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WHO STAYS AND WHO LEAVES?
A PROFILE OF ADULT PUBLIC MENTAL HEALTH CONSUMERS

Summary

The 2001 Washington State Legislature directed the Washington State Institute for Public Policy to, "conduct a longitudinal study of long-term [mental health] client outcomes to assess any changes in client status at two, five, and ten years."

Every year, the state's public mental health system serves about 120,000 individuals. To follow changes over time, this paper focuses on a cohort of 39,039 adults who received public mental health services in January 2004. At the end of four years, we found that:

- 9 percent received services continually (every month)
- 18 percent regularly utilized mental health services (every quarter)
- 10 percent had intermittent use of mental health services (breaks longer than three months)
- 64 percent were classified as "leaving" clients who received services and did not return

Using administrative data, we looked at utilization patterns by (1) demographics (age, region, and sex), (2) previous utilization of mental health services, (3) diagnoses, (4) Medicaid eligibility, and (5) functioning and impairment. After highlighting factors associated with service utilization, we outline future reports in this series that will address outcomes for public mental health consumers.

INTRODUCTION

The Mental Health Division (MHD) of the Department of Social and Health Services (DSHS) oversees the provision of public mental health services throughout Washington State. These services include the following:

- Mental Health Crisis Services
- Outpatient Mental Health Services
- Inpatient Mental Health Services
- Adult State Hospitals
- Involuntary Treatment Services

In 2007, approximately 120,000 persons received community outpatient services through this system. Inpatient mental health stays (community hospitals as well as evaluation and treatment facilities) were necessary for an additional 7,900 persons in 2007. And, during 2007, 2,700 persons were in residence at an adult psychiatric hospital.

Crisis intervention and emergency assistance for mental health crises are provided to all state residents. These services include crisis hotlines and mobile crisis response teams. In 2007, 35,600 individuals received mental health crisis services (14,200 received crisis services and no other public outpatient services during the year).

In response to a performance audit of the state's mental health system, the 2001 Washington State Legislature passed ESSB 5583, which directed the Washington State Institute for Public Policy (Institute) to "*conduct a longitudinal study of long-term client outcomes to assess any changes in client status at two, five, and ten years. The measures tracked shall include client change as a result of services, employment and/or education, housing stability, criminal justice involvement, and level of services needed.*"

Previous reports published for this study have focused on a group of clients who received mental health services during 2002 and then came back for services at any time during subsequent years (previous reports are listed at the end of this paper).

This report is the first document in a series that extends this analysis by tracking the following types of public mental health clients:

1) those who ***receive services continually*** (month after month)
2) those with ***regular utilization*** of mental health services (every calendar quarter)
3) those with ***intermittent use*** of mental health services (no services for longer than a calendar quarter)
4) ***"leaving clients"*** who receive mental health services and do not return

The goal of this research series is to highlight the characteristics and service utilization of long-term, short-term, and intermittent users of *public* mental health services. In subsequent reports, we will analyze whether frequent users of mental health services are also frequent users of other public health services (emergency room, hospitalizations, detoxification, or drug treatment admissions). We will also examine how outcomes, such as arrests, employment, and involuntary treatments, differ among various types of mental health consumers.

It is important to note that the receipt of mental health services on a continual basis is a necessary process for some consumers. Lifelong conditions (such as schizophrenia) may require ongoing medication management and therapeutic assistance. Even continual consumers, however, may be able to transition from publicly funded to privately insured mental health services.

The goal of this research series, therefore, is to highlight various outcomes among different types of mental health consumers in order to determine which factors affect service utilization and improve outcomes.

STUDY GROUP

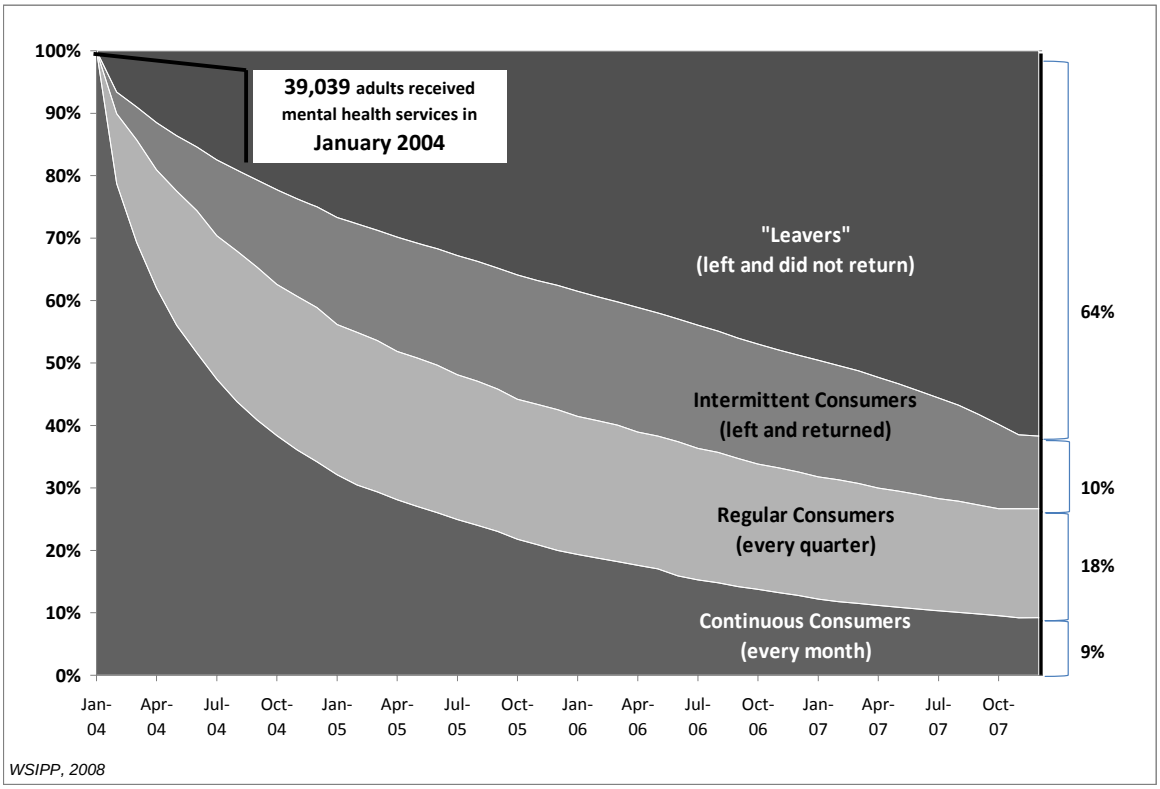
To analyze the patterns of utilization and corresponding characteristics for mental health consumers, we selected a "snapshot" of individuals receiving services in January 2004. Previous Institute studies have focused on outcomes for a 2002 cohort of mental health consumers. We have decided to adopt a new 2004 study group for several reasons:

1) Medicaid rules for Washington's managed care system for mental health have undergone significant changes since 2002. New "Access to Care" standards and approved service modalities have shifted funding requirements and priorities.
2) In late 2003, MHD added several new data elements to the Consumer Information System (CIS) to become compliant with the Health Insurance Portability and Accountability Act (HIPAA) and improve performance indicator reporting.
3) Given data availability and completeness, a more thorough history can be compiled for consumers receiving services in 2004.

The new baseline group includes 39,039 consumers who used mental health services in January 2004. The vast majority of these individuals (96 percent) received outpatient care; the remainder were in community hospitals, evaluation and treatment facilities, or adult psychiatric institutions.

This initial report in the research series will focus on outcomes for the adult population. Children served by the public mental health system will be the topic of future analyses.

Exhibit 1
Adults Receiving Public Mental Health Services in January 2004
Frequency of Use Declines Sharply Over Four Years



As Exhibit 1 shows, 39,039 adults received public mental health services in January 2004. In the subsequent four years, 9 percent (3,465) of these consumers utilized services every month. An additional 18 percent (6,950) had short breaks in service, but still had activity at least once every calendar quarter. Some consumers (10 percent) received mental health services intermittently with breaks lasting longer than three months. Finally, nearly two-thirds (64 percent) of this initial cohort received mental health services and did not return over the study time period.

In upcoming reports, we will compare outcomes for adults who briefly utilize mental health services with those who are seen on an ongoing basis. Measuring the persistence of service is not intended to assess the degree to which public mental health consumers adhere to proper treatment. However, there are few standards available in defining continuity of care among this population.[1] In the absence of an agreed upon definition, we will examine how utilization (or lack thereof) of mental health services relates to encounters with other systems (such as emergency rooms or the criminal justice system). Prior to analyzing these outcomes, this paper outlines the characteristics and background of ***continuous***, ***intermittent***, and ***leaving*** public mental health consumers. Using administrative data, we will examine:

- Demographics (age, region, and sex)
- Previous utilization of mental health services
- Diagnoses
- Functioning and impairment
- Medicaid eligibility

For each of these subgroups, we will report on four-year utilization trends. In addition to these descriptive tables, this report will present results from statistical models that show the predictors of continuous usage of public mental health services.

[1] C. Adair, G. McDougall, A. Beckie, A. Joyce, C. Mitton, C. Wild, et al. (2003). History and measurement of continuity of care in mental health services and evidence of its role in outcomes. *Psychiatric Services, 54*(10): 1351-1356. <http://psychservices.psychiatryonline.org/cgi/ content/abstract/54/10/1351>

SERVICE UTILIZATION PROFILES

Age, Sex, and Regional Support Network

There are many notable differences when we begin to analyze utilization trends for different subgroups of adults receiving public mental health services. Exhibit 2 displays the distribution of consumers receiving services in January 2004 with results by age, sex, and region. As Exhibit 2 shows, slightly more men (10.5 percent) and adults aged 46 to 60 (12.2 percent) received services month after month when compared with all adult consumers.

In addition, younger individuals (aged 18 to 30) used mental health services on a short-term basis at a far greater rate than the rest of the cohort. While 64 percent of all adults received mental health services and did not return, nearly 72 percent of young adults were classified as "leaving" consumers.

Finally, Exhibit 2 displays regional differences in service utilization. Some of these differences may be explained by variations in population demographics between each Regional Support Network (RSN). This interaction is explored in the statistical models presented on page 9.

Exhibit 2
Adults Receiving Public Mental Health Services in January 2004
Utilization After Four Years by Age, Sex, and RSN

	Ongoing (received services monthly)	***Regular Utilization*** (every quarter)	***Intermittent Breaks*** (more than three months between service)	***Leavers*** (received services and did not return)	**Total**
Sex					
Male	10.5%	17.9%	10.2%	61.3%	**16,807**
Female	7.6%	17.7%	9.4%	65.3%	**22,232**
Age					
18–30	4.5%	12.0%	11.9%	71.7%	**7,873**
31–45	9.9%	18.1%	10.7%	61.3%	**14,620**
46–60	12.2%	22.2%	8.9%	56.8%	**11,460**
61–74	7.4%	20.6%	7.0%	65.1%	**3,051**
75 and older	2.1%	9.6%	2.6%	85.5%	**2,035**
RSN					
Chelan-Douglas	3.0%	9.0%	8.9%	79.1%	**700**
Clark County	6.6%	18.5%	11.6%	63.4%	**1,815**
Grays Harbor	5.9%	14.7%	6.1%	73.3%	**558**
Greater Columbia	1.2%	15.0%	10.9%	72.9%	**5,133**
King County	12.0%	24.0%	10.0%	54.0%	**12,611**
North Central WA	0.3%	7.7%	5.0%	87.0%	**741**
North Sound	7.5%	14.4%	9.3%	68.8%	**4,492**
Northeast WA	0.0%	4.6%	3.4%	92.0%	**436**
Peninsula	13.6%	16.9%	8.4%	61.1%	**2,218**
Pierce County	13.0%	13.1%	8.4%	65.5%	**3,991**
Southwest	5.6%	15.5%	12.2%	66.6%	**1,261**
Spokane County	10.8%	20.0%	10.3%	58.9%	**2,578**
Thurston-Mason	9.4%	15.2%	10.6%	64.8%	**1,433**
Timberlands	6.4%	10.5%	9.7%	73.4%	**1,018**
Missing					**54**
Total	***8.9%***	***17.8%***	***9.7%***	***63.6%***	**39,039**

Exhibit 3
Adults Receiving Public Mental Health Services in January 2004
Utilization After Four Years by Months of Service (in past two years)

Months of Service in Last Two Years	*Ongoing* (received services monthly)	*Regular Utilization* (every quarter)	*Intermittent Breaks* (more than three months between service)	*Leavers* (received services and did not return)	Total
0–1 (new)	0.8%	3.2%	5.7%	90.3%	**5,204**
2–12	3.3%	9.8%	10.3%	76.6%	**12,612**
13–22	5.7%	23.3%	12.1%	58.9%	**11,218**
23–24 (continual)	23.7%	29.3%	8.4%	38.6%	**10,005**
Total	***8.9%***	***17.8%***	***9.7%***	***63.6%***	**39,039**

Service History
Focusing on public mental health service consumers at a ***point in time*** is a helpful way to analyze service patterns, because it captures (1) first time consumers, (2) those in the midst of short-term services, (3) those experiencing longer patterns of utilization, and (4) those with an ongoing or continual history of services.

For our study cohort of adults receiving services in January 2004 (see Exhibit 3):

- 13 percent (5,204) were **new consumers**
- 32 percent (12,612) received services for 2 to 12 months in the previous two years
- 29 percent (11,218) had an extended history of services (13 to 22 months in the last two years)
- 26 percent (10,005) were **continual consumers** who had received services in 23 or 24 months during the last two years

Not surprisingly, previous utilization of mental health services is strongly correlated to future utilization patterns. Exhibit 3 illustrates the solid relationship between past history and subsequent usage patterns. A high percentage (90 percent) of "new" consumers will receive services and not return within four years, compared with 64 percent of all consumers receiving services at any point in time. In fact, less than 1 percent of new consumers who begin receiving mental health services will remain continuously during the subsequent four years. New consumers remain engaged for an average of 8.7 months and a median four months over the course of four years.

Conversely, individuals who have already been receiving continuous services will go on to become ongoing users at a rate nearly three times that of other consumers (23.7 percent versus 8.9 percent).

Diagnoses and Functioning
The patient's primary diagnosis has a strong relationship to service duration and patterns, as shown in Exhibit 4. While roughly 9 percent of all adults receiving services in January 2004 remained enrolled continuously after four years, one in five (20 percent) of those diagnosed with schizophrenia received continuous services. While consumers with a primary schizophrenia diagnosis represented 29 percent of all cases, they accounted for 65 percent of those persons receiving continuous services.

A plurality of consumers (15,065 or 39 percent) had a diagnosis of depression or anxiety. In general, these consumers received services on a short-term basis, with 72 percent not returning after a period of service utilization.

Exhibit 4
Adults Receiving Public Mental Health Services in January 2004
Utilization After Four Years by Primary Diagnosis and GAF Score

	Ongoing (received services monthly)	***Regular Utilization*** (every quarter)	***Intermittent Breaks*** (more than three months between service)	***Leavers*** (received services and did not return)	**Total**
Diagnosis					
Schizophrenia	20.0%	27.3%	11.3%	41.5%	**11,201**
Bipolar	7.4%	19.5%	11.5%	61.7%	**6,498**
Depression/Anxiety	4.2%	14.8%	8.7%	72.3%	**15,065**
Other	2.4%	8.4%	5.7%	83.6%	**2,581**
Missing	1.5%	5.0%	8.5%	84.9%	**3,694**
Global Assessment of Functioning (GAF)					
1–40 (Severe)	14.7%	21.0%	10.2%	54.1%	**10,663**
41–50 (Serious)	8.8%	20.2%	10.1%	60.9%	**13,389**
51–60 (Moderate)	6.2%	16.3%	8.9%	68.6%	**7,130**
61 plus (Mild)	3.8%	13.8%	9.9%	72.5%	**2,120**
Not Assessed	3.5%	9.7%	8.8%	78.1%	**5,737**
Total	***8.9%***	***17.8%***	***9.7%***	***63.6%***	**39,039**

Using a 100-point scale called the Global Assessment of Functioning (GAF), clinicians can make a determination about a patient's psychological, social, and occupational functioning.[2] Exhibit 4 classifies GAF scores into four categories, consistent with related research:[3] 1 to 40 indicates pervasive or severe impairment; 41 to 50, serious impairment; 51 to 60, moderate impairment; and scores of 61 or higher signifying mild or minimal impairment.

As expected, consumers with a lower assessed functioning score appear more likely to receive services over four years. As GAF scores increase, the rate of continuous service utilization declines. Approximately three-quarters (73 percent) of consumers with mild impairment were likely to leave services without returning.

In 2003, there were significant changes to the state's Medicaid Plan for Mental Health services as a result of new requirements from the federal Center for Medicare and Medicaid Services (CMS). A key component of these changes involved the implementation of new Access to Care Standards (ACS), which established both eligibility and medical necessity criteria for accessing authorized public mental health services.[4] Part of these criteria required individuals to have an impairment evidenced by a GAF score of 60 or below for brief intervention services and a GAF score of 50 or below for community support services.[5]

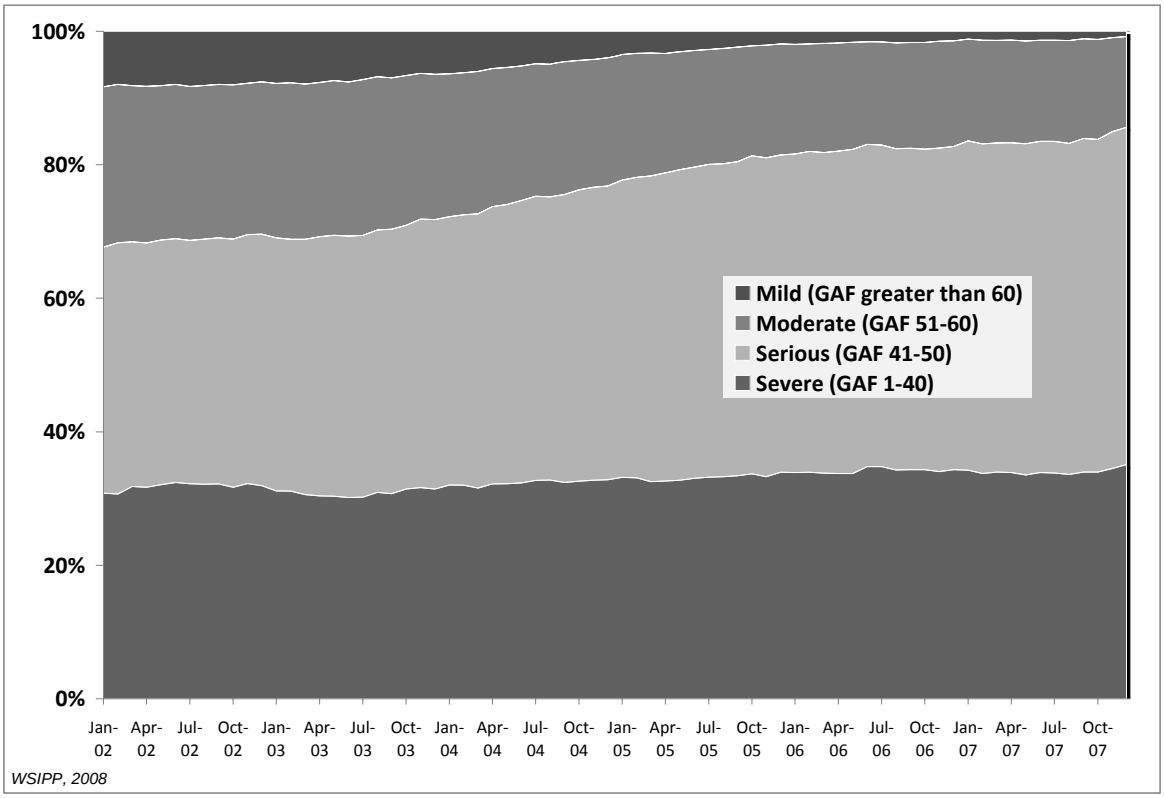
[2] For detailed descriptions of GAF scale scores, see: American Psychiatric Association (1994). *Diagnostic and statistical manual of mental disorders, Fourth Edition*, *Text Revision (DSM-IV-TR)*, p 32.

[3] R. Moos, A. Nichol, & B. Moos (2002). Global Assessment of Functioning ratings and the allocation and outcomes of mental health services. *Psychiatric Services, 53*(6): 730-737 <http://www.psychservices.psychiatryonline.org/cgi/content/abstract/53/6/730>

[4] A review of public mental health benefits in five states following the CMS changes to state Medicaid plans found that, "Washington is the only state of the five that imposes functional impairment requirements as a means of determining service eligibility. Other states incorporate impairment scores using the GAF into discrete level of care guidelines for medical necessity, but none require such impairment for entry into the system." Triwest Group. (2007). *Statewide transformation initiative mental health benefit package design, final report*. Seattle: Author.<http://www1.dshs.wa.gov/pdf/hrsa/mh/sti_benefit_design_final_report_2008_01_23_final.pdf>

[5] <http://www.dshs.wa.gov/pdf/hrsa/mh/Access_to_Care_Standards20060101.pdf>

Exhibit 5
Adult Public Mental Health Caseload (2002–2007)
Distribution of Consumers by Global Assessment of Functioning (GAF) Scores



As Exhibit 5 demonstrates, the composition of the public mental health caseload changed noticeably after 2003—a smaller percentage of mild or moderate consumers were served and the portion of consumers with a serious GAF score (41 to 50) increased. Two explanations for this trend are possible: (1) Restrictions on entry into the system led to fewer functional individuals receiving care, and (2) a "watering down" of GAF assessments, where lower scores (close to the cut-point) were given more frequently to ensure access to services. Both of these factors may be contributing to the changing distribution of GAF scores for the public mental health caseload over time. These changes are worth noting as we analyze improvements in functioning for ***continuous***, ***intermittent***, and ***leaving*** public mental health consumers.

Improvements in Functioning

Over 80 percent of the study cohort had a GAF score at the start of the study period (January 2004) and at the last observed service month.[6]

Exhibit 6 shows the distribution of changes in GAF scores between the two time periods. Approximately 65 percent of consumers had very little (± 5 points) change in GAF scores. To determine how many individuals had a significant change, we calculated a reliable change index to find a threshold for notable improvement.[7] This threshold relies on assumptions about the statistical reliability of the GAF as an instrument to score functioning levels. We estimate that individual change would need to be in the 9 to 15 point range to be considered reliable. Using this range, 5.7 to 12.5 percent of consumers in the study cohort had a meaningful improvement in GAF scores during the period of service.[8] Improvement levels did not appear to be related to utilization patterns.

[6] Individuals may not have more than one GAF score if they receive one-time services such as crisis intervention, or they discontinue or exit services prior to the first six-month follow-up.

[7] N. Jacobson & P. Truax (1991). Clinical significance: A statistical approach to defining meaningful change in psychotherapy research. *Journal of Consulting and Clinical Psychology, 59*(1): 12-19.

[8] Among psychiatrists and mental health professionals, there is a debate about the utility of the GAF for measuring outcomes. See H. Goldman (2005). Special Section on the GAF: Editor's Introduction: "Do you walk to school, or do you carry your lunch?" *Psychiatric Services, 56*(4): 419, for a discussion.

Exhibit 6
Adults Receiving Public Mental Health Services in January 2004
GAF Score Changes

Change in GAF Score	***Ongoing*** (received services monthly)	***Regular Utilization*** (every quarter)	***Intermittent Breaks*** (more than three months between service)	***Leavers*** (received services and did not return)	Total
More than 15 point decline	147 (4.5%)	363 (5.7%)	288 (9.1%)	743 (3.9%)	1,541 (4.8%)
11 to 15 point decline	169 (5.2%)	399 (6.3%)	260 (8.2%)	746 (3.9%)	1,574 (4.9%)
6 to 10 point decline	340 (10.5%)	794 (12.5%)	456 (14.5%)	1,326 (6.9%)	2,916 (9.1%)
1 to 5 point decline	564 (17.4%)	1,173 (18.5%)	573 (18.2%)	2,145 (11.1%)	4,455 (13.9%)
No change	932 (28.8%)	1,514 (23.9%)	515 (16.3%)	9,040 (46.9%)	12,001 (37.5%)
1 to 5 point increase	545 (16.8%)	1,077 (17.0%)	470 (14.9%)	2,371 (12.3%)	4,463 (13.9%)
6 to 10 point increase	307 (9.5%)	559 (8.8%)	311 (9.9%)	1,456 (7.6%)	2,633 (8.2%)
11 to 15 point increase	134 (4.1%)	261 (4.1%)	158 (5.0%)	669 (3.5%)	1,222 (3.8%)
More than 15 point increase	100 (3.1%)	189 (3.0%)	122 (3.9%)	788 (4.1%)	1,199 (3.7%)
Total	3,238	6,329	3,153	19,284	32,004
Mean Months (t1–t0)	48	43	29	15	25
Reliable Change (high estimate —improved 8.9 points)	13.0%	12.3%	14.2%	12.1%	12.5%
Reliable Change (low estimate —improved 14.6 points)	4.9%	4.9%	6.4%	6.0%	5.7%

Crisis Service and Non-Medicaid Persons

Eligibility determinations (such as GAF scores discussed previously) are not necessary for individuals seeking crisis services. All state residents may seek 24-hour mental crisis services such as:

1) **Crisis Line:** Each county maintains a 24-hour crisis hotline for immediate counseling and referral to appropriate resources.
2) **Crisis Intervention Teams:** Many jurisdictions in the state have law enforcement professionals trained to work in Crisis Intervention Teams (CIT). Specially trained officers can respond to crisis events with mentally ill individuals, de-escalate the event, and help resolve the situation in a measured and calm manner.
3) **Crisis Triage Centers:** These centers provide a single point of entry and short-term observation and treatment unit for individuals experiencing mental health crises. Triage Centers can provide an alternative to jails and emergency rooms by offering a safe, professionally staffed facility for helping stabilize individuals in crisis. Once the crisis has abated, triage centers can help with appropriate services at discharge.

Exhibit 7
Adults Receiving Public Outpatient Mental Health Services in January 2004
Utilization After Four Years by Crisis and Medicaid Status

Service Type	***Ongoing*** (received services monthly)	***Regular Utilization*** (every quarter)	***Intermittent Breaks*** (more than three months between service)	***Leavers*** (received services and did not return)	Total
Non-Crisis	9.3%	19.1%	9.5%	62.1%	**33,688**
Crisis	5.7%	8.8%	9.8%	75.8%	**3,922**
Total	***8.9%***	***18.0%***	***9.5%***	***63.5%***	**37,610**
Medicaid Eligibility					
Medicaid	10.5%	20.7%	9.7%	59.2%	**30,639**
Non-Medicaid	2.5%	6.8%	9.2%	81.5%	**7,753**
Total	***8.9%***	***17.9%***	***9.6%***	***63.7%***	**38,392**

Among those receiving outpatient services in the January 2004 sample (n=37,610), 10 percent received crisis services. As expected in a crisis situation, these individuals were more likely to receive services in the short-term and not return. While 64 percent of all outpatient consumers did not receive services on a recurring basis, 76 percent of crisis consumers received services and then left during the four-year study period.

As noted earlier, significant changes to the state's Medicaid plan for mental health services occurred after 2003. The implementation of the new Access to Care Standards for Medicaid-funded services occurred between September 2003 and January 2005. Among the study cohort receiving inpatient or outpatient care (in January 2004), 20 percent (7,753) were not Medicaid-eligible. Non-Medicaid persons were less likely to receive services on a continual or ongoing basis compared with other consumers. Some of this difference could be attributed to the eligibility changes that occurred during this period, or to differences in consumer characteristics among Medicaid and non-Medicaid persons.

MULTIPLE FACTORS AND SERVICE UTILIZATION

Previous exhibits have focused on the service utilization patterns among different subgroups of public mental health consumers. Individual consumers, of course, do not belong solely to one subgroup, but have varied and different characteristics and backgrounds.

So how does this combination of factors among public mental health consumers impact ongoing service utilization?

To answer this question, we conducted a multivariate *event-history* analysis to determine how the interplay between individual profiles is related to subsequent service usage.

In January 2004, there were 3,158 "new" adult consumers to the public mental health system in Washington State. Individuals were counted as new consumers if they had not received any services in the prior two years. In the subsequent four years after January 2004, several factors were related to an individual receiving service in any given month.

- ↑ Compared with adults with depression or anxiety, individuals with a primary diagnosis of **schizophrenia or bi-polar** were *25 percent more likely* to receive services over the four-year study period.
- ↑ Assessments of functioning also played a role in service utilization. Consumers with a **severe GAF score** (1 to 40) were *15 percent more likely* and consumers with a **serious score** (41 to 50) were *28 percent more likely* to remain in the public mental health system when compared with other consumers.
- ↓ Adults receiving **crisis services** had a lower likelihood of service continuation (*12 percent less likely*).

- ↓ **Non-Medicaid** consumers were also *11 percent less likely* to be connected to services over the study period.
- ↑ For every hour of **traditional outpatient services**[9] received, the likelihood of service continuation *increased by 4 percent*.
- ↑ Demographic factors played a smaller role in subsequent service utilization. Compared with young adults (age 18 to 30), consumers **aged 31 to 45** were *10 percent more likely* and consumers **aged 46 to 60** were *18 percent more likely* to continue services.
- ↑ **Females** had a *10 percent increased* likelihood of services over the study period.
- ↔ **Race and geography** (Regional Support Network) did not play a significant role in service utilization patterns.

Full details of this utilization model are presented in the Appendix. It is important to note that the results presented from this analysis are not meant to indicate that certain groups of individuals are being denied public mental health services. Rather, they illustrate the types of consumers more likely to persist with public mental health services.

As discussed previously, patterns of service utilization may not be directly related to improved social outcomes. In future reports, we will look at mental health service utilization *in conjunction with* other important indicators (such as hospitalizations, arrests, and employment) to analyze results for public mental health consumers over time. The next section outlines these future reports.

FUTURE REPORTS IN THIS SERIES

This first report in the research series has highlighted the key differences among continuous, intermittent, and "leaving" public mental health consumers. Many of the differences observed in this study cohort are similar to other studies of patients who left care. For example, Alexander Young et al., found that "compared with patients who left treatment, patients who stayed were older, more likely to have schizophrenia, less likely to be married, more likely to be living in an institution, more satisfied with their relationships with friends and family, and less likely to have legal problems."[10]

While a high percentage of consumers from this cohort leave care over time, it is not clear how outcomes for these individuals compare with those receiving ongoing services and support. Young also notes that, "little is known about patients who leave public clinics over longer periods of time or about the degree to which patients who leave actually need further care…. The association of patient attrition with particular outcomes may lead to misleading conclusions if we monitor only the outcomes of patients who remain in treatment."[11]

Surveys of mental health consumers are often characterized by low response rates.[12] Yet, follow-up with the full spectrum of served individuals is necessary to assess outcomes. To maintain full coverage of these outcomes, this study will utilize state administrative databases to follow events of interest over time. Future reports will focus on the outcomes of the January 2004 cohort of continuous, intermittent, and short-term consumers in the following areas:

[9] Includes: Counseling/Psychotherapy, Day Support, Day Treatment, Family Treatment, Group Treatment Services, Medication Management, Medication Monitoring, Psychiatric Treatment/Medication Supervision, Psychosocial Rehabilitation. See: Triwest Group. (2007). <http://www1.dshs.wa.gov/pdf/hrsa/mh/sti_benefit_ design_final_report_2008_01_23_final.pdf> p. 52.

[10] A. Young, O. Grusky, D. Jordan, & T. Belin (2000). Routine outcome monitoring in a public mental health system: The impact of patients who leave care. *Psychiatric Services, 51*(1): 85-91 <http://psychservices.psychiatryonline.org/cgi/content/abstract/51/1/85>

[11] Ibid.

[12] C. Kaufmann & D. Phillips. (2000). *Survey of state consumer surveys.* Rockville, MD: Substance Abuse and Mental Health Services Administration. <http://www.mhsip.org/Ckaufman.pdf>

Arrests and Convictions. Encounters with the criminal justice system will be the focus of this report. We will analyze patterns and prevalence of arrests and convictions among subgroups of mental health consumers. In addition, the likelihood of subsequent re-arrests for different types of mental health consumers will be examined.

Emergency Hospitalizations. This report will examine differences in emergency room admissions (and re-admissions) among mental health consumers who remain in treatment and those who leave. Characteristics of mental health consumers with frequent admissions to emergency rooms will be compared with other high utilizers of emergency services.

Mental Health. For long-term and short-term consumers, we will look at factors related to involuntary treatment admissions, residential treatment, and psychiatric hospitalizations. Service utilization patterns will also be analyzed to determine individual characteristics associated with different treatment types (e.g., co-occurring treatment, crisis services, individual treatment, medication management, supported employment, etc.).

Employment. This report will analyze quarterly wages and hours worked for long-term, leaving, and returning mental health consumers. We will review the literature on definitions of successful employment for various subgroups within the public mental health system. Based on these various definitions, an analysis of stable employment and wage progression will be presented.

Drug Treatment and Detoxification. Using data from state-funded drug treatment services, we will report on the subsequent detoxification and drug treatment episodes for long-term, leaving, and returning consumers. This analysis will also look at the characteristics of adults with co-occurring disorders and follow outcomes such as treatment completion.

In addition to following outcomes for adult public mental health consumers, future reports in this series will include more details about children in the mental health system. Special attention will be paid to outcomes among different age groups, such as young children; adolescents; and transitioning, young adults.

INSTITUTE STUDY ON LONGITUDINAL OUTCOMES OF MENTAL HEALTH CLIENTS—PREVIOUS REPORTS

Lerch, Steve. (2005). *Long-Term Outcomes of Public Mental Health Clients: Preliminary Report*. Olympia: Washington State Institute for Public Policy, Document No. 04-02-3401.

Mayfield, Jim. (2005). *Employment Characteristics of Clients Receiving Public Mental Health Services*. Olympia: Washington State Institute for Public Policy, Document No. 05-10-3902.

Yen, Wei. (2005). *Criminal Justice Involvement Among Clients Receiving Public Mental Health Services*. Olympia: Washington State Institute for Public Policy, Document No. 05-10-3901.

Yen, Wei and Mayfield, Jim (2005). *Long-Term Outcomes of Public Mental Health Clients: Additional Baseline Characteristics*. Olympia: Washington State Institute for Public Policy, Document No. 05-03-3401.

Yen, Wei. (2006). *Long-Term Outcomes of Public Mental Health Clients: Two-Year Follow-Up*. Olympia: Washington State Institute for Public Policy, Document No. 06-02-3401.

Yen, Wei. (2007). *Long-Term Outcomes of Public Mental Health Clients: Interim Report for 2002–2005*. Olympia: Washington State Institute for Public Policy, Document No. 07-03-3402.

APPENDIX

Event History Analysis for Repeat Service Spells

Category	Variable	Hazard Ratio	95% Confidence Limits		p value
Age	31-45	1.10	1.17	1.04	0.00
	46-60	1.18	1.26	1.10	<.0001
	61+	0.90	0.98	0.83	0.02
Service	Crisis	0.88	0.93	0.84	<.0001
	Traditional Outpatient*	1.04	1.04	1.03	<.0001
	Non-Traditional Outpatient*	1.00	1.00	1.00	0.42
Eligibility	Non-Medicaid	0.89	0.93	0.84	<.0001
Race	African American	0.93	1.02	0.84	0.12
	Asian American	1.12	1.31	0.96	0.16
	Native American	1.15	1.33	1.00	0.05
	Other Race	0.94	1.01	0.87	0.10
Diagnoses	Schizophrenia	1.25	1.37	1.14	<.0001
	Bipolar	1.24	1.35	1.15	<.0001
Functioning	GAF Score: Severe (1–40)	1.15	1.24	1.07	0.00
	GAF Score: Serious (41–50)	1.28	1.36	1.21	<.0001
Sex	Female	1.10	1.15	1.04	0.00
RSN	Chelan/Douglas	1.12	1.35	0.93	0.24
	Clark	0.97	1.15	0.83	0.74
	Grays Harbor	0.92	1.15	0.73	0.45
	Greater Columbia	0.90	1.02	0.79	0.10
	King	1.03	1.17	0.90	0.68
	North Central	1.09	1.30	0.91	0.34
	Northeast	0.90	1.15	0.71	0.40
	North Sound	0.80	0.92	0.70	0.00
	Peninsula	1.00	1.16	0.86	0.96
	Pierce	0.90	1.03	0.79	0.13
	Southwest (Cowlitz)	1.16	1.41	0.96	0.12
	Thurston/Mason	1.03	1.23	0.86	0.73
	Timberlands	1.06	1.25	0.90	0.49

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	909.0009	29	<.0001
Score	512.4123	29	<.0001
Wald	606.4387	29	<.0001

* Traditional Outpatient includes the following service codes: Counseling/Psychotherapy, Day Support, Day Treatment, Family Treatment, Group Treatment Services, Medication Management, Medication Monitoring, Psychiatric Treatment/Medication Supervision, Psychosocial Rehabilitation. Non-Traditional Outpatient includes: Community Psychoeducation, Co-occuring Treatment, MST, Peer Support, Therapeutic Psychoeducation, High Intensity Treatment, Rehabilitation Case Management. Classifications from Triwest Group (2007).
<http://www1.dshs.wa.gov/pdf/hrsa/mh/sti_benefit_design_final_report_2008_01_23_final.pdf> p. 52.

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