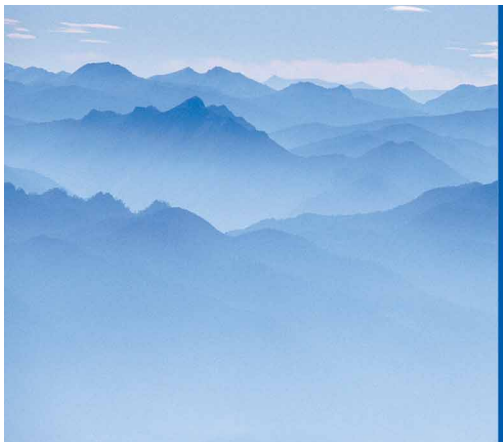
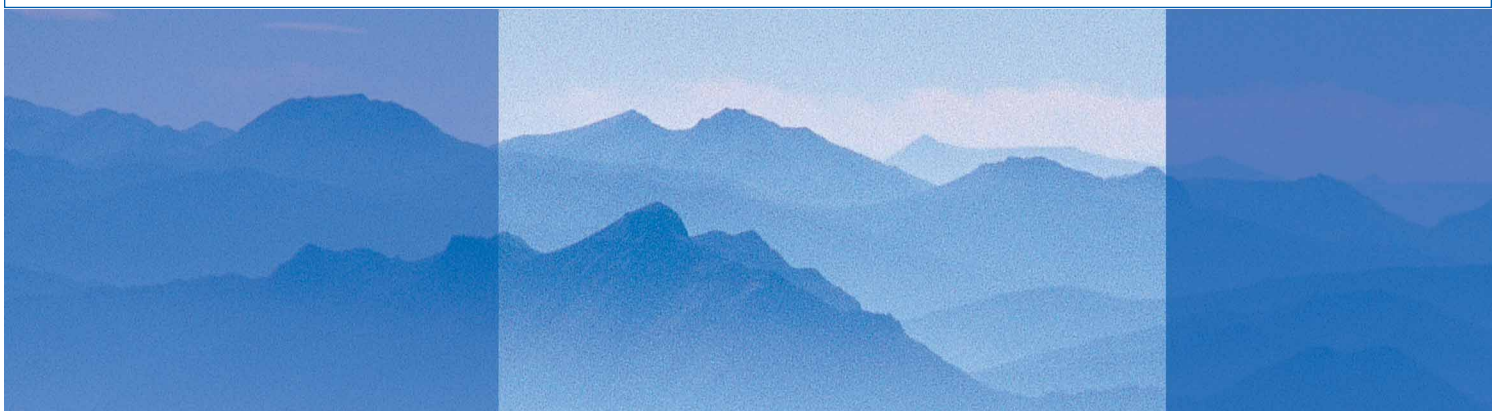


Mental Disorder, Substance Use and Criminal Justice Contact

PART 3

LINKED DATA ANALYSIS

JULY 2005



Mental Disorder, Substance Use and Criminal Justice Contact

LINKED DATA ANALYSIS

JULY 2005

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Introduction

The Ministry of Health Services, the Ministry of Children and Family Development, the Ministry of the Attorney General, the Ministry of Public Safety and Solicitor General, and the Forensic Psychiatric Services Commission share a long-term commitment to the development of services and supports for persons with mental and/or substance use disorders. The Ministries have formed a partnership to jointly address high priority issues affecting persons with mental and/or substance use disorders accessing their services. The purpose of this collaboration is to implement evidence-based, effective, and efficient provincial programs for persons who are within or exiting the justice system, and, to reduce the risk of this target population for entering or re-entering the justice system.

Diverse services and supports have an influence on the interaction between mental illness, substance use, and corrections. Many of these divergent services and associated actions are reflected in separate databases, typically maintained in different branches of government. The present document presents a series of brief analyses based on the linkage of various health and corrections services data. These analyses were undertaken in parallel with a systematic review of the scientific literature and a key informant survey.

By linking different data sets it is possible to examine the pattern of service utilization across a diversity of inter-related resources. With respect to the present population, relevant resources include: primary care, hospital services, community mental health, alcohol & drug services, corrections services, housing, forensic services, vocational assistance, community care, probation services, educational supports, family services, and others.

If linked data are maintained over time, they can support the evaluation of service improvements and serve the ongoing objective of accountability. Despite the value of linking databases in relation to complex social problems, the Project Team is not aware of any jurisdiction in Canada or abroad that has undertaken population-level analyses of the type involved in the current initiative.

1. Summary of Results

The prevalence of all measured mental health and substance use problems is greater among the corrections cohort than the corresponding population rates. (See page 7)

Youth within the corrections system were about 1.5 times more likely to have been diagnosed in the previous year with non-drug related mental illness. They are no more likely than the population to have been recently diagnosed with psychotic or mood disorders, perhaps due to the generally later age of onset of these disorders. Youth in corrections were significantly more likely to have been diagnosed with a substance-related disorder in the past year (2.9-4.8 times). The most prevalent forms of mental illness among youth in the general population (e.g., Hyperkinetic Syndrome) were 4-5 times more prevalent among youth in the corrections system. (See page 7)

Adults in the corrections system were more likely to have been diagnosed in the previous year with a non-drug related mental illness (1.2-1.9 times). Of particular note, rates of substance use in the adult corrections cohort were 11-13 times greater than the population rates. (See page 7)

The second most common MSP fee item ascribed to the corrections cohort in 1999/00 (after "office visits") was methadone treatment. Methadone treatment accounted for an increasing proportion of the MSP services billed for the adult corrections cohort in the years prior to and following the index year (99/00). For example, in 2002/03, methadone treatment represented 28% of all MSP medical services provided to the cohort who were involved with corrections in 99/00.

Methadone-related services involved a minority of the adult corrections population who were diagnosed with a substance use disorder. The availability of appropriate services for the majority of substance misusing offenders remains unclear. (See page 8)

The AIMS database is a source of insight into the rates of various counseling services for substance use problems. Of those individuals who received methadone treatment, 20% received services in the same year (1999/00) as reported in AIMS. Specific forms of

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counseling (e.g., motivational enhancement therapy) are an important feature of effective treatment for IV drug users (including methadone recipients), and are the most effective form of treatment for the most prevalent types of substance use disorders (i.e., alcohol-related problems). (See page 10)

Individuals may serve sentences in the community or in custody (jail). Services and billing records were examined for the community and custody cohorts separately. Both cohorts were associated with relatively stable patterns of activity over the years prior to and following their involvement with corrections in 99/00. Of note, the modal diagnosis among the custody cohort was related to substance use, while the modal diagnosis in the community setting was for other types of mental illness. (See page 11)

Approximately 72% of the corrections cohort aged 15-64 accessed physician services in the index year (99/00). By comparison, approximately 85% of the population accessed physician services in the same year. In interpreting this discrepancy it must be remembered that members of the corrections cohort spent some (or all) of the index year in custody. (See page 13)

Among those members of the corrections cohort who accessed services through MSP, a significant number (approximately 42%) received services for a mental health problem. Of note, the proportion of MSP claimants receiving mental health services increased in the years following their involvement with corrections. (See page 14)

Also of interest, the number of individuals receiving services for alcohol and drug related problems increased steadily over the 9 years preceding the index year. Thus, a rising proportion of those individuals who would eventually enter the corrections system (in 1999/00) presented to physicians in the preceding years with substance-related problems. (See page 15)

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Prior to sentencing by a court, cases may be resolved in a number of possible manners. A series of analyses were carried out in order to estimate whether persons with mental illness or substance use problems were less likely than other offenders to enter court, or to be sentenced to jail. In summary, it appears that individuals who were associated with mental health or substance use problems were more likely than others to have their matters resolved by a court (as opposed to pre-court), and that those associated with mental health or substance use problems were slightly more likely to be found guilty. (See page 18)

When people with mental illness appeared in court, they were no more likely than other offenders to be convicted of "administrative" offences. (See page 22)

Hospitalization rates were reviewed. Individuals with mental illness were hospitalized more frequently than others (between 1 and 5 times). Individuals with substance related disorders were 13 times more likely to be hospitalized. In addition, the average length of stay for people with mental illness or substance use disorders was nearly twice that of the general population (7.9 days versus 4.8 days). (See page 26)

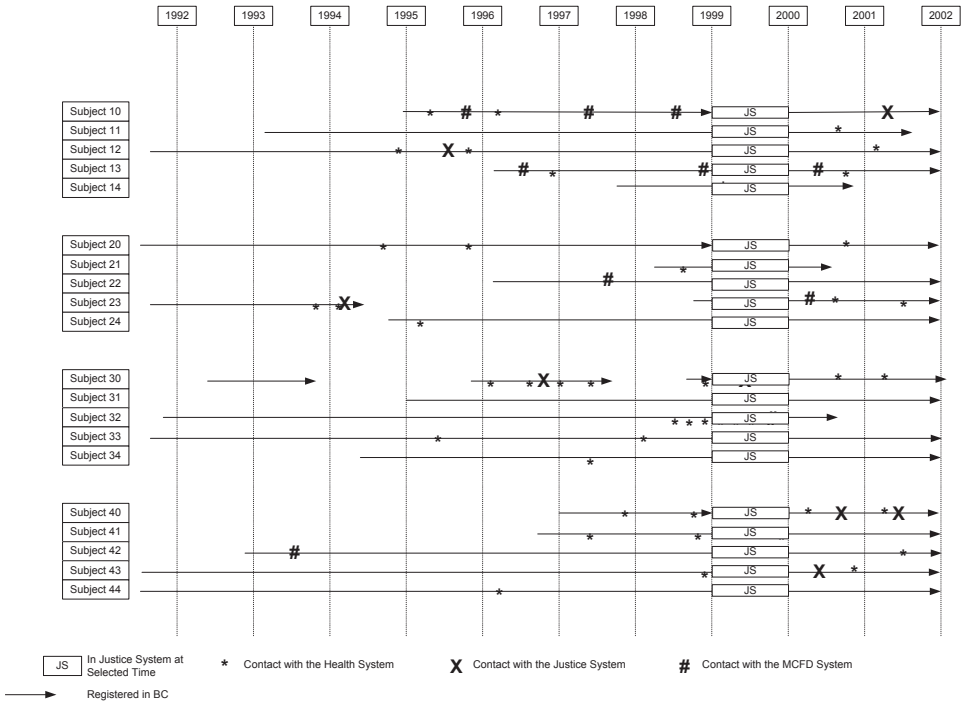
Finally, rates of repeat incarceration were examined for persons with mental illness. In general, people with serious mental illness did not appear to be coming into contact with the corrections system at a greater frequency than others. (See page 27)

2. Overview of Analytic Approach

Analyses contained in this report are derived from an integrated database constructed by linking the following Provincial information sources: medical services plan claims, hospital discharges, community mental health services, alcohol & drug services, and corrections services (community and custody). An independent series of analyses was conducted on the dataset corresponding to pre-sentencing activities within the justice system. Population-level data linkages entail myriad technical and operational procedures. The Project Team has been guided by accepted epidemiological practices in an effort to accurately preserve the validity of the resulting linked database.

Data were analysed in relation to the population of individuals associated with the Provincial Corrections system in the year 1999/00. Health service utilization regarding mental illness or substance use problems for this population was analysed retrospectively, and for the years subsequent to 2000, as available. See Figure 2-1 (below) for an illustration of the general analytic approach.

Figure 2-1 Schematic of Analytic Approach



3. Definition of Mental Illness

All Medical Service Plan (MSP) fee-for-service billing claims use an associated ICD 9 diagnostic code (see Table 3-1 for the grouping of the codes). Note that the categorization scheme is not hierarchical or mutually exclusive. Within the course of a year an individual may be given a diagnosis of 295 (schizophrenia) at one time, and at another time given a diagnosis of 301 (Personality disorders). Such an individual would be defined as having an SMI (295) and as having an LSMI (301). The categorization scheme presented below has been incorporated in previous analyses of BC population data for the year 1998/99. Adoption of the same scheme in the present analysis allows for comparison between the population involved with the corrections system and the population in general.

Table 3-1 ICD-9 Codes Used to Group the MSP Diagnostic Claims

Diagnostic Group Title	ICD9 Codes	Description
Severely Mentally Ill (SMI)	295	Schizophrenia disorders
	296	Affective psychoses
	297	Paranoid states
	298	Other non-organic psychoses
	299	Psychoses with origin specific to childhood
	310	Specific non-psychotic mental disorders due to organic brain damage
	311	Depressive disorder, not elsewhere classified
Less Severely Mentally Ill (LSMI)	300	Neurotic disorders
	301	Personality disorders
	302	Sexual deviations and disorders
	306	Physiological malfunction arising from mental factors
	307	Special symptoms or syndromes, not elsewhere classified
	308	Acute reaction to stress
	309	Adjustment reaction
	312	Disturbance of conduct, not elsewhere classified
	313	Disturbance of emotions specific to childhood and adolescence
	314	Hyperkinetic syndrome of childhood
	V61	Other family circumstances
	V62	Other psychosocial circumstances
	04A	General psychiatric examination -no care required (MSP only)
	50B	Anxiety/depression (MSP only)
Alcohol/Drug (A&D)	291	Alcoholic psychoses
	292	Drug psychoses
	303	Alcohol dependence syndrome
	304	Drug dependence
	305	Nondependent abuse of drugs
Cognitive Disorders (CD)	290	Senile and pre-senile organic psychotic conditions
	293	Transient organic psychotic conditions
	294	Other organic psychotic conditions (chronic)

4. Prevalence of Mental Illness in Year Prior to 1999/00

One-year prevalence rates were calculated for different categories of mental health problems for the year prior to an individuals' involvement with the corrections system.

Table 4-1 presents the basic rate calculations. Population rates for the year 1998/99 are based on data prepared in a separate analysis (RUM Report).

Table 4-1 Prevalence of Mental Illness by Source of Data

	Adult				Youth				
	Custody		Community		Custody		Community		RUM
	N	Rate	N	Rate	N	Rate	N	Rate	Rates[2]
Overall[1]	9,269		34,590		1,150		7,084		
SMI	750	8.1%	4,096	11.8%	66	5.7%	426	6.0%	6.2%
LSMI	1,417	15.3%	6,566	19.0%	216	18.8%	1,300	18.4%	12.7%
AD	1,575	17.0%	4,795	13.9%	72	6.3%	269	3.8%	1.3%
CD	39	0.4%	146	0.4%	1	0.1%	7	0.1%	0.1%
ANY	2,555	27.6%	10,482	30.3%	288	25.0%	1,618	22.8%	16.8%

[1] Denominator for column rate calculations

[2] Ages 15-64 Only

The above results can be converted into estimates of the relative risk of different forms of mental health problems within the corrections cohorts in comparison to the population rates[1]. Results are presented in Table 4-2.

Table 4-2 Relative Risk Calculations Adult

	Adult		Youth	
	Custody	Community	Custody	Community
SMI	1.3	1.9	0.9	1.0
LSMI	1.2	1.5	1.5	1.4
AD	13.1	10.7	4.8	2.9
CD	4.2	4.2	0.9	1.0
ANY	1.6	1.8	1.5	1.4

In all cases the most prevalent category of problems involved alcohol and drug use.

[1] It is an approximation because the overall population figure includes the CS population data.

5. Substance Use Disorders and Related Services

The preceding results emphasize the relative burden of substance-related problems within the community and custody populations. Further analysis of MSP claims indicates the types of services provided in relation to problematic substance use. Below are two sets of MSP analysis. The first set of results refers to the most common diagnoses ascribed by physicians. The second set of results refers to the type of service provided by the physician. The following results refer to the Adult Custody cohort.

Between 1990 and 2004 the diagnosis of Drug Dependence accounted for 86-99% of all diagnostic codes. The balance of service events consisted of Alcohol Dependence (2-9%) and Non-Dependent Use of Drugs (0-3%).

Further examination of the MSP claims shows that the second most frequent fee item in 1999/00 (after Office Visits) was Methadone Maintenance (see Table 5-1).

Table 5-1 Top 2 Fee Items Used for the Corrections Population

	Fee Item				Row %		
	00100	00039	All Others	Total	00100	00039	All Others
Year	Office Visit	Methadone Maintenance					
1990/91	13,261	3,245	30,367	46,873	28%	7%	65%
1991/92	14,772	3,001	32,170	49,943	30%	6%	64%
1992/93	15,937	3,133	31,819	50,889	31%	6%	63%
1993/94	17,647	3,753	36,584	57,984	30%	6%	63%
1994/95	19,948	3,694	41,462	65,104	31%	6%	64%
1995/96	21,514	4,213	43,101	68,828	31%	6%	63%
1996/97	26,124	5,995	46,179	78,298	33%	8%	59%
1997/98	29,574	9,874	48,595	88,043	34%	11%	55%
1998/99	29,353	15,252	53,917	98,522	30%	15%	55%
1999/00	**30,118**	**20,674**	**57,438**	**108,230**	**28%**	**19%**	**53%**
2000/01	29,033	32,700	63,325	125,058	23%	26%	51%
2001/02	29,336	46,019	88,785	164,140	18%	28%	54%
2002/03	29,344	54,438	109,736	193,518	15%	28%	57%
2003/04	*22,896*	*39,083*	*83,788*	*145,767*	*16%*	*27%*	*57%*

The results indicate that methadone maintenance is accounting for an increasing proportion of the total MSP claims for this cohort over the years. The trend toward increased use of methadone continues in the years following the index year (99/00).

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While methadone maintenance accounts for a large proportion of MSP claims for this cohort, it does not include a majority of the overall cohort of problematic substance users. Approximately 17% of the Adult Custody population was diagnosed with a Substance Use Disorder in 99/00, while 6% of the cohort received methadone treatment.

Over time, the Corrections population constitutes an increasing proportion of all methadone patients in BC – 10% of all BC methadone patients were in the Adult Custody cohort in 99/00, and the percentage increases subsequently.

6. AIMS and Methadone Maintenance

Research has indicated that the effectiveness of methadone treatment is improved when it is accompanied by concurrent counselling services. The AIMS database is a source of insight into rates of counselling services for alcohol and drug problems. The reliability of AIMS data is questionable (addressed briefly in following section). Moreover, counselling services may be provided through other means not reflected in AIMS. With these caveats, the following results are reported.

Over the full time we have MSP data (1990/91 to 2003/04) there were 3,434 CS individuals with at least one 00039 claim (methadone treatment). Of these 1457 (42.4%) were also found in AIMS at some time (not necessarily the same time as the methadone treatment). On a yearly basis, Table 6-1 shows the correspondence between methadone treatment and concurrent service reflected in AIMS.

Table 6-1 Overlap Between Methadone Maintenance and AIMS

	#AIMS	#MethM	#Both	%MM
1994/95	4	257	0	0%
1995/96	3	329	0	0%
1996/97	7	481	0	0%
1997/98	24	795	5	1%
1998/99	347	1,144	114	10%
1999/00	**714**	**1,610**	**327**	**20%**
2000/01	567	1,880	298	16%
2001/02	438	2,227	277	12%
2002/03	291	2,275	198	9%
2003/04	203	2,095	137	7%

In general, these results indicate relatively low levels of overlap between methadone treatment and parallel services provided through community alcohol & drug services. This result may be due to true low levels of coordinated service, under-reporting of service activity through AIMS, or a combination of these.

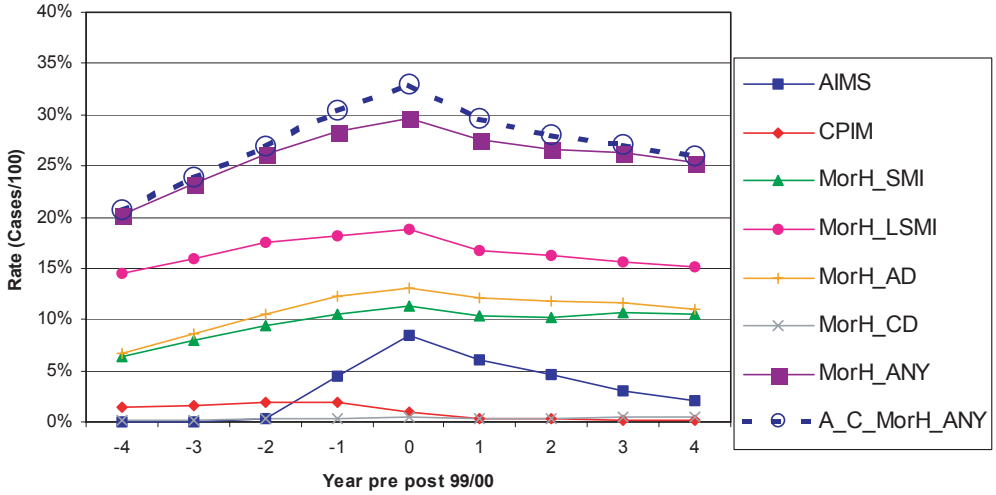
7. Mental Health and Substance Use Related Service Utilization

The prevalence of mental illness and substance use disorders within the corrections population has been cited previously. It is also of interest to know the pattern of health service utilization within this population over time. It is also important to be alert to differences related to different branches of corrections, such as community and custody settings.

The following figures provide an indication of the levels of service utilization regarding mental illness and substance use that are provided in different settings. MSP and Hospital data are combined (MorH), and rendered separately for the categories of SMI, LSMI, AD, CD, and ANY. The proportion of individuals linked to the CPIM and AIMS databases is also provided. Concerns have been raised regarding the reliability of the latter two databases, and there appear to be grounds for concern in the patterns of reported utilization. For example, the trend line for CPIM shows greater levels of utilization in years prior to our index year, followed by a sustained decline. This pattern might suggest any of the following: a catastrophic event stimulating widespread mental health service utilization; a gradual reduction in available service levels over time; an artifact of reporting. The first figure below illustrates rates for Adult Community and Adult Custody combined. The second and third figures present rates for Adult Community and Adult Custody respectively (see Figure 7-1).

Figure 7-1

Health Care by Type Pre and Post Reference Year (Matched to PHN = Y; Age 15-64)



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Overall, patterns of service utilization over time appear relatively stable in absolute numbers. Rates for LSMI are the most common overall, and are more likely to dissipate overtime. Both of these would be expected, due to the population prevalence of LSMI and the likelihood of remission.

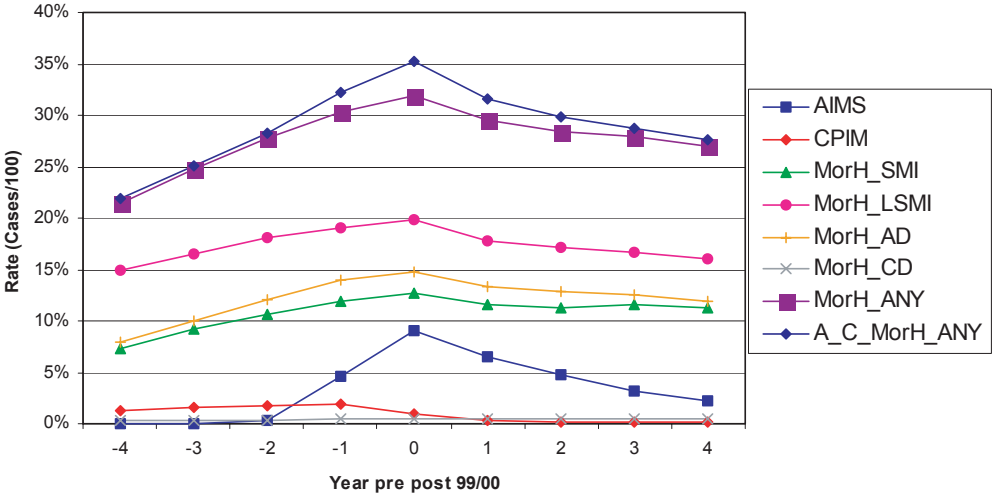
Rates of service for LSMI and substance use problems remain stable, consistent with the common course of these problems. Overall rates of service retention are consistent with or better than those for the population with mental health and substance use problems.

In the Adult Community population the most common type of service event involves LSMI, as noted in the overall Corrections population above. Mental health and substance use services were utilized by approximately 35% of the Community cohort in the index year (see Figure 7-2). As in the overall cohort, the rates of service utilization appear stable over time.

Figure 7-2

Health Care by Type Pre and Post Reference Year

(Matched to PHN = Y; Age 15-64 Adult Community)



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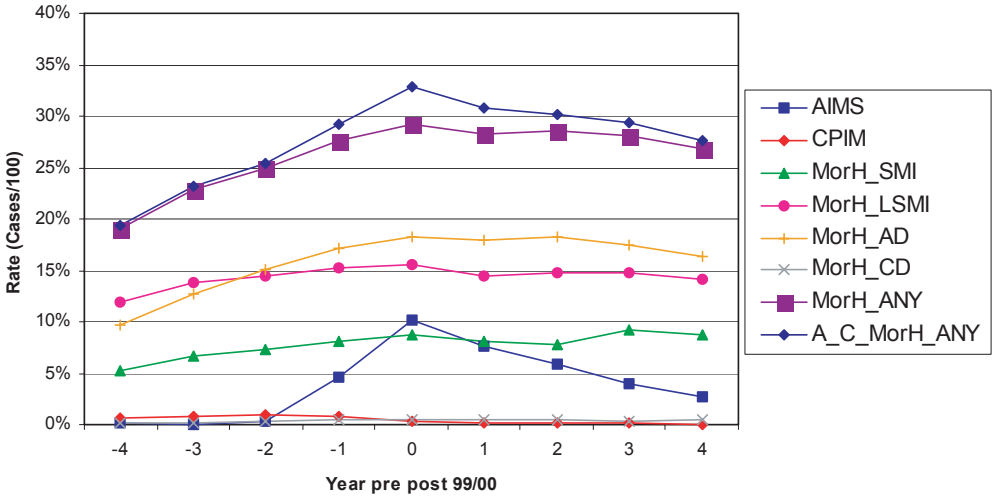
The Adult Custody cohort has similar levels of absolute service utilization (approximately 33% of the cohort). However, the most common service received in the index year was related to substance use problems whereas in the Community cohort the most common service event was related to LSMI. Also, the prevalence of SMI was greater in the Community cohort than in the Custody cohort (e.g., 13% vs. 9% in the index year). Services for substance use disorders remained fairly stable in the cohort for the years following their involvement in the corrections system (see Figure 7-3).

Figure 7-3

Health Care by Type Pre and Post Reference Year

(Matched to PHN = Y; Age 15-64 Adult Custody)

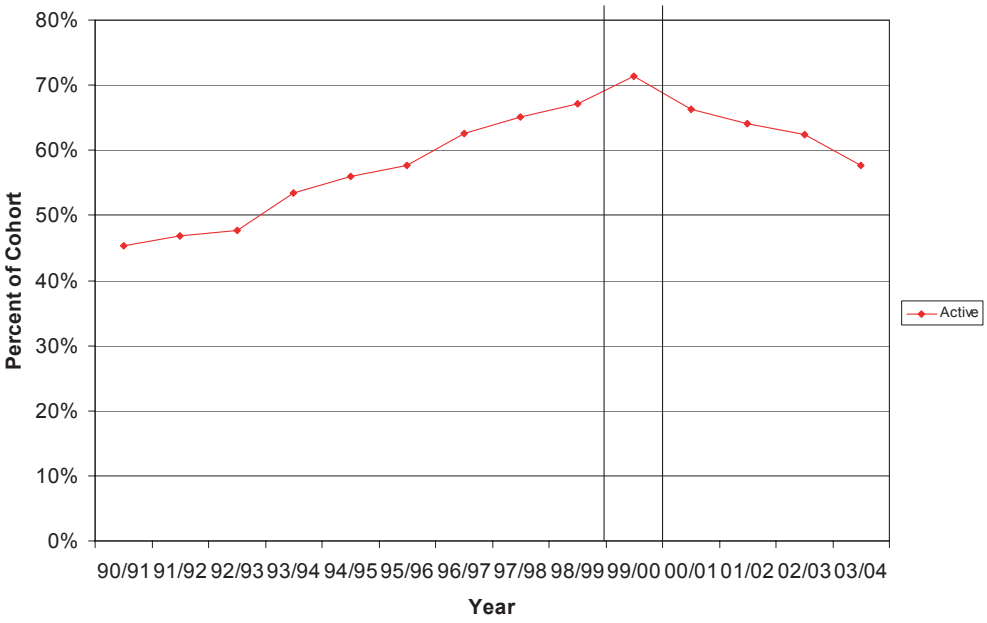


8. Continuity of Service Utilization - MSP

MSP claim levels for all types of services are presented in Figure 8-1 for the custody cohort. Of particular interest are the proportions in the years immediately prior to and after the cohort selection year (1999/00 – set off by the vertical lines in the plot). Note how they basically mirror each other, a common finding with this kind of utilization data when presented over time for a cohort selected within a specified year[2]. This pattern is of some importance in interpreting the results presented below.

Figure 8-2 (next page) illustrates the percentages of psychiatric claims among those individuals who had at least one physician visit during each year.

Figure 8-1 Percent of Cohort With a Claim in Each Year (ages 15-64)



[2] We cannot provide a published reference for this statement, as it is based on a similar pattern observed in a number of other analyses we have done with utilization data. But it generally reflects the fact that in years prior to and after the selection year not all the cohort members are still available to be a "case" (some have not moved in yet in the years prior, and some have moved out in the years past). Using the number of members in the cohort as the denominator for all years produces this pattern.

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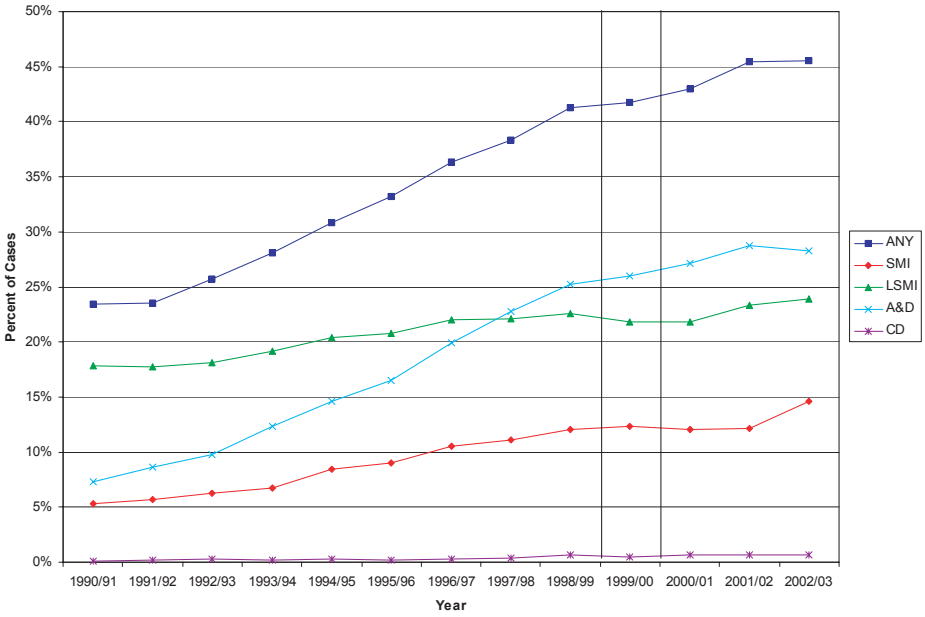
Figure 8-2 Percentage of Individuals With at Least 1 Psychiatry Claim Among Those Individuals With Any MSP Claim



Overall, these results reflect several important points. The slope of the AD line is clearly higher than that of the SMI or LSMI line. This implies that AD problems are increasingly likely to emerge as health concerns within the CS-bound population prior to their involvement with the corrections system in 1999/00. The results also indicate that AD problems remain at much higher prevalence rates than SMI or LSMI within this population.

Also of interest are the results following the year 1999/00. Unlike the pattern observed for all MSP claims (Figure 8-1), the proportion of CS individuals with an MSP claim that puts them into the SMI, LSMI, etc. groups is not declining significantly. An increasing proportion of those who remain active in the MSP system post 1999/00 are generating MSP claims in all mental health areas examined.

Finally, the CS population differs dramatically from the general population on the basis of A&D claims, as noted previously. The magnitude of this discrepancy is far greater than that observed for all other mental health problems.

9. Analysis of Accused Individuals, Mental Health Flags, and the Manner in Which Cases Were Concluded

Purpose of Analyses

Previous analyses have been reported concerning mental illness and substance use among the population of individuals who have been sentenced. These analyses have not included the population who become involved in the corrections system, but have their matters resolved before reaching court (e.g., Alternate Measures), or those who are found not guilty or otherwise diverted from jail.

This report presents results derived from analyses of the JUSTIN database (maintained by the Ministry of the Attorney General). JUSTIN contains variables that detail the course followed by individuals who enter the justice system, including the proportion of individuals who have their matters resolved in different ways before reaching court, and the proportion diverted from jail.

JUSTIN contains a large number of records (see below), and the task of linking JUSTIN with additional databases would be significant. In consultation with the MAG, several analyses were identified that would help establish the relative value of linking JUSTIN with MoH data for the current project. A strategy was developed to examine whether individuals with mental illness appear to have their matters resolved differently than others. The strategy also examines whether the individuals whose records are contained in the CORNET database are representative of the mentally ill subgroup contained in JUSTIN.

Overview of Analytic Approach

Between July 1, 2001 and April 30, 2004, criminal matters were concluded for 256,581 persons in BC. Data regarding the proceedings of these individuals are contained in the JUSTIN database. Several of the fields within JUSTIN are suggestive of the presence of mental illness or a substance use problem (i.e., “in need of a psychiatric assessment”; “a risk for suicide”; “a drug user”; “mentally disordered”; “the person was not criminally responsible”; and “the person was not fit to stand trial”). These variables were aggregated in order to produce a subset of individuals who were coded as Mental Illness Flag (MIF).

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9. Analysis of Accused Individuals, Mental Health Flags, and the Manner in Which Cases Were Concluded

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At the outset it is important to consider the validity of the MIF coding itself. There is no direct source of validation for the MIF cases identified through JUSTIN. However, the CORNET database (year 1999/00) includes a similar mental illness flag, and listed 848 cases as MIF. Ninety-two percent of these individuals were also identified in Ministry of Health databases with a mental health diagnosis. This high degree of overlap (convergent validity) supports the meaningfulness of MIF flags listed in CORNET. We are not aware of any reason to expect a different level of validity associated with the MIF flags in JUSTIN. In both JUSTIN and CORNET the MIF underestimates the prevalence of mental health problems, in comparison with epidemiological results as well as the rates reflected in Ministry of Health data.

Pre-Court and Court Resolution of Cases with/without MIF

The figure below illustrates the overall percentage of individuals classified as MIF, and the proportion of MIF and non-MIF groups who had their matters resolved through court or pre-court (see Figure 9-1).

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9. Analysis of Accused Individuals, Mental Health Flags, and the Manner in Which Cases Were Concluded

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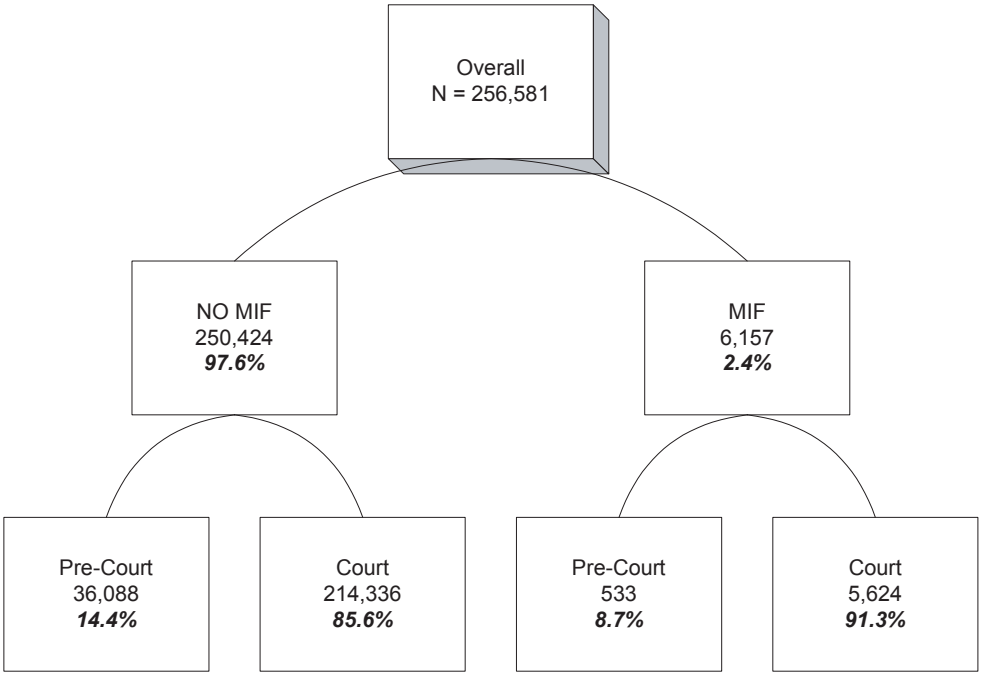
Figure 9-1 Resolutions of Cases Via Court and Pre-Court



Significantly fewer MIF individuals had their matters concluded pre-court than non-MIF individuals (Chi-squared = 162.133; df = 1; $p<.001$). This result disconfirms the hypothesis that the MIF's are more likely to be diverted pre-court. On the contrary, they are more likely to end up in the court system.

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9. Analysis of Accused Individuals, Mental Health Flags, and the Manner in Which Cases Were Concluded

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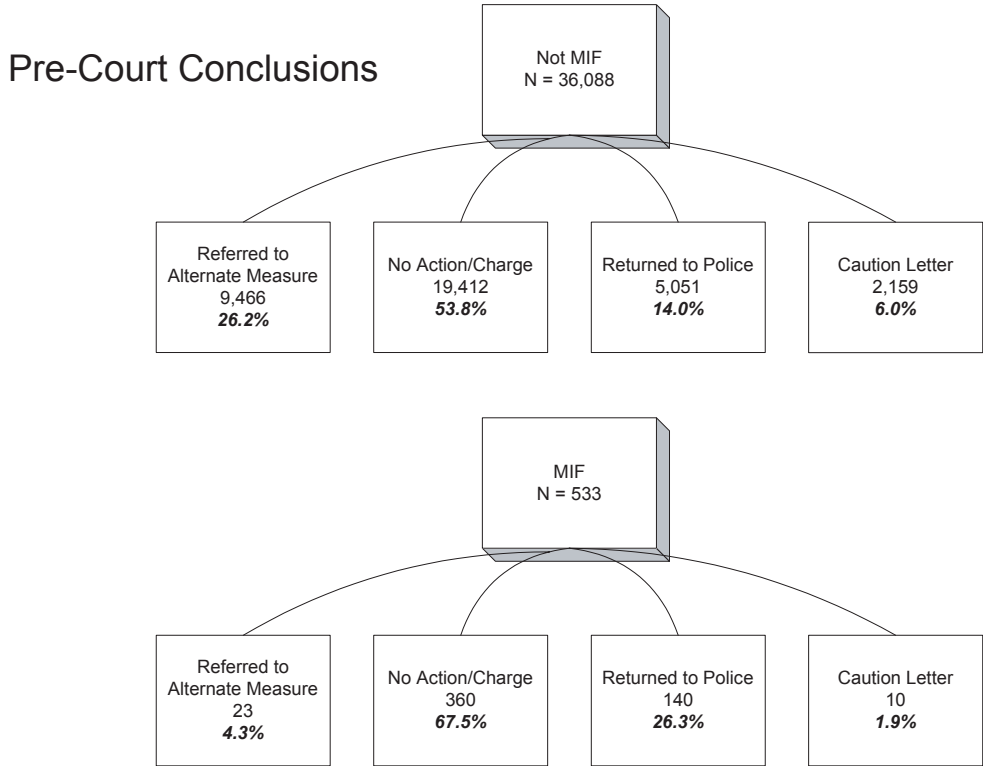
Resolutions Pre-Court with/without MIF

Criminal matters may be resolved in several ways prior to reaching a courtroom. Pre-court conclusions include: referral to alternate measures; no action/charge; returned to police; caution letter.

The following figure illustrates the proportions of individuals (MIF and non-MIF) according to whether their matters were resolved pre-court through the above listed options (see Figure 9-2).

Figure 9-2 Types of Pre-Court Resolutions



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9. Analysis of Accused Individuals, Mental Health Flags, and the Manner in Which Cases Were Concluded

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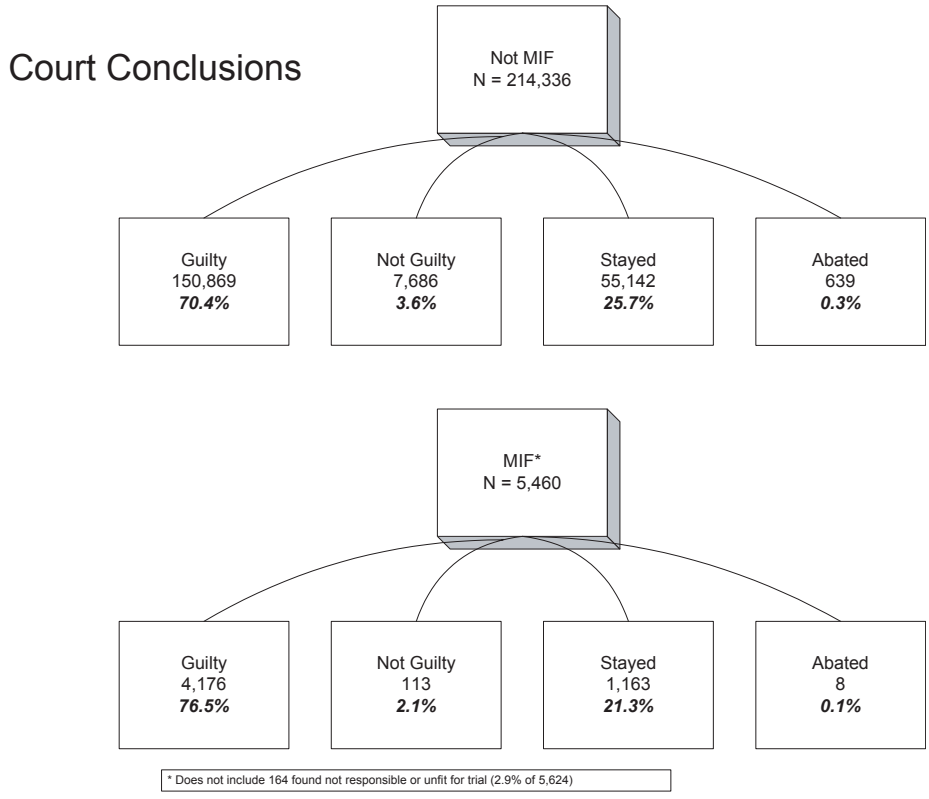
The pattern is statistically significant (Chi-square = 186.493; df = 3; $p < .001$), indicating that those identified as MIF and non-MIF have their matters resolved in different ways. Individuals classified as MIF are noticeably less likely to be referred to alternate measures, and noticeably more likely to be returned to police. MIF individuals are also less likely to be issued a caution letter. MIF individuals in the pre-court stream are more likely to end up with "no action/charge" or be returned to police (93.8% of the time).

Court Conclusions with/without MIF

The following figure illustrates the pattern of adjudication based on the indication of mental illness within JUSTIN (see Figure 9-3).

Figure 9-3 Court Resolutions



continued . . .

9. Analysis of Accused Individuals, Mental Health Flags, and the Manner in Which Cases Were Concluded

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The results indicate that MIF individuals are somewhat more likely to be found guilty. Again, the difference is statistically significant (Chi-square = 107.421; df = 3; $p < .001$).

Overall, the foregoing results do not suggest any disproportionate diversion of MIF individuals from the corrections system through the processes and procedures documented in JUSTIN. In addition, the results suggest that the MIF population represented in CORNET (and subject to detailed health analyses) is representative of the MIF population documented in JUSTIN.

10. "Administrative" Offences and Mental Health Status

Some published reports have noted that the types of offences committed by individuals with mental illness do not differ overall from the general distribution of offences. Of particular concern is the possibility that individuals categorized as SMI may be sentenced on the basis of "administrative" (or summary) offences, in comparison to the population of offenders generally. A listing of administrative offences was provided by Community Corrections & Corporate Programs, based on a system of categories used by Statistics Canada.

Each individual's offences were examined and if any one of the offences were classed as an "administrative" then the individual was counted as a case. For the 1999/00 year a total of 3,870 individuals were identified. Statistical results indicate that status of AD alone showed a significant difference with the presence an offence of an administrative type. Groups identified as SMI, LSMI, and CD showed no difference with the offender population overall in relation to the rate of incarceration due to administrative offences.

Overall, these results fail to confirm that the SMI or LSMI groups are more likely to be involved with the corrections system due to administrative reasons.

II. Prevalence Rates and Trends Within Youth Custody

The prevalence of different mental health problems within the youth corrections cohort was analysed in relation to population levels. Within the population as a whole, the most commonly diagnosed forms of mental illness among youth are:

314 Hyperkinetic syndrome of childhood
313 Disturbance of emotions specific to childhood and adolescence
312 Disturbance of conduct, not elsewhere classified

Alcohol and drug-related diagnoses were also analysed, although these are considerably less common than the above diagnoses among youth.

Individuals were classified as having or not having a MSP or hospital visit in the year where this diagnosis was present. One instance of such a diagnosis would make them a case.

To be included in this analysis the individual's CS data had to have come from the youth custody or youth community data sources. Thus age was not a selection criterion in itself; rather it is one indirectly because of the justice system's classification of youth and adult systems.

A total of 7,417 individuals who could be linked to a PHN were found in the CS youth data sources. Unlike the adult data examined to date, the utilization rates are higher in years prior to the reference year. This is shown more clearly in the graph below (see Figure 11-1).

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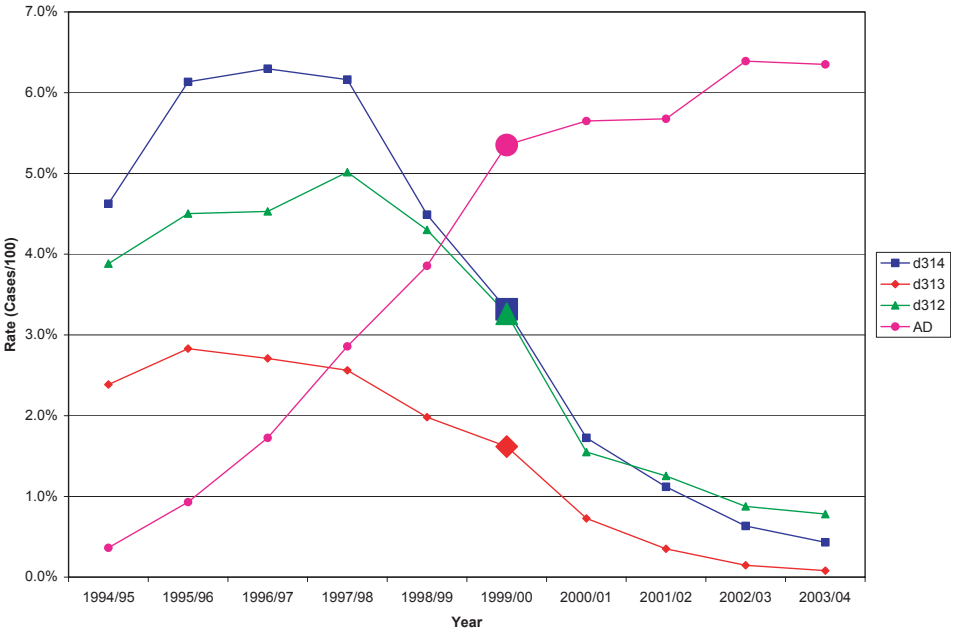
Figure 11-1 Youth Diagnoses Over Time



The shape of the graph is undoubtedly an artefact of the diagnostic process. The diagnoses 312-314 are used more often with children (ages 5-9 and 10-14). The CS youth population has a mean age of 17 years, implying that many of these individuals would have been diagnosed in the past. By contrast, epidemiological reports suggest that alcohol and drug problems become increasingly prevalent through young adulthood.

To make a direct comparison to population rates, a subset of the youth justice data was selected: those who were between the ages of 13 and 17 in 99/00 (i.e., individuals who would have been between 10-14 years of age 3 years prior. Utilization levels within this subset were determined for the three years prior to their period of involvement in the justice system. This would make their rates directly comparable to the population rates for the 10-14 year olds. A total of 3,616 records were identified. The breakdown of the number diagnosed in the year 3 prior and the rates are presented in Table 11-1 (all data are for age range 10-14 years).

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Table 11-1 Youth in Corrections and Population Prevalence Rates

Diagnosis	N	% of 3,616	pop rate	aprx RR
diag314	270	7.5	1.80	4.17
diag313	124	3.4	0.78	4.36
diag312	179	5.0	1.26	3.97
AD	30	0.83	0.15	5.53

The results indicate that the relative risk of receiving services for any of these problems is at least 4x greater than the population rate for those individuals who subsequently enter the youth corrections system. The relative risk of substance use problems is somewhat greater.

12. Hospitalization Rates

Hospital visits may serve as an indicator of an individual's quality of health and the quality of their community healthcare. Hospital discharge rates were analysed for different categories of mental illness within the overall corrections population (aged 15-64). These were then compared with the overall population rates, and an approximate relative risk was calculated. The results are presented in Table 12-1.

Table 12-1 Hospital Discharge Rates for 1999/00: Corrections Cohort and General Population

	Discharges per 100 Population		
	CS Group (based on 9119)	BC Population (15-64)	Ratio (CD/Population)
ANY	3.59	0.78	4.6
SMI	0.99	0.45	2.2
LSMI	0.77	0.17	4.5
A&D	1.75	0.14	12.5
CD	0.08	0.01	7.7

As with the MSP data, the alcohol and drug values are the highest. Average length of stay (ALOS) was also examined. ALOS for the overall population (15-64) was 4.8 days in 1999/00, and the ALOS in the CS population is quite a bit higher (7.9 days). Thus while the proportion of CS individuals with a hospital visit in a year is relatively small, their rates of hospital utilization are higher and ALOS is longer than the corresponding values for the general population.

Overall, 42% of the CS cohort ended up in hospital at least one time over the 10-year period. Comparable rates are not available for the BC population.

13. Repeat Corrections Involvement Among SMI

Analogous to hospitalization, the extent of repeated contact with the justice system among the mentally ill may be an indicator of the effectiveness of various community resources.

A series of analyses were conducted on the SMI cohort, in order to identify the frequency of involvement with Provincial Corrections. The results were compared with the non-SMI cohort in order to calculate whether the patterns of justice system contact were different between these groups.

Analyses were conducted for individuals having an SMI diagnosis across three different intervals: SMI diagnosis in the reference year; SMI diagnosis in any of the previous 5 years; SMI diagnosis in the 4 years after the reference year.

The results indicate the following:

- If the person has SMI in the current year, they are less likely to have been in jail within the previous 2 years.
- If the person has a SMI diagnosis sometime in the previous 5 years they are more likely to have some form of formal contact, but less likely to have spent some time in jail.
- Those that are going to be (or continue to be) treated for SMI in the future are less likely to have previous jail in 2 years.

These results are consistent with other SMI-related findings. SMI is slightly overrepresented in the corrections system, and as a group these individuals do not appear to be coming into contact with corrections at a greater frequency than other people.