Allegheny County

HealthChoices Program

A Longitudinal Study of Recidivism of HealthChoices Clients

A Report on Study Period Three

presented by

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

Recidivism:

A Longitudinal Study of the Original Cohort

Prepared by
Allegheny HealthChoices, Inc.

Executive Summary

Allegheny HealthChoices, Inc (AHCI) produced the first in a series of three reports on recidivism in January 2001. The intent of this study was to observe patterns of utilization over time of the same group or cohort of people. Following the second report, Community Care, the County, and AHCI representatives met to discuss how to contact individuals who repeatedly utilize intensive services, how to effectively coordinate their care, and how to engage these individuals in community services.

To better understand the consumer's needs and perceptions, a survey tool was developed and distributed to a sample of Intensive Case Managers (ICM) and Resource Coordinators (RC) who work with the individuals identified in the report. The response rate of the survey completion was less than targeted and reflected the ICM/RC's perspective of the consumer's support systems and other factors that may contribute to their readmission. The findings were published as an addendum report in January 2002. As a result of the survey findings, Community Care requested that the ICM/RCs complete an additional survey tool that helped gain an understanding from the consumer's perspective. This survey process was accomplished by the ICM/RC who asked the consumers for their response to the same questions previously answered by the ICM/RCs. The results are included in the body of this report.

The following report is the third analysis of this same cohort for the study period of April 1, 2001 through December 31, 2001. The rationale for following the same individuals over time is to better understand the nature of the illness with respect to the level of care, frequency of service, and identify system barriers that impede an individual's community tenure. Consumers were originally assigned to a population based on the number of admissions during the study period. The populations are defined as follows:

- Population One – Consumers who were admitted one or two times during the study period. There were 4,020 people (83%) in this population from the original cohort.
- Population Two – Consumers admitted to an inpatient level of care three to nine times during the study period. This represented 813 people (17%) from the original cohort.
- Population Three – Consumers who were admitted ten or more times during the study period. The total number of consumers originally identified in this population was 23 (< 1%).

The following are important findings that were not identified during the first two studies:

- The percent of people that became ineligible or did not receive any service during this study period increased for Population One and Two and decreased for individuals in Population Three;
- The number of units of case management services utilized decreased slightly during study period three for people in Population Two;
- The percent of involuntary readmissions (level 303 and 304) increased during study period three for people in Population One and Two; and
- In general, improvements were seen in terms of reduced admissions and increased service utilization for people in Population Three.

The process of conducting the record reviews and surveys during and subsequent to the second study period may have increased awareness and effort by Community Care and the providers to focus energies on the high risk people that frequently access intensive services. Findings within the third report indicate that attention should also be given to address the needs of people with moderate utilization of intensive services, identified as Population Two.

AHCI plans to continue to monitor this same cohort over time and recommends that the next study period cover the calendar year of 2002. One of the foci of the fourth study may be to compare utilization patterns of the people in Population Two to Populations One and Three.

Defining the Data

Cohort Description

The purpose of a longitudinal study of this same cohort is to gain a better understanding of their needs, behavior patterns, and barriers to community tenure over time. The people included in this analysis period, study three, are the same individuals as those who met the criteria in the original study. A total of 4,856 consumers were included in the original study, all of who had a least one mental health inpatient admission during the original twelve-month study period. The 4,856 consumers were delineated into three population groups as described in the Executive Summary. While consumers' utilization of mental health inpatient services may change over time, they retained their original population designation for comparison purposes.

The demographic characteristics vary among the populations. The following table illustrates the percent of the most prevalent cohort characteristic for each population of the original cohort:

Table 1.0

Demographics per Population

Characteristics	Population One	Population Two	Population Three
Age: 22-44 years	52%	63%	74%
Gender: Female	54%	51%	35%
Race: Caucasian	55%	55%	65%
Eligibility: SSI	36%	49%	61%

Key: SSI – Social Security Income

Data Sources

The original recidivism report was completed using data from July 1, 1999 to June 30, 2000. The second study covered the nine-month period of July 1, 2000 to March 30, 2001. The current study begins with April 1, 2001 and ends December 31, 2001. The reason for the change from a twelve-month period to a nine-month study period is due to stakeholders' interest in following these individuals and implementing processes that may positively impact their utilization patterns and outcomes.

The data used to calculate the percent of admissions, readmissions, and the average length of stay (ALOS) for inpatient services is based on authorizations. Service utilization information is based on adjudicated claims.

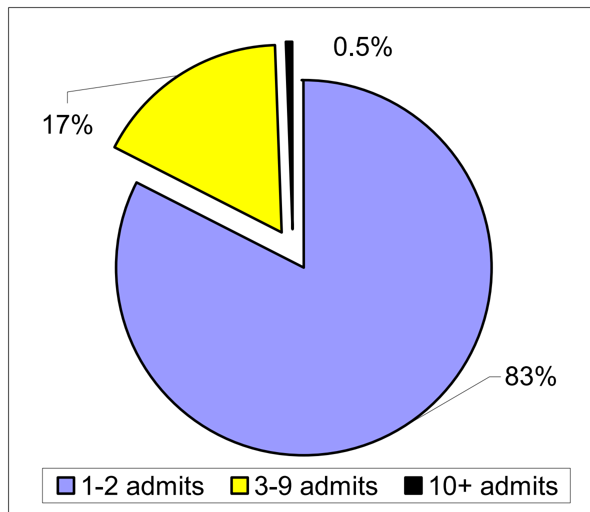
Changes Within the Cohort

Shift in Utilization

Consumers were assigned to a population during the original study based on the number of mental health inpatient admissions experienced during the study period. All individuals continue to be assigned to the same population for studies two and three, despite the number of inpatient admissions; only the percent of admissions within the population changes. For example, Mr. Brown (fictitious) had 11 inpatient admissions in study one, placing him into Population Three. During study two, Mr. Brown had five admissions and then he experienced one inpatient mental health admission during study period three. Mr. Brown is included in Population Three for all three reports. Within the pie graph; however, Mr. Brown would be represented by the number of actual admissions during the study period (individuals with one or two admissions for the current report). Charts 1.0 to 1.6 illustrate the shift in utilization for each population within the respective study period and compare findings from study period two to study period three.

Chart 1.0

Study One Population Distribution



Of the 4,856 consumers in the original study, 83% (4,020) represented people with one or two admissions. People with 3-9 admissions represented 17% (813) of consumers. Less than 1% of (23) consumers had ten or more admissions. Charts 1.1 through 1.6 illustrate changes that occurred during studies two and three for each population group (each piece of the pie). A fourth population group developed in subsequent studies that includes people who became ineligible or did not have a claim for inpatient mental health services. These people are designated as “Other.”

Chart 1.1
Study Two Population Distribution

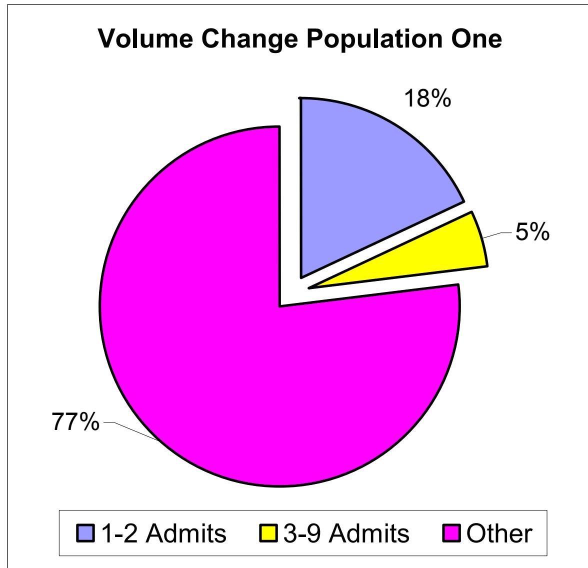


Chart 1.2
Study Three Population Distribution

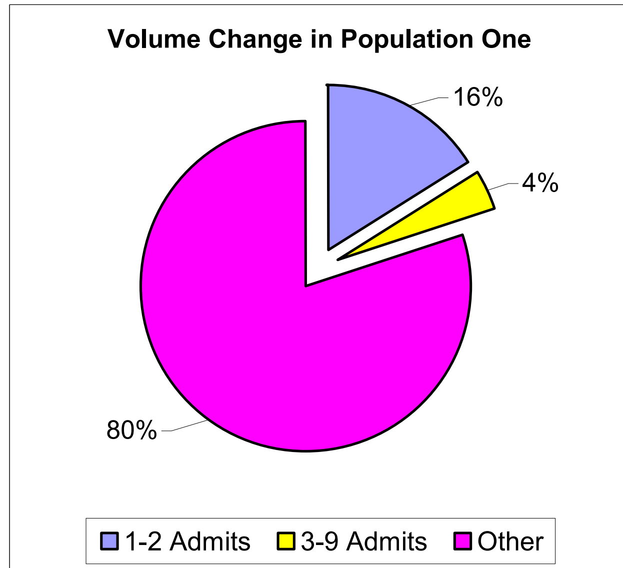


Chart 1.3
Study Two Population Distribution

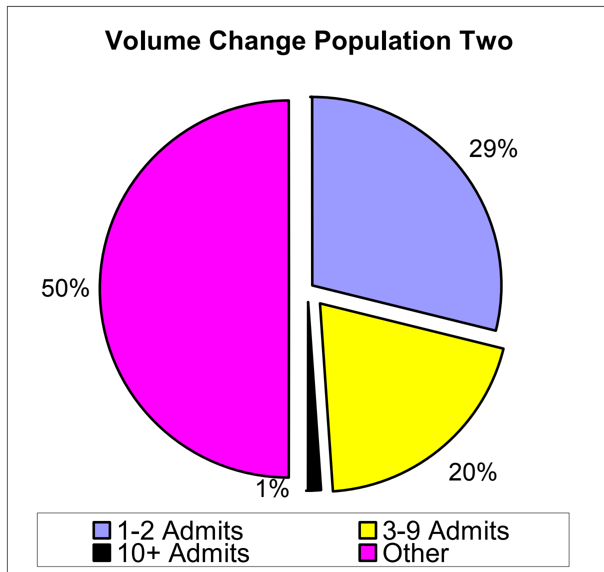
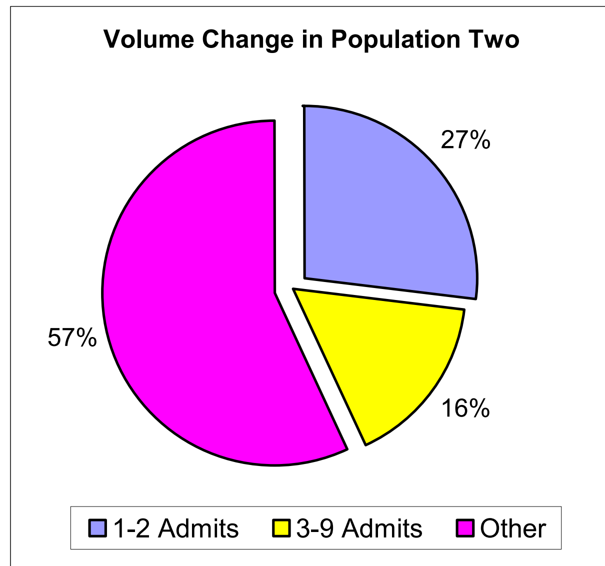


Chart 1.4
Study Three Population Distribution



The comparative shift of utilization patterns for people in Population One and Two for the two study periods was unremarkable (Charts 1.1 to 1.4). Individuals within each population may have changed their behavior; however, the overall change equalized between study periods two and three.

Chart 1.5
Study Two Population Distribution

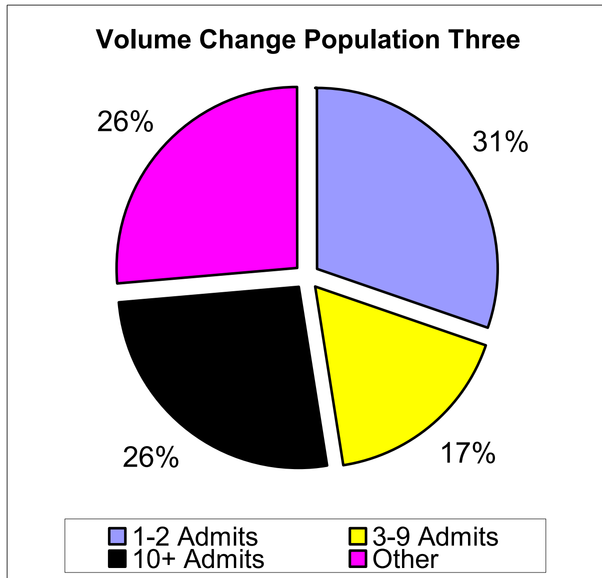
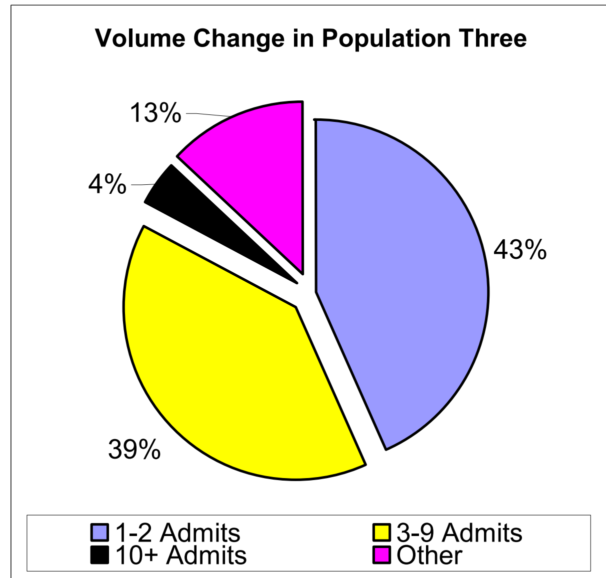


Chart 1.6
Study Three Population Distribution



The marked changes observed within Population Three for the two study periods can be attributed to the small number (23) of people within the population. The changes were desirable because the number of people admitted ten or more times decreased. The number of people with less than ten admissions increased. In addition, the number of people in the "Other" category declined, representing two fewer people in study three that lost their eligibility (Charts 1.5 and 1.6).

AHCI expects to see a shift in utilization patterns over time for all of the populations. Literature suggests that individuals who are integrated into the community, have stable housing, take their medications as prescribed, and are involved in meaningful activities and/or employment generally will require less inpatient care than other individuals without comparable community supports. Therefore, AHCI does not expect the inpatient measure of one to two admissions to be eliminated. The desired long term outcome is to engage people in the appropriate mix of support services and thereby improve community tenure.

Distribution Changes Within the Populations

Analysis of the second and third study periods revealed changes that resulted in a new population group. Some people in each of the three populations did not have an inpatient admission during the second or third study period. These individuals are included in the category of "Other." People in this category may have accessed outpatient services throughout the study period. These individuals represent 32% of the entire cohort for study period three. The "Other" category may also represent individuals that became ineligible and no services were prescribed during the study period. These individuals represent 44% of

the three populations in study period three. The tables below illustrate the number and percent of people for each population who received only outpatient services (Table 1.1) and those who were ineligible for service (Table 1.2).

Table 1.1

People Without Inpatient Admissions who Received Outpatient Services

	Study Period Two		Study Period Three	
Population	**Number of Consumers**	**Percent of "Others"**	**Number of Consumers**	**Percent of "Others"**
One	1,804	45%	1,344	34%
Two	329	40%	224	28%
Three	2	9%	1	4%

Note: Outpatient services include all outpatient mental health, drug & alcohol, medication checks, etc. and intensive case management and resource coordination services.

Analysis of the cohort of people that did not have an inpatient admission revealed that a smaller percent of people accessed outpatient services during study period three (32% of the total cohort) as compared to study period two (44% of the total cohort).

Table 1.2

People Without Service and/or Ineligible

	Study Period Two		Study Period Three	
Population	**Number of Consumers**	**Percent of Consumers**	**Number of Consumers**	**Percent of Consumers**
One	1,295	32%	1,886	47%
Two	76	9%	237	29%
Three	4	17%	2	9%

Likewise, the aggregate percent of people who became ineligible and/or those without service was larger during study period three (representing 44% of the total cohort) than in study period two (28% of the total cohort). However, fewer people in Population Three became ineligible or went without service during the third study period. Moving out of the County or being admitted to the State Mental Hospital or jail are common examples of circumstances that result in a consumer's loss of eligibility.

Shifts in Service Mix for People With and Without Admissions

During the second study, AHCI found in general that people not admitted for inpatient and non-hospital services tended to use a larger percent of outpatient and support services than people with admissions. The following charts illustrate the percent of people (bar graph) who accessed outpatient services and the average number of units (line graph) for each of the populations. The charts compare people with at least one admission during the study period and people in the "Other" category without an admission. Please note that the scale used in Chart 1.7 is smaller than the scale used in Chart 1.8.

Chart 1.7
Utilization of Case Management by People With Mental Health Inpatient Admissions

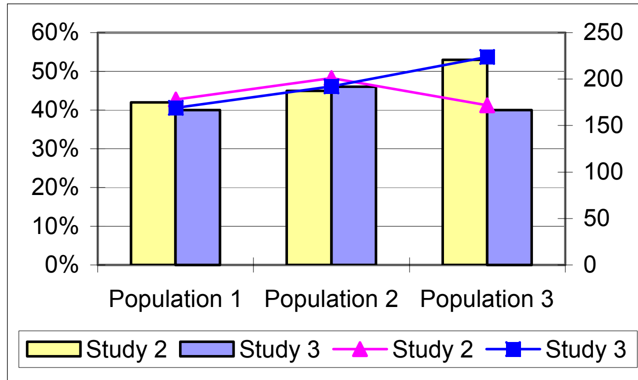
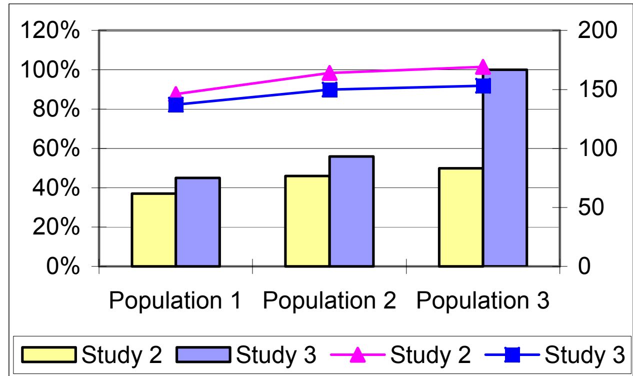


Chart 1.8
Utilization of Case Management by People Without Mental Health Inpatient Admissions



Note: Bars represent the percent of people and lines represent the average number of units.

The percent of people accessing case management that had an admission did not change substantially from the second to the third study period for people in Populations One and Two. The percent of people without an admission in Population Three who accessed case management services increased by 10% and the average numbers of units decreased by 14 units from study two period to study period three. The percent change for "Other" people in Population Three represents one person (100%).

Chart 1.9
Utilization of Medication Check by People With Mental Health Inpatient Admissions

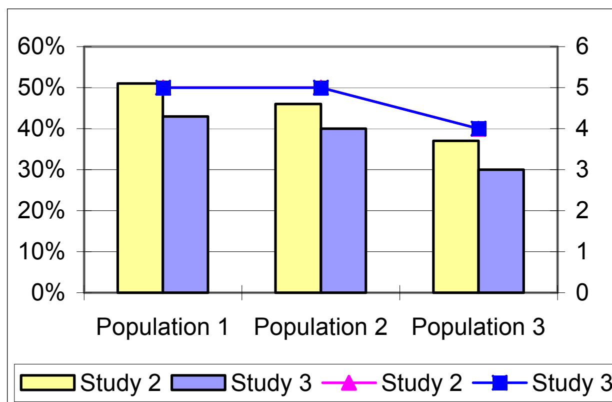
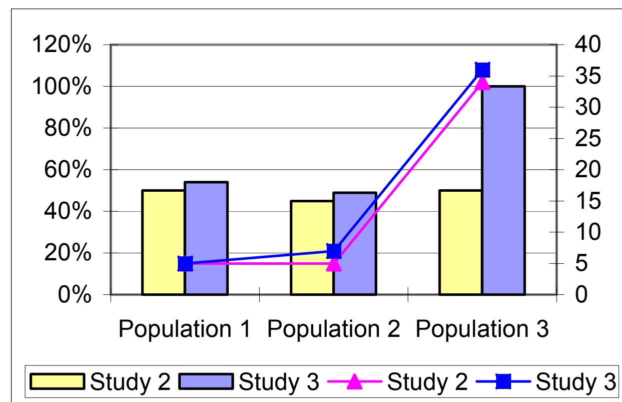


Chart 2.0
Utilization of Medication Check by People Without Mental Health Inpatient Admissions



Note: Lines overlap in Chart 1.9 indicating the same number of units were used.

The percent of people with an admission who had a medication check decreased from the findings of study period two for all populations and slightly increased for people in the "Other" category for all populations. The average number of units was unchanged.

Chart 2.1
Utilization of Drug & Alcohol-IOP by People With Mental Health Inpatient Admissions

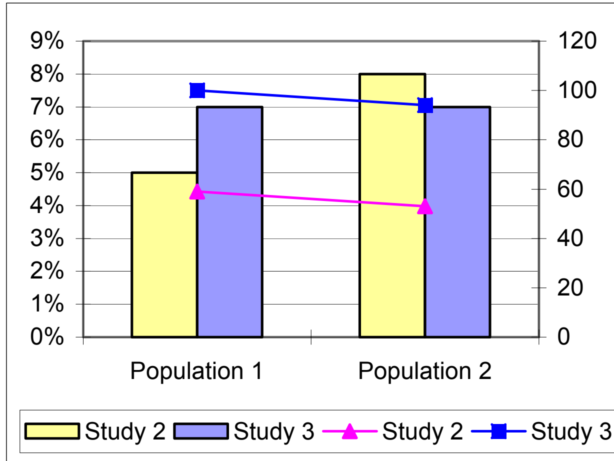
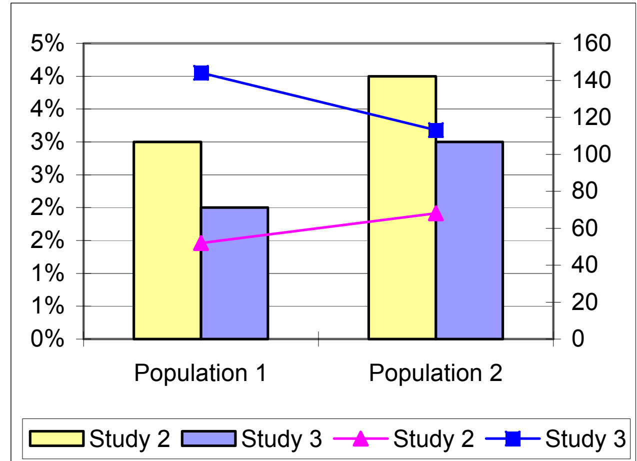


Chart 2.2
Utilization of Drug & Alcohol-IOP by People Without Mental Health Inpatient Admissions



Note: Bars represent the percent of people and lines represent the average number of units.

People in Population One and Two who had an inpatient mental health admission during study period three used an average of 41 units more of drug and alcohol intensive outpatient (IOP) service than the average used during study period two. Conversely, the average number of units of IOP used by people without an admission increased by 92 units for Population One between the two study periods and only increased by 45 units for people in Population Two. People in Population Three did not use IOP drug and alcohol services.

Utilization of Inpatient and Non-hospital Services

The following is a longitudinal comparison of the percent of readmissions to the average length of stay (ALOS) for each of the populations. Charts 2.3 and 2.4 illustrate patterns for inpatient mental health admissions.

Chart 2.3
Percent of Inpatient Mental Health Readmissions Within 30 Days of Discharge by Population

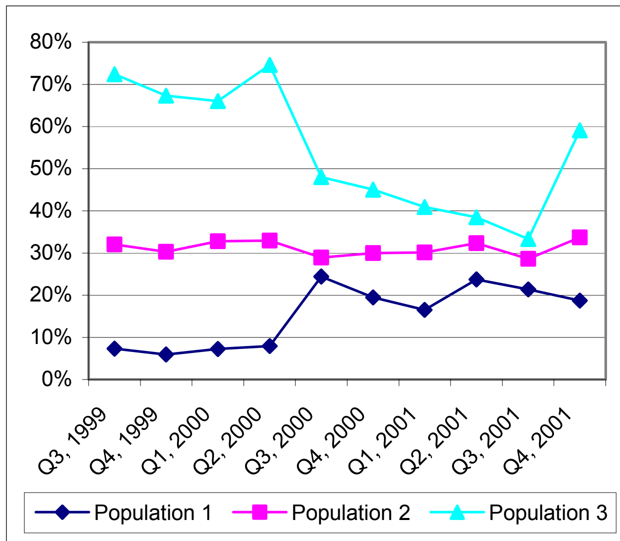
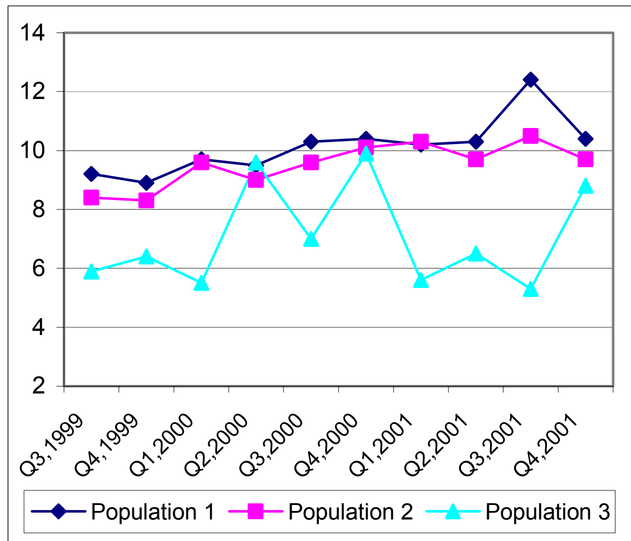


Chart 2.4
Average Length of Stay for Mental Health Inpatient Admissions by Population



By definition, the people in Population Three are expected to have a larger percent of readmissions than the other two populations (refer to the definitions located on page one). Most notable is the dramatic reduction in readmissions (Chart 2.3) beginning in the third quarter 2000 as compared to the percent of readmissions for people in Populations One and Two. The third quarter 2000 marks an increase in the percent of readmissions for people in Population One.

Trends of the ALOS for each population do not explain the readmission trends. For example, the percent of readmissions for the people in Population Two remained stable over the study periods while the ALOS increased gradually. The ALOS gradually increased during the study periods for people in Population Three; however, the percent of people readmitted abruptly increased. It is important to note that a small change in the number of people in Population Three results in a large percentage increase/decrease. The most significant finding is the discrepancy in the ALOS for people in Population Three compared to those in Population One and Two (Chart 2.4).

A comparison of the percent of readmissions to non-hospital rehabilitation and the ALOS for each population is illustrated in Charts 2.5 and 2.6.

Chart 2.5
Percent of Non-hospital Rehabilitation Readmissions Within 30 Days of Discharge by Population

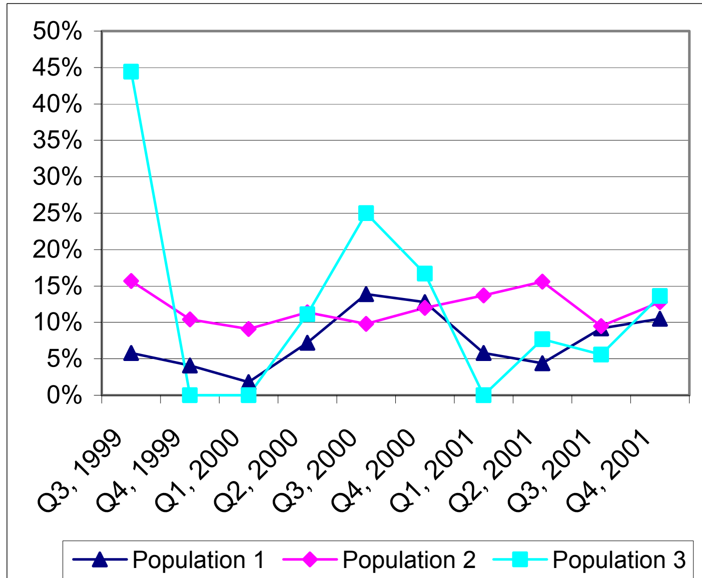
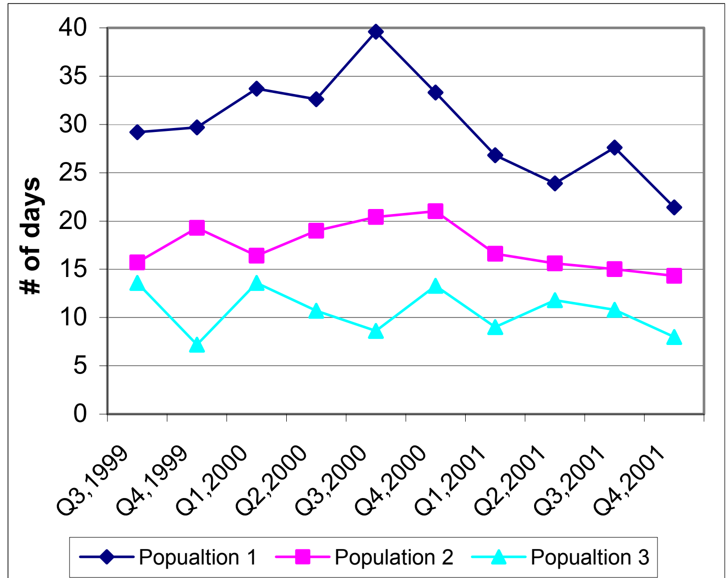


Chart 2.6
Average Length of Stay for Non-hospital Rehabilitation Admissions by Population



The trends for non-hospital rehabilitation services are unique to each population. For example, the percent of readmissions and the ALOS for people in Population One peak during the third quarter 2000. AHCI would not expect to see a longer length of stay associated with a higher percent of readmissions. Conversely, the percent of people readmitted in Population Two is flat, then gradually increases until the second quarter 2001. The ALOS for Population Two gradually increases (asynchronous to readmissions) through the fourth quarter 2000 then decreases. As shown in Chart 2.6, the ALOS for people in Population Three is consistently lower than the ALOS for people in Population One and Two. This may contribute to the frequency of readmissions for people in Population Three.

The analysis and comparison of readmissions to the ALOS for each population accessing inpatient rehabilitation, inpatient detoxification, and non-hospital detoxification was unremarkable and involved a small number of consumers.

Comparison of Authorized Service to Actual Utilization

The analysis of services authorized and accessed by consumers for the second study was expressed as a percent of authorizations with a paid claim. The findings varied for each population based on the service. In general, the percent of services used by people in Population Two exceeds the use by people in Populations One and Three. Charts 2.7 to 2.9 compares the percent of units authorized to units utilized for each population, by service, for study periods two and three.

Chart 2.7
Percent of Authorized Services Used By Population One

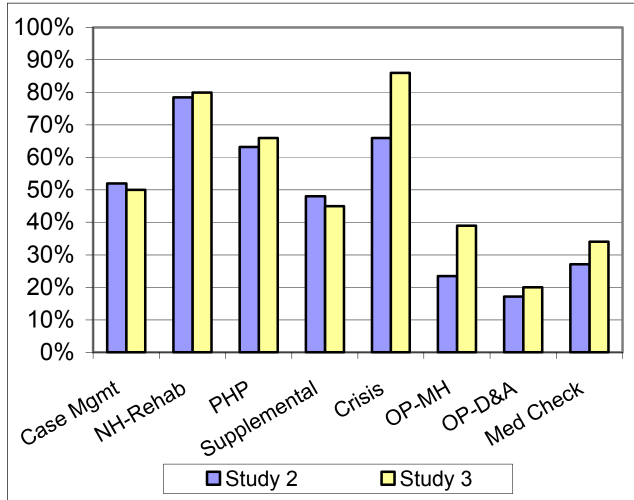


Chart 2.8
Percent of Authorized Services Used By Population Two

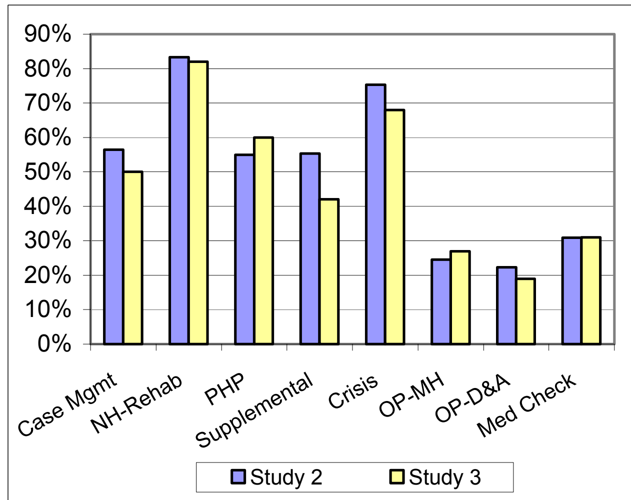
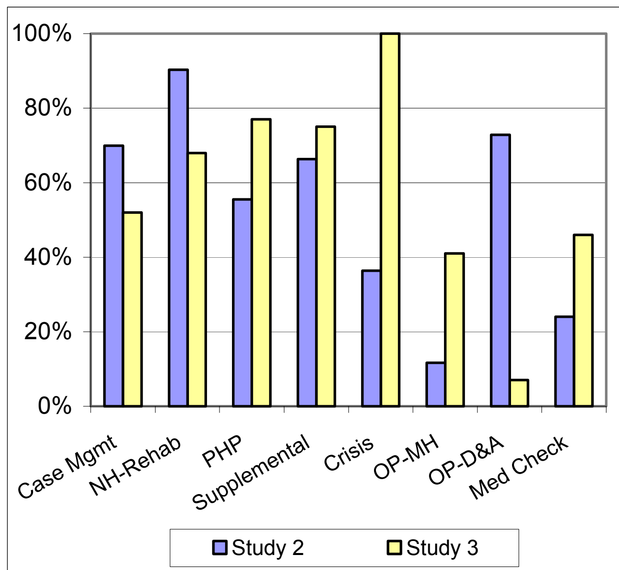


Chart 2.9
Percent of Authorized Services Used By Population Three



The relationship between the actual use of crisis management and authorization for the service during study periods two and three was strong. This same relationship was observed for non-hospital rehabilitation services. Conversely, a weak relationship exists between the number of units authorized and the number used for outpatient mental health, outpatient drug and alcohol, and medication checks, suggesting that the services are prescribed but are not accessed by consumers. The use of partial hospitalization, outpatient mental health, and medication check services increased from study period two to study period three for people in Population Three. This may indicate effective outreach by Community Care's Care Managers and providers' attempts to establish rapport with consumers over time. Community treatment teams may also contribute to the increase use of these services.

Involuntary Admissions by Population

During the third study period, 84% of the people in Population One that had a voluntary admission were readmitted voluntarily. Findings of this same measurement for Population Two and Three were 91% and 96% respectively. Charts 3.0 to 3.2 illustrate

these voluntary admissions and the percent of people with an involuntary admission by the level of commitment for each population.

Chart 3.0
Percent of Readmissions to the Same Level of Admission for Population One

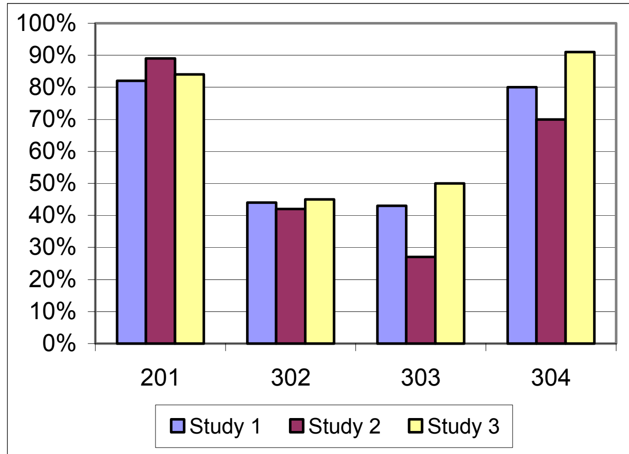


Chart 3.1
Percent of Readmissions to the Same Level of Admission for Population Two

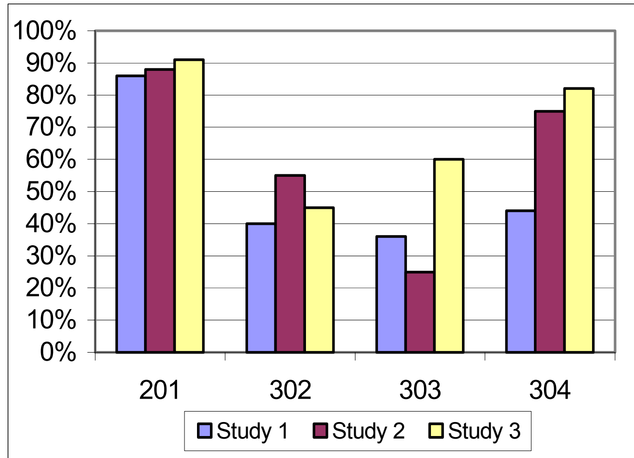
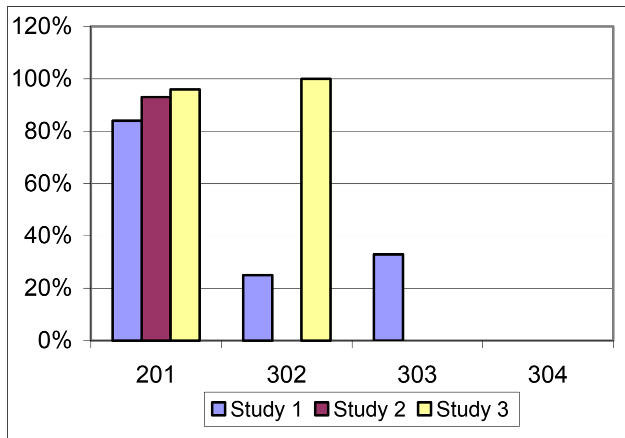


Chart 3.2
Percent of Readmissions to the Same Level of Admission for Population Three



The involuntary readmission trends for people in Populations One and Two are similar with the exception of an increase of involuntary readmissions to a level 304 for people in Population Two from the first to the third study periods. Care Managers should target these individuals for outreach and their potential for stabilization and diversion. In a subsequent section, the individuals in Population Three are analyzed on a member-level basis and may explain the findings (absence of readmissions to the same level of care) for 303 and 304 level of involuntary admissions.

Note: The percent for each level of admission is based on the number of people initially admitted (denominator) and the number of people with a readmission to the same level (numerator).

A Qualitative Description of Population Three

During the second study period, AHCI conducted a record review of all the individuals in Population Three and a sample of people in Population Two. The purpose of this activity was to better understand what could have precipitated an inpatient admission in hopes to prevent recidivist patterns. The three most salient findings of this exercise were that

many people with frequent admissions had a dual diagnosis (mental health and drug and alcohol), many did not have stable housing, and some people accessed inpatient services from multiple providers (cyclical pattern). All factors were felt to contribute to the individual's multiple admissions.

This detailed level of analysis was not conducted during the third study period. Instead, the electronic records of individuals in Population Three were accessed, using the Care Management Information System (PsychConsult), to determine if any of these themes continued. This exercise revealed that 18 of the 23 people (78%) in Population Three had a dual diagnosis. The housing status was undetermined for 13 of the 23 people (57%) because the information was not available. Only four people accessed inpatient services from more facilities during study three than study two (ranging from three to five providers). Five of the 23 consumers (22%) are currently participating in community treatment teams (CTT). Community Care established the CTT initiative during the fourth quarter 2001; therefore, participation was not an option for consumers during the second study period.

Comparison of ICM/RC and Consumer Survey Responses

An addendum to the second study report produced in January 2002 summarized the Intensive Case Manager's (ICM) and Resource Coordinator's (RC) perspective of the consumers' situation. The process of obtaining the consumer's perspective was more arduous because consumers did not respond to the survey. To address this issue, the ICM/RC assigned to the consumer were asked to work with the consumer to complete the survey questions.

The methodology used to survey consumers may have been flawed by the delay in completing the surveys. Consumers expressed concern about their confidentiality with the survey process as they were initially approached by the Consumer Action and Response Team (CART). A couple months later, the surveys were completed by the consumer's ICM/RC. Table 1.3 illustrates the consumer's response (column two) during the interview by the ICM/RC and the ICM/RC's understanding (column three) of the consumer's history and current situation. The response of some of the measures clearly indicates that the ICM/RC had a good understanding of the consumer. This is indicated by percentages that are similar (i.e. 56% of the consumers reported living in supportive/structured housing and 53% of the ICM/RC's thought that their clients were living in a supportive/structured housing setting).

The responses that are not similar (i.e. 68% of consumers reported experiencing side effects and 32% of ICM/RC's thought consumers had experienced side effects) indicate a lack of rapport and understanding of the consumer's needs. Another area of concern is the underestimation by ICM/RC's of the consumer's use of illegal substances as shown in Table 1.3.

Table 1.3
Survey Responses of the Consumer and ICM/RC's Perspectives of the Consumer's History and Current Situation

Measurement	Consumer Response	ICM/RC Response
Live independently	28%	16%
Use of supportive/structure housing	56%	53%
Homeless in the past	23%	26%
Rely only on family for support	20%	21%
Rely on multiple people for support	72%	53%
Have a current prescription	88%	84%
Identify most effective medication	60%	63%
Experienced side effects of medications	68%	32%
Used illegal substances	56%	32%
Participate in a 12-step program	56%	37%
History of some form of abuse	60%	42%

The denominator for the consumer surveys was n=31 and the denominator for the ICM/RC responses was n=30

Conclusions

It appears that some of the reduction in readmissions for individuals in Population Three may be a result of outreach and reinvestment program initiatives. The next longitudinal study should demonstrate more improvement as these initiatives mature and individuals experience long term recovery.

A few of the findings identify areas for improvement with individuals in Population Two. These people are at risk for involuntary admissions as a result of disengaging in treatment and the lack of continuity of care. The same initiatives that appear to be effective in reducing readmissions for people in Population Three should be considered for this population. It may be helpful for representatives from AHCI, Community Care, and members, to discuss opportunities that promote coordination of care and recovery for individuals in Population Two.