

March 2005

LONG-TERM OUTCOMES OF PUBLIC MENTAL HEALTH CLIENTS: ADDITIONAL BASELINE CHARACTERISTICS

In response to a performance audit of the state's mental health system, the 2001 Washington State Legislature passed ESSB 5583,¹ which calls for the development of an outcomes-based performance system to be implemented by the Department of Social and Health Services (DSHS). The legislation also directs the Washington State Institute for Public Policy (Institute) to conduct a longitudinal study of long-term state-funded mental health client outcomes and indicates measures to be tracked, including services received, employment, education, housing stability, criminal justice involvement, and level of services needed. A preliminary report in 2004 provided baseline information on age, gender, race, education enrollment status, employment, living situation, and select mental health conditions.²

This report provides additional data on the baseline characteristics of Washington's public mental health clients, including the number of DSHS Mental Health Division (MHD) clients served by each regional support network (RSN), criminal justice involvement, and mental health functioning assessment scores. In addition, more data are provided on service utilization patterns and employment and earnings.³

The Institute's next step is to analyze changes from the baseline year of 2002 to 2004, with a report to be completed by the end of 2005. Subsequent reports on changes from the baseline will be released in 2008 and 2013. Given the scarce information on long-term outcomes of public mental health services in Washington State, these reports may yield data useful to the legislature and the MHD in identifying best and cost-efficient practices.

Additional 2002 Baseline Characteristics

Utilization of Inpatient and Outpatient Services

In 2002, 8.4 percent of the approximately 130,000 clients served by the MHD received inpatient services. The average number of days in hospitals among inpatients was 45. The median was only 12 days, however, suggesting that a relatively small group of high-use clients accounted for the majority of inpatient days. In fact, 10 percent of inpatients accounted for 63 percent of the inpatient days. This skewed utilization pattern is also found in outpatient services, where the top 10 percent of MHD clients at the high end of utilization accounted for two-thirds (65.7 percent) of the outpatient hours. The average outpatient hours was 24, while the median was only 6.

¹ Chapter 334, Laws of 2001.

² Steve Lerch. 2004. *Long-Term Outcomes of Public Mental Health Clients: Preliminary Report*. Olympia: Washington State Institute for Public Policy.

³ The criminal justice involvement analysis is based on the Institute's synthesized Criminal Justice System data. The analysis of employment and earnings is based on data from the Employment Security Department (ESD).

Similar patterns of inpatient and outpatient utilization are also observed for adult (ages 19 and older) and child (ages 0 to 18) client groups. However, child clients were less likely to be inpatients than adults. The proportion of adult clients who received inpatient care was 10.4 percent compared with 2.9 percent of child clients (see Exhibit 1).

Exhibit 1
Utilization of Inpatient and Outpatient Mental Health Services, 2002

| | Adults (19+) | Children (0–18) | Total* |
|--|-----------------|--------------------|-----------|
| Total clients | 90,301 | 38,741 | 129,537 |
| Inpatient Service | | | |
| Total Inpatients | 9,402 | 1,116 | 10,849 |
| Percent inpatient of all MHD clients | 10.4% | 2.9% | 8.4% |
| Average inpatient days | 47.5 | 36.2 | 45 |
| Median inpatient days | 12 | 15 | 12 |
| Total inpatient days | 446,723 | 40,395 | 492,648 |
| Total inpatient days of the top 10 percent inpatient use | 281,004 | 22,252 | 309,656 |
| Percent of top 10 percent inpatient use of all inpatient days | 62.9% | 55.1% | 62.9% |
| Outpatient Service | | | |
| Total Outpatients | 87,652 | 38,404 | 126,223 |
| Percent outpatient of all MHD clients | 97.1% | 99.1% | 97.4% |
| Average outpatient hours | 25.4 | 22.2 | 24.4 |
| Median outpatient hours | 5.8 | 7.0 | 6.2 |
| Total outpatient hours | 2,228,582 | 852,632 | 3,081,441 |
| Total outpatient hours of the top 10 percent outpatient use | 1,497,314 | 527,450 | 2,025,509 |
| Percent of top 10 percent outpatient use of all outpatient hours | 67.2% | 61.9% | 65.7% |

Source: Institute analysis of DSHS MHD data. * The age of 495 clients and the inpatient and outpatient status of 1,077 adult clients and 162 child clients could not be determined.

Mental Health Division Clients Served by Regional Support Networks

Exhibit 2
Regional Support Networks and Counties

Outpatient services for MHD clients are contracted to the 14 RSNs around the state. Six RSNs each serve a single county, particularly the large urban counties. The remaining RSNs each serve two or more counties (see Exhibit 2).

| RSN | Counties |
|------------------|---|
| Chelan/Douglas | Chelan and Douglas |
| Clark | Clark |
| Southwest | Cowlitz |
| Greater Columbia | Asotin, Benton, Columbia, Franklin, Garfield, Kittitas, Klickitat, Skamania, Walla Walla, Whitman, and Yakima |
| Grays Harbor | Grays Harbor |
| King | King |
| North Central | Adams, Grant, and Okanogan |
| Northeast | Ferry, Lincoln, Pend Oreille, and Stevens |
| North Sound | Island, San Juan, Skagit, Snohomish, and Whatcom |
| Peninsula | Clallam, Jefferson, and Kitsap |
| Pierce | Pierce |
| Spokane | Spokane |
| Timberlands | Lewis, Pacific, and Wahkiakum |
| Thurston/Mason | Mason and Thurston |

Source: DSHS MHD

Exhibit 3 shows the number of MHD clients served by each RSN in 2002 and its percentage of the state total. Also shown are the RSN caseloads for adult and child clients.

**Exhibit 3
RSN Caseload, 2002**

| | Adults (19+) | | Children (0–18) | | Total | |
|-------------------------|--------------|------------------------|-----------------|------------------------|---------|------------------------|
| | N | Percent of State Total | N | Percent of State Total | N | Percent of State Total |
| State Total* | 90,301 | 100.0% | 38,741 | 100.0% | 129,042 | 100.0% |
| RSN | | | | | | |
| Chelan/Douglas | 1,849 | 2.0% | 805 | 2.1% | 2,654 | 2.1% |
| Clark | 4,391 | 4.9% | 2,708 | 7.0% | 7,099 | 5.5% |
| Southwest | 3,274 | 3.6% | 1,258 | 3.2% | 4,532 | 3.5% |
| Greater Columbia | 11,140 | 12.3% | 5,293 | 13.7% | 16,433 | 12.7% |
| Grays Harbor | 1,443 | 1.6% | 785 | 2.0% | 2,228 | 1.7% |
| King | 22,835 | 25.3% | 8,351 | 21.6% | 31,186 | 24.2% |
| North Central | 1,840 | 2.0% | 930 | 2.4% | 2,770 | 2.1% |
| Northeast | 1,285 | 1.4% | 540 | 1.4% | 1,825 | 1.4% |
| North Sound | 12,458 | 13.8% | 6,161 | 15.9% | 18,619 | 14.4% |
| Peninsula | 5,047 | 5.6% | 1,755 | 4.5% | 6,802 | 5.3% |
| Pierce | 11,175 | 12.4% | 4,798 | 12.4% | 15,973 | 12.4% |
| Spokane | 7,157 | 7.9% | 3,024 | 7.8% | 10,181 | 7.9% |
| Timberlands | 3,134 | 3.5% | 1,092 | 2.8% | 4,226 | 3.3% |
| Thurston/Mason | 3,457 | 3.8% | 1,576 | 4.1% | 5,033 | 3.9% |

Approximately one-fourth of all clients were served by the King County RSN, and nearly 40 percent were served by the North Sound, Greater Columbia, and Pierce County RSNs. The four largest RSNs, when combined, served over 60 percent of the MHD clients in 2002. The other RSNs each served from 1.4 to 7.9 percent of MHD clients. The distribution of adult and child caseloads by RSNs resembles that of their overall caseloads.

Source: Institute analysis of DSHS MHD data.

* The sum of the RSNs exceeds the state total because some clients received services from multiple RSNs.

Functioning Assessment Scores

MHD clients are periodically assessed regarding their functioning in relation to their mental health illness. The assessment differs for adults 18 and older, children 6 through 17, and children under 6.⁴ However, for all age groups, the assessment is measured on a scale from 1 to 100, where the lowest scores mean persistent problems with functioning (or even danger to self or others), and the highest scores mean superior functioning. Exhibit 4 shows that all three age groups had similar patterns of functioning assessment scores: an annual average score around 50, the majority of the clients with a score that remained the same during 2002, and, among those whose scores changed, a larger percentage with lowered scores.⁵

⁴ Although the functioning assessments are administered to these age groups, the scores presented in this report use a slightly different age grouping to be consistent. We define adults as age 19 and older. Therefore, for the functioning assessment, we report the scores for adults age 19 and older, children age 6 to 18, and children under age 6.

⁵ The use of Functioning Assessment Scores from the MHD database as outcome measures is problematic as MHD analyses of the data suggest that they are not updated reliably after the initial service. The initial score is often propagated along giving a false impression that no change has occurred. It is unclear under what conditions service providers do change these scores. For example, it is possible that they are more likely to change these scores after a crisis and rapid decline in functioning rather than after a gradual period of improvement. This could create a false impression that functioning declines over time.

Exhibit 4
Functioning Assessment Scores, 2002

| | Adults | Children 6–18 | Children Under 6 |
|---|------------|---------------|------------------|
| Total Clients* | 90,301 | 35,930 | 2,811 |
| Annual average assessment scores | (N=63,224) | (N=23,770) | (N=1,087) |
| Average assessment score | 47.9 | 52.4 | 50.3 |
| Change in assessment score in 2002** | (N=50,096) | (N=18,808) | (N=784) |
| Increase in assessment score | 15.0% | 13.4% | 4.9% |
| No change in assessment score | 65.3% | 64.3% | 81.8% |
| Decrease in assessment score | 19.8% | 22.4% | 13.4% |

Source: Institute analysis of DSHS MHD data.

* The age of 495 clients could not be determined.

** A minimum of two months of data are required for this calculation.

Employment and Earnings

In our 2004 publication, we reported employment status of MHD clients using MHD's program data. We have since matched the MHD program data with the unemployment insurance (UI) wage data maintained by the Employment Security Department (ESD). From ESD's UI wage data, we were able to obtain employment and wage earnings information for 26.8 percent of MHD adult clients. This means that these adults were employed at some point during 2002. Among MHD clients who were shown to have worked in 2002, average annual earnings totaled \$8,486. Many of these clients were employed intermittently, as the quarterly employment data show a much smaller percentage of MHD adult clients employed, from 17.1 percent to 18.1 percent compared with 26.8 percent annually. The quarterly earnings for MHD adult clients were approximately \$3,200 (see Exhibit 5). The percentage employed and average wage earnings' statistics are supported by similar analyses conducted by the MHD.⁶

Exhibit 5
Employment and Wage Earnings Among Adult Clients, 2002

| Annual | | | | | |
|---|----------------------|-----------------------|----------------------|-----------------------|--|
| Employed anytime in 2002 | 24,160 | | | | |
| Percent employed anytime in 2002 | 26.8% | | | | |
| Average annual earnings among workers | \$8,486 | | | | |
| Quarterly | First Quarter | Second Quarter | Third Quarter | Fourth Quarter | |
| Employed | 15,647 | 16,177 | 16,363 | 15,418 | |
| Percent employed | 17.3% | 17.9% | 18.1% | 17.1% | |
| Average quarterly earnings among workers | \$3,230 | \$3,200 | \$3,184 | \$3,283 | |

Source: Institute analysis of ESD and DSHS MHD data.

⁶ Source: personal correspondence with MHD research staff, March 2005.

Criminal Justice Involvement

The Legislature directed the Institute to examine criminal justice involvement of MHD clients. We matched MHD program data with the Criminal Justice System (CJS) database maintained at the Institute. The CJS has synthesized individual-level data from several criminal justice system data sources:

- Administrative Office of the Courts' Judicial Information System (for juvenile courts, superior courts, and courts of limited jurisdiction);
- Department of Corrections' Offender Based Tracking System; and
- Washington State Patrol's Identification System.

The matched data show that approximately 16 percent of MHD adult clients had at least one felony conviction prior to their first month use of MHD service in 2002 (lifetime felony conviction). The majority of the convictions took place more than two years prior to the adult client's first service utilization in 2002. Only 5.9 percent of all MHD adult clients had any felony convictions within the two-year period before their first MHD service utilization in 2002 (see Exhibit 6).

An analysis of the most recent conviction shows that, of the one-third of MHD adult clients who had had any criminal convictions (29,532 out of 90,301), 71.2 percent (21,022) were convicted for misdemeanor charges and 28.8 percent (8,510) for felony charges. Of the 8,510 clients whose last conviction was a felony, over one-third (35.8 percent) were convicted for property crimes and another 29.1 percent for drug crimes. An additional 16.1 percent of most recent felony convictions were related to assault.

Exhibit 6
Prior Criminal Justice Involvement
by Adult Clients, 2002

| | | |
|---|---------------|----------------|
| Total Adult Clients | 90,301 | |
| Lifetime Felony Convictions | | |
| Adult clients with felony convictions | 14,079 | |
| Percent of adult clients with convictions | 15.6% | |
| Average lifetime felony convictions | 2.8 | |
| Median lifetime felony convictions | 2 | |
| Felony Convictions in Past 2 Years | | |
| Adult clients with a felony conviction in past 2 years | 5,353 | |
| Percent of adult clients with a felony conviction in past 2 years | 5.9% | |
| Average felony convictions | 1.8 | |
| Median felony convictions | 1 | |
| Most Recent Conviction (N=29,532) | N | Percent |
| Misdemeanor convictions | 21,022 | 71.2% |
| Felony convictions | 8,510 | 28.8% |
| Most Recent Felony Conviction (N=8,510) | N | Percent |
| Property | 3,046 | 35.8% |
| Drug | 2,474 | 29.1% |
| Assault | 1,367 | 16.1% |
| Sex | 554 | 6.5% |
| Robbery | 318 | 3.7% |
| Weapon | 148 | 1.7% |
| Escape | 128 | 1.5% |
| Domestic violence | 106 | 1.2% |
| Homicide | 90 | 1.1% |
| Property violence | 65 | 0.8% |
| Other | 214 | 2.5% |

Source: Institute analysis of CJS data and DSHS MHD data.

Data Limitations

Data limitations often exist in administrative files because information required for policy analysis may not correspond to an agency's original reasons for collecting the data. Additionally, the quality of specific data elements may differ significantly depending on their relative importance to the program administration. Furthermore, each program or agency has its own system of data collection and its own method of identifying individual members served by the program or agency. Therefore, linking administrative data files from different sources adds to the challenge of using administrative data for policy research. Data challenges for this particular project include, but are not limited to, the following:

- **Quality of the Periodical Reports in the MHD Service Utilization File.** Several fields in the MHD service utilization file are based on “periodical reports”—reports provided by RSNs to the MHD on overall treatment outcomes such as Functioning Assessment Scores or on information peripheral to treatment, such as living situation, educational program enrollment, and employment. The data are collected and reported at the initial service and then at 3-month, 6-month, and 12-month intervals if the client continues to receive services. Although these fields are collected and reported periodically, they are recorded as monthly data in the MHD service utilization file. The months covered by an interval are filled with the data collected at the beginning of the interval. In reality, a client's status may change over the course of the interval.

The use of Functioning Assessment Scores as outcomes may present a particular problem. As mentioned previously, MHD clients' health improvement over time may be underestimated while their health decline may be overestimated, probably because providers tend to administer prompt reassessments when a rapid decline is detected while they are less inclined to do so when health is improving.

Another concern for the quality of the periodical reports is the scale of missing data. There are times when a client is reported to have received services in a particular month but there is no periodical report (i.e., blank entry) or the periodical report specifies information as “unknown.” If a field is blank or is unknown, we treat it as missing data. The missing rate for the fields of education (enrollment), employment, and living situations ranges from a low of 17 percent to a high of 53 percent.

- **Linking Between MHD and ESD Data.** Linking the MHD database and the ESD wage file resulted in a total match of 24,160 (or 26.8 percent) of the 90,301 MHD adult clients. The linking was performed using the clients' social security number (SSN). Employment and wage statistics obtained from the ESD file are based on the assumptions that the SSNs in both the MHD and ESD files are reliable and that a non-matched MHD client was not employed and earned no wages in 2002. These assumptions are susceptible to challenges,⁷ but alternative assumptions are pragmatically not realistic with the ESD wage data.
- **Linking Between MHD and Criminal Justice System (CJS) Data.** The Institute's CJS database was used to obtain criminal justice involvement information. The CJS incorporates administrative files from three main sources: the Administrative Office of the Courts, the Department of Corrections, and the Washington State Patrol. The three justice system files

⁷ For instance, the ESD wage file does not include earnings from federal employment, self-employment, and employment in other states.

were compared and checked against each other to obtain unique person records using a complex matching system involving date of birth, name(s), gender, court case numbers, etc.

It is not uncommon among individuals arrested to give false information about themselves, such as their birth date and name. To the extent possible, each justice agency has incorporated mechanisms, although not necessarily the same, that attempt to sort out false information (alias, false birth date, etc.) given by the same individual in multiple encounters with the justice system. However, uncertainty about how well each system sorts out the false information still remains. Combining the different systems and then merging the results with the MHD program data may have increased the uncertainty of the final matched data. Just as with merging MHD and ESD data, assumptions must be made that a match is based on reliable data and a non-match means there is no criminal record. While imperfect, no other viable assumptions are practical.

- **Linking Records Over Time.** The goal of the legislation is to track outcomes of MHD clients over time. Some outcomes are easier to track than others. For instance, tracking employment and earnings using the ESD UI wage data and tracking criminal justice involvement using the CJS data can be done with little difficulty if the current linking methods are accepted. On the other hand, it is difficult to track outcomes unless client data remain in the system (e.g., functioning assessment and living situation). Most often, MHD clients stay in the MHD data system for a few months rather than a few years. To track these outcomes over time, data need to be collected from sources other than MHD administrative files.

These limitations can lead to concerns about the quality and reliability of the data on long-term outcomes for MHD clients. The following solutions may minimize some of these limitations:

- Instead of, or in addition to, tracking the 2002 cohort, use cross-sectional data to analyze the changes in the overall MHD client characteristics. That is, each year's current MHD clients are examined and the results compared across years. This approach, however, portrays the caseload trends rather than individual outcomes. An example of this approach is in MHD's annual report *State-Wide Publicly Funded Mental Health Performance Indicators*.⁸
- Recruit a panel of study subjects for a longitudinal observation. This can be done by recruiting a smaller random sample from the 2002 cohort and studying them over time using survey techniques (telephone or in-person interviews) regardless of whether they are still in the MHD system. This may be a more expensive option, but it would provide scientifically sound outcome data.
- Use weighting or imputation methods to compensate for missing information in key data fields. The weighting approach takes a subset that contains no missing data and assigns each record a weight so that the sum of the weight equals the total number of clients. The imputation approach, on the other hand, uses all records and assigns an imputed value to data fields with missing values. However, the reliability of the resultant data from either approach is questionable when initially there is a large amount of missing data.

⁸ Washington State Department of Social and Health Services. 2004. *State-Wide Publicly Funded Mental Health Performance Indicators: Fiscal Year 2003*. Olympia: Mental Health Division (December). <<http://www1.dshs.wa.gov/pdf/hrsa/mh/mhdpireport2002.pdf>>.

Next Steps

Calendar years 2003 and 2004 MHD data for the 2002 cohort will be collected and matched with the 2003 and 2004 UI wage and CJS data. Outcomes of the 2002 MHD clients will be examined and reported in December 2005.

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Acknowledgements: The authors would like to thank the following people at the Institute for their contribution to this report: John Miller and Laura Harmon for their assistance in the analysis of the data, Roxanne Lieb and Steve Aos for reviewing the drafts, and Debra Fabritius and Janie Maki for editing and formatting the report. We would also like to thank Judy Hall, Gordon Hannah, and Bruce Stegner of the Washington State Department of Social and Health Services Mental Health Division for reviewing drafts.

Suggested citation: Wei Yen and Jim Mayfield. 2005. *Long-Term Outcomes of Public Mental Health Clients: Additional Baseline Characteristics*. Olympia: Washington State Institute for Public Policy.

Document No. 05-03-3401



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