by other sources (37,784 visits). During this same year, 208,894 patients had their visits covered by private insurance (accounting for 314,809 visits), more patients than all the other groups combined. As a result, we anticipated that coverage for visits by private insurance would increase substantially to meet demands of an increasing patient population. Instead, we documented a drop or a stable count of visits covered by private insurance between the 2001-2003 and 2004-2006 time periods.

In addition to tracking the increase in visits since 1997, it is important to note the dramatic increase in charges applied to each visit. For conditions involving mental illness or substance use in ambulatory care settings, average charges increased by 77% and 67%, with most of the increase occurring since 2001 across all payor groups. In 2001, average charges for mental illness visits were \$625; by 2006, average charges per visit had increased to \$1,184. Similarly, average charges for visits for substance use increased from \$1,024 to \$1,729 in a five year time period. The increase in charges reflects a similar increase among all ambulatory care hospital visits.

The increase in charges attributed to self payors, particularly those who are frequently hospitalized for conditions related to substance use, raises questions about the ability of these individuals to match payments with the increasing cost of health care. For individuals with 10 or more visits across all hospital settings in 10 years, the figure below documents that this group is substantially more likely to have to pay out of pocket than through any other payment source. This likely will result in repercussions to the health care system, both in terms of individual access to effective long-term care and the shifting of coverage for care to other payors such as Medicaid or Medicare.



Key Findings: What You Need to Know

Across all conditions that require hospitalizations, private insurance covers more patients and visits than any other payor. Though still the primary payor for care related to mental illness or substance use conditions, private insurance has covered a smaller proportion of the mental health and substance use visits since 2001. Among patients with a primary diagnosis of substance use who are frequently hospitalized, only 21% were covered by private insurance and 37% were self pay.

Policy Implication: Given that Medicare and Medicaid typically pay less than what is covered by other payor sources and that individuals who self-pay make up a high percentage of those using mental health services, it is difficult to assess patient access to effective long-term care services. The potential for the cost of coverage to be shifted to other payor groups (via increases in premium plans, higher charges for other services, etc.) is high and the likelihood for self-payors to access effective continuous care may be particularly low.

Hospitalizations Among Individuals with Diagnoses for both Mental Illness and Substance Use

When looking at the continuum of care for mental health, it is important to understand the extent to which services are available to address the needs of individuals who are diagnosed with both mental illness and substance use conditions. The Substance Abuse and Mental Health Services Administration (SAMHSA) research on co-occurrence of mental illness and substance use indicates 20-50% of those treated in mental health settings have a co-occurring substance use disorder and 50-75% of those with substance use disorder have a co-occurring mental illness disorder. (2005)

Table 1² shows that 75% of patients with a primary diagnosis of mental illness who came into a hospital setting at least 10 times over a 10 year period also had substance use identified as a secondary or contributing diagnosis for one or more of their 10+ visits between 1997 and 2006. On average, 24% (about one in four) of all visits with a primary diagnosis of mental illness included a substance use condition as a secondary diagnosis.³

Table 1. Patients with Primary Diagnosis of Mental Illness: Inpatient, Specialty and Ambulatory Care, 1997-2006

# of Visits	Patients	Total Visits	Total Charge	Avg. Charge Incurred During Period Per Visit	Avg. Charge Incurred During Period Per Patient	# of Patients with Substance Use Secondary in Any Mental Illness Visits by Patient	% of Patients	# of Mental Illness Visits with Substance Use Identified as Secondary Condition	% of All Mental Illness Visits
1	49,851	49,851	\$255,874,652	\$5,133	\$5,133	8,448	16.9%	8,448	16.9%
2	13,709	27,418	\$158,728,380	\$5,789	\$11,578	4,468	32.6%	5,814	21.2%
3	5,464	16,392	\$103,773,132	\$6,331	\$18,992	2,355	43.1%	3,859	23.5%
4	2,883	11,532	\$74,354,851	\$6,448	\$25,791	1,399	48.5%	2,748	23.8%
5	1,694	8,470	\$61,559,498	\$7,268	\$36,340	925	54.6%	2,092	24.7%
6	1,193	7,158	\$54,007,613	\$7,545	\$45,270	702	58.8%	1,802	25.2%
7	738	5,166	\$37,463,125	\$7,252	\$50,763	466	63.1%	1,350	26.1%
8	543	4,344	\$32,038,639	\$7,375	\$59,003	356	65.6%	1,184	27.3%
9	448	4,032	\$28,076,108	\$6,963	\$62,670	288	64.3%	1,030	25.5%
10+	2,310	45,619	\$319,507,545	\$7,004	\$138,315	1,737	75.2%	11,530	25.3%

As shown above, the overall and average charges among those who repeatedly use hospital services for treatment is quite high. For those with mental illness who visit a hospital only once in a 10-year period, the average charge was \$5,133. However, for patients who have repeated hospital visits, the average charge per visit is almost \$2,000 higher and the per patient charge over this 10 year time period was \$138,315 (a total charge of \$320 million for 2,310 patients). **In other words, 3% of patients accounted for 28% of total charges.**

² To avoid duplicate counts in Tables 1 and 2, the series of “poison codes” which were used to identify mental illness and substance use visits in other sections of this report were removed from the definition for a mental illness visit.

³ For example, for the 1,193 patients who had 6 hospital visits during this period, an average of 1.5 of those visits included a secondary diagnosis of substance use.

An analysis of the data for individuals with a primary diagnosis of substance use documents a similar pattern. Ninety-three percent of repeat patients with a primary diagnosis of substance use have some history of a co-occurring mental illness condition. On average, about 39% of all substance use hospital visits included a mental illness condition as a secondary diagnosis. Charges incurred by this group totaled \$51 million for 856 patients, with an average charge of \$60,000 incurred per patient over 10 years. **Among this group, 2% of the patients accounted for 13% of total charges.**

Table 2. Patients with Primary Diagnosis of Substance Use: Inpatient, Specialty and Ambulatory Care, 1997-2006

# of Visits	Patients	Total Visits	Total Charge	Avg. Charge Incurred During Period Per Visit	Avg. Charge Incurred During Period Per Patient	# of Patients with Mental Illness Secondary in Any Substance Use Visits by Patient	% of Patients	# of Substance Use Visits with Mental Illness Identified as Secondary Condition	% of All Substance Use Visits
1	31,476	31,476	\$152,890,873	\$4,857	\$4,857	10,630	33.8%	10,630	33.8%
2	6,884	13,768	\$66,984,367	\$4,865	\$9,730	3,707	53.8%	5,197	37.7%
3	2,679	8,037	\$38,480,975	\$4,788	\$14,364	1,689	63.0%	2,997	37.3%
4	1,343	5,372	\$25,046,131	\$4,662	\$18,649	931	69.3%	2,119	39.4%
5	778	3,890	\$17,525,868	\$4,505	\$22,527	584	75.1%	1,529	39.3%
6	548	3,288	\$14,553,580	\$4,426	\$26,558	458	83.6%	1,378	41.9%
7	345	2,415	\$10,566,441	\$4,375	\$30,627	294	85.2%	1,037	42.9%
8	246	1,968	\$8,394,166	\$4,265	\$34,123	206	83.7%	790	40.1%
9	187	1,683	\$7,228,499	\$4,295	\$38,655	158	84.5%	650	38.6%
10+	856	14,880	\$51,214,159	\$3,442	\$59,830	794	92.8%	5,924	39.8%

Key Findings: What You Need to Know

Among patients who are frequently hospitalized (at least 10 times over 10 years) with a primary condition of mental illness, 75% had a co-occurring diagnosis of substance use identified as a contributing condition in one out of four of their visits. Total per patient charges for these high-end users over 10 years exceeded \$138,000, with a total charge of \$320 million for 2,310 people. A similar pattern is found when reviewing data on patients presenting with a primary diagnosis of substance use and secondary conditions related to mental illness. This group of 856 people incurred total charges of \$51 million over 10 years.

Policy Implication: The importance of providing effective treatment and support services for individuals with both mental illness and substance use conditions should be a high priority for health care providers. The failure to provide effective treatment will have a range of long-term costs to New Hampshire, both financial and social.

The Co-Occurrence of Conditions Related to Physical and Mental Health

Not only is it important to accurately diagnose and provide effective services for those patients who have both mental illness and substance use conditions, it is also critical for care providers to have an understanding of the interplay between physical and mental health conditions and the impact that this may have on treatment plans, management, and recovery.

To better understand the different conditions that are commonly identified as contributing factors in hospitalizations for patients with a primary diagnosis of mental illness or substance use, we reviewed the nine secondary diagnostic fields attached to each patient's record in the 2004-2006 inpatient⁴ hospital care files. Tables 3 and 4 document the results of this review, where at least 5% or more of visits had a secondary condition in one of 18 possible category areas.^{5 6}

Table 3. Primary Diagnosis of Mental Illness in Inpatient Settings, 2004-2006

Percent of Visits With Specified Secondary Condition

Secondary Diagnosis Condition	Visits
	18,093
Mental Disorders	83.3%
Endocrine, nutritional and metabolic diseases, and immunity disorders	32.6%
Diseases of the circulatory system	26.0%
Symptoms, signs, and ill-defined conditions	24.5%
Diseases of the respiratory system	18.8%
Diseases of the musculoskeletal system and connective tissue	18.7%
Diseases of the digestive system	16.9%
Injury and Poisoning	14.4%
Diseases of the nervous system	13.1%
Diseases of the genitourinary system	8.1%
Infectious and parasitic diseases	5.7%

Among the 18,093 visits with a primary diagnosis of mental illness, over 80% of those receiving services in an inpatient setting had secondary conditions related to a range of other conditions within the mental disorder ICD-9 grouping. One in three had conditions related to endocrine, nutritional, and metabolic diseases and immunity disorders. About one in four had conditions related to diseases of the circulatory system or symptoms, signs, and other ill-defined conditions. Less than 20% had conditions related to: diseases of the respiratory, musculoskeletal, and digestive system, injury and poisoning, diseases of the nervous or genitourinary system, or infectious and parasitic diseases.

⁴ Ambulatory care files were not included in this review as ambulatory care staff are more likely to be focused on the primary reason for a hospital visit. Inpatient staff, however, typically document a fuller case history on a patient and are more likely to consistently capture co-morbid conditions.

⁵ Tables 3 and 4 do not account for patients who present at a different time with a primary condition other than mental illness or substance use. As a result, the presence of co-morbid conditions is likely higher than shown.

⁶ These are broad categories commonly used to group codings within the ICD-9 classification system. In particular, the "Mental Disorders" grouping includes a much broader range of codes to describe mental illness or substance use conditions than is used for the majority of analyses in this report.

Among the 7,516 visits with a primary diagnosis of substance use, most (87%) had secondary conditions which fell under the broad category of mental disorders. Approximately 42% had secondary diagnoses related to symptoms, signs, and ill-defined conditions, 36% had conditions related to endocrine, nutritional and metabolic diseases, and immunity disorders, and 34% had diseases of the circulatory system. About one in four had conditions related to diseases of the digestive or respiratory systems or conditions related to injury and poisoning. Less than 20% had conditions related to: diseases of the musculoskeletal system, diseases of the blood and blood-forming organs, infectious and parasitic diseases, diseases of the genitourinary system or nervous system.

Table 4. Primary Diagnosis of Substance Use in Inpatient Settings, 2004-2006

Percent of Visits With Specified Secondary Condition

Secondary Diagnosis Condition	Visits
	7,516
Mental Disorders	87.5%
Symptoms, signs, and ill-defined conditions	41.8%
Endocrine, nutritional and metabolic diseases, and immunity disorders	36.4%
Diseases of the circulatory system	33.8%
Diseases of the digestive system	26.9%
Injury and Poisoning	25.3%
Diseases of the respiratory system	22.4%
Diseases of the musculoskeletal system and connective tissue	14.1%
Diseases of the blood and blood-forming organs	14.0%
Infectious and parasitic diseases	11.1%
Diseases of the genitourinary system	9.6%
Diseases of the nervous system	8.4%

Key Findings: What You Need to Know

The review of the data showed the types of co-occurring conditions that patients with a primary diagnosis of mental illness or substance use had when admitted to inpatient care. Of note, more than 80% of the patients in each group had a range of secondary conditions related to mental health disorders, indicating a complexity to mental health care that moves beyond simple descriptors of people as “depressed” or “bipolar”. Equally important, each group presented with a range of secondary conditions representative of a broad array of physical health concerns, including diseases of major body systems (e.g. circulatory, respiratory, digestive).

Policy Implication: Historically, training for physicians has encompassed treating co-occurring physical conditions, however, little emphasis has been placed on the interaction between mental health and physical health. While recent training efforts have sought to correct this, much still needs to be done to ensure that health concerns related to mental illness or substance use are regularly incorporated into patient treatment plans. Best treatment practices take into account the whole person, including physical and mental health needs. Health care staff require additional training to ensure that they are able to develop health care plans for those patients with mental illness, substance use, and other health conditions.

Inpatient Care Visit Rates by Town

The continued growth in utilization of ambulatory care and the relatively stable utilization rate for inpatient hospital visits raise questions as to whether or not New Hampshire citizens who need mental health and/or substance use services are receiving care at a level and frequency that meets their needs and enables them to be fully participating members of their communities. For example, it is not necessarily a negative finding that emergency departments are more likely to be used than they were 10 years ago. To the extent that people going to emergency departments receive the appropriate services and/or referral to other services, this could be interpreted as a positive finding. While we currently do not have adequate information to determine whether or not these facilities are appropriately or inappropriately utilized, there are some implications that we can draw from the data.

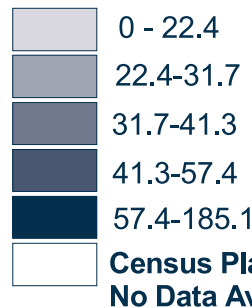
As New Hampshire's population continues to grow, there will be a greater demand for mental illness and/or substance use services. In order to meet this increased demand for services, New Hampshire must identify existing gaps in its mental health system and take steps to develop appropriate services and supports where they are needed.

To understand the extent to which New Hampshire communities utilize hospitals to provide treatment for mental illness or substance use, we worked with Public Health Services at the Department of Health and Human Services. The following maps illustrate the rate of inpatient visits per 10,000 population for patients who have a primary diagnosis of mental illness or substance use. (For a full list of hospitalization rates by town, including ambulatory care rates, please see the Appendix)

As shown in the map to the right, high rates of inpatient care visits were concentrated among those towns that have access to a hospital providing mental health care. Clusters of high hospital visit rates were found in Keene and surrounding communities and towns in the eastern and northwestern part of the state.

Inpatient Care Visit Rates for Mental Illness 2000-2003

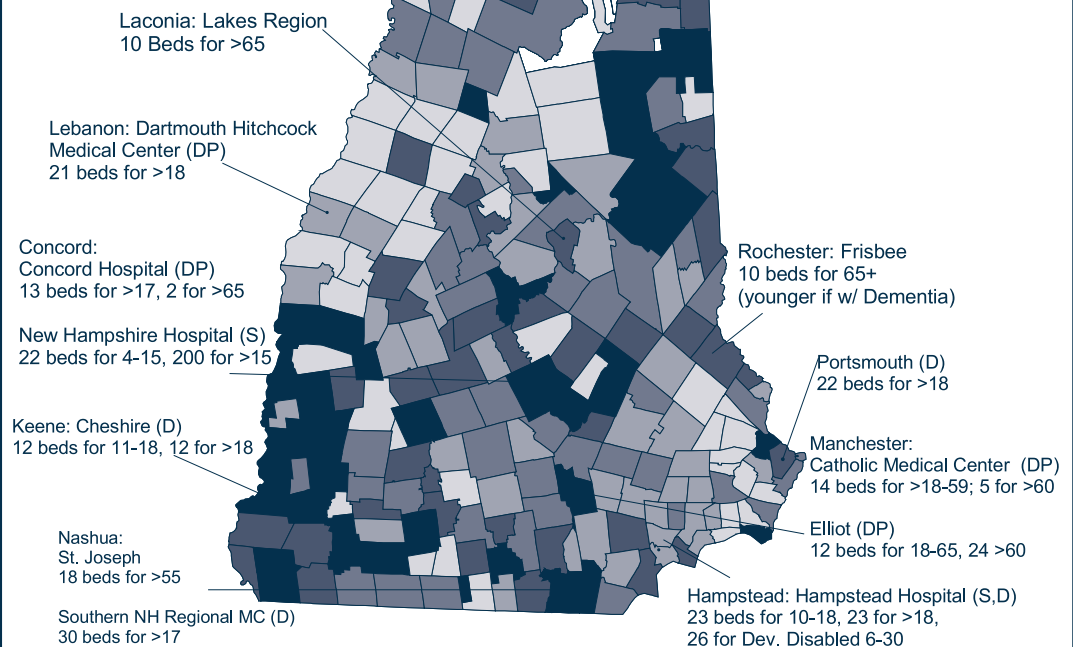
Visits Per 10,000 Population Quintile Distribution



Median Visit Rate =
36.1 Visits Per 10,000 People

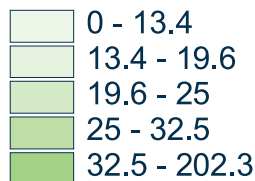
Towns with dedicated hospital resources for mental illness and/or substance abuse and age ranges served are noted on the map

Key:
S = Specialty Care Hospital
D = Some Alc/Drug treatment
DP = Alc/Drug treatment if primary psych condition exists



Inpatient Care Visits for Substance Use 2000-2003

Visits Per 10,000 Population Quintile Distribution



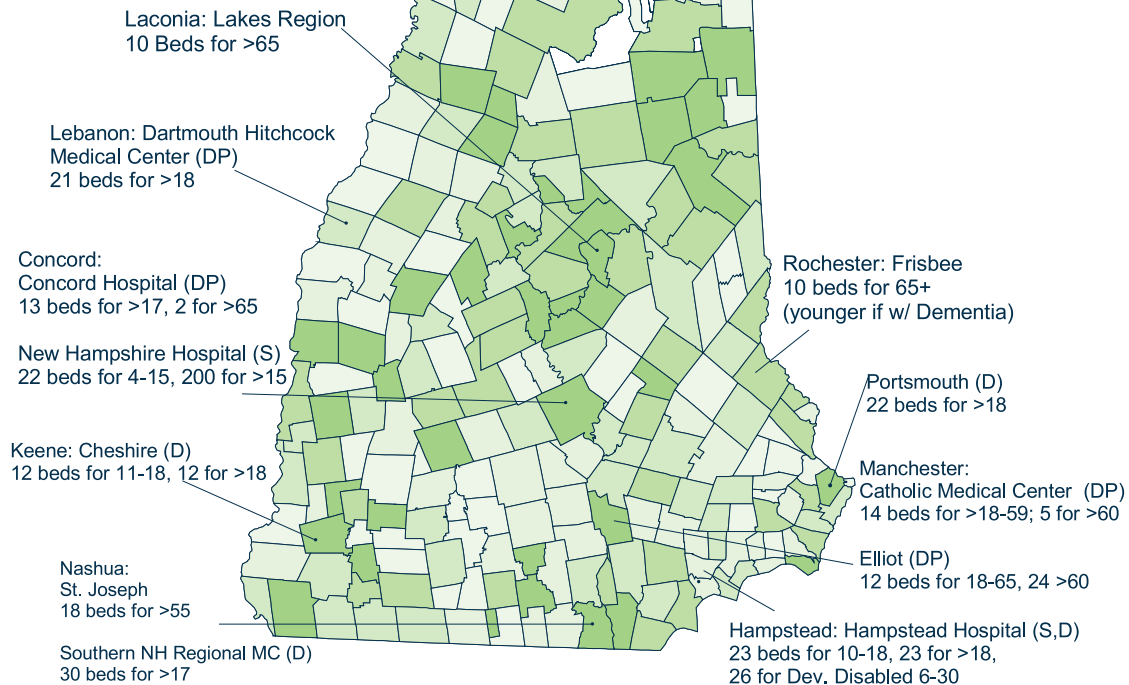
**Census Place or
No Data Available**

**Median Visit Rate =
22 Visits Per 10,000 People**

Towns with dedicated hospital resources for mental illness and/or substance abuse and age ranges served are noted on the map

Key:

S = Specialty Care Hospital
D = Some Alc/Drug treatment
DP = Alc/Drug treatment if primary psych condition exists



The map above shows the rate of inpatient visits per 10,000 population for patients with a primary diagnosis of substance use. Higher hospital utilization rates were more likely to be found in the Lakes Region, on the eastern side of the state, and around Berlin and Gorham in the North Country.

Key Findings: What You Need to Know

A town-by-town review of hospital utilization, as illustrated by the above maps, indicates a number of areas of concern. The absence of dedicated acute or specialty care facilities in the North Country and the high rate of inpatient care to treat mental illness and substance use is particularly troubling. Among patients with substance use conditions, ambulatory care rates appeared to be distributed evenly across the state, while high inpatient rates were concentrated in the central, eastern, and northern areas of New Hampshire. In a review of the data for both ambulatory and inpatient hospitalizations, Claremont, Berlin, and surrounding towns had consistently high rates of hospitalizations for patients presenting with either mental illness or substance use.

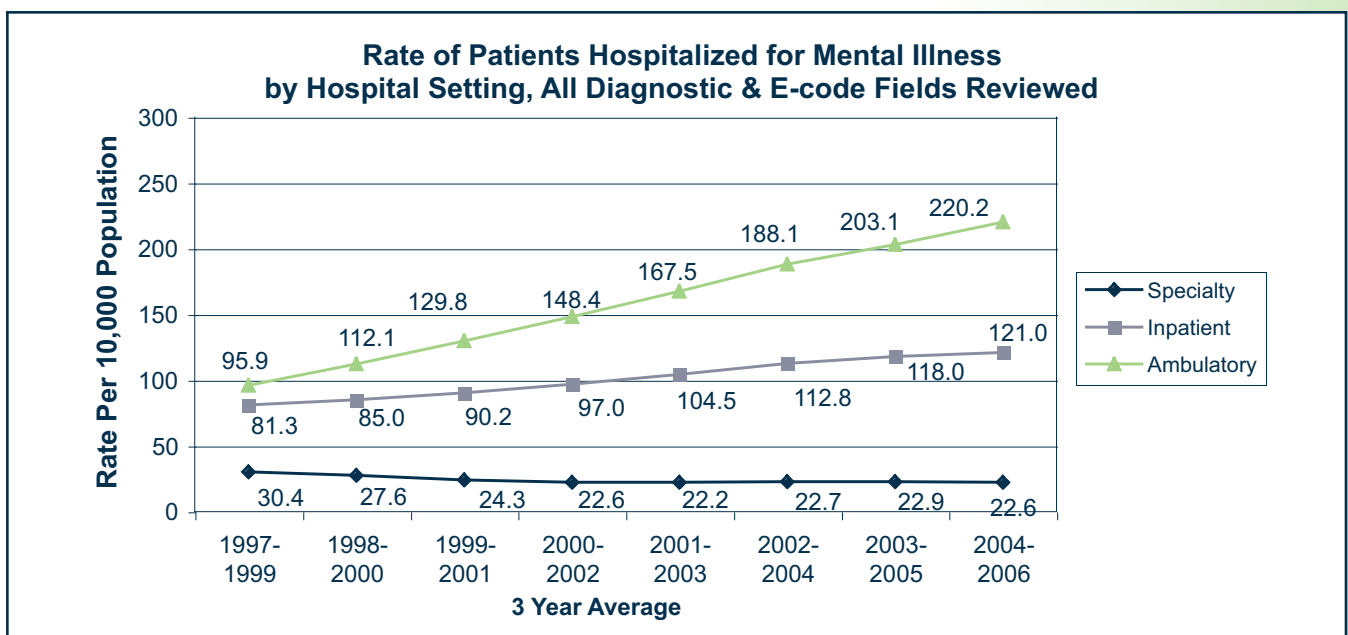
The increased hospitalization rates are representative of just one component of the care continuum for mental health care and substance use. Where the rate of people at the town level is particularly high, it should raise the question of access; not only in terms of geographic distance to hospitals with dedicated services for mental illness or substance use but also to raise questions as to the availability of alternative sources of care at the community level. Ruter and Davis' research (2008) documented that lapses in continuity of care, especially after hospitalization, was a significant contributor to suicide-related mortality and morbidity.

Policy Implication: New Hampshire's lack of dedicated facilities for the treatment of mental illness and substance use conditions makes it difficult for residents in many areas of the state to access appropriate care and treatment. New Hampshire needs to take steps to ensure that effective and self-sustaining supports and services are available at the local level.

Improvements in the Hospital System of Care

Increased identification of mental illness and substance use conditions

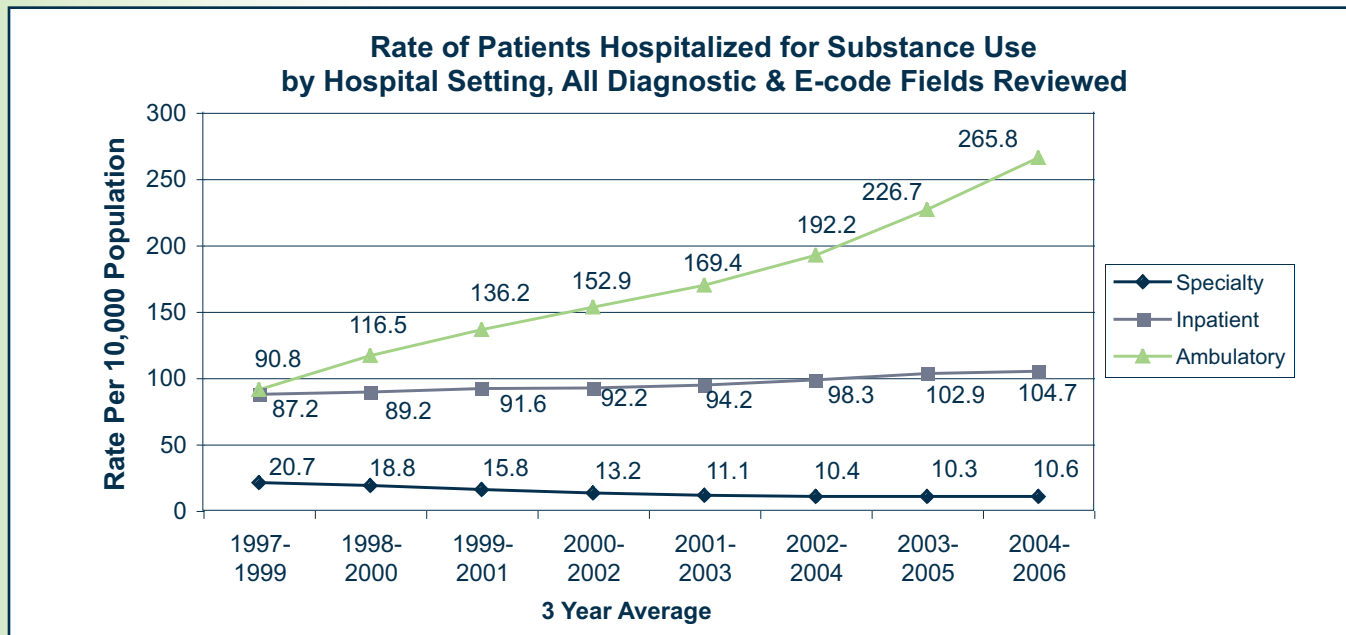
In our research we found that over the last 10 years, physicians in both ambulatory care and inpatient settings have been more likely to identify mental illness or substance use conditions as a secondary factor contributing to an individual's need for hospital care. The project's advisory board does not interpret this finding as a true rise in the prevalence of mental illness or substance use, but rather the improved ability of physicians and other hospital staff to more accurately diagnose mental illness and substance use conditions as contributing factors.



To calculate the prevalence rates shown in the graph on the previous page, we reviewed three types of hospital data fields: the primary diagnostic field, E-code, and nine secondary diagnostic fields for conditions related to mental illness or substance use. While the specialty care hospital rate declined for both mental illness and substance use, rates for inpatient and ambulatory care have seen tremendous increases over time.

Using this expanded review, inpatient rates for mental illness conditions increased from 81 to 121 per 10,000 (+49%) and ambulatory care rates increased from 96 to 220 per 10,000 (+130%).

Similarly, inpatient rates for substance use related conditions increased from 87 to 105 per 10,000 (+20%) and ambulatory care rates increased from 91 to 266 per 10,000 (+193%).



Ambulatory care patients with mental illness or substance use conditions are more likely to be discharged to additional services than all other types of patients.

Table 5. Discharges, Ambulatory Care Settings, 2004-2006

The majority of patients whose ambulatory care visits concerned primary conditions related to mental illness (79%) or substance use (88%) were discharged to home to manage their own care. In contrast, 96% of all patients were discharged to home, self care. Ambulatory care visits for 12% of patients with mental illness and 4% with a diagnosis of substance use resulted in a transfer to another facility. Discharge for other ambulatory care visits by patients with mental illness or substance use were spread among the remaining eight categories.

		Mental Illness	Substance Use	All
Discharge Type	Number of Visits	46,772	19,948	2,068,441
	Home, Self Care	78.6%	87.6%	96.5%
	Intermediate Care	3.8%	2.5%	1.3%
	Patient Left Before Treatment	0.7%	0.6%	0.5%
	Against Medical Advice	1.1%	2.4%	0.4%
	Transfer to Other Facility	12.3%	4.5%	0.4%
	Transfer to Inpatient in Same Hospital	1.1%	1.0%	0.4%
	Home Health Service	0.2%	0.2%	0.2%
	Assisted Living	2.0%	1.0%	0.1%
	Died	0.1%	0.0%	0.1%
	Redirected to Appropriate Provider	0.1%	0.3%	0.0%

Table 6. Discharges, Inpatient Care Settings, 2004-2006

Discharge Type	Number of Visits	Mental Illness 18,093	Substance Use 7,516	All 371,293
Home, Self Care		77.6%	64.0%	63.0%
Home Health Service		2.3%	4.3%	16.2%
Intermediate Care		5.9%	7.1%	14.2%
Transfer to Other Facility		7.8%	14.7%	2.7%
Died		0.3%	1.6%	2.2%
Assisted Living		2.7%	1.8%	0.9%
Against Medical Advice		3.5%	6.6%	0.7%

In contrast to discharges from ambulatory care settings, visits for mental illness were much more likely (78% vs. 63%) to be discharged to self care at home than all visits discharged from inpatient care. Patients with a substance use condition were almost as likely as all patients (64% vs. 63%) to be discharged to self care at home.

Although individuals with mental illness or substance use were more likely to be transferred to another facility than all other inpatient discharges, these patients were much less likely to be transferred to home health services or to intermediate care. This raises questions regarding the availability of a continuum of care at the community level for those with more serious conditions who are admitted to inpatient care.

Of critical note, individuals with mental illness or substance use conditions were five to nine times more likely to be discharged against the medical advice of the attending physician than all patients.

Key Findings: What You Need to Know

Compared to ten years ago, physicians are more likely to identify mental illness or substance use as a contributing condition to ambulatory care visits. The project's advisory board noted that this is most likely due to physicians benefiting from increased training and outreach efforts by medical providers, advocates, and mental health educators. As a result, they are more accurately assessing all of the conditions affecting a person's health. We are hopeful that better diagnoses will increase the likelihood that treatments will be developed that take into consideration all aspects of a person's health care needs.

Individuals with mental illness or substance use conditions who sought care within ambulatory care settings were more likely than patients without these conditions to be discharged to sources other than self care. Referrals to community services may be a sign that the continuum of care is working when emergencies arise. However, findings drawn from the review of inpatient records indicated that patients were less likely to be referred to intermediate care services and, in the case of patients with mental illness, more likely to be discharged to self care at home.

Policy Implication: The examples cited above indicate that increased knowledge among health care providers is having a positive impact on improved care coordination. It will be important to continue to build upon these training efforts to help ensure that New Hampshire residents get the appropriate level of care when and where they need it most. Additionally, the lower rate of discharges to intermediate level care or home health services for individuals receiving inpatient care as well as the increased likelihood to be discharged against medical advice raises a question about the availability of services for those with more intensive mental health or substance use treatment needs.

Summary Discussion

“Early treatment can ameliorate symptoms and prevent the development of more serious conditions in many cases. For most persons, multiple types of treatment have been proven to be effective, but many treatment options are not available due to shortages of staff and the lack of adequate training of providers in improved practices.”

2008 Commission to Develop a
Comprehensive State Mental Health Plan

This brief raises a series of issues related to the care and services that are available for New Hampshire citizens with mental illness or substance use conditions.

In the course of the past decade, physicians have become more sophisticated in their ability to assess mental illness and substance use. Health care providers, as well as the general public, have a better grasp of the complexities associated with these conditions. At the same time, however, our state's ability to deliver appropriate care and treatment has declined while demand is increasing. There has been a steady decrease of mental illness and substance use services within the specialty hospital service system and community mental health resources have been severely strained. Private insurance coverage for mental health services has decreased and reimbursement from Medicare and Medicaid is below the market rate. Between 1997 and 2006, ambulatory care utilization increased by 39% for patients with mental illness and 37% for substance use conditions, as compared to an increase of 17% among the general population. Additionally, much of this increase can be tied to dramatic increases in prevalence rates for those aged 15-29 and 30-49. In this time period, the mental illness and substance use rate for 15-29 year olds increased by over 50% for both condition types and among 30-49 year olds, the increase was 32% and 26%.

The data showing a high number of individuals with single visits to ambulatory care (without repeat visits) and subsequent referral to additional sources of treatment may indicate that those individuals with mild conditions are successfully managing their illness. However, the fact that individuals receiving inpatient services for mental

illness or substance use are more likely to be discharged to home rather than referred to intermediate level services raises a question as to whether or not more intermediate level services are available to those who need them. It was particularly concerning to find that one out of every 15 patients diagnosed with a mental illness and one of every 30 diagnosed with a substance use condition are discharged from inpatient care against the medical advice of the attending physician.

Adequately financing healthcare for patients with mental illness or substance use is an enormous challenge that requires a long-term solution. Since 1997, private insurance coverage of ambulatory care visits for the general population has increased substantially. Yet, over the past five years, there has been limited-to-no growth in private insurance coverage for ambulatory care visits related to mental illness or substance use. Additionally, data on inpatient care indicates that average length of stay for patients with mental illness or substance use has not increased and actually appears to be decreasing. However, since 2001, the average charges for ambulatory care, and even more so for inpatient services, related to mental illness and substance use have been steadily rising.

While healthcare costs have been increasing across all conditions, and are in part reflective of the broader challenges facing our healthcare system, we need a better understanding of the impact that this has on self-insured or underinsured patients who have mental illness or substance use conditions. We found that patients who are frequently hospitalized because of mental illness and/or substance use typically are uninsured and more likely to be covered by Medicare or Medicaid or to be Self Pay. The general population ultimately finances treatment for these repeat patients either through taxes that fund Medicare and Medicaid, or through increased costs in private health insurance premiums. Unfortunately, Medicaid/Medicare reimbursement rates are failing to keep up with the rising costs of providing healthcare for these individuals and private insurance coverage for mental illness and substance use treatment is declining. It is worth noting that even though care coordination improves access to care

and reduces utilization of more restrictive forms of treatment (Bickman, L. cited in Hoagwood, K; Burns, B; Kiser, L; Ringeisen, H.; Schoenwald, S., 2001), this service often is not reimbursed by private insurance.

There needs to be further discussion on how best to address the needs of patients who have co-occurring disorders of both mental illness and substance use. As compared to the general population, these individuals are much more likely to seek hospital services, burdening already overtaxed emergency departments and increasing healthcare costs. Additionally, those with a primary condition of mental illness or substance use often have other secondary health problems. It is critical that healthcare plans and services at the community and state level focus on the needs of the whole person, addressing both physical and mental health conditions.

The data reviewed for this brief raises concerns about the availability of community resources in some regions of the state and the extent to which hospitals and other care

agencies are able to meet the needs of those with mental illness, substance use, and other related medical conditions. The North Country and other rural areas of the state have higher rates of ambulatory and inpatient care usage. Statewide, the availability of facilities that provide specialized mental health or substance use care is shrinking. In much of the state there is a shortage of trained professionals to meet the needs of individuals with mental illness and substance use conditions.

Lack of appropriate and ongoing treatment has consequences not only for individuals with mental illness and/or substance use conditions, it also has a long-term negative impact on families, employers, and the community at large. Given that 46% of New Hampshire residents (over 600,000) are estimated to develop some sort of mental illness or substance use condition during the course of their lifetimes, immediate and substantive steps should be taken to implement an effective continuum of care that efficiently meets a range of mental, physical, and substance use care needs.

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Mental Illness and Substance Use: Opportunities for Research and Discussion

- 1) What changes to the service system will enable researchers, policy makers, advocates and consumers to more accurately understand the true cost (not just the charge) of hospital services for patients with mental illness and/or substance use conditions?
- 2) To what extent do cuts in funding of community-based and specialized treatment centers contribute to increased utilization and costs of ambulatory care for individuals with mental illness and substance use?
- 3) Are current treatment modalities the most cost-effective? For example, could the number of inpatient admissions be reduced if primary care were improved?
- 4) Why is there a growing disparity between prevalence rates using primary vs. all secondary diagnostic fields in ambulatory care settings? What is driving it? Why is the rate of change less severe in inpatient settings?
- 5) To what extent are changes in private insurance coverage and lack of inpatient facilities/services (i.e. not enough Licensed Alcohol and Drug Addiction Counselors), driving health behavior and changes in ambulatory care usage for individuals with mental illness and substance use concerns?
- 6) What happens to people who are discharged to home and/or referred for additional services? Is there a statewide system in place to ensure follow-up? How do the experiences of those receiving ambulatory care differ from those receiving inpatient care?
- 7) For patients on Medicare experiencing the highest average charges per visit... their high charges may in large part be explained by the fact that this group tended to have longer inpatient hospital stays than those with other forms of insurance. What else may be driving the increased charges? Are these persons with co-morbid medical problems as well as substance use conditions? Have there been changes in Medicare payments over time?
- 8) Are there ways to cover the cost for care coordination across systems and will this improve outcomes of treatment and/or reduce hospital utilization and cost?

Selected Resources, Supports, and Services in New Hampshire and Nationally

Available Data

- ▶ New Hampshire Comprehensive Health Information System: <http://www.nhchis.org>
- ▶ New Hampshire Center for Public Policy: www.nhpolicy.org
- ▶ Children's Alliance of New Hampshire: www.childrennh.org
- ▶ NH Department of Health and Human Services Bureau of Behavioral Health: www.dhhs.nh.gov/DHHS/BBH
- ▶ NH Department of Health and Human Services Division of Public Health Services Office of Alcohol, Tobacco and Other Drug Services: www.dhhs.nh.gov/DHHS/ATOD
- ▶ National Survey of Children with Special Health Care Needs: <http://cshcndata.org/Content/Default.aspx>
- ▶ Centers for Disease Control and Prevention: www.cdc.gov
- ▶ National Institute of Mental Health: www.nimh.nih.gov
- ▶ Substance Use and Mental Health Services Administration: www.samhsa.gov
- ▶ National Institute on Drug Abuse: www.nida.nih.gov
- ▶ Institute of Medicine. Quality Chasm Series: Improving the Quality of Health Care for Mental Health and Substance Use Conditions, 2006: www.iom.edu
- ▶ Mental Health: A Report of the Surgeon General: www.surgeongeneral.gov/library/mentalhealth
- ▶ The President's New Freedom Commission on Mental Health, Achieving the Promise: Transforming Mental Health Care in America, 2003: www.mentalhealthcommission.gov

Advocacy Groups

- ▶ NAMI NH-National Alliance for Mental Illness: www.naminh.org or 603-225-5359
- ▶ New Futures: www.new-futures.org or 603-225-9540
- ▶ Granite State Federation of Families for Children's Mental Health: www.ffcmh.org or 603-785-7948
- ▶ Parent Information Center: www.parentinformationcenter.org or 603-224-7005
- ▶ NH Governor's Commission on Disability: www.nh.gov/disability or 603-271-2773
- ▶ Council for Children and Adolescents with Chronic Health Conditions: www.ccachc.org or 603-225-6400
- ▶ Granite State Independent Living: www.gsil.org or 603-228-9680

Appendix:

List of Hospitalization Visit Rates Per 10,000 People for Mental Illness/Substance Use by Town, 2000-2003 Hospital Discharge Data

Town	Mental Illness Ambulatory Care Visit Rate	Mental Illness Inpatient Care Visit Rate	Substance Use Ambulatory Care Visit Rate	Substance Use Inpatient Care Visit Rate
State Median	158.3	36.1	37.5	22
Acworth	408.8	152.9	55.9	47.1
Albany	212.1	70.7	29.8	37.2
Alexandria	123.0	36.7	38.6	29.4
Allenstown	170.4	52.4	44.8	21.9
Alstead	183.1	72.5	25.4	30.5
Alton	173.4	38.3	35.6	23.4
Amherst	118.3	36.4	32.1	17.1
Andover	192.2	37.3	37.3	28.0
Antrim	189.2	52.3	36.2	17.1
Ashland	252.1	33.1	90.4	44.6
Atkinson	128.4	23.2	30.6	16.2
Auburn	85.4	30.6	28.5	15.5
Barnstead	179.4	45.5	32.7	30.3
Barrington	170.7	20.2	48.1	19.9
Bartlett	151.3	36.0	29.7	25.2
Bath	188.1	19.4	24.9	11.1
Bedford	99.1	40.0	24.8	14.4
Belmont	220.3	35.6	59.7	50.3
Bennington	163.4	45.7	28.1	8.8
Benton	119.8	31.9	39.9	8.0
Berlin	252.1	185.1	75.1	77.8
Bethlehem	149.2	42.3	47.9	22.3
Boscawen	161.2	54.2	36.1	19.4
Bow	114.4	33.1	22.3	17.5
Bradford	236.6	52.4	60.8	27.0
Brentwood	150.1	25.3	52.8	13.4
Bridgewater	121.4	14.9	24.8	22.3
Bristol	225.0	54.2	47.6	45.2
Brookfield	147.3	39.8	87.6	11.9
Brookline	126.6	30.9	32.7	17.8
Campton	184.9	23.7	41.9	31.0
Canaan	196.9	18.0	36.1	26.3
Candia	116.4	40.7	35.7	27.7
Canterbury	136.9	20.6	26.7	20.6
Carroll	180.8	43.4	79.5	28.9
Center Harbor	276.8	77.7	51.0	46.1
Charlestown	187.6	57.5	49.7	28.5
Chatham	392.0	57.4	47.8	9.6
Chester	133.3	28.4	36.7	19.6
Chesterfield	101.0	50.5	30.4	19.4
Chichester	55.9	16.9	13.7	6.3
Claremont	342.2	115.5	106.6	47.8

Appendix continued

Clarksville	85.2	25.6	0.0	51.1
Colebrook	274.3	94.3	75.0	33.2
Columbia	53.1	16.6	6.6	6.6
Concord	370.9	101.1	78.1	37.7
Conway	399.7	114.5	76.4	62.1
Cornish	127.6	29.3	38.1	19.1
Croydon	91.8	18.4	51.4	7.3
Dalton	192.1	81.2	35.2	29.8
Danbury	218.3	34.5	23.0	36.8
Danville	135.9	38.5	48.7	19.8
Deerfield	125.1	31.1	33.1	20.1
Deering	84.5	24.7	15.6	6.5
Derry	222.4	52.2	64.7	28.2
Dorchester	220.8	42.7	42.7	14.2
Dover	258.6	34.5	91.5	26.7
Dublin	115.0	31.7	31.7	10.0
Dummer	128.7	16.1	40.2	24.1
Dunbarton	99.8	26.5	15.9	15.9
Durham	108.9	13.7	30.5	9.4
East Kingston	126.5	25.3	57.3	17.3
Easton	75.8	9.5	0.0	9.5
Eaton	150.0	6.5	6.5	13.0
Effingham	161.3	49.9	30.7	26.9
Ellsworth	1416.2	86.7	115.6	202.3
Enfield	190.8	25.7	38.5	17.6
Epping	218.6	29.3	64.2	23.7
Epsom	240.1	57.5	55.1	30.8
Errol	228.0	50.7	25.3	109.8
Exeter	241.9	32.6	61.0	25.6
Farmington	291.8	43.1	68.2	24.3
Fitzwilliam	148.1	41.0	36.5	21.6
Francestown	124.2	19.6	19.6	9.8
Franconia	206.2	44.9	44.9	18.5
Franklin	409.6	89.9	87.3	57.9
Freedom	172.4	53.8	51.9	29.7
Fremont	167.7	22.8	41.4	20.7
Gilford	147.7	29.7	28.7	29.4
Gilmanton	199.2	34.1	31.8	18.6
Gilsum	134.9	72.2	25.1	37.7
Goffstown	110.9	32.5	30.5	15.6
Gorham	161.1	56.8	34.5	34.5
Goshen	180.3	85.2	81.9	49.2
Grafton	220.4	11.0	39.7	13.2
Grantham	131.4	21.0	39.8	16.6
Greenfield	201.3	52.9	32.3	5.9
Greenland	198.6	27.9	39.3	29.5
Greenville	206.4	80.3	77.0	43.5
Groton	177.1	10.7	37.6	16.1
Hampstead	147.4	28.5	33.8	13.6
Hampton	211.2	35.2	67.4	30.6
Hampton Falls	141.8	19.3	36.1	15.5
Hancock	124.2	32.5	25.4	22.6
Hanover	74.0	20.0	23.7	9.7

Appendix continued

Harrisville	101.4	48.4	11.5	6.9
Hart's Location	0.0	0.0	0.0	0.0
Haverhill	271.1	34.4	49.6	23.7
Hebron	209.6	53.7	53.7	32.2
Henniker	141.1	39.3	32.8	15.1
Hill	203.1	36.7	36.7	24.5
Hillsborough	265.8	92.9	59.6	38.8
Hinsdale	149.3	51.8	32.5	21.7
Holderness	159.2	13.9	34.1	24.0
Hollis	103.9	41.5	24.7	16.5
Hooksett	120.4	33.8	45.6	21.4
Hopkinton	138.3	40.9	30.5	20.0
Hudson	186.1	59.8	59.8	33.7
Jackson	158.3	52.8	26.4	14.7
Jaffrey	204.0	65.0	60.0	28.9
Jefferson	219.5	29.6	32.1	27.1
Keene	246.8	103.1	65.9	36.2
Kensington	124.3	14.1	38.4	11.5
Kingston	143.4	25.2	52.9	15.7
Laconia	339.1	48.0	72.4	56.2
Lancaster	331.1	71.6	58.6	38.8
Landaff	146.5	33.3	20.0	20.0
Langdon	37.5	29.2	8.3	20.8
Lebanon	226.9	31.1	49.3	23.8
Lee	35.0	4.1	15.2	1.2
Lempster	139.0	47.2	39.7	22.3
Lincoln	147.7	37.4	41.4	25.6
Lisbon	237.8	46.9	53.2	31.3
Litchfield	134.3	28.2	43.1	26.9
Littleton	190.6	53.4	47.9	23.3
Londonderry	137.3	31.4	39.5	19.8
Loudon	155.9	45.8	29.8	13.3
Lyman	92.0	10.2	20.4	5.1
Lyme	112.5	22.2	11.8	13.3
Lyndeborough	142.2	40.8	30.3	13.6
Madbury	56.6	6.5	19.4	4.9
Madison	225.8	41.3	34.0	34.0
Manchester	246.6	82.6	95.2	38.8
Marlborough	147.5	73.7	36.9	35.6
Marlow	160.9	75.5	29.6	9.9
Mason	123.8	14.7	39.9	12.6
Meredith	181.9	33.6	46.1	36.0
Merrimack	137.6	49.5	39.1	23.2
Middleton	202.9	23.5	30.2	11.7
Milan	151.9	53.7	22.2	53.7
Milford	202.8	67.6	70.7	40.3
Milton	298.9	31.8	55.0	28.7
Monroe	96.8	28.1	37.5	21.9
Mont Vernon	130.3	50.7	38.1	33.4
Moultonborough	128.5	28.0	29.0	21.5
Nashua	257.1	83.1	99.0	51.8
Nelson	81.7	35.0	27.2	54.5
New Boston	99.5	22.6	31.1	17.0

Appendix continued

New Castle	154.7	31.9	27.0	7.4
New Durham	193.5	31.4	38.9	16.2
New Hampton	135.4	25.6	23.2	28.1
New Ipswich	152.6	34.6	43.8	17.3
New London	189.7	46.4	33.5	20.6
Newbury	131.1	29.6	19.7	24.0
Newfields	123.7	12.7	30.1	9.5
Newington	225.0	66.5	76.0	0.0
Newmarket	188.8	20.1	56.4	19.2
Newport	283.7	74.5	103.6	51.2
Newton	157.5	30.5	50.8	20.3
North Hampton	163.6	22.4	61.6	20.2
Northfield	282.0	42.0	47.3	40.9
Northumberland	313.4	68.0	39.2	28.9
Northwood	179.2	36.3	47.0	17.5
Nottingham	146.0	23.2	29.6	13.5
Orange	139.8	0.0	32.9	16.4
Orford	126.8	16.1	13.8	13.8
Ossipee	340.0	94.4	95.0	60.8
Pelham	131.3	38.3	38.3	25.9
Pembroke	267.0	65.1	62.6	24.4
Peterborough	243.4	69.4	55.9	23.5
Piermont	185.0	24.9	56.9	32.0
Pittsburg	139.0	63.7	14.5	17.4
Pittsfield	281.0	74.8	68.1	41.4
Plainfield	110.2	18.4	32.4	11.9
Plaistow	158.3	44.8	49.9	19.8
Plymouth	166.9	28.0	36.2	24.7
Portsmouth	295.8	46.7	87.0	40.4
Randolph	95.6	36.8	36.8	14.7
Raymond	198.8	33.4	68.4	25.0
Richmond	94.5	42.8	24.8	20.3
Rindge	159.7	38.0	56.7	23.6
Rochester	351.5	42.8	78.5	29.2
Rollinsford	223.7	22.6	92.1	17.9
Roxbury	73.6	21.0	42.1	10.5
Rumney	263.7	18.7	45.9	37.4
Rye	175.1	32.4	30.4	21.9
Salem	157.1	46.7	41.7	25.2
Salisbury	169.2	42.3	33.8	29.6
Sanbornton	147.5	24.0	35.0	32.3
Sandown	129.0	26.3	51.6	16.9
Sandwich	113.0	21.1	21.1	26.8
Seabrook	260.6	62.6	87.7	39.4
Sharon	34.5	13.8	6.9	0.0
Shelburne	137.3	26.1	19.6	6.5
Somersworth	306.0	45.7	99.0	28.8
South Hampton	83.9	17.4	40.5	17.4
Springfield	162.9	53.5	48.4	35.6
Stark	151.9	39.2	4.9	14.7
Stewartstown	180.7	34.7	44.6	29.7
Stoddard	105.8	37.0	23.8	7.9
Strafford	121.8	25.8	31.8	10.6

Appendix continued

Stratford	496.5	77.4	72.1	40.0
Stratham	120.7	18.3	33.1	16.8
Sugar Hill	87.8	13.2	35.1	4.4
Sullivan	177.1	66.8	26.7	30.1
Sunapee	152.8	27.1	28.6	18.3
Surry	115.1	40.8	29.7	18.6
Sutton	121.6	23.1	20.0	12.3
Swansey	155.9	57.4	32.7	20.7
Tamworth	232.7	100.0	46.5	32.7
Temple	167.8	18.2	29.2	5.5
Thornton	118.7	9.3	13.3	14.7
Tilton	310.7	69.2	46.6	47.3
Troy	245.0	90.5	55.3	31.4
Tuftonboro	192.1	58.4	41.6	25.8
Unity	55.4	1.6	26.9	3.2
Wakefield	217.6	52.6	37.1	23.4
Walpole	134.6	74.5	28.3	23.5
Warner	186.5	44.0	30.8	32.5
Warren	214.3	28.2	47.9	47.9
Washington	118.4	13.2	13.2	15.8
Waterville Valley	105.6	19.2	48.0	9.6
Weare	143.6	39.9	30.6	17.0
Webster	60.2	22.6	22.6	7.5
Wentworth	116.6	18.9	22.1	22.1
Westmoreland	151.3	86.1	22.2	12.5
Whitefield	269.4	76.6	43.3	27.2
Wilmot	102.9	29.4	21.0	10.5
Wilton	197.7	47.6	56.9	29.1
Winchester	190.5	93.2	56.1	33.4
Windham	122.0	29.3	39.9	20.4
Windsor	108.0	0.0	0.0	12.0
Wolfeboro	258.4	60.6	49.4	28.7
Woodstock	111.1	34.9	69.7	28.3

About the Access New Hampshire Advisory Board

Special thanks and appreciation to the members of the project's advisory board who committed substantial time and energy to providing input, data, and reflection on this project. The role of the group is five-fold:

- 1) Review current collected data and offer suggestions for important data sources;
- 2) Help interpret graphs;
- 3) Suggest overall themes and messages;
- 4) Act as a resource for media inquiries when the report is released, and;
- 5) Provide guidance on needed areas of future research.

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Although advisory board members had multiple opportunities to provide input during the creation of the policy brief, final interpretations of the data as presented in this data brief reflect the views of the Institute on Disability at UNH and may or may not reflect the views of the board members and/or the agencies they represent.



Living with Disability in the Granite State

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