

Minnesota Mental Health and Chemical Dependency Treatment Utilization Trends: 1998 – 2002

In a recent task force report, the Minnesota Psychiatric Society (MPS) describes a shortage of psychiatrists in the state, especially among child and adolescent specialists, and an accompanying decrease in the number of mental health beds available for state residents.¹ Anecdotal reports of full-to-capacity inpatient mental health and chemical dependency treatment beds in the Minneapolis/St. Paul metropolitan area and the subsequent diversion of Twin Cities patients to hospitals elsewhere in the state have frequently appeared in the news media over the past two years. Similar incidents are also documented in the task force report. This issue brief examines aggregate changes in behavioral care utilization in Minnesota between 1998 and 2002, then analyzes whether the volume of care provided to Twin Cities residents by local hospitals, as well as facilities outside the region, has changed.

The primary findings in this issue brief are:

- The number of psychiatrists practicing in Minnesota remained nearly steady between 1998 and 2002.
- In 2001, there were 987 inpatient mental health beds in use at Minnesota hospitals and 422 chemical dependency treatment beds, but with unverified occupancy levels.
- Mental health hospitalizations at twenty-five select Minnesota hospitals with behavioral programs increased 26% between 1998 and 2002, compared with 30% for the US, while average lengths of stay declined in both areas.
- Chemical dependency hospitalizations rose 8% at Minnesota hospitals and 9% across the US from 1998 to 2002, while average lengths of stay declined in both areas.
- The portion of Twin Cities residents being hospitalized outside of the Minneapolis/St. Paul metropolitan area for mental health and chemical dependency increased between 1998 and 2002.
- St. Cloud area hospitals appear to have the largest proportion of Twin Cities residents receiving behavioral care outside the Minneapolis/St. Paul area.

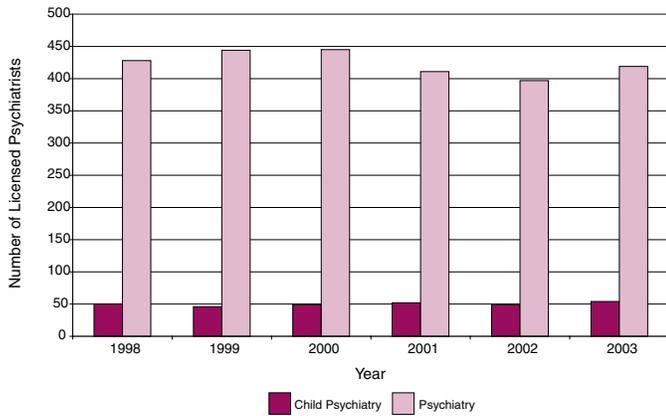
Availability of Psychiatrists

According to medical licensing survey information collected annually by the Minnesota Department of Health (MDH), the number of licensed, practicing, office-based, psychiatrists (425 on average) and child psychiatrists (49 on average) in Minnesota remained nearly flat from 1998 thru 2003² (Figure 1). Eighty-three percent of reporting office-based psychiatrists during 2002 had offices in the state's urban areas while 17% were officed in rural counties. The eleven county Twin Cities metropolitan area was home to 62% of the psychiatrists surveyed, Rochester 13%, Duluth 4%, and St. Cloud with 3%. Fargo/Moorhead and the Grand Forks/East Grand Forks metropolitan areas accounted for the remainder (Figure 2).

Minnesota Mental Health and Chemical Dependency Treatment Utilization Trends: 1998 – 2002

Figure 1

Trend in Number of Licensed Psychiatrists Practicing in Minnesota

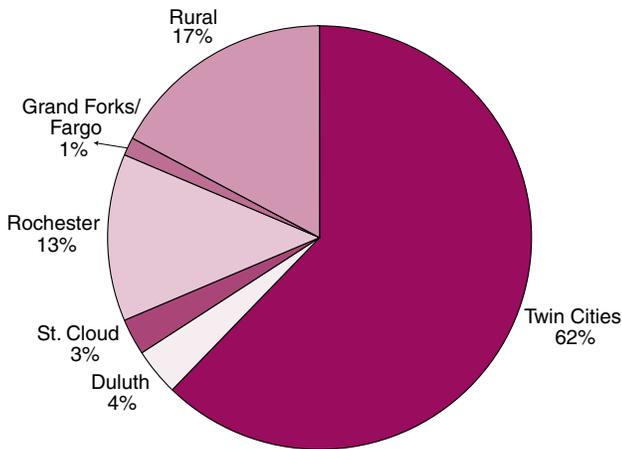


Source: MDH Health Workforce Data Base, Office of Rural Health and Primary Care.

Note: Count of M.D.s with an office location and some hours spent in the state, unadjusted for survey response rate.

Figure 2

Distribution of Licensed and Practicing Psychiatrists Across Minnesota in 2003



Data Source: MDH Health Workforce Data Base, Office of Rural Health and Primary Care.

According to estimates provided to MPS by HealthPartners, Minnesota has 10 psychiatrists per 100,000 persons compared to 16 per 100,000 in the US. The MPS task force report cites another estimate of 4.6 child psychiatrists per 100,000 persons in Minnesota compared with 6.7 per 100,000 in the US.³

Behavioral Beds

Access to inpatient behavioral beds, however, is not solely dependent upon the availability of psychiatrists. The MPS task force report suggests that 10 to 30% of the existing behavioral bed capacity in Minnesota could be utilized more efficiently with a well-coordinated network of outpatient services and timely post-discharge placements. Delays in transfers to regional treatment centers, nursing homes, group homes and residential treatment units can sometimes unnecessarily result in prolonged occupancy of needed inpatient beds as patients wait for placement arrangements to occur.

Inpatient facility licenses granted by MDH to hospitals in the state stipulate the total number of inpatient beds that can be operated, but do not detail the mix of beds allocated to the constellation of clinical services within a hospital, except in the case of a specialty facility (for example, a psychiatric hospital). This means that the precise number of mental health and chemical dependency treatment inpatient beds setup and available in Minnesota on any given day is unknown to MDH, leaving unverified the occupancy levels at existing units and where additional beds are needed, if any. Periodic facility surveys, such as those conducted by the Minnesota Hospital Association (MHA) or MDH, partially fill this information gap, but the information collected can vary depending upon the purpose of the survey.

According to the most recent MHA behavioral bed survey, the number of hospitals with dedicated beds for adult and pediatric mental health and adult and pediatric chemical dependency treatment during 2001 were as follows⁴:

- Adult Mental Health – 31 hospitals, 852 beds (728 urban, 124 rural)
- Pediatric Mental Health – 6 hospitals, 126 beds (126 urban, 0 rural)
- Adult Chemical Dependency – 14 hospitals, 386 beds (353 urban, 33 rural)
- Pediatric Chemical Dependency – 3 hospitals, 46 beds (46 urban, 0 rural)

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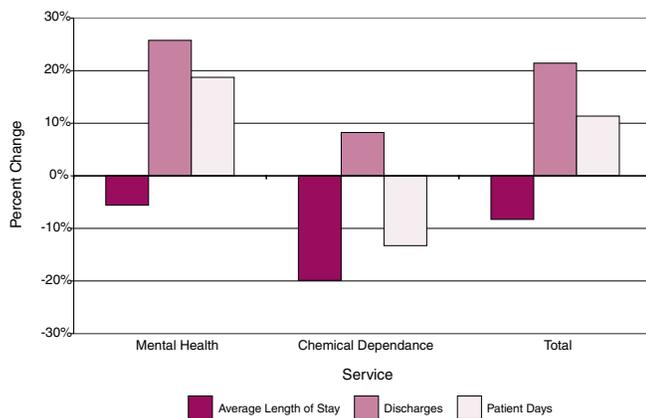
From these results, it is clear that the majority of behavioral beds are located in urban areas of the state with a small number situated in rural Minnesota.⁵ The MPS task force report also documents that several Minnesota hospitals have closed behavioral units over the past decade. The report identifies difficulties in retaining and recruiting psychiatrists, especially child and adolescent specialists as potential factors in these closures. Minnesota's two non-governmental behavioral care facilities closed more than a decade ago.

Minnesota Behavioral Care Utilization Trends

Analysis of the Minnesota Hospital Discharge Database (MHDD)⁶ finds that the number of total hospitalizations for behavioral services, both mental health care and chemical dependency treatment combined, grew 21% between 1998 and 2002, as illustrated in Figure 3. The figure also reveals that the average length of stay at participating facilities decreased 8% while the volume of inpatient days rose 11% between the two years, driven by the increase in the number of hospitalizations. Most of the growth in the volume of overall behavioral care patient days was fueled by the use of mental health services.

Figure 3

Change in Minnesota Behavioral Care Use
1998 - 2002

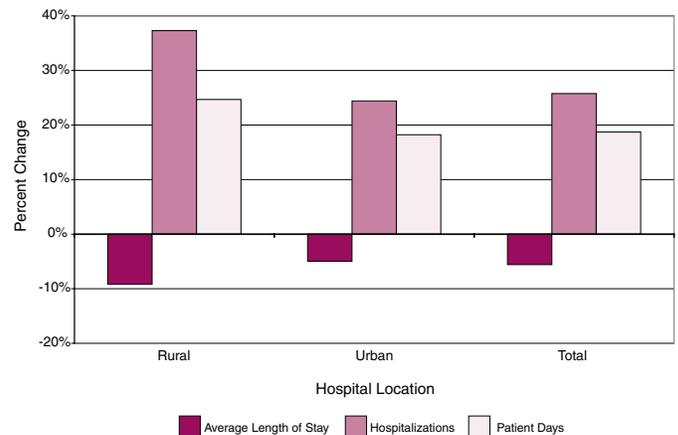


Data Source: Minnesota Hospital Discharge Dataset, twenty-five select hospitals with behavioral programs.

Mental Health Services - Figure 4 shows that the number of total mental health patient days increased 19% between 1998 and 2002. The area experiencing the greatest growth in mental health volume was rural Minnesota, with a 25% increase in rural hospital patient days versus 18% at urban facilities. This mental health service growth resulted from an increasing number of hospitalizations, 37% at rural facilities versus 24% at the urban, while average lengths of stay declined 5% in urban facilities and 9% in rural hospitals. This represents a decline from 8.7 days in 1998 to 8.2 days in 2002 at urban hospitals compared to a drop from 6.4 to 5.8 days at rural facilities.⁷

Figure 4

Change in Minnesota Mental Health Services
Utilization, 1998 vs 2002



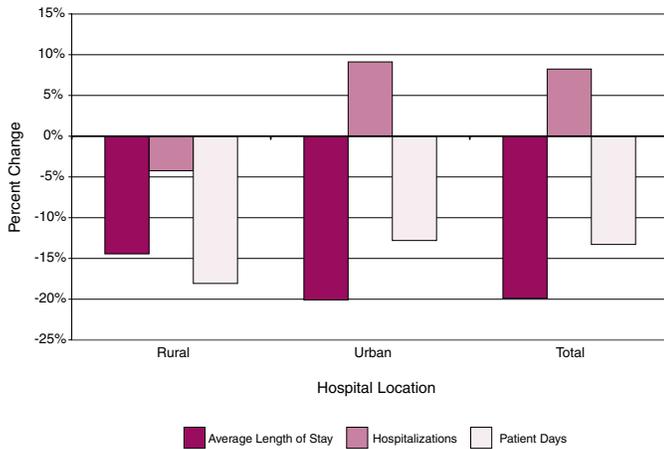
Data: Minnesota Hospital Discharge Database, twenty-five select hospitals with behavioral services programs.

Chemical Dependency Treatment Services - In contrast to the growth in mental health care volumes, overall chemical dependency treatment patient days declined during the study period as seen in Figure 5. A 20% drop in average length of stay resulted in an overall 13% patient day decline despite an 8% rise in hospitalizations. Chemical dependency treatment average lengths of stay fell from 7.7 days in 1998 to 6.2 days in 2002. The increase in hospitalizations occurred exclusively at urban hospitals while rural facilities experienced a decline. Falling lengths of stay were most precipitous at the urban hospitals, 20% versus 14% in rural facilities, yet the average length of stay was still longer at the rural facilities than at the urban hospitals (9 days versus 6 days) in 2002.

Minnesota Mental Health and Chemical Dependency Treatment Utilization Trends: 1998 – 2002

Figure 5

Change in Minnesota Chemical Dependency Treatment Utilization, 1998 vs 2002



Data: Minnesota Hospital Discharge Database, twenty-five select hospitals with behavioral services programs.

The increase in inpatient behavioral care volumes reported above, without a corresponding increase in the number of psychiatrists admitting patients, may be due to several factors. For example, in addition to psychiatrists, other licensed physicians now admit patients for behavioral care, often to medical/surgical units while waiting for a behavioral bed to become available. The MPS task force report further suggests that patients in need of care sometimes may present at hospital Emergency Departments in order to see a psychiatrist sooner rather than wait to see a doctor in office, sometimes after an extensive waiting period in an outpatient setting. Furthermore, Minnesota's population increased 5.3% between 1998 and 2002, and as shown elsewhere, population growth can lead to increases in hospital utilization.⁸

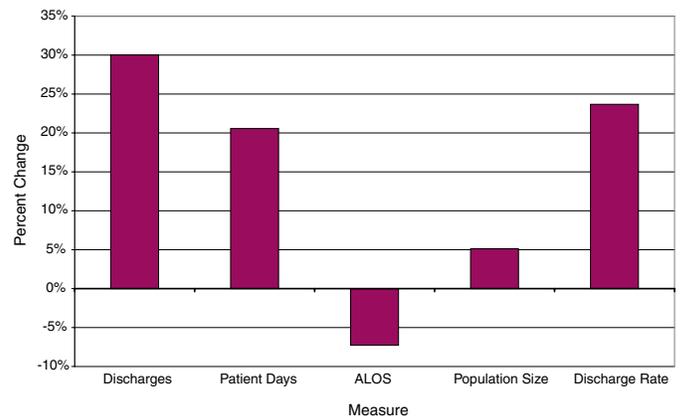
U.S. Behavioral Care Utilization Trends

In the United States, there were 1,893 inpatient psychiatric facilities, both freestanding hospitals and hospital-based units, during 2002, down from 2,089 in 1998, a 12% decline in just four years.⁹ Despite a decline in capacity, the number of hospitalizations for mental health care regardless of site rose from 1.5 million in 1998 to 1.9 million, a 30% increase¹⁰ (compared with 26% in Minnesota), as can be seen in Figure 6. While the U.S. population, like Minnesota,

grew 5%¹¹ over the period, the rate at which patients were hospitalized for mental health care rose from 534 per 100,000 persons in 1998 to 661 per 100,000, a 24% increase.¹² The U.S. inpatient average length of stay for mental health care declined from 8.4 to 7.8 days (Minnesota 8.4 days to 8.0) over the same period, or a 7% drop (Minnesota fell 6%).

Figure 6

Change in U.S. Mental Health Utilization, 1998 to 2002

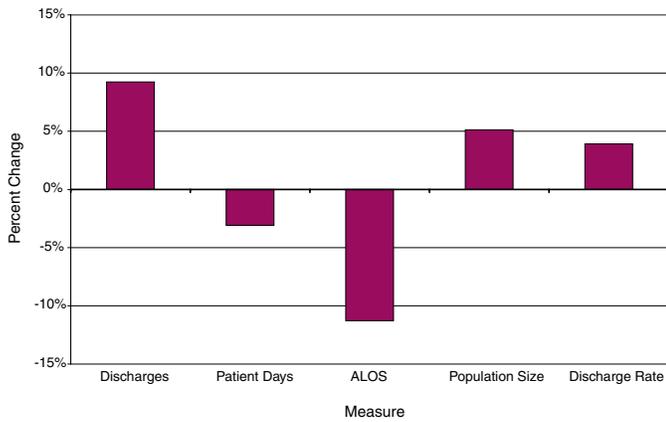


Data: National Hospital Discharge Surveys, 1998, 2002: National Center for Health Statistics, CDC.

Hospitalizations for chemical dependency treatment climbed 9% between 1998 and 2002 in the U.S. (Minnesota rose 8% at hospitals with behavioral programs) as seen in Figure 7.¹³ The decline in average length of stay was much more precipitous than in mental health, falling from 5.4 days in 1998 to 4.8 days, or an 11% fall (Minnesota fell 14%). The rate at which the U.S. population was hospitalized for chemical dependency treatment care increased only 4% over the period, from 179 per 100,000 persons to 186 per 100,000.

Figure 7

Change in U.S. Chemical Dependency Treatment Utilization, 1998 to 2002



Data: National Hospital Discharge Surveys, 1998, 2002: National Center for Health Statistics, CDC.

These changes in both services across the U.S. also reflect the trends in Minnesota, with one exception. U.S. mental health inpatient days increased 21% between 1998 and 2002 versus 19% in Minnesota. Chemical dependency treatment patient day volumes in the U.S. declined 3% between the two years, but fell 13% in Minnesota at the twenty-five hospitals studied. There may be several explanations for this difference. For example, Minnesota is home to some of the most respected and innovative addiction and substance abuse treatment programs in the United States. Treatment modalities developed here may be different from those in the hospitals participating in the National Hospital Discharge Survey. Also, if available treatment beds are in short supply, one way to manage the demand for care is to reduce lengths of stay by discharging patients into outpatient settings as soon as possible in order to make inpatient beds available for patients with a greater need of more intensive care.

Where Are Twin Cities Behavioral Patients Hospitalized?

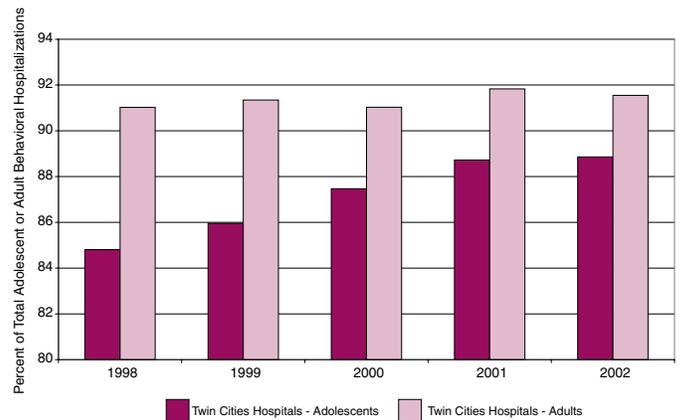
If Twin Cities behavioral inpatient beds are at capacity, there should be an indication in the Minnesota Hospital Discharge Database that Minneapolis/St. Paul residents were hospitalized in

increasing numbers elsewhere in the state. The MPS task force report suggests that the problem is greater for adolescents than for adults. According to the MHDD analysis, Twin Cities residents were indeed hospitalized in increasing numbers at hospitals in other geographic areas of the state.

Figure 8 shows that the percent of total adult¹⁴ Minneapolis/St. Paul residents hospitalized at Twin Cities hospitals remained relatively stable over the study period at approximately 91%. But, the proportion of total Twin Cities resident adolescents hospitalized for behavioral care in Minneapolis/St. Paul area hospitals rose from 85% in 1998 to 89% in 2002.

Figure 8

Percent of Total Twin Cities Hospitals Adolescent and Adult Behavioral Hospitalizations Originating from the Twin Cities



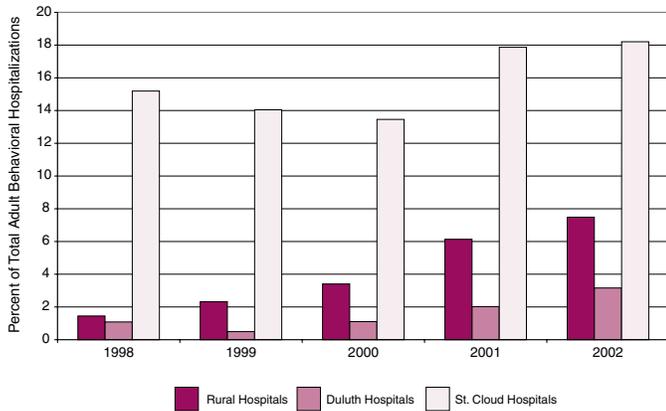
Data Source: MDH Hospital Discharge Database

Rural hospitals saw an increase in Twin Cities adult patients between 1998 and 2002, as shown in Figure 9. Duluth hospitals also experienced a similar influx of metro adult residents rising from 1% of total adult behavioral hospitalizations to 3% over the same period. Twin Cities resident adult patients were most prevalent at St. Cloud metropolitan area hospitals, constituting 15% of all adult behavioral hospitalizations in 1998 and slightly over 18% in 2002.

Minnesota Mental Health and Chemical Dependency Treatment Utilization Trends: 1998 – 2002

Figure 9

Percent of Total Local Area Adult Behavioral Hospitalizations Originating From the Twin Cities Region

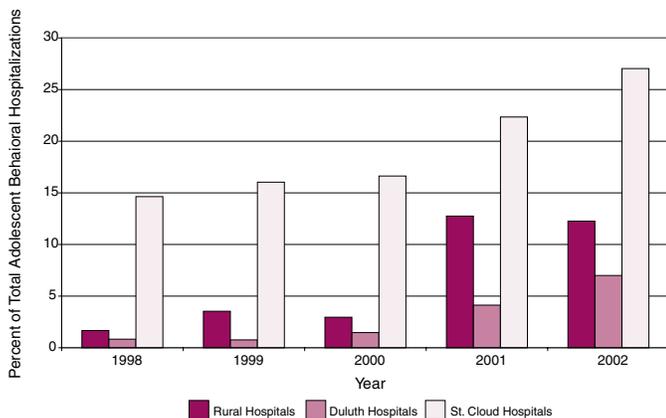


Data Source: MDH Hospital Discharge Database
Note: Adults defined as persons ages 22 thru 64 years.

The proportion of total Twin Cities adolescent behavioral hospitalizations at rural hospitals rose from 2% in 1998 to 12% in 2002, as displayed in Figure 10. Duluth hospitals reported that 1% of adolescent behavioral hospitalizations originated from the Twin Cities in 1998 increasing to 7% in 2002. At St. Cloud area hospitals, the flow of adolescents from the Twin Cities accounted for 15% of all adolescent hospitalizations in 1998 climbing to 27% in 2002.

Figure 10

Percent of Total Local Area Adolescent Behavioral Hospitalizations Originating From the Twin Cities Region



Data Source: MDH Hospital Discharge Database
Note: Adolescents defined as persons ages 12 thru 21 years.

These findings suggest that an increasing proportion of Greater Minnesota behavioral hospitalizations are due to Twin Cities patients being hospitalized outside the Minneapolis/St. Paul metropolitan area. Twin Cities adults and adolescents accounted for an increasing proportion of the respective behavioral hospitalizations in St. Cloud, Duluth and rural Minnesota between 1998 and 2002. St. Cloud area hospitals appear to have a larger proportion of patients originating from the Twin Cities compared to hospitals located in other areas of the state.

Conclusions

- The number of psychiatrists practicing in Minnesota remained nearly steady between 1998 and 2002.
- In 2001, there were 987 inpatient mental health beds in use at Minnesota hospitals and 422 chemical dependency treatment beds, but with unverified occupancy levels.
- Mental health hospitalizations at twenty-five select Minnesota hospitals with behavioral programs increased 26% between 1998 and 2002 compared with 30% for the US while average lengths of stay declined in both areas.
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Minnesota Mental Health and Chemical Dependency Treatment Utilization Trends: 1998 – 2002

Endnotes

¹ Minnesota Psychiatric Society Task Force, “The Shortage of Psychiatrists and of Inpatient Psychiatry Bed Capacity,” September, 2002, <http://www.mnpsychsoc.org/TFRpt.pdf>.

² Counts of licensed medical physicians by specialty are collected annually by the Minnesota Office of Rural Health and Primary Care for the Health Workforce Database at the time a physician is licensed or renews a license. Survey response rates are typically 90% for MDs. Numbers reported above are for only those physicians with offices located in Minnesota and seeing patients above a specified number of hours per year. Counts reported above were not adjusted for survey response rate. The American Board of Medical Specialties reported 512 general psychiatry certificates issued in 2003 in Minnesota, 42 child and adolescent certificates, and 30 child psychiatry certificates.

³ MPS report cites HealthPartners as the source of the estimate. Child psychiatrist estimates referenced as Thomas and Hozar: “National distribution of child and adolescent psychiatrists,” *Journal of American Academy of Child and Adolescent Psychiatry*, 38.1, January 1999.

⁴ Bed survey conducted by the Minnesota Hospital Association in 2001, includes the VA hospitals.

⁵ Urban locations are defined as those counties included in the Metropolitan Statistical Areas designated by the US Office of Management and Budget. Rural locations are defined as non-MSA counties.

⁶ MHDD numbers reported were the experience of twenty-five urban and rural facilities providing behavior care services and consistently participating in MHDD over the five-year analysis period. Other hospitals in some regions of the state have elected not to participate in the database.

⁷ Mental health lengths of stay at urban hospitals are likely longer due to case-mix complexity.

⁸ Health Economics Program, <http://www.health.state.mn.us/divs/hpsc/hep/miscpubs/utilization.pdf>, November 2003.

⁹ Provider of Service file from the Centers for Medicare and Medicaid.

¹⁰ National Center for Health Statistics, National Hospital Discharge Surveys, 1998 and 2002.

¹¹ U.S. Census Bureau, July population estimates, 1998 and 2002.

¹² Since all Minnesota hospitals do not share their insurance claims data with MDH, we are unable to calculate a directly comparable use rate.

¹³ National Center for Health Statistics, National Hospital Discharge Surveys, 1998 and 2002.

¹⁴ Adults were defined for the analysis as persons 22 years old to 64 years old.

¹⁵ Adolescents were defined as persons 12 to 21 years of age.

¹⁶ There was underreporting or delayed reporting among some of the twenty-five hospitals located outside the Twin Cities and St. Cloud in 1998.

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The Health Economics Program conducts research and applied policy analysis to monitor changes in the health care marketplace; to understand factors influencing health care cost, quality and access; and to provide technical assistance in the development of state health care policy.

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