Allegheny County HealthChoices Program

Recidivism

presented by

Allegheny HealthChoices, Inc

306 Fourth Avenue, Pittsburgh, PA 15222
Phone: 412/325-1100 Fax 412/325-1111

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AHCI is a contract agency for the Allegheny County Department of Human Services' HealthChoices Program

HealthChoices Behavioral Health Program
Focus Quality Review:

Recidivism

Introduction

Much attention is given to the issue of recidivism (readmission to the same level of service in a short period of time). Discussion is often centered on what factors influence recidivism and how these factors can be managed in order to reduce it. This report explores issues influencing readmissions, manifestations within specific populations, and identifies areas for opportunity to improve the well being of consumers who use behavioral health services.

For the purposes of this report, please note the following explanation of terms:

- Recidivism – Readmission within 30 days to the same level of intensive service, which includes:
    - Inpatient mental health
    - Inpatient detoxification *
    - Inpatient rehabilitation *
    - Non-hospital detoxification *
    - Non-hospital rehabilitation *

      *(*Denotes drug and alcohol services)*

- Enrollees – Eligible Medicaid recipients who were enrolled in the HealthChoices program during the report period. This information is based on member month equivalents reported in capitation data.

- Community Care Consumers – HealthChoices enrollees on whose behalf a claim has been adjudicated for behavioral health services received through Community Care during the report period.

- Paid Claims – Paid Claims are used for calculating numerous reports, including service utilization. The date of service is extracted from the paid claims data. Paid claims are based on all claims submitted for behavioral health services received by enrollees through Community Care during the report period.

- Commitment – Commitments are used **only** for mental health treatment, and therefore are not applicable to drug and alcohol services. Commitments fall into two categories: voluntary and involuntary. Voluntary admissions are categorized as a 201

commitment. Involuntary commitments are listed as 302, 303 or 304. The most obvious difference in these categories is the timeframes associated with each commitment. Although a voluntary inpatient may sign him/herself out without the attending physician's release, they must give notice of their intent to leave. A person voluntarily admitted may, at the discretion of the physician, be held up to 72 hours if the physician does not agree with their request to withdraw from the inpatient treatment. A 302 commitment is granted for up to 5 days. A 303 commitment is granted for up to 20 days and a 304 is granted for up to 90 days and involves a state hospital stay or an involuntary commitment to outpatient care.

- Supplemental Services –The State requires Community Care to provide certain "in-plan" services. Community Care is also able to offer supplemental services, which are not required offerings, but which they feel will benefit the consumers.

Methodology

Defining the Data

In analyzing an episode of care and the services consumers received in relation to a readmission to the same level of care, Allegheny HealthChoices, Inc. (AHCI) used a combination of data sources: authorization and claims data. Authorization data was used to define the episodes of care. An episode of care is defined as a period of service with a start date (admission date) and an end date (discharge date). Claims data was used to determine consumers' service utilization prior to, in between, and after a defined episode of care and subsequent readmission to the same level of care.

Authorization data was used to define episodes of care instead of claims, because claims data can portray a less accurate reflection of the inpatient activities. For example, several claims may be submitted for one episode of care (i.e., an eight day mental health inpatient hospitalization may have two claims submitted, one for the first four days and another for second four days). Depending on the parameters set, the two claims could be characterized as a readmission instead of one continuous episode of care. Therefore, authorization data was used to provide the most accurate picture of initial episodes of care and subsequent readmissions to the same level of care,

Claims data was used to analyze service utilization because it is generally more reliable than authorization data with regard to dates of service for less intensive services (i.e., outpatient therapy). While authorized intensive services, such as mental health inpatient, are almost always used for the specified date and time, the relationship between authorizations and actual utilization for less intensive services is not as accurate. Less intensive services tend to be authorized for a longer time period and for no specified dates of service. For example, outpatient therapy may be authorized for 52 visits over a one-year time period. The frequency with which the consumer actually uses the visits can only be determined by analyzing claims data. The provider essentially confirms the

consumer's receipt of service (including the service dates) during the claim submission process.

Additionally, it is important to remember that the number of consumers represents a uniform measure of episodes of care (authorization data) and services (claims data). Therefore, the service utilization portion of this report is based on unduplicated consumer counts. Given that a consumer could have multiple episodes of care in intensive services, the total number of the types of services received will exceed the number of consumers.

Defining the Population

The population selected for this report was those consumers identified as being readmitted to an intensive service within 30 days of discharge from the same service. The intensive service categories analyzed in this report include: inpatient mental health, inpatient detoxification, inpatient rehabilitation, non-hospital rehabilitation, and non-hospital detoxification.

Understanding that several factors influence recidivism, the total population was divided into three groups:

- Population 1- Consumers who were admitted one or two times during the study period (July 1, 1999 to June 30, 2000). The total number of consumers in this population was 4,020.
- Population 2- Consumers that were admitted three to nine times during the study period. The total number of consumers identified in this category was 813.
- Population 3- Consumers who were admitted ten or more times during the study period (the range was 10 to 21 episodes). This population equals 23 consumers.

Note: When the population is defined as one group instead of the three groups above, then the total population is being represented.

Defining the Timeframe

The timeframe used for this report included the third and fourth quarters of 1999 and the first and second quarters of 2000. This represents one full year of HealthChoices data and one year of full enrollment. A service was counted as part of the quarter in which the admission or initial date of service occurred.

Readmission Rates

Overview

The frequency of overall readmissions and the demographic characteristics of readmissions are expressed as a rate per 1,000 members. Readmission rates provide a standardized measurement and a more accurate reflection of the performance than a percent of readmissions. Rates per 1,000 are especially important when comparing service categories in which the volume of activity varies substantially between service categories.

In general, inpatient mental health readmission rates were significantly higher than those for drug and alcohol services. To foster more meaningful comparisons, the services related to drug and alcohol treatment have been combined into a common category titled "D&A Services." This category is comprised of inpatient detoxification, inpatient rehabilitation, non-hospital rehabilitation, and non-hospital detoxification. Although these services are presented as a combined readmission rate, the integrity of the data was maintained by deriving the combined rate from service category admissions to service category readmissions (i.e., inpatient detoxification admission to inpatient detoxification readmission).

The following table illustrates the range of readmissions across the study period by service category and by timeframes of one to seven and eight to thirty days:

Table 1.0 Readmission Rates by Service Category and Timeframes

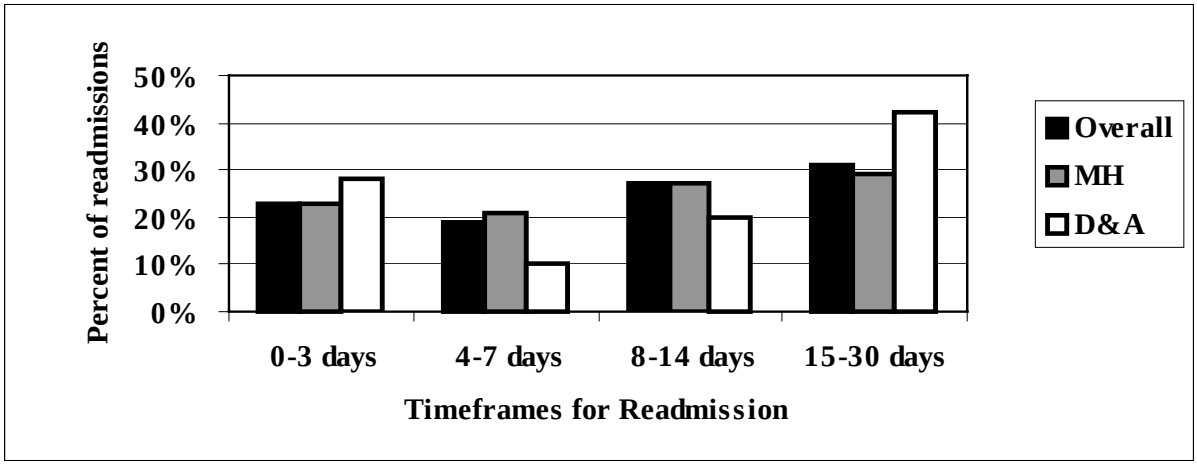
Service Category	Range of Readmission Rates w/in 1-7 days	Range of Readmission Rates w/in 8-30 days
Inpatient Mental Health	0.84 to 1.23	1.27 to 1.58
D&A Services	0.07 to 0.10	0.11 to 0.23

Note: Represents readmissions that occurred from July 1, 1999 to June 30, 2000 by quarter. Ranges expressed as rates per 1,000 members.

Table 1.0 illustrates that more readmissions occur between 8-30 days following discharge than during the first seven days after discharge. The table also demonstrates a large variance in readmission rates by service category.

AHCI considered another perspective of the same data, narrowing the scope of readmission into four distinct time frames. These four periods of readmission lend itself to a better understanding of the issues and opportunity to reduce the rate of readmission. Chart 1.0 presents a summary of the percentage of consumers who were readmitted to the same level of services within four distinct time periods during the 30 days after discharge from the initial episode of care.

Chart 1.0 Percentage of Total Readmissions Within 30 days of Discharge



Key:
Total: All readmissions over the 12-month time period
MH: Mental health readmissions over the 12-month time period
D&A: Drug and alcohol readmissions over the 12-month time period

Chart 1.0 illustrates that most of the readmissions (both mental health and drug and alcohol) occurred between 15-30 days of discharge from the initial episode of care. Clinical practice suggests that the sooner a consumer receives services after discharge from an intensive service, the more likely the consumer is engaged in services and is able to maintain stability and his/her tenure in the community. Ideally, outpatient services should be initiated within 72 hours of discharge to effectively engage consumers in their treatment plan. These findings may indicate that these services are not routinely being offered upon discharge and/or external factors interfere with the consumers' adherence to the treatment plan.

Mental health readmissions were fairly consistent over the 12-month period, ranging from 21% to 29%. A wide variance was seen in drug and alcohol readmissions, ranging from 10% to 42%. While it is not clear why drug and alcohol readmissions vary in this manner, there are a several factors that could influence admissions for both mental health and drug and alcohol services. These could include transportation, access, housing, seasonal/cyclical variations in utilization, discharge planning, outreach, and consumer adherence issues.

Demographic Overview

Demographic characteristics are a fundamental prologue to the analysis. Of the total consumers considered in this report, those in the 22 to 44 years age category had the highest overall readmission rate (6.20/1,000 members). In terms of eligibility categories, consumers in the category of Social Security Income had the highest readmission rate (5.46/1,000). Men (5.78) were admitted at a rate higher than women (5.39/1,000) and Caucasian consumers (5.95/1,000) at a higher rate than African American consumers (4.44/1,000).

The same demographic characteristics were analyzed for each of the three population groups. Table 1.1 illustrates the percentages of consumers within the largest demographic category for each population. For example, the largest age group represented in all three populations was 22-44 years. The percentages were calculated using the size of each population as the denominator. Given the large disparity between the size of population one and population three, one would expect to see a gradual increase in the percentages from population one to three. The values in bold print identify percentages that are markedly increased/decreased and do not follow this predictable sequence.

Table 1.1 **Demographics per Population**

Characteristics	Population 1	Population 2	Population3
Age: 22-44 years	52%	63%	74%
Gender: Female	54%	51%	**35%**
Race: Caucasian	55%	55%	**65%**
Eligibility: SSI	36%	49%	**61%**

The differences highlighted in population three are more reflective of enrollment demographic data than consumer demographics and the disparity of people enrolled by race, versus utilization by race. This supports the theory that Caucasian consumers utilize a greater percent of outpatient services than African American consumers. The utilization disparity may be a result of several factors such as: case management, outreach, discharge planning, access, and transportation. The only characteristic difference observed in the two population set is that females are readmitted at a higher rate if their number of readmissions per year is less than ten.

Tier Assignment

A four level Tier system designed by Community Care assigns consumers to a unique Tier based on their specific diagnosis, clinical risk factors, utilization rates, and their Medical Assistance eligibility category. Tier One encompasses consumers who are:

- The highest priority, having utilized three or more inpatient episodes of care.
- These consumers are in a level of care other than outpatient and have a diagnosis that is consistent with the DPW standards for Serious and Persistent Mental Illness (SPMI). Factors of chronicity of illness, severity, and recidivism contribute to the assignment of Tier One.

Consumers in Tier One tend to have more chronic, long-term illness and utilize multiple resources. There is a strong correlation between the readmission rate and a Tier One assignment for inpatient mental health services. Of the total inpatient mental health consumers who were readmitted within thirty days of discharge, 6.44/1,000 adults and 1.01/1,000 children were assigned to Tier One.

The following table illustrates the distribution of tier assignments among the three populations studied. As you would expect, consumers within population three utilized

more intensive resources, presented with more complex needs, and have the potential for a greater risk for recurrent readmission.

Table 1.2 Tier Assignment by Population

Tier Level	Population 1	Population 2	Population 3
Tier 1	19%	66%	96%
Tier 2	45%	26%	4%
Tier 3	20%	7%	0%

Note: The percentages were calculated using the total number of consumers per population as the denominator. The values include children, adolescents, and adults.

Commitment Status

The percentages of readmissions by commitment status were relatively consistent over two distinct time periods (1-7 and 8-30 days). The overall percentage of readmissions based on an initial *voluntary* status was 82%, and the percentage based on an initial *involuntary* status was 18%. Other percentages of readmission based on commitment status are outlined in Table 1.3.

Table 1.3 Comparison of Commitment Status in Initial Admission vs. Readmission*

Initial Status to the Readmission Status	Percentage
Voluntary to voluntary status	95%
Voluntary to involuntary status	27%
Involuntary to voluntary status	23%
Involuntary to involuntary status	81%

**Note: Commitment status applies only to inpatient mental health services.*

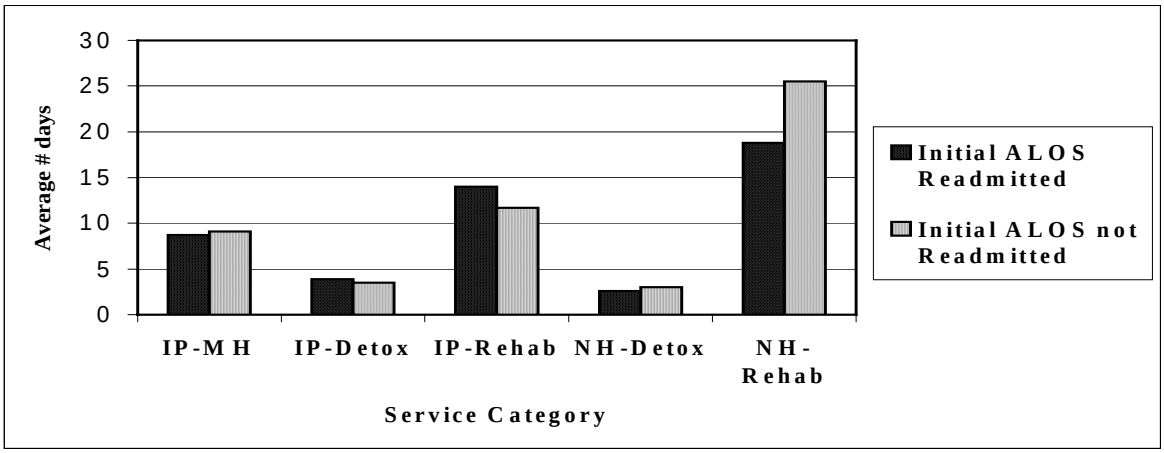
The data shows that most admissions occur on a voluntary basis for mental health services. This is consistent with previous AHCI report findings. Additionally, consumers who were initially admitted under a specified commitment status were more likely to be admitted under the same status if a readmission was required.

Average Length of Stay

A myriad of factors contributes to the length of stay of the initial admission and the rate of readmission. Factors can include the timeliness and intensity of discharge planning, case management efforts during the first admission, outreach efforts at discharge, consumer adherence issues, and risk factors within the consumer's home environment.

Average Length of stay (ALOS) is a controversial factor within the scope of recidivism. Chart 1.1 illustrates the ALOS, for all three populations, of the initial episode of care for consumers who were readmitted to the same level of care and those who were not readmitted within 30 days of discharge.

Chart 1.1 Comparison of the Initial ALOS of Consumers Readmitted and Not Readmitted



Key:

IP-MH	Inpatient mental health	**NH-Detox**	Non-hospital detoxification
IP-Detox	Inpatient detoxification	**NH-Rehab**	Non-hospital rehabilitation
IP-Rehab	Inpatient rehabilitation		

Over the twelve-month period, the total ALOS for consumers who were readmitted to inpatient mental health services and most drug and alcohol services was essentially equal to the ALOS of consumers who were not readmitted to the same service. On the contrary, the ALOS for consumers of non-hospital rehabilitation services not readmitted (25.5 days) was significantly higher than the ALOS for consumers who were readmitted to the same service (18.8 days). If the person voluntarily completes a non-hospital rehabilitation program, there is a greater likelihood that the person is motivated to continue with his/her recovery and is engaged in services. This could lead to a lower incidence of recidivism within the 30-day time period.

In terms of age groups, consumers 22-44 years (3.9 days) and 45-64 years (3.8 days) had the highest ALOS for most inpatient detoxification services. The same pattern was noted for the 6-12 year olds (12.7) who received inpatient mental health services. African American consumers receiving non-hospital rehabilitation services consistently had longer ALOS (18.1 days) than consumers of other races.

The ALOS findings are interesting but are not definitive in regards to recidivism. A final analysis of the ALOS, found in Table 1.4, reveals significant variance across the three populations by service type. Two of the four core services demonstrated a decrease in the average number of days from population one to population three. The pattern for the ALOS for consumers of inpatient rehabilitation services within population two was atypical (7.47 days) as compared with the ALOS for the other two populations. This prompted an analysis of population two by two distinct categories: consumers with three to six admissions and those with seven to nine admissions during the study period. The findings are illustrated in the following table.

Table 1.4 **ALOS by Population**

Service Type	Population 1	Population 2 3-6 / 7-9 admits	Population 3
IP-MH	9.30	8.74 / 8.01	6.76
IP-Detox	3.62	3.51 / 3.34	3.39
IP-Rehab	**17.41**	**7.49 / 7.33**	**13.00**
NH-Rehab	30.92	18.32 / 12.47	11.48

Key:

IP-MH	Inpatient mental health	**IP-Rehab**	Inpatient rehabilitation
IP-Detox	Inpatient detoxification	**NH-Rehab**	Non-hospital rehabilitation

The breakdown of population two does not explain the ALOS disparity for consumers of inpatient rehabilitation services. However, it did reveal a marked difference in the ALOS for non-hospital rehabilitation consumers. This finding support the pattern observed with the ALOS for non-hospital rehabilitation services as identified in Chart 1.1. In general, the ALOS for consumers that were not readmitted was greater than the ALOS for those readmitted.

The ALOS for inpatient detoxification services was essentially the same across the populations. This pattern is expected because the detoxification period is a set length of time during which the body absolves the toxin. The process is not contingent on the demographic characteristics, needs, or complexity of the individual. Issues impacting the ALOS are addressed in the body of the report titled *Utilization and Timing of Supplemental Services* and M*ember-Level Information*.

Service Utilization

Service Type

The next step was to determine the composition of consumers with the least and the greatest utilization of services. The percent of utilization of the top three admission categories was calculated for each population. The rank order of these categories was consistent across the populations: inpatient mental health, non-hospital rehabilitation, and inpatient detoxification (respectively). The percentage variance for inpatient mental health is very small across the populations. Given that inpatient mental health is exceedingly the highest service utilized by all populations, the findings below were anticipated. Substantial variance exists between the three populations for consumers of non-hospital rehabilitation and inpatient detoxification services. The following table illustrates these findings.

Table 1.5 **Utilization of Service Type by Population**

Service Type	Population 1	Population 2	Population 3
IP-MH	82%	92%	91%
NH-Rehab	**15%**	**44%**	**65%**
IP-Detox	**7%**	**16%**	**26%**

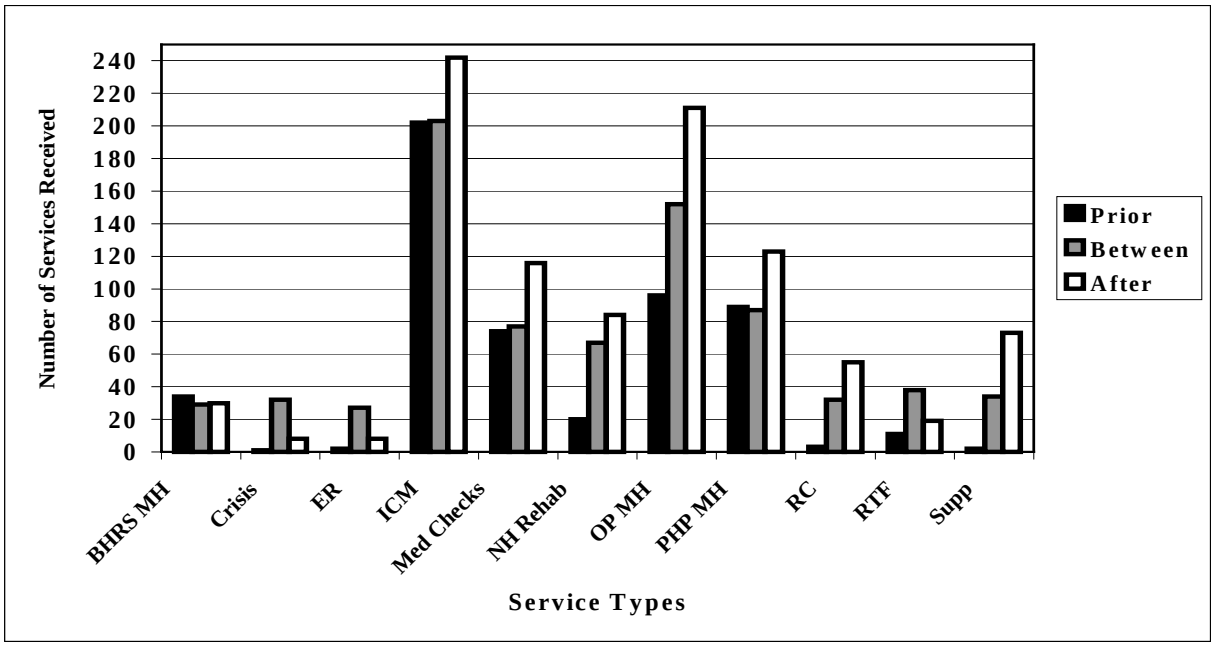
Key:
IP-MH Inpatient mental health **IP-Detox** Inpatient detoxification
NH-Rehab Non-hospital rehabilitation

The bolded values denote atypical patterns across the populations. The discrepancies cannot be explained by applying the demographic or ALOS findings above. The next step in the analysis process was to ascertain if the disparity was due to a single factor not yet considered or a composite of attributes. First, the mix of services used by the total population and by the three study populations was analyzed.

Service Mix by Total Population

The mix of services a consumer receives within the 30 days prior to admission, between admissions, and the 30 day period following discharge was analyzed to determine if there were any trends in utilization related to readmission. Chart 1.2 illustrates the 11 services consumers utilized most as compared to their admission and readmission to the same level of care.

Chart 1.2 **Top 11 Outpatient/Non-hospital Services Received in Relation to Admission/Readmission to Intensive Services**



Note: The data is based on paid claims matched to an episode of care and confirmed by an authorization. A consumer can be counted in more than one category, as they may receive more than one service type at a time. The initial admission and subsequent readmission to intensive services are included in the service mix. The data is inclusive of the admission date and the date of discharge in order to capture any additional services that occurred on those two days.

Key:

Crisis	Mobile crisis	**OP MH**	Outpatient mental health treatment
ER	Emergency room	**PHP MH**	Partial hospital program-mental health
ICM	Intensive case management	**RC**	Resource coordination
Med Check	Medication check	**RTF**	Residential treatment facility
NH Rehab	Non-hospital rehabilitation	**Supp**	Supplemental services
BHRS MH	Behavioral health rehabilitative services for children and adolescents- mental health		

There were approximately 22 different service categories that were captured in the data. Overall, the mental health and drug and alcohol services accessed by consumers was allocated equally to both service types. However, when analyzing the top 11 services utilized, more consumers accessed mental health services than drug and alcohol services.

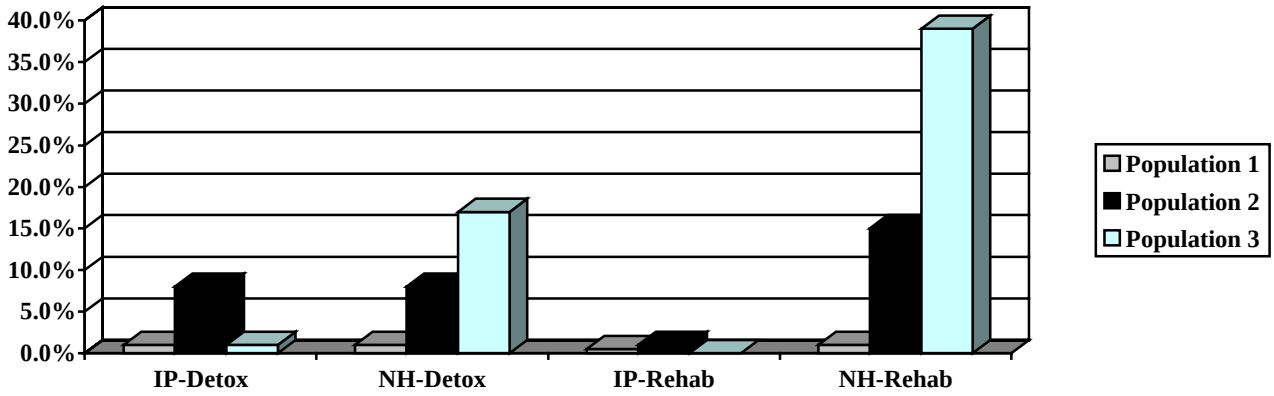
The number of distinct services utilized prior to an initial admission was less than the number between admissions and after discharge. This is expected because consumers often need additional support upon discharge from an intensive service to augment recovery, foster stabilization, and prevent relapse. Support Services are also imperative in preventing recurrent admissions. Promoting outpatient services upon discharge may result in more service types (variety) and units (numbers) added to the service mix of a consumer's treatment plan.

Chart 1.2 also illustrates that eight of the eleven service categories demonstrated an increase in utilization from 30-days prior to the initial episode of care, between the admissions, and after discharge. The service categories that displayed an increase included: intensive case management, medication monitoring, non-hospital rehabilitation, outpatient mental health, partial hospitalization, resource coordination and supplemental services. These are services commonly used to support consumers after an intensive-level episode of care.

Service Mix Comparisons by Population Groups

The service mix data pertaining to services received prior to admission must be evaluated concurrently with the percent of services that consumers received after an inpatient mental health admission. The subsequent eight charts demonstrate the percent of intensive and less intensive inpatient and outpatient services received by consumers of each of the populations.

Charts 1.3 Core Drug and Alcohol Services Utilized Prior to an Inpatient Mental Health Admission by Population

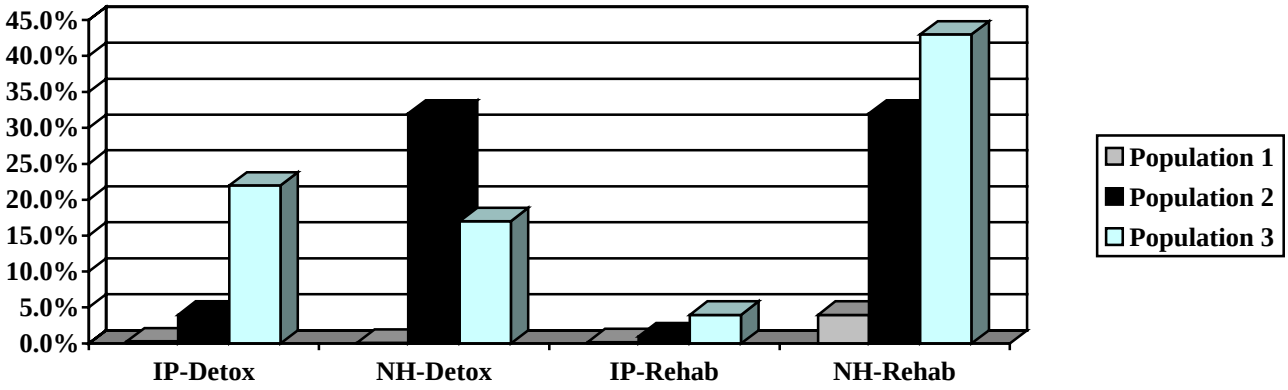


Key:

IP-Detox	Inpatient detoxification	**IP-Rehab**	Inpatient rehabilitation
NH-Detox	Non-hospital detoxification	**NH-Rehab**	Non-hospital rehabilitation

In Chart 1.3, population three represents the largest consumers of core resources (four services illustrated in Chart 1.3) with the exception of inpatient detoxification and inpatient rehabilitation services. The pattern was different for core services received after admission (as illustrated in Chart 1.4). Population three had the largest percentage of consumers for three of the four core services represented. Utilization of inpatient rehabilitation for population three increased, however, utilization did not vary before and after admission for populations one and two. This may indicate that consumers within population three did not receive sufficient support via additional services offered (i.e. case management, outreach coordination, mobile crisis) and required subsequent inpatient services.

Charts 1.4 **Core Drug and Alcohol Service Utilization After an Inpatient Mental Health Admission by Population**

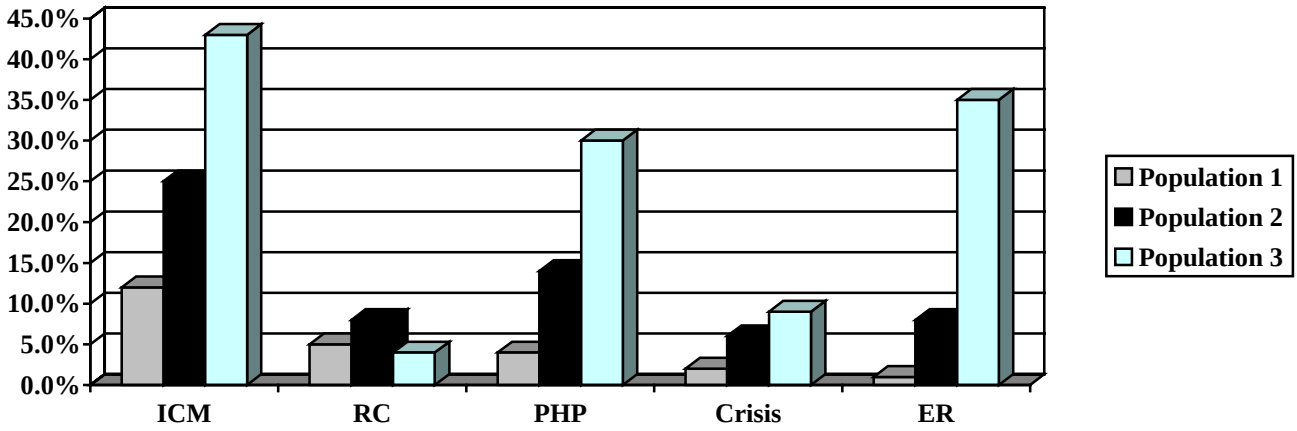


Key:

IP-Detox	Inpatient detoxification	**IP-Rehab**	Inpatient rehabilitation
NH-Detox	Non-hospital detoxification	**NH-Rehab**	Non-hospital rehabilitation

As illustrated in Charts 1.5 below, population three accessed the highest percentage of mental health services prior to admission. As acknowledged earlier, we believe that the consumers within this population have greater needs and are more medically complex than consumers in populations one and two.

Chart 1.5 **Mental Health Services Received Prior to Admission by Population**



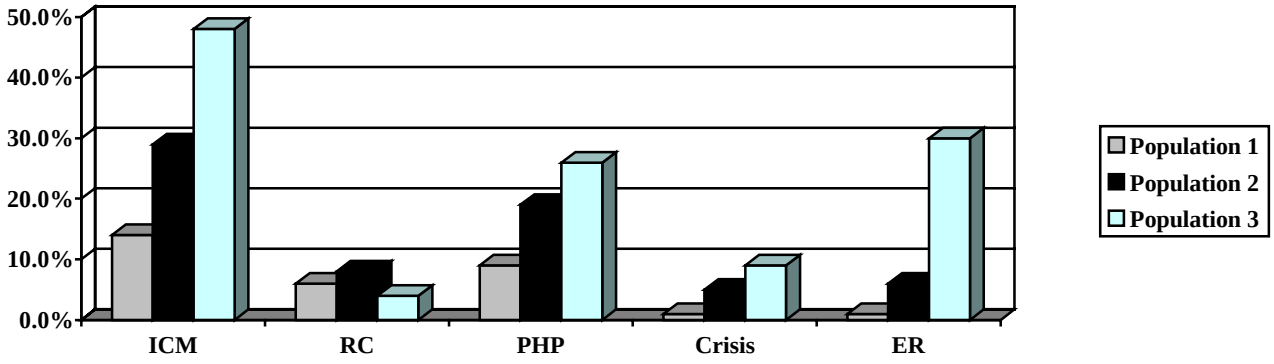
Note: Mobile crisis and emergency room are not exclusive mental health services and may represent drug and alcohol utilization.

Key:

ICM	Intensive case management	**Crisis**	Mobile crisis
RC	Resource coordination	**ER**	Emergency room
PHP	Partial hospital program		

Given AHCI's assumption that persons identified within population three require a higher intensity of management than persons in populations one and two, one would expect to see this reflected in the consumption of services after discharge. Individuals within population three did receive a larger percentage of services after admission as persons in population one and two. However, the actual percent consumed does not equal the need, especially for intensive case management. In addition, population three consumed emergency room services much more frequently than mobile crisis. This may indicate opportunities for consumer/provider education. These concerns are depicted in Chart 1.6.

Chart 1.6 Mental Health Services Received After Admission by Population

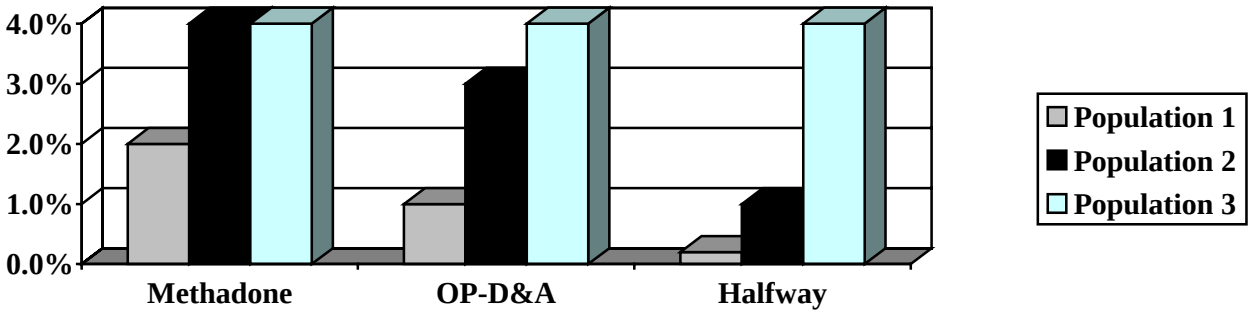


Key:

ICM	Intensive case management	**Crisis**	Mobile crisis
RC	Resource coordination	**ER**	Emergency room
PHP	Partial hospital program		

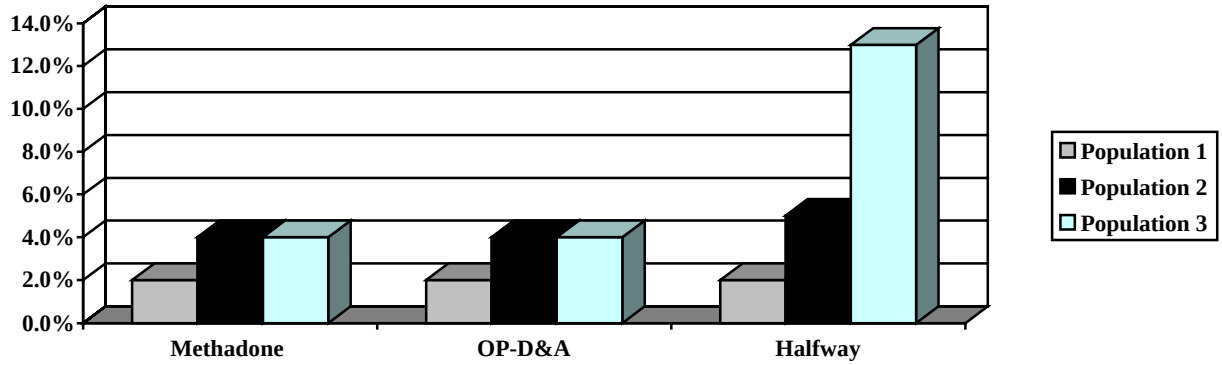
Next is a comparison of drug and alcohol services received before and after admission. In comparing Charts 1.7 and 1.8, note that the scale of the second chart is appreciably larger. While methadone use was essentially unchanged, the utilization of outpatient drug and alcohol services for population two increased. Most noticeable was a percentage increase across all populations for halfway house, especially for population three. Considering that the volume of consumers within population three is small, this increase can be translated into a few consumers. Conversely, a percent increase in population one translates into a large number of consumers.

Chart 1.7 Drug and Alcohol Services Used Prior to Admission by Population



Key:
OP-D&A: Outpatient drug and alcohol **Halfway:** Halfway House

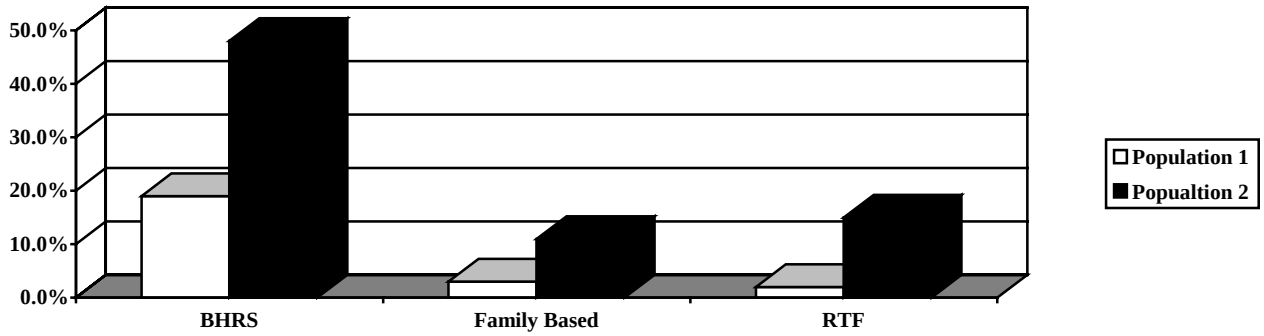
Chart 1.8 Drug and Alcohol Services Used After Admission by Population



Key:
OP-D&A Outpatient drug and alcohol **Halfway** Halfway House

The final charts (1.9 and 2.0) illustrate the utilization of children and adolescent outpatient care. Population three is comprised of only adults, therefore, the absence of behavioral health services is expected. Population two includes 75 children/adolescents and population one contains 646 children/adolescents. The percentages of each service represented were calculated based on the volume of children/adolescents for each population (646 and 75 respectively). The largest percentage of consumers accessed behavioral health rehabilitation services before admission.

Chart 1.9 Children/Adolescent Services Prior to Admission by Population



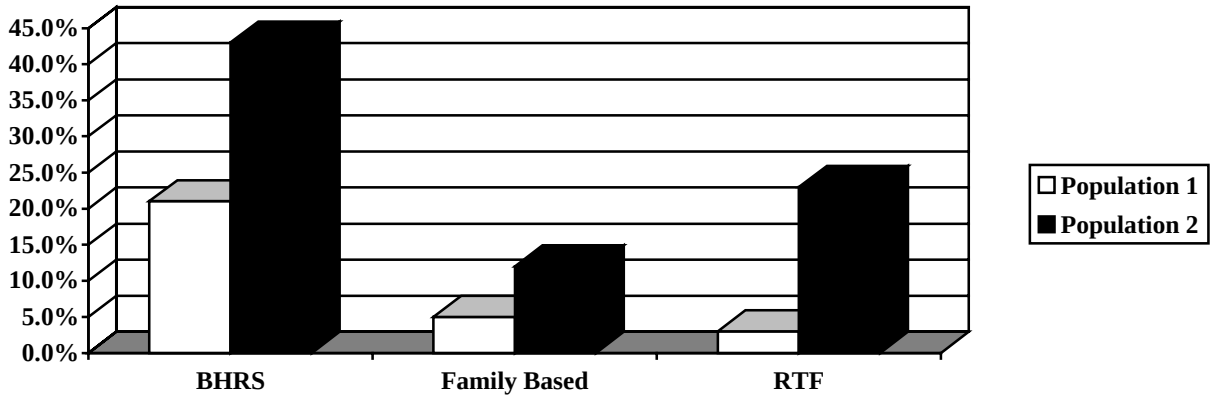
Note: Percentages are calculated using the number of children/adolescents per population as the denominator.

Key:

BHRS	Behavioral health rehabilitation services for children/adolescents
RTF	Residential treatment facility

Utilization of behavioral health rehabilitation services and family based services before and after admission was fundamentally the same. Residential treatment facility (RTF) utilization doubled for population two for services received after admission. All community resources must be exhausted before RTF is utilized. Therefore, consumers in population two that have failed outpatient management and experienced several admissions would be directed to a RTF.

Chart 2.0 Children/Adolescent Services After Admission by Population



Key:

BHRS	Behavioral health rehabilitation services for children/adolescents
RTF	Residential treatment facility

In concluding the service mix portion of the analysis, it appears that the utilization of outpatient services before and after admission did not target at-risk populations. The services were not consistently used to their potential to avoid inpatient admissions. Population three consumed consistently less than 50% of the conventional discrete services (adult mental health and drug

and alcohol services). Persons in population two and three consumed drug and alcohol services at nearly the same rate, even though population three contains a larger percent of dual-diagnoses than population two. In terms of children and adolescent services, the pattern is more extreme (negative) than adult service utilization. The goal should be to attempt to engage 100% of the at-risk population.

Utilization and Timing of Supplemental Services

The service mix by population, as shown above, illustrates significant disproportion of intensive and less intensive services. The use of supplemental services can enhance a person's tenure in the community and contribute to an overall decrease in the recidivism rate. Supplemental services offer a unique treatment for consumers with a drug and alcohol and/or mental health diagnosis that are not available with other outpatient services. However, the utilization of supplemental services has not changed appreciably since HealthChoices was implemented in the Southwest Region. Expanded utilization of supplemental and capitated services could significantly augment the well being of members that receive behavioral health services. Consumers may not innately seek out supplemental services (see Table 1.6 below) as they do inpatient and emergency services, because they may not be familiar with the services or are unaware of their benefits. These services must be explained, offered, and encouraged by the provider and Community Care. They must also be easily accessible to the consumer. A low utilization rate is not exclusively indicative that the service was not indicated for the consumer. Providers have the responsibility to inform and educate their clients. The following table illustrates the utilization of supplemental services by population for the time periods of 30 days prior to admission and 30 days following discharge.

Table 1.6 Utilization of Supplemental Services Before and After Admission

Supplemental Service Prior to Admission	Population 1	Population 2	Population 3
D&A Partial Hospital	63%	33%	**0%**
D&A IOP	31%	38%	40%
Residential Support	13%	42%	60%
Total Supplemental Services	**2%**	**10%**	**22%**
Supplemental Services After Discharge			
D&A Partial Hospital	46%	43%	43%
D&A IOP	30%	29%	57%
Residential Support	36%	45%	29%
Total Supplemental Services	**7%**	**23%**	**30%**

The percent of total supplemental services was calculated using the number of consumers within the given population (4,020, 813, and 23 respectively). The denominator used to determine the percentage of a given service was the total number of supplemental services within the given population (n= 72 for population 1, n=84 for population 2, and n=5 for population 3).

Key:

D&A Partial Hospital Drug and alcohol partial hospitalization
D&A IOP Drug and alcohol intensive outpatient
Residential Support Community residential support

Across the populations, drug and alcohol partial hospitalization services were not used prior to admission by consumers in population three, but were frequently used by consumers in population one. This utilization pattern was more evenly distributed for the same service after discharge. The decline in utilization of community residential support services by consumers in population three (prior to admission to after discharge) cannot be explained by any single factor presented to this point.

Lack of Service Utilization Between Admission and Readmission

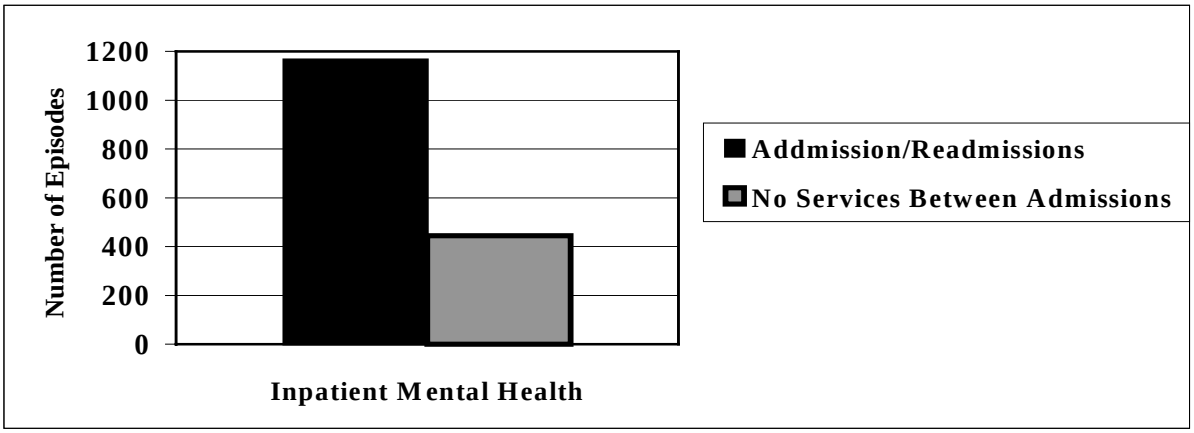
As part of the recidivism report, data was analyzed to determine the extent to which consumers did not receive any services between the initial episode of care and the readmission to the same level of care within 30 days.

Throughout the 12-month time period, there were 1,288 occurrences of admission/readmission to the same level of care within 30 days. Of these 1,288 occurrences, consumers did not receive services between the admission and readmission 641 (49.7%) times[1]. Although there were more occurrences of admission/readmission to inpatient mental health over the 12-month period, the percentage of these occurrences where a consumer did not receive services in between admission/readmission (38%), was lower than that of any of the drug and alcohol services. (The exception to this is with inpatient rehabilitation services, which was not considered since only one admission/readmission was captured). Inpatient detoxification admissions/readmissions was the service category with the highest percentage of occurrences (71%) where a consumer did not receive services in between admission/readmission.

The following charts illustrate the frequency with which consumers did not receive services between admission to inpatient mental health, inpatient detoxification, non-hospital detoxification, and non-hospital rehabilitation services and subsequent readmission to the same level of care.

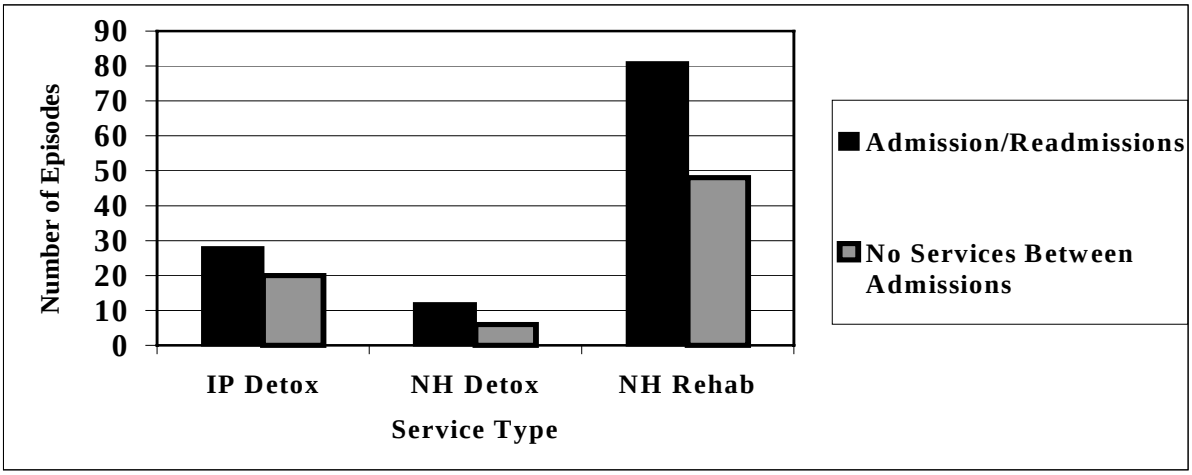
[1] This does not represent a distinct number count of consumers, but rather the number of times over the 12-month time period there was an admission/readmission to the same level of care within 30 days of initial discharge. One consumer may have had several admission/readmission episodes over the 12-month period. Thus, these numbers are duplicative.

Chart 2.1 Consumers Without Services Between Inpatient Mental Health Admissions and Readmissions



Note: *Members are an unduplicated count, however, admissions/readmissions and services are duplicated.*

Chart 2.2 Consumers Without Services Between Drug and Alcohol Admissions and Readmissions



Note: *Members are an unduplicated count, however, admissions/readmissions and services are duplicated.*
Key:

IP-Detox	*Inpatient detoxification*	***NH-Rehab***	*Non-hospital rehabilitation*
NH-Detox	*Non-hospital detoxification*		

Over the 12-month time period, consumers were readmitted to inpatient mental health services within 30 days of discharge from the same level of care 1,166 times. Of these 1,166 admission/readmissions for inpatient mental health services, consumers did not receive any services between the initial episode of care and the readmission 445 times. The largest number of consumers who did not receive services between the initial episode of care and the readmission were in the 22 to 44 year age group, male, and Caucasian. These demographic characteristics represent overall utilization of services by age, gender and race.

For the 28 times consumers were admitted and readmitted to inpatient detoxification services within a 30 day period, consumers did not receive services in between the initial episode of care and the readmission 20 times. The largest number of consumers who did not receive services between admission and readmission were in the 22 to 44 years age group, female, and Caucasian.

Of the 12 admission/readmission to non-hospital detoxification services, consumers did not receive services between the initial admission and readmission six times. Half of these consumers were in the 22 to 44 years age group (45-64 year olds accounted for the other half), and most were female and Caucasian.

Of the 81 occurrences of admission/readmission to non-hospital rehabilitation services, consumers did not receive services between the initial admission and readmission 48 times. The largest percentage of these consumers was in the 22 to 44 years age group, female, and African American.

There were no (0) occurrences of a consumer admission/readmission to inpatient rehabilitation without services in between, and in fact, there was only one occurrence overall of admission/readmission to this level of care. This may be due to several factors including:

- Overall lower utilization of this service type compared to the other intensive services.
- Admissions to long-term treatment after inpatient rehabilitation.
- Utilization of non-hospital rehabilitation settings after inpatient.
- And possibly, the length of stays involved in inpatient rehabilitation.

The lack of services prior to and after admission is a reason for concern and may provide insight on recidivism. The table below highlights the lack of services for each of the three populations.

Table 1.7 Consumers That Received No Services Prior to and After Admission

Service Timing	Population 1	Population 2	Population 3
No Services Prior to Admission	63%	67%	70%
No Services After Admission	47%	56%	57%

The percentages do not vary substantially across the populations. The majority of consumers within population one did not receive services prior to admission and many did not receive services after admission. Given this, one cannot conclude that the exclusion of services alone contributes to recidivism.

Services by Provider

Another perspective in terms of how service utilization relates to recidivism was to analyze resource utilization patterns by providers. This analysis focused on two specific outpatient services: resource coordination and intensive case management. Episodes of care for inpatient mental health services were linked to individual providers of each service. The findings were not conclusive with regards to recidivism. The data revealed that providers who rendered the most resource coordination and intensive outpatient management services had the highest percentage

of readmission as well as the highest percent of consumers who were not readmitted (in comparison to lower volume providers). These findings are an indicator of capacity and volume, but do not help explain to the issue of recidivism.

Outpatient and Case Management Services Initiated Prior to Discharge

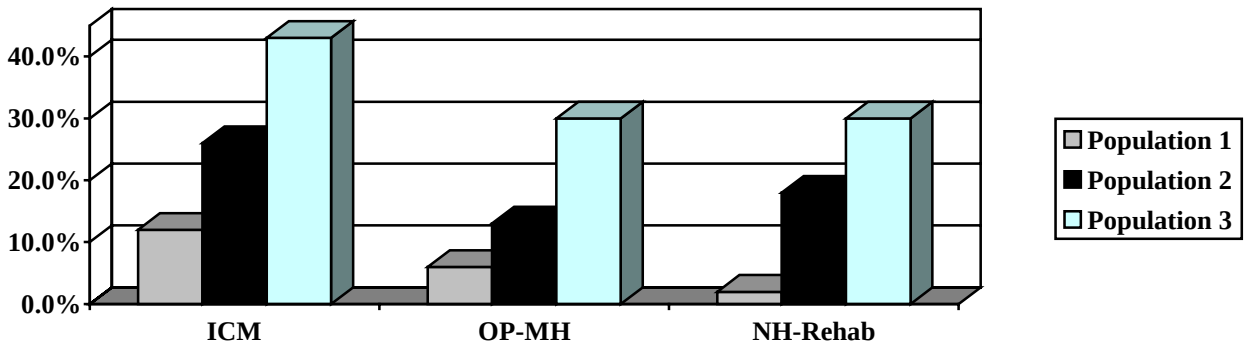
The final step in analyzing services was to determine the number of consumers by population who had outpatient and case management services initiated prior to their inpatient mental health discharge. The expectation is that efforts to establish a relationship with a consumer prior to discharge will enhance the likelihood that they will utilize services post-discharge. The percent of consumers that did not receive any outpatient service (intensive case management, etc.) during their inpatient stay by population were as follows:

- Population 1 – 56%
- Population 2 – 67%
- Population 3 – 87%

Given that population three has the highest recidivism rate, this population should be the primary focus. Initiating outpatient services prior to discharge is a means of reducing the need for readmission. Establishing rapport between the consumer and provider is key to reducing repeated admissions. Consumers are more inclined to receive and follow advice from a known advocate that will also be providing the care. This commitment by the provider inherently produces a sense of responsibility and accountability by the consumer. It also ensures that the consumer is equipped with the necessary resources to follow the treatment plan after he/she returns to their natural environment. This process also affords the consumer an opportunity to ask questions about the program. Conversely, the provider is enabled to allay fears and misconceptions that the consumer may have by explaining the advantages of jointly developing a treatment plan designed to meet their individual needs. Finally, subsequent efforts to engage the consumer to participate in the treatment plan are more likely to be accepted.

The following charts parallel the percent of initiation of outpatient services by population. The findings depict that more outpatient services are being introduced to the population with the greatest recidivism rate. These efforts may have deterred more readmissions than if the services were not initiated. In addition, Community Care has made provisions for providers to receive payment for initiating outpatient services prior to discharge from an inpatient admission. A threshold for an acceptable percent of outpatient services initiated prior to discharge could be established and efforts targeted at consumers that meet the description of population three.

Chart 2.3 Outpatient Services Initiated Prior to Discharge

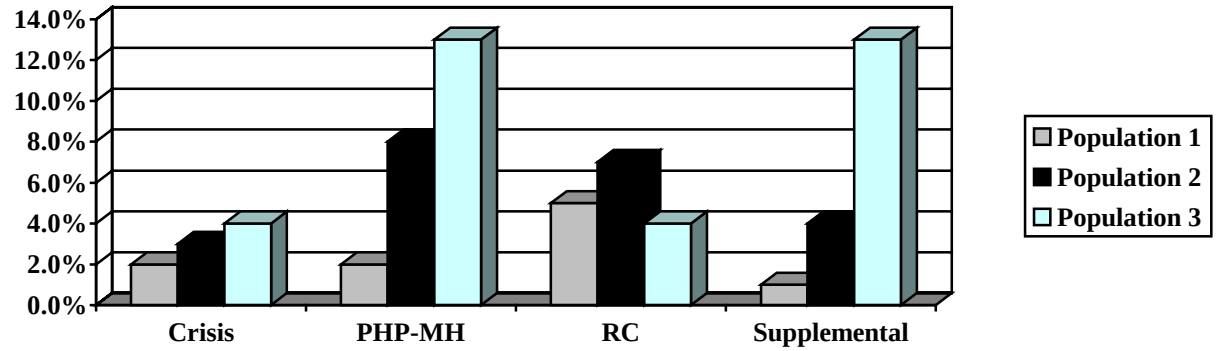


Key:

ICM	Intensive case management	**NH-Rehab**	Non-hospital rehabilitation
OP-MH	Outpatient mental health		

Chart 2.4 illustrates other outpatient services introduced during the inpatient mental health period. The predominant pattern exhibited above is replicated below, with the exception of resource coordination services not being provided to the population with the greatest recidivism rate. Another important observation is that the scale on the Chart 2.3 is significantly greater than Chart 2.4. Both of these observations offer potential for improvement and may contribute to a decline in recidivism.

Chart 2.4 Other Outpatient Services Initiated Prior to Discharge



Key:

Crisis	Mobile crisis	**RC**	Resource coordination
PHP-MH	Partial hospital program-mental health		

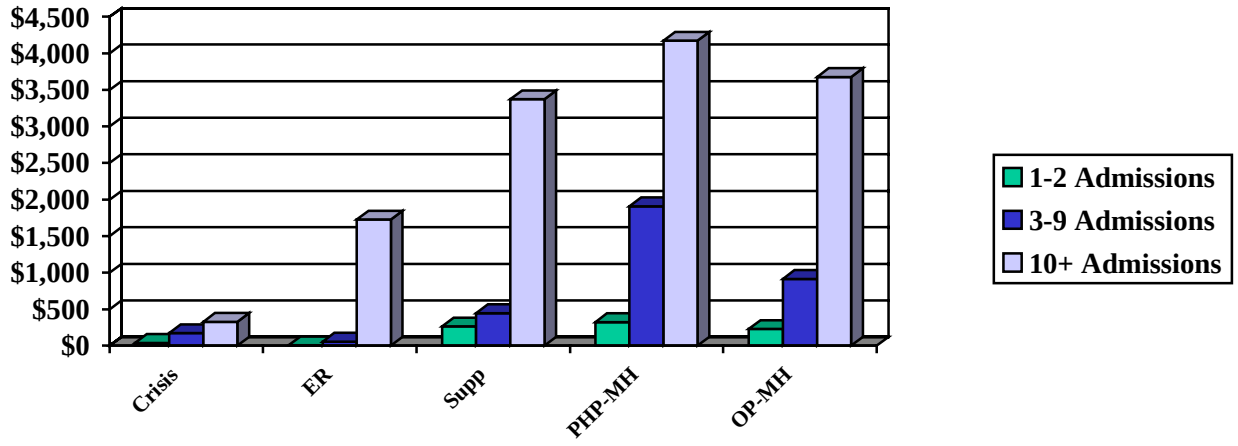
The Allegheny Crisis Emergency Services Team (ACES), includes mobile crisis among the outpatient services that are initiated prior to discharge. ACES is actively marketing their services to providers, facilities, and consumers to promote awareness. The toll free telephone

number has been added to many consumer-related materials. ACES believes that their coordinated efforts can help avoid the need for admission in many situations.

Utilization Costs by Population

The analysis clearly illustrates that persons in population three consumed a higher percentage of support services than consumers within populations one and two. The total percentage for intensive support services (i.e. intensive case management, resource coordination, partial hospital program, mobile crisis, and emergency room), however, is less than 50% per service. The goal for support service utilization for persons within this population should be 90% to 100% utilization. Charts 2.5 and 2.6 illustrate the actual costs to provide these support services.

Chart 2.5 Dollars Per Consumer for Outpatient Services Received by Population



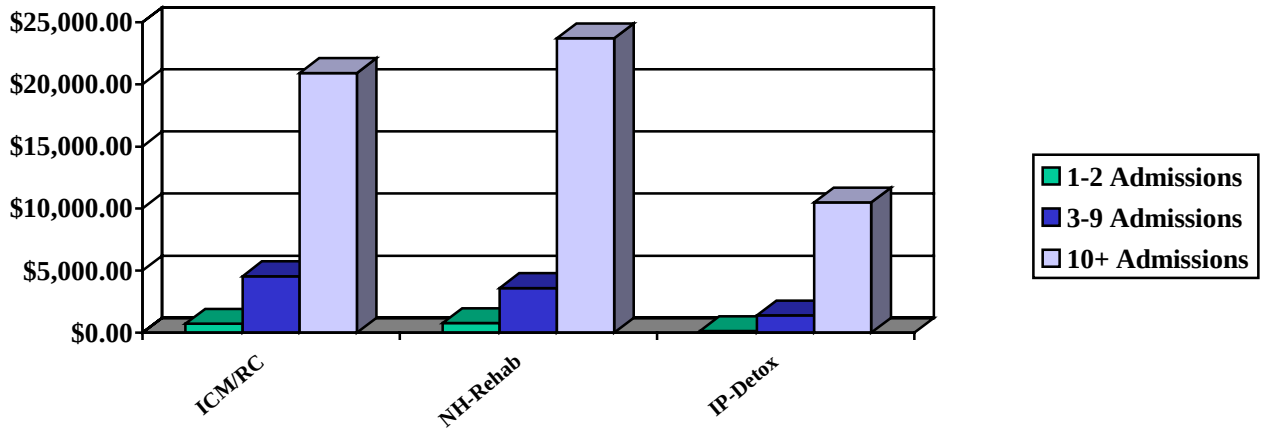
Note: *Dollars were calculated on a per unit charge based on the number of consumers per population.*

Key:

Crisis	Mobile crisis	**PHP-MH**	Partial hospital program-mental health
ER	Emergency room	**OP-MH**	Outpatient-mental health
Supp	Supplemental services		

Chart 2.6 is a continuation of the comparison of costs of services by the three population groups.

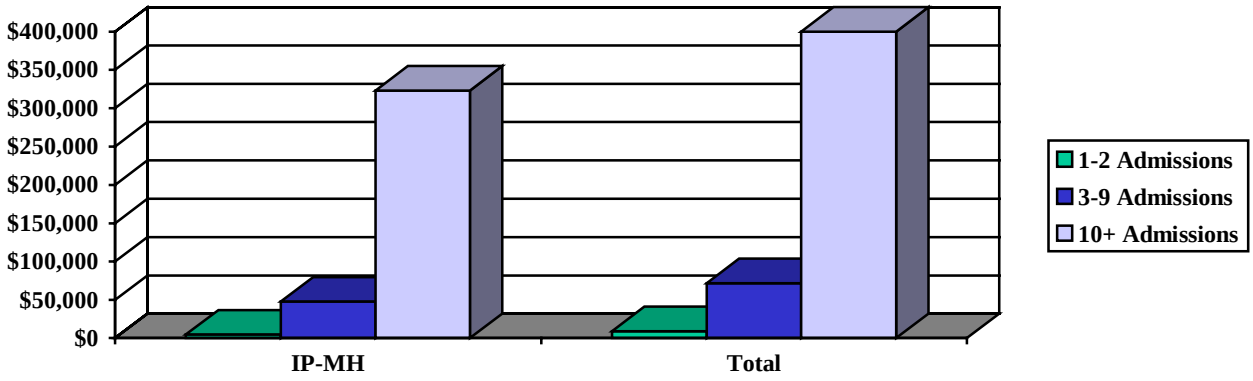
Chart 2.6 Dollars Per Consumer for Services by Population



Key:
ICM/RC Intensive case management plus resource coordination.
NH-Rehab Non-hospital rehabilitation
IP-Detox Inpatient detoxification

Although the cost is substantially higher for consumers within population three, they do not compare to the enormous costs incurred for inpatient services. Notice the dollar range on the y-axis in Charts 2.5 and 2.6 as compared to 2.7. The total costs to manage the consumers within population three are most influenced by the inability to maintain these persons in an outpatient setting.

Chart 2.7 Dollars Per Consumer for Inpatient Mental Health Services by Population



Key:
IP-MH Inpatient mental health

The enormity of the cost differential between costs incurred by persons within population three as compared to populations one and two is the obvious beginning point. The efforts should not be isolated to cost containment, but should also factor in essential steps to improve the well being of this group of individuals.

Summary of the Findings

The crux of the analysis was an examination of the behaviors of individuals within the three populations. All 23-member records of consumers in population three were viewed using PsychConsult, Community Care's care management information system. Two random samples of 30 records each were reviewed for consumers within population one and two. The most significant finding was consumer utilization patterns by provider among the three comparison groups. Consumers in population one had primarily one provider for all admissions and one provider for their outpatient services. Population two consumers sought care from multiple inpatient and outpatient providers; however, they would receive service from one provider for three to six consecutive episodes. Consumers within population three received care from multiple providers on a cyclical basis. For example, they would see provider A, B, C, D, E, F, then repeat the cycle A, B, C. . . This lack of continuity between the provider and the consumer, along with the factors summarized above, could contribute to a higher rate of recidivism for population three.

Another definitive observation at the member-level was related to diagnosis. Twenty of the twenty-three (87%) consumers within population three had a dual diagnosis (mental health and drug and alcohol). Twenty (67%) of the sample population within population two had a dual diagnosis. Of the consumers in population one, eighteen (60%) of the sample population had a dual diagnosis. These findings support the theory that individuals at-risk for subsequent readmissions have more complex issues than persons identified at a lower level of risk.

Service timing and mix was another pivotal component of the analysis process. One may expect to see a higher use of supplemental services in populations two and three because of their degree on need. In addition, supplemental services tend to be utilized or targeted for high needs clients or clients with complex needs. Service utilization is often driven by medical necessity and individual needs as described above. The percent of supplemental services utilized after an initial discharge could be greater than the percent prior to admission. Subsequent inpatient admissions may be averted or less intensive services (intensive case management, resource coordination) may be provided concomitantly with the use of supplemental services (drug and alcohol partial hospitalization, etc). In addition, the data revealed that at-risk populations did not access outpatient services before and after admission. These services could be used more regularly to reduce the overall rate of recidivism.

A summary description of demographic and utilization characteristics of consumers who experience the highest rate of recidivism gained from the analysis include:

- Caucasian males between the ages of 22-44 years.
- Eligibility status was Social Security Income (SSI).
- Tier One assignment.
- ALOS in general was less than consumers in population one and two who have a lower recidivism rate.

- Utilize a higher percent of inpatient mental health, non-hospital rehabilitation, and inpatient detoxification services (respectively) than consumers with lower recidivism rates.
- Do not receive services before admission.
- Of the supplemental services received prior to admission, drug and alcohol partial hospitalization services were not utilized. This may indicate a lack of access and awareness of the services.

Conclusions

Early identification of consumers that match the description above and intervention is imperative to reducing recidivism and improving their well being. As indicated previously, intervention measures must be driven through cooperative efforts of the provider and the case manager. Outreach is the single most crucial mechanism to ensure that at-risk members have an understanding of their role in the treatment plan and can identify their primary contact person. This pivotal role functions to coordinate all levels and episodes of care that the consumer is in immediate need of, perceived need of, or anticipated need of receiving.

Case managers and providers should identify consumers who have the potential for recidivism by applying the principles of this analysis. The provider and case manager have the opportunity to contribute to the reduction of recidivism by educating and encouraging consumers to use alternative outpatient resources. This means that consumers must be equipped with the resources necessary to initiate the process in the event of an emergency or an impending crisis and, ideally have the necessary support services in place to avoid the need for crisis services. An established plan for engaging the consumer and developing rapport must be established and agreed to by the consumer. These combined efforts can create an environment in which the consumer can feel safe and willing to ask for assistance.