Community Health And Safety Evaluation

(CHASE) Project

Final Report

Prepared for the Vancouver Coastal Health Authority
by the CHASE Project Team
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British Columbia
Centre *for* Excellence
in HIV/AIDS

Providence HEALTH CARE
St. Paul's Hospital

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1. EXECUTIVE SUMMARY

The CHASE Project, sponsored by Vancouver Coastal Health, was conducted by the BC Centre for Excellence in HIV/AIDS to evaluate the impact of four new health related facilities in Vancouver's Downtown Eastside (DTES). These were the Downtown Community Health Clinic (DCHC), the Pender Community Health Clinic (PCHC), the Health Contact Centre (HCC), and the Life Skills Centre (LSC). In addition, this Project provided the opportunity to assess a number of health outcomes through the recruitment of a large representative cohort of people residing in the area and using health services.

Largely through the efforts of "peer-researchers" and a committed staff of community-minded researchers, over 4,000 people were enrolled in the CHASE Project through a number of innovative strategies, making it one of the largest community research cohorts ever assembled in Canada. The study was designed to collect some key information through a brief face-to-face survey and to obtain consent to link personal identifying information (name, date of birth, PHN) with existing health databases. This has allowed a "virtual" cohort of individuals to participate in a study that can collect a large number of health indicators over time through periodic linkages with external data sources. Recruitment was conducted between January 2003 and December 2004, so that the processing and analysis of the data is ongoing.

Community level data was also collected concurrently in order to put the findings from the cohort in some perspective. For example, information was gathered from provincial vital statistics that measured mortality in the DTES. This graphically illustrated the health disparities that exist within this community, with age adjusted standardized mortality rates (ASMR) showing that all cause mortality was 126.3 in the DTES compared with 54.2 for the rest of

BC in 2003. Further, alcohol-related ASMR was 4.2 vs. 0.6, drug-related ASMR was 8.6 vs. 0.7, and HIV-related ASMR was 17.4 vs. 0.3. Crime statistics revealed high intensity police activity in the DTES communities. Drug possession and drug trafficking accounted for the majority of arrests, with spikes in activity corresponding with police "crackdowns" in the area. Assaults and robberies remained relatively consistent over 3 years of observation.

The median age of the cohort is 43years, 31% are women, 29% are of Aboriginal ethnicity, 69% live in unstable housing situations, and 77% receive welfare payments. These variables are consistent with community census data and support the representative make-up of the CHASE cohort. This is a population with extremely high uptake of community services. This includes a wide range of programs, from food banks, needle exchanges, and outreach programs, to pharmacies, medical clinics and addiction counselors. At the time of enrollment, 64% of the participants in CHASE reported visiting at least one of the four new VCH sites in the past year.

Major findings

1. The CHASE Project highlights the poor health status of a large representative cohort of DTES residents and the extreme health disparities when compared to the general population.
2. A very high proportion of people in this community use illicit drugs with crack cocaine and injection cocaine being the most common.
3. Heroin use is on the decline and addiction services must continue to expand beyond opiate use to deal with the increasing prevalence of crack cocaine, powder cocaine and other stimulants. The strategies to expand addiction services are in line with current trends in drug use.

4. Drug addiction and drug misuse adversely influences all attempts to improve health, and it can overwhelm the ultimate public health impacts of the four facilities.
5. The majority of residents live in unstable housing, mainly in the guise of dilapidated hotels, and this contributes to poor health outcomes.
6. The prevalence of HIV and Hepatitis C in this community is among the highest in North America and will require innovative programs and increased resources to reduce transmission and care for those already infected.
7. The uptake of the DCHC and the PCHC has been very high, and the multi-disciplinary services offered at each site have allowed a more comprehensive approach to medical care.
8. The high attendance recorded at these medical clinics, although a rather blunt indicator of health care requirements, illustrates the extreme level of illness and need in this community.
9. The Health Contact Centre offers a unique low threshold point of contact for many of the most marginalized, where they can access a wide range of services including a large needle exchange program.
10. The detox and daytox programs have been increasing in scope and uptake since the opening of the four facilities in order to be responsive to individuals who are requesting this service.
11. The Life Skills Centre has become a major centre of activity for the more "stable" members of the community, offering real opportunities to pursue programs that can lead to improved integration into society
12. Emergency Rooms (specifically St. Paul's Hospital) continue to show increasing numbers of visits despite the opening of these new facilities.

13. A high proportion of ER visits result in hospital admission, suggesting that there is an increased need for in patient care.
14. Antiretroviral therapy is under-utilized in this community despite programs specifically designed to support HIV positive patients on treatment.
15. There is an increasing number of people in the community who have actually been on antiretrovirals in the past, but have been unable to sustain the daily demands of taking the drugs.
16. Women appear to be consistently disadvantaged when it comes to health related services, including the four facilities, and there is an urgent need for more women-centred programs.

2. INTRODUCTION AND OBJECTIVES

2.1 Introduction

The Downtown Eastside (DTES) of Vancouver is home to approximately 16,000 long-term residents, including men, women, and children of diverse backgrounds, and is one of the most impoverished communities in Canada [1]. In recent decades, poverty, low-income housing, high crime and unemployment rates, and an ever-present illicit drug scene have characterized the neighbourhood. Plagued by a host of adverse social conditions, residents contend with multiple chronic illnesses, drug addiction, and reduced life expectancy [2].

In response to the health crisis in the DTES, numerous government reports and external evaluations have been written. The current state of the DTES has been a focus of national attention as a result of the work of community activists, concerned citizens, and the media. The result has been ambitious sets of recommendations and proposed interventions that deal with a range of inter-related issues, from addiction treatment to housing to urban renewal. Perhaps the two most relevant, timely, and bold initiatives are the Vancouver Agreement, which involves the collective efforts of the federal, provincial, and municipal governments, and the Integrated Health Approach to the DTES, set out by Vancouver Coastal Health (VCH).

The Vancouver Agreement [3] involves the three levels of government and aims to design and implement a coordinated strategy that will promote sustainable economic, social, and community development in Vancouver. Specific objectives for the DTES are outlined in the Agreement and include improving the health of residents through increased access to health care, and reducing HIV transmissions through a comprehensive, multi-tiered substance misuse strategy that includes a range of low threshold harm reduction approaches.

The VCH and its community partners have also recognized the importance of an integrated health approach, and have implemented various programs to deal with the current health and social conditions in the DTES. Essential components include effective drug and alcohol services, enhanced primary health care, reduction in infectious diseases, and increased access to housing. The VCH has also identified the need to go beyond conventional treatment by implementing a continuum of innovative approaches to reduce drug-related harms.

In working toward these goals, the VCH has opened four new facilities that are designed to enhance health services. These include the Downtown Community Health Centre, the Pender Community Health Centre, the Health Contact Centre, and the Life Skills Centre. In order to assess the impact of the four projects, a vigorous evaluation was conducted to measure improvements in health and any reduction in the harms related to drug use.

2.2 Objective

The overall objective of the CHASE Project has been to evaluate the health impact of the recently implemented VCH health initiatives on the residents of the DTES. As well, the project aimed to monitor health trends and identify priority health issues and shortfalls. The three primary areas of focus were:

- Communicable diseases
- Primary health care
- Access and movement within the health care system

These three areas of focus were addressed through the establishment of a centralized community database. Data linkages and collaborations provided the infrastructure for a sustainable prospective database that serves to centralize a range of health data and allows for the effective assessment of the health status of DTES residents. This important feature provides a range of concrete information, including incidence and prevalence rates of diseases such as HIV,

hepatitis C, syphilis, and tuberculosis. The database can also be used to provide technical assistance to community groups by providing data that will support their programs and optimize reporting.

In addition, the CHASE team has been tracking a range of community statistics in the DTES since 2001. Data was extracted for the five communities that constitute the greater DTES: Chinatown, DTES, Gastown, Strathcona and Victory Square and for two blocks radius around the four VCH facilities: DCHC, PCHC, HCC and LSC. These statistics were reported yearly in the spring reports. This final report includes data received from Vital Statistics and Income Assistance for 2001-2003; and Vancouver Police Department crime data for 2001-2004.

The first CHASE report, delivered in February 2003 provided a summary of data collected during the first six months of the CHASE Project. Included were a pilot study focusing on three DTES primary health clinics; a process study of the Health Contact Centre; and a pilot study of migration patterns in the DTES.

The second CHASE report, delivered in fall 2003 presented data pertaining to the evaluation of VCH's new DTES health initiatives. Included in this report was evaluation data specific to the Downtown Community Health Centre (DCHC), the Pender Community Health Centre (PCHC), the Health Contact Centre (HCC), and the Life Skills Centre (LSC). Specific evaluation dimensions examined in this report included:

- Flow (numbers of people using the VCH services)
- Reach (who is being reached by VCH services)
- Process (how well are the VCH services being implemented)
- Outcomes (what are the health impacts of the VCH services)

The purpose of the third report, delivered in spring 2004, was to highlight some of the significant findings and utilized data from linkages with St Paul's

emergency room, the BCCfE Drug Treatment Program, and the BCCDC HIV testing database. Included were analyses on:

"High Rates of Primary Care and Emergency Department Use Among Injection Drug Users in Vancouver"

"Access and Discontinuation of Highly Active Antiretroviral Therapy In a Community With High Rates of Injection Drug Use."

HIV Incidence in a Community With High Rates of Injection Drug Use: Vancouver, Canada, 1992-2002."

These previous reports can be found at http://chase.hivnet.ubc.ca.

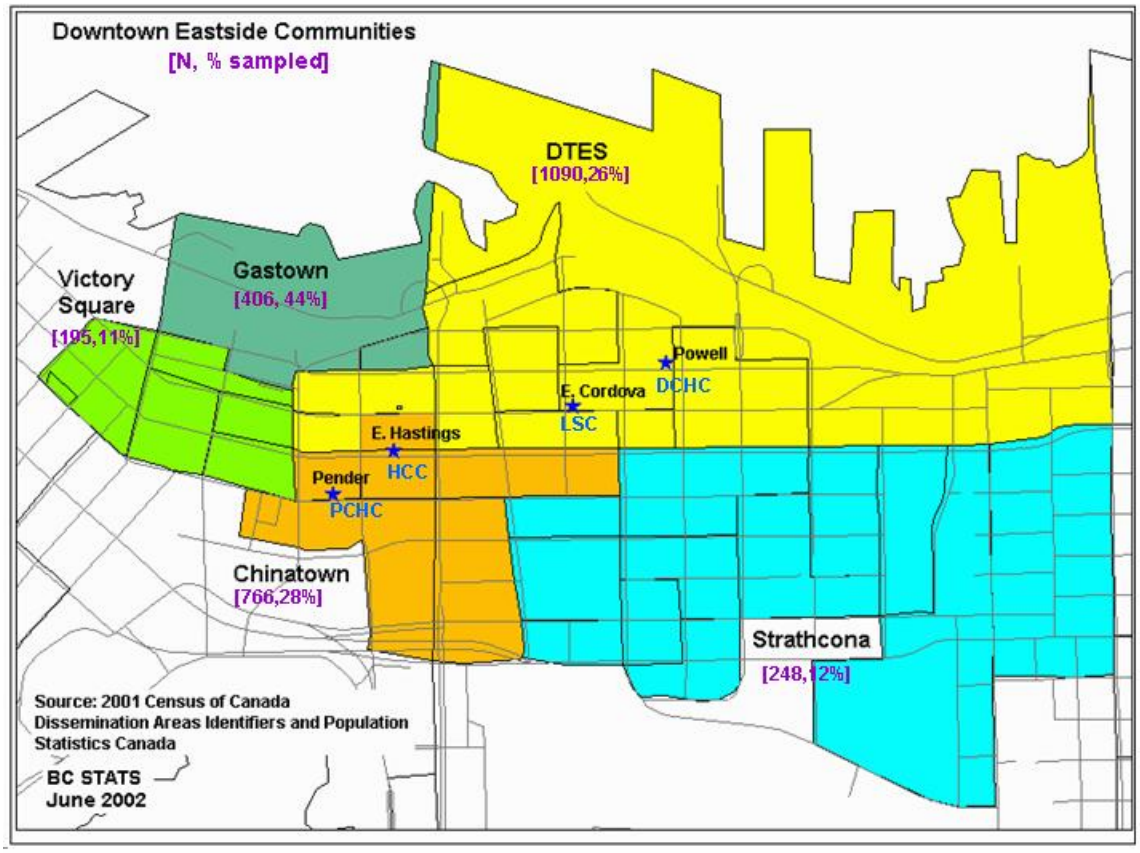
The purpose of the final report is to present complete summaries of crime, vital statistics and income assistance statistics for the five communities, and to highlight significant findings of the project to date. Included in this report are details of the participatory approach to health research, an updated demographic and health profile of the CHASE cohort, and highlights of the health outcomes analyses of the CHASE linked data and primary care access and movement analyses of the PARIS data.

3. COMMUNITY STATISTICS SUMMARY

3.1 The Downtown Eastside

The Greater Downtown Eastside community consists of five smaller areas: Gastown, Chinatown, Strathcona, Victory Square, and an area commonly referred to as the Downtown Eastside. Their locations are displayed in Figure 3.1a along with the four VCH facilities of interest: PCHC, HCC, LSC and DCHC.

Figure 3.1a DTES Five Communities and Four Centres



According to the 2003 population estimates generated by BC STATS based on 2001 Census data, there are 16,877 individuals living in the DTES, of whom 62% are male and 38% are female [4]. The proportion of females living in the DTES is relatively low compared with the city of Vancouver where 51% are female. The entire DTES population is broken down by community and gender in Table 3.1a.

As indicated, the largest community is Strathcona, with a population of 6,561, followed by the DTES community with 4,906, and Chinatown with of 2,730. The smallest community within the DTES is Gastown with a population of 916.

Table 3.1a. 2003 DTES Population by Community and Gender (n = 16,877)

	Males	Females	Total
Gastown	597	319	916
Victory Square	1,434	330	1,764
Chinatown	1,801	929	2,730
DTES	3,481	1,425	4,906
Strathcona	3,148	3,413	6,561
TOTAL DTES	**10,461**	**6,416**	**16,877**

The age distribution of the DTES population is presented in Table 3.1b. As indicated, 11.1% of the population is under the age of 20 years, and 39% are under the age of 40 (3). Approximately 32% of the population is between the ages of 40 and 59, and 28% are older than 59 years. Compared to the City of Vancouver, there is a higher proportion of older residents in the DTES. For example, while 60% of DTES residents are above the age of 40 years, only 42% of Vancouver residents fall into this category (4).

Table 3.1b. 2003 Age of DTES Residents by Gender (n = 16,877)

Age Group	Males	Females	Total	(%)
0-9	491	446	937	5.6%
10-19	488	445	933	5.5%
20-29	830	559	1,389	8.2%
30-39	2,275	1,186	3,461	20.5%
40-49	2,142	960	3,102	18.4%
50-59	1,625	674	2,299	13.6%
60-69	1,247	628	1,875	11.1%
70-79	950	745	1,695	10.0%
80-89	346	580	926	5.5%
90-99	67	192	259	1.5%
100+	0	1	1	0.0%
Total:	**10,461**	**6,416**	**16,877**	

There is also a high proportion of individuals of Aboriginal descent living in the DTES. In 1996, Census data indicated that 9% of the DTES population was of Aboriginal descent, while only 2% of the population of Vancouver was Aboriginal (1,4) .

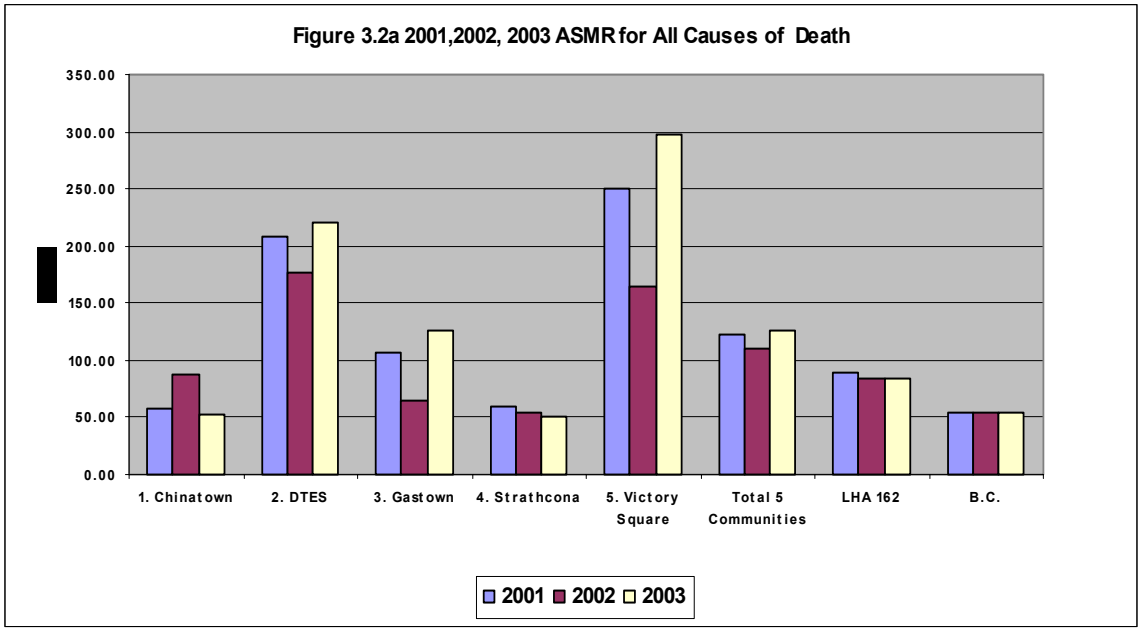
3.2 Mortality 2001-2003

DTES residents have a lower life expectancy than other British Columbians (1). Mortality figures for the DTES and British Columbia were derived from Vital Statistics and are presented in Table 3.2a.

In 2003, the Adjusted Standardized Mortality Rate (ASMR) for the DTES was more than twice as high as the provincial standard (ASMR = 54.18), with 126.34 deaths occurring per 10,000 individuals. In the same year, the rate of death due to alcohol in the DTES (ASMR = 4.21) was more than seven times higher than the provincial rate (ASMR = 0.63), and the rate of death due to drug use in the DTES (ASMR= 8.61) was more than twelve times the provincial rate (ASMR = 0.69). Also in 2003, the rate of death due to HIV-related diseases for the DTES (ASMR = 17.43) was more than 60 times the provincial average (ASMR = 0.28), and the rate of death due to hepatitis C for the DTES (ASMR = 0.9) was 6 times the provincial average (ASMR = 0.15).

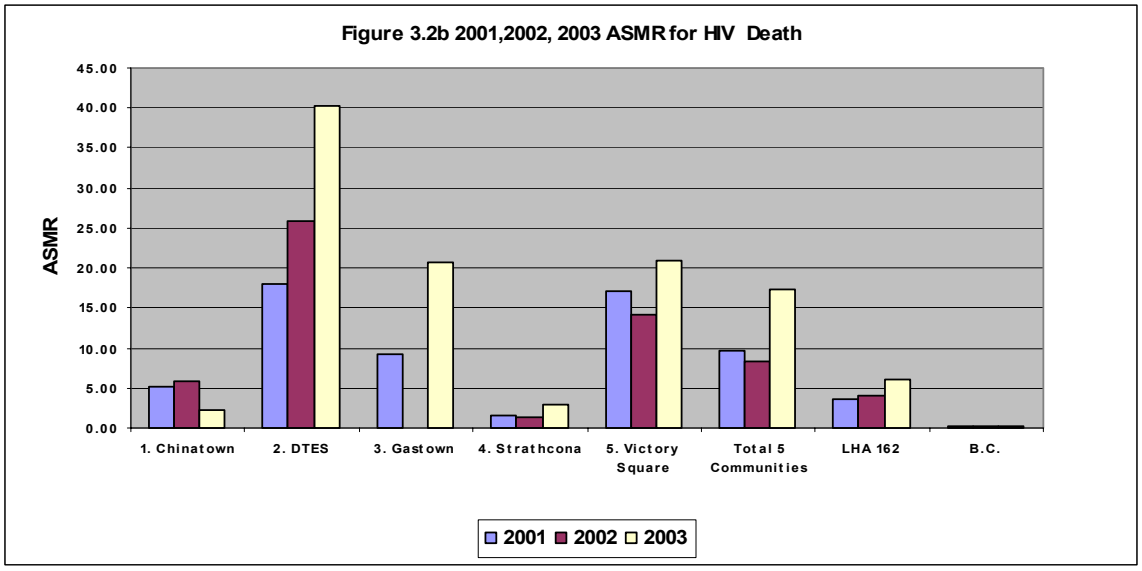
Table 3.2a. 2003 Adjusted Standardized Mortality Rates (ASMR) for the DTES and the Province of British Columbia

Death Cause	DTES	BC
Alcohol-related	4.21	0.63
Drug-related	8.61	0.69
HIV-related	17.43	0.28
Hepatitis C-related	0.9	0.15
All causes	**126.34**	**54.18**



As indicated in Figure 3.2a, Victory Square has the highest death rate among the five communities. In 2003, the ASMR for Victory Square is 297.44, almost 6 times as high as Strathcona at 51.61 and provincial average at 54.18. Comparing the total five communities, the 2003 ASMR is 126.34, which is more than double the BC rate at 54.18 .

Among all the causes of death, HIV related deaths are the highest in 2003 and its ASMR has increased substantially from 9.61 in 2001 to 17.43 in 2003 in DTES, as illustrated in Figure 3.2b. In comparison to the provincial average at 0.28, the 2003 DTES ASMR of 17.43 in DTES is more than 60 times the provincial counterpart.

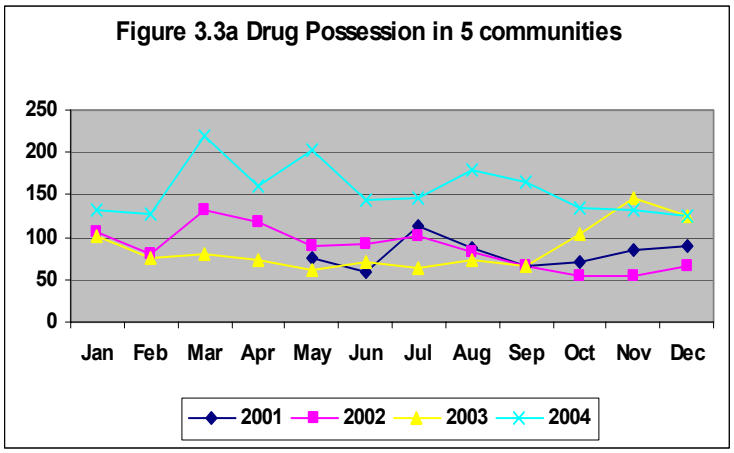


Among the three years of ASMR data in the five communities, 2001 is the highest for all causes, drug–related, alcohol-related as well as HIV-related deaths. HIV-related deaths have been increasing in the DTES through 2001, 2002 and 2003 reaching 40.0 per 10,000 in the year 2003. This is much higher than the other 4 communities and showed a much steeper trajectory.

More detailed mortality statistics tables can be found in Appendix 3.2b.

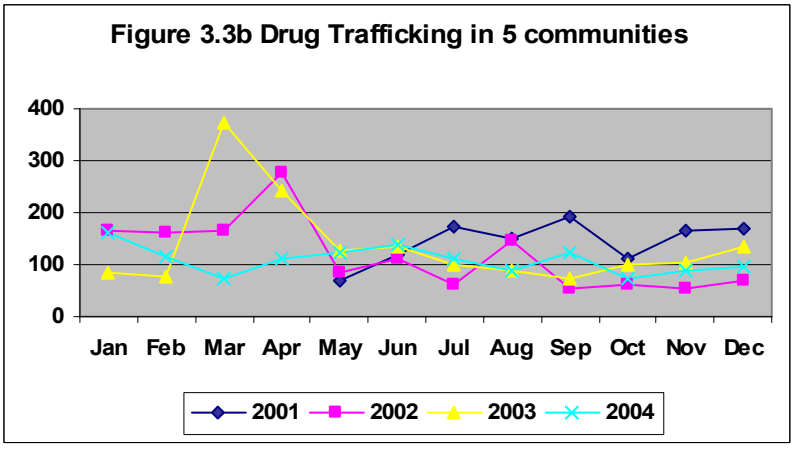
3.3 Crime Statistics 2001-2004

DTES is regarded as one of Canada's most violent communities, with high police presence and high crime rates. The Vancouver Police Department provided key crime statistics in drug possession, drug trafficking, assaults and robbery and theft of cars in the five community areas. As well these statistics were provided for a two blocks radius around the four VCH facilities. These crime statistics are shown for a four year period from 2001 to 2004.



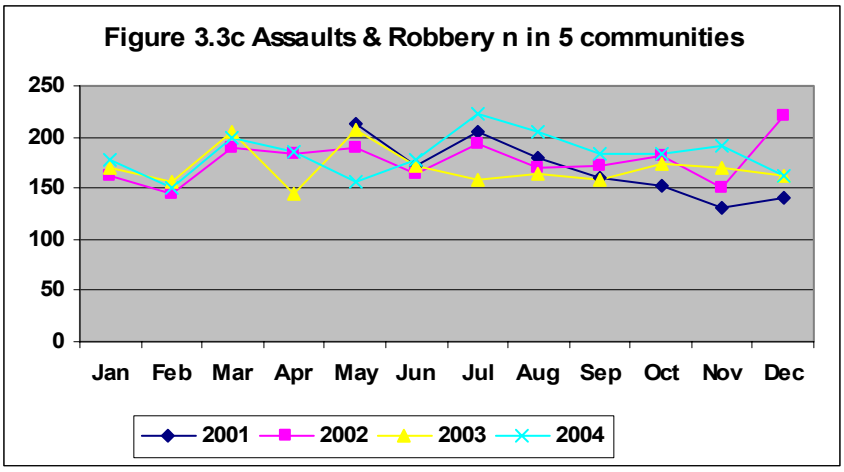
Among the five communities, the most active drug use occurred around HCC and PCHC in Chinatown area and least active around DCHC and in Strathcona. Among four years of data recorded, drug possession offences are the highest (yearly average 155.8) in 2004 whereas drug trafficking offences are the lowest (yearly average 109.3) in 2004 as indicated by figures 3.3a and 3.3b.

A significant spike occurred in drug trafficking charges during March 2003. This date coincides with a police crackdown in the neighbourhood where 390 is observed, as indicated by the spike in Figure 3.3b. More detailed data can be seen in Appendix 3.3. The first Safe Injection Site in North America opened in September

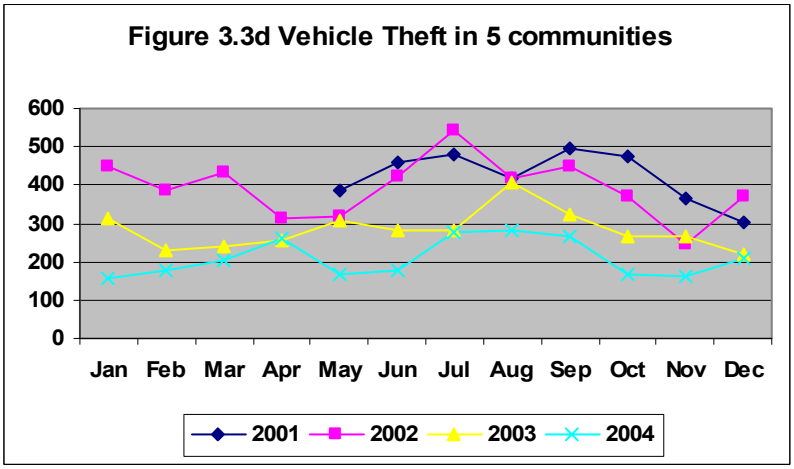


2003 in DTES. Drug crime statistics were tallied three months prior to the opening and three months after the opening. While the drug possession offences increased from 205 before to 374 after, the drug trafficking offences remained stable at 321 and 336 for these two periods.

Assaults and robbery crimes remained relatively stable during four years of observation. There is no indication of any major shift in the five communities and also around the four centres. The five community yearly average climbs slowly from 169 in 2001 to 183 in 2004. A similar pattern is observed around the four centres, with yearly average of 43.3 in 2001 rising gradually in four years to 47.5 in 2004. Figure 3.3 shows the Assaults and Robbery for the five communities. The corresponding tables and figures for the four centres can be found in the Appendix 3.3c.



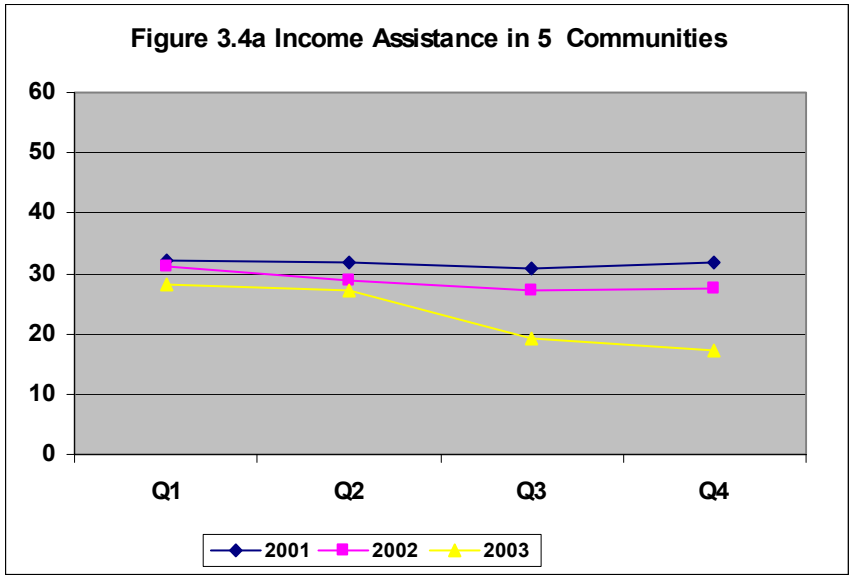
In contrast to the Assaults crime, there is a definite downward trend in the Vehicle Theft crime with 2004 showing the lowest counts. As displayed in graphs 3.3d, the 2001 average at about 400 has dropped consistently year after year to only about 200 thefts in 2004. Again, more detailed statistics in tables and

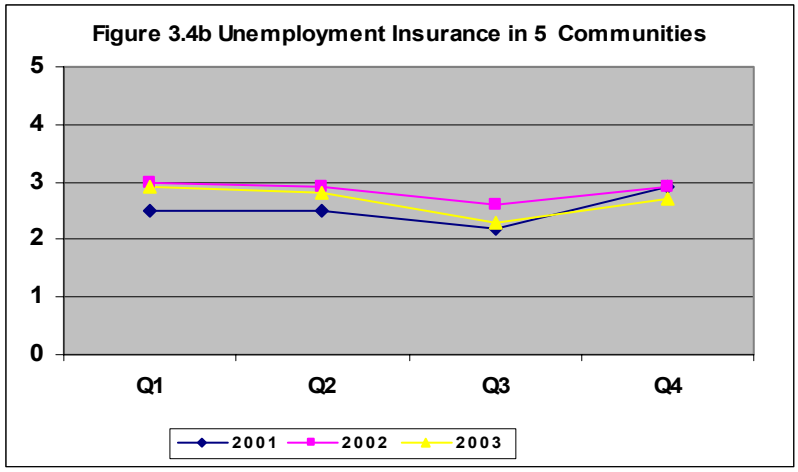


graphs for both five communities and four centres can be found in the Appendix 3.3d.

3.4 Income Assistance and Employment Insurance 2001-2003

Residents of the DTES have substantially lower incomes than other Vancouver residents. In 1996, the median annual income among individuals living in the DTES was $6,755 for males and $7,286 for females (4). During this same year, the median annual income among people living in Vancouver was $20,484 for males and $16,197 for females (1). There is also a high rate of uptake of basic BC Benefits (i.e., income assistance) among DTES residents. In 2001, 31.6% of DTES residents were receiving BC Benefits, compared with just 4.5% of all British Columbians. As shown in Figure 3.4a, the proportion of DTES residents receiving BC Benefits was relatively steady through 2001 and 2002. However, there was a marked decrease following the second quarter of 2003. This pattern is associated with the introduction of more stringent eligibility rule for income assistance. More detailed income statistics in tables and graphs can be found in the Appendix 3.4a.





While high unemployment is generally found in the DTES, unemployment insurance rates are not higher, as the majority of the residents do not qualify for unemployment insurance. In fact, the unemployment insurance rate in the DTES is just 2.7% in 2003 compared to 3.6% for the province. As shown in Figure 3.4b, the three years from 2001 to 2003 remained unchanged across all four quarters of each year. More detailed unemployment tables and figures can be found in Appendix 3.4b.

4. RECRUITMENT METHODLOGY

4.1 Method and Analytic Strategy

The major objective of the CHASE recruitment strategy was to create a cohort that reflected those residing and having access to services in the DTES communities. The recruitment targets were based on the census track data of the 5 communities of interest. In total, 3530 participants were recruited for the CHASE Cohort between January 2003 and November 2004. Individuals were informed of the project through community-based agency staff, postings in local agencies, door-to-door initiatives, and through word of mouth. Individuals were eligible for inclusion in the study if they reported living in the DTES and / or were using health services in the DTES at the time of interview. Participants were asked to provide a personal health number (PHN), a social insurance number, and informed consent for participation in the project. Surveys were administered in a variety of settings, including ten community-based agencies, two VCH clinics, the Life Skills Centre, the Health Contact Centre, 117 SRO hotels and social housing buildings, and a large space that operates as a needle exchange in the Washington Hotel. By using such a wide range of recruitment venues and strategies the final cohort had the best chance to capture a group of individuals that were representative of this community. In addition, permission was requested to link personal identifiers with health service registries. Participants are followed retrospectively and prospectively through a range of health-related database linkages. Participants received $10 upon completion of the baseline survey. The University of British Columbia/Providence Health Care Ethics Board approved the study.

4.2 Recruitment Sampling Strategy

In addressing the issue of fair representation from all parts of DTES, an overall 23% (2705/11695) sampling was attained from recruiting at least 10% from each of the five communities as depicted in Figure 3.1a. The exact distribution of CHASE recruitment by areas is shown in Table 4.2a. The most prominent communities Chinatown and DTES have 28% and 26% of people enrolled. Gastown, with the least residential population at 917 has the highest sampling percentage at 44%. About 77% (2705/2520) recruited are from DTES communities, leaving 23% from either outside of DTES, outside of Vancouver, outside of the Lower Mainland and outside of the province, as shown in Table 4.2a.

Table 4.2a Recruitment Sampling Distribution		2001 census	
Areas	**Subtotal**	**population**	**%sampled**
Chinatown	766	2736	**28%**
DTES	1090	4177	**26%**
Gastown	406	917	**44%**
Strathcona	248	2098	**12%**
Victory Square	195	1767	**11%**
Five communities Total:	**2,705**	**11,695**	**23%**
within LHA162 (outside 5 communities)	364		
LHA162 Total:	3,069	34,880	9%
within Lower Mainland (outside LHA162)	174		
within BC (outside Lower Mainland)	16		
outside BC	1		
NO address	270		
Total:	**3,530**		

The recruitment took place over a two year period from 2003 to 2004. The core of CHASE was recruited in the first 16 months. Then recruitment based on special themes started in the summer of 2004. The first theme based on HIV and HCV took place in June 2004 while the other two themes based on STD and CRACK use occurred in the last three months in 2004. Figure 4.1a shows a breakdown of recruitment by year and month.

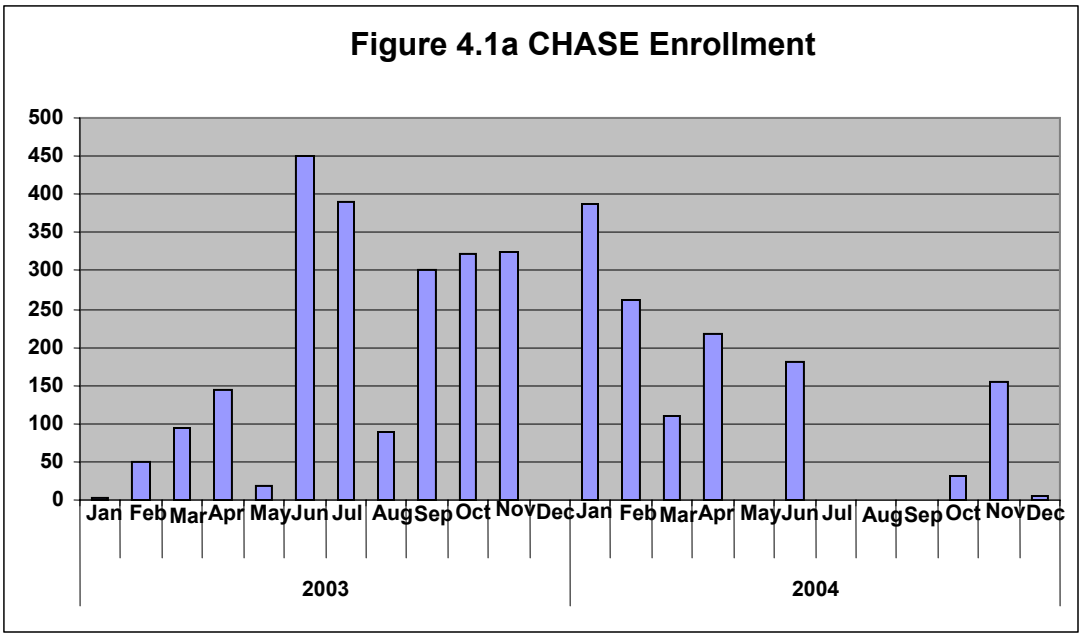


Figure 4.1a CHASE Enrollment
500
450
400
350
300
250
200
150
100
50
0
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
2003
2004

5. CHASE COHORT DESCRIPTION

5.1 Method and Analytic Strategy

Descriptive and univariate statistics were used to describe the sociodemographic characteristics, health status, health service and drug use patterns of the CHASE cohort, and to explore associations among these variables. Variables of interest included age, Aboriginal ancestry, type of housing, education level, health status, health service access, and drug use. Stable housing was defined as living in either a house or apartment. Unstable housing was defined as living arrangements that include transitional living, single room occupancies (SROs), and homelessness. Drug use behaviours include any use (last 6 months), frequent use (daily or most days) and type of drug. VCH service use was based on self-reporting within the last year. All other health service utilization and drug use were based on self-reporting in the previous six months.

Specifically, variables considered in this report include:

- **Sociodemographics**: gender, ethnicity, housing status, DTES residence, education
- **Health and welfare characteristics:** employment, receipt of income assistance, receipt of disability benefits, regular physician care, health status, health care access
- **Service use**: food bank, pharmacy, HIV medications, nursing care, physician care, ambulance pick-up, emergency room visits, hospital admission, mental health unit, mental health worker, outreach worker
- **Specific VCH health service use:** VCH services, VCH clinics (DCHC, PCHC), Vancouver Native Health (VNH) clinic, HCC, LSC
- **Addiction service use:** needle exchange, methadone, alcohol and drug counselling, detox, daytox, recovery house, other drug treatments

- **Self-reported infectious disease testing and outcome:** HIV testing, hepatitis C testing, tuberculosis testing
- **Barriers to health care:** limited hours of operation, long wait lists, not knowing where to go, language barrier, treated poorly by health care professionals, difficulty keeping appointments
- **Personal injuries and events:** overdose, sleeping outdoors, physically assaulted, injury, stopped/searched/questioned by police, jail time, pregnancy
- **Drug use:** injection cocaine/heroin/crystal methamphetamine, alcohol, crack, marijuana, non-injection heroin/cocaine/crystal methamphetamine, dilaudid, benzodiazepine and methadone

5.2 Descriptive Results

A total of 3,530 participants were recruited between January 2003 and November 2004 and were successfully linked with external data sources and thus eligible for this analysis. Of the 3,530 individuals, 2406 (68%) were male, 1097 (31%) were female, and 27 (0.8%) were transgender. For the purpose of gender analysis, sociodemographic characteristics, health service uptake and drug use patterns are reported for the 3503 individuals identified as either male or female.

As indicated in Table 5.2a, the median age was 43.0 years, with women tending to be younger than men (p=0.017). Twenty-nine percent of individuals were of Aboriginal ancestry, and women were significantly more likely to

identify as Aboriginal (39% versus 24%), (OR=2.38, 95% CI: 1.63-2.75, p<0.001). High levels of unstable housing were reported among all participants, with women significantly less likely to report living in unstable housing (57% versus 74%), (OR=0.45, 95% CI: 0.31-0.62, p<0.001). Twenty-seven percent of participants reported having less than a grade 10 education level, and women were more likely than men to have an education level less than grade 10 (32% versus 25%) (OR=1.61, CI: 1.15-1.98, p<0.001).

Table 5.2a	Sociodemographic Characteristerics of the CHASE cohort, Stratified by Gender				
Characteristic	**Total n (%)**	**Females n (%)**	**Males n (%)**	**OR (95% CI)**	**p-value**
Age					
Median, yr	43	41	43		0.017
Interquartile range	(36-50)	(35-50)	(37-50)		
Ethnicity					
Aboriginal	1005 (29)	423 (39)	582(24)	2.38 (1.63-2.75)	<0.001
Non-Aboriginal	2498 (71)	674 (61)	1824 (76)		
Housing					
Unstable	2407 (69)	620 (57)	1787 (74)	0.45 (0.31-0.62)	<0.001
Stable	1096 (31)	477 (43)	619 (26)		
Living in the DTES					
Yes	2683(77)	848(77)	1835(76)	1.06 (0.89-1.26)	0.503
No	820(23)	249(23)	571(24)		
Education (< grade 10)					
Yes	850 (27)	301 (32)	549 (25)	1.61 (1.15-1.98)	<0.001
No	2283 (73)	646 (68)	1637 (75)		

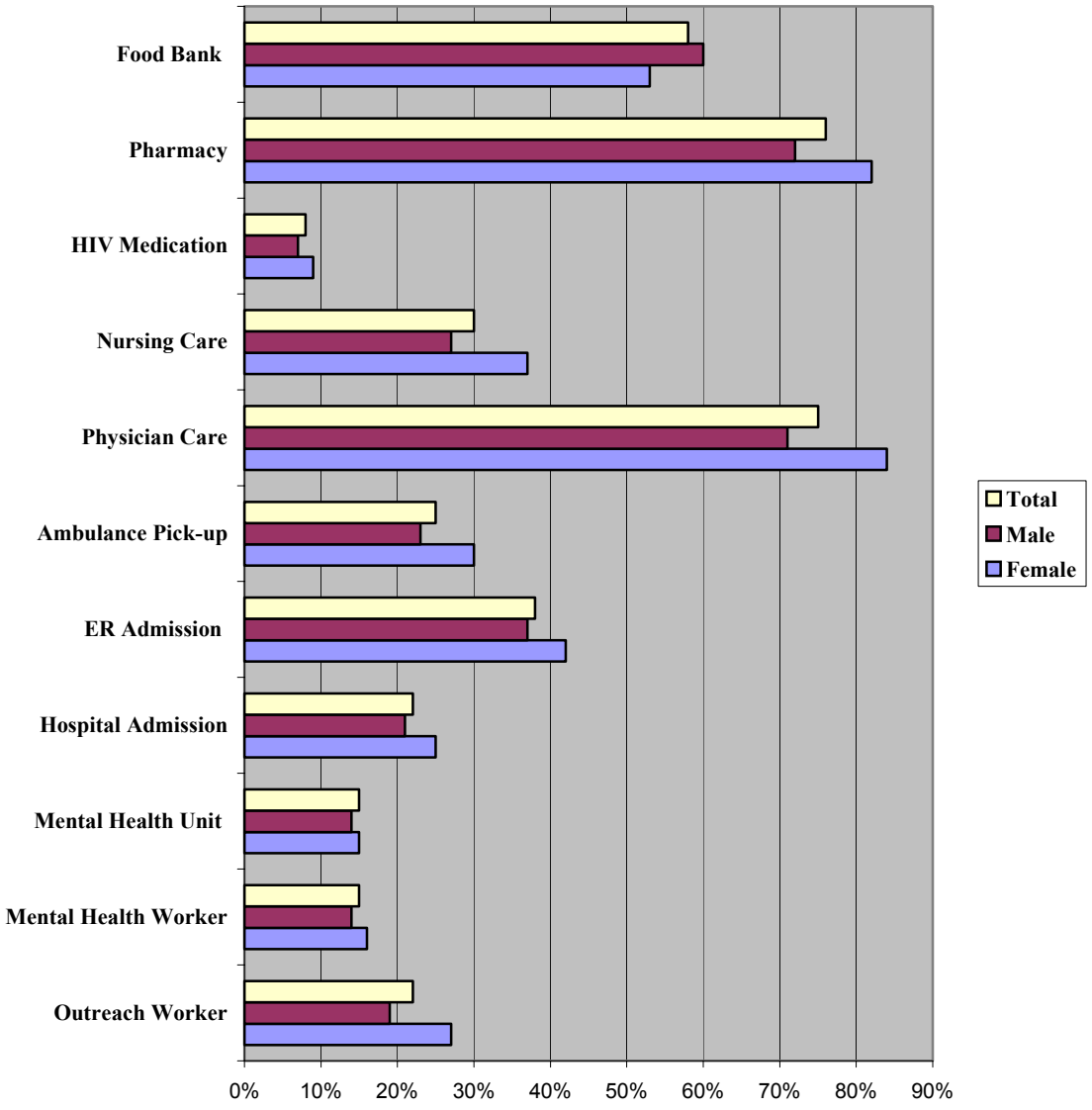
Among health and welfare characteristics (Table 5.2b), the large majority of participants were receiving income assistance (77%) and close to half (44%) were receiving disability benefits (DB2). Sixty-one percent of individuals rated their health status as either "fair" or "poor" and 18% reported that they could only "rarely" or "sometimes" access health care when they needed it. Women were more likely than men to have a regular primary care physician (75% versus

65%) (OR=1.46, 95% CI: 1.11-1.72, p<0.001), and to rate their health status as either "fair" or "poor" (67% versus 59%) (OR=1.40, 95% CI: 1.20-1.62, p<0.001).

Table 5.2b	Health and Welfare Characteristerics of the CHASE cohort, Stratified by Gender				
Characteristic	**Total n (%)**	**Females n (%)**	**Males n (%)**	**OR (95% CI)**	**p-value**
Receiving Income Assistance					
Yes	2696 (77)	829 (76)	1867 (78)	0.96 (0.91-1.02)	0.186
No	807 (23)	268 (24)	539 (22)		
Receiving Disability Benefits					
Yes	1553 (44)	488 (45)	1065 (44)	1.00 (0.96-1.05)	0.456
No	1950 (56)	609 (55)	1341 (56)		
Have a Regular Doctor					
Yes	2374 (68)	821 (75)	1553 (65)	1.46 (1.11-1.72)	<0.001
No	1129 (32)	276 (25)	853 (35)		
Health Status (poor/fair)					
Yes	2143 (61)	730 (67)	1413 (59)	1.40 (1.20-1.62)	<0.001
No	1359 (39)	367 (33)	992 (41)		
Can Access Health Care					
Usually/Always	2872(82)	876 (81)	1996 (83)	0.95 (0.89-1.01)	0.856
Rarely / Sometimes	610(18)	207 (19)	403 (17)		

As indicated in Figure 5.2a, a high level of health and related service use was reported in the previous six months. Eighty-four percent of participants reported having visited a physician in the previous six months. Forty-two percent had visited a hospital emergency room (ER), while 30% had been picked up by an ambulance and 25% had been admitted to a hospital. Several gender-based differences in service use were found, with women consistently more likely than men to report the use of nursing care (37% versus 27%, p<0.001), physician care (84% versus 71%, p<0.001), outreach workers (27% versus 19%, p<0.001), ambulance pick-ups (30% versus 23%, p<0.001), ER admissions (42% versus 37%, p=0.004), hospital admissions (25% versus 21%, p=0.004), and pharmacies (82% versus 72%, p<0.001).

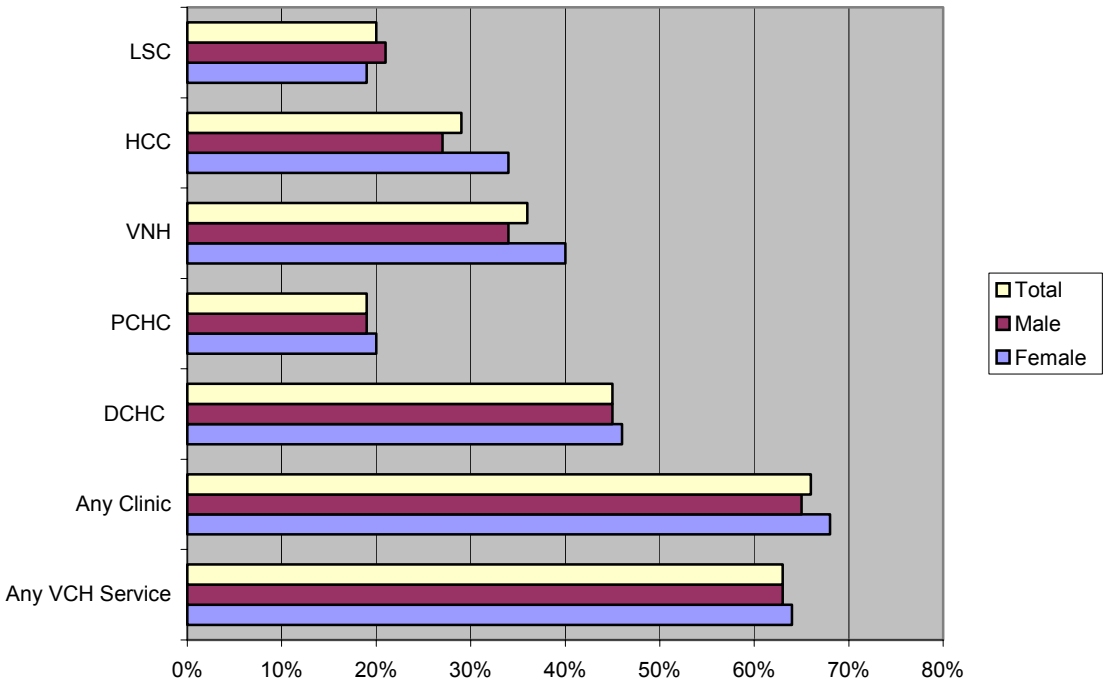
Figure 5.2a: Service Use (last 6 months) by Gender



In terms of VCH service use (see Figure 5.2b), the majority of participants (64%) reported the use of at least one of the four VCH service facilities in the last year (DCHC, PCHC, HCC, or LSC). Sixty-eight percent reported using at least one of the three primary health clinics (DCHC, PCHC, or Vancouver Native Health Clinic (VNH)). DCHC was the clinic with the highest reported uptake by participants (46%), followed by VNH at 40%. Thirty-four percent reported the use of the HCC in the previous year. Less frequently used services were PCHC

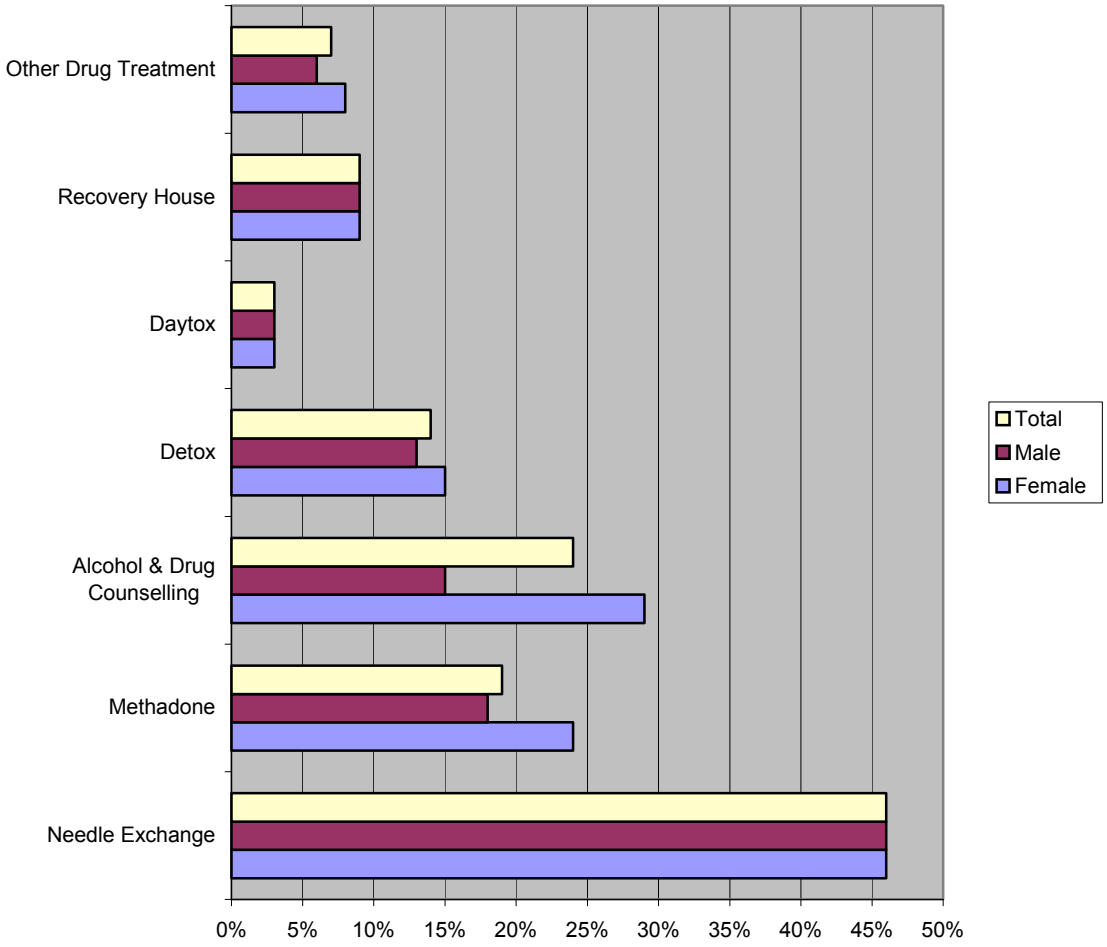
(20%) and LSC (19%). Gender-based differences were noted, with women more likely than men to report the use of Vancouver Native Health (40% versus 34%, p<0.001), and the Health Contact Centre (34% versus 27%, p<0.001).

Figure 5.2b: VCH Service Use (last year) by Gender



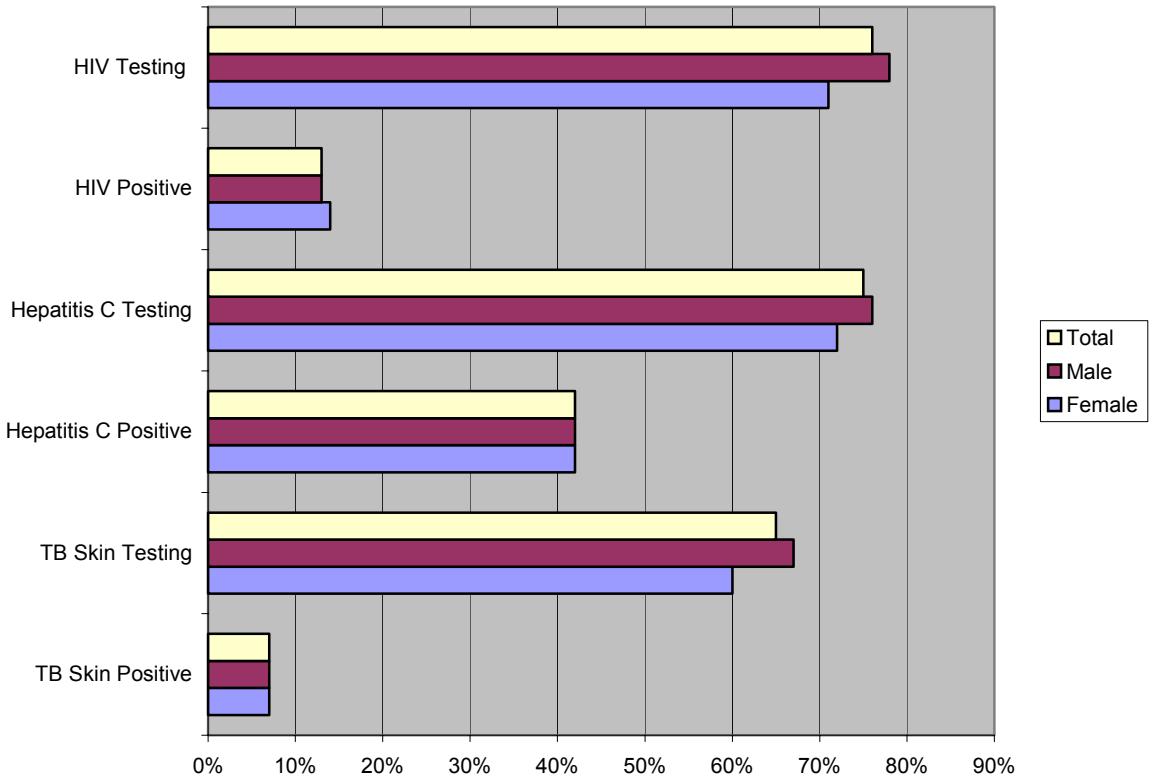
Results also show a high use of addiction services in the previous six months. As indicated in Figure 5.2c, 46% of participants reported the use of a needle exchange, while 24% reported the use of alcohol and drug counselling, and 19% reported the use of methadone maintenance therapy (MMT). Less frequently accessed services included detox (14%), recovery houses (9%), and other drug treatment centres (7%). Women were more likely than men to report the use of MMT (24% versus 18%, p<0.001) and alcohol and drug counselling in the last six months (29% versus 15%, p<0.001).

Figure 5.2c: Addictions Service Use (last 6 months) by Gender



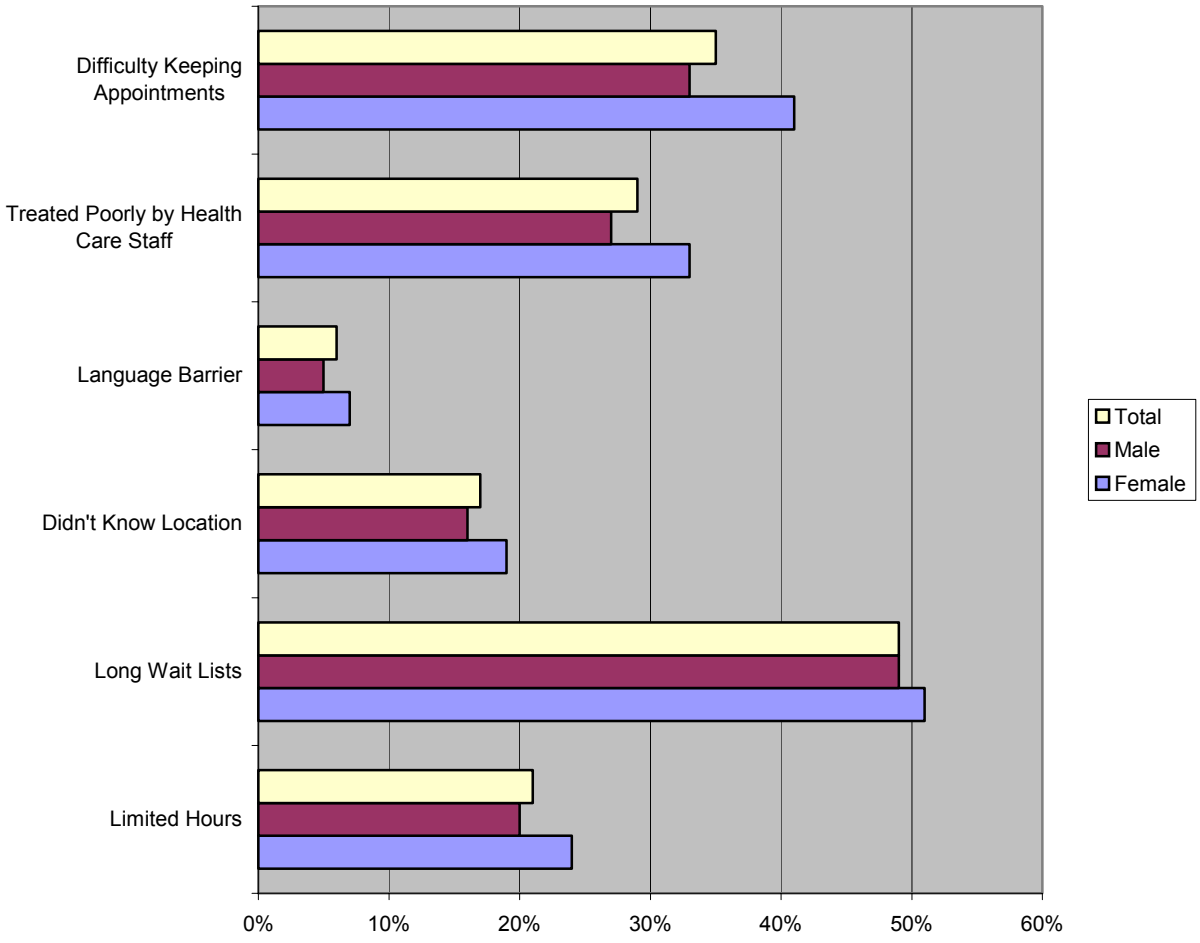
As indicated in Figure 5.2d, CHASE participants reported high levels of coverage for HIV, hepatitis C and tuberculosis testing, with 76% of individuals having been tested for HIV, 75% for HCV and 65% for TB. Self-reported test outcomes suggest high levels of infection. Of the total, 42% of participants reported testing positive for HCV, while 14% reported testing positive for HIV. Women reported slightly lower levels of HIV testing (71% versus 78%, $p<0.001$), and hepatitis C testing (72% versus 76%, $p=0.005$), though no gender-based differences were found in the percentage of positive tests.

Firgure 5.2d: HIV, Hepatitis C and TB Testing & Outcomes by Gender



Long wait lists (49%), difficulty in keeping appointments (35%), and having been treated poorly by health care professionals (29%) were the most frequently cited barriers to health care access (see Figure 5.2e). Gender-based differences were found in almost all barriers to accessing health care. Women were more likely than men to report experiencing poor treatment by a health care professional (33% versus 29%, $p<0.001$) and difficulty keeping appointments (41% versus 33%, $p<0.001$). Women also more frequently cited limited hours of operation (24% versus 20%, $p=0.03$) and language barrier (7% versus 5%, $p=0.01$) as obstacles to health care access.

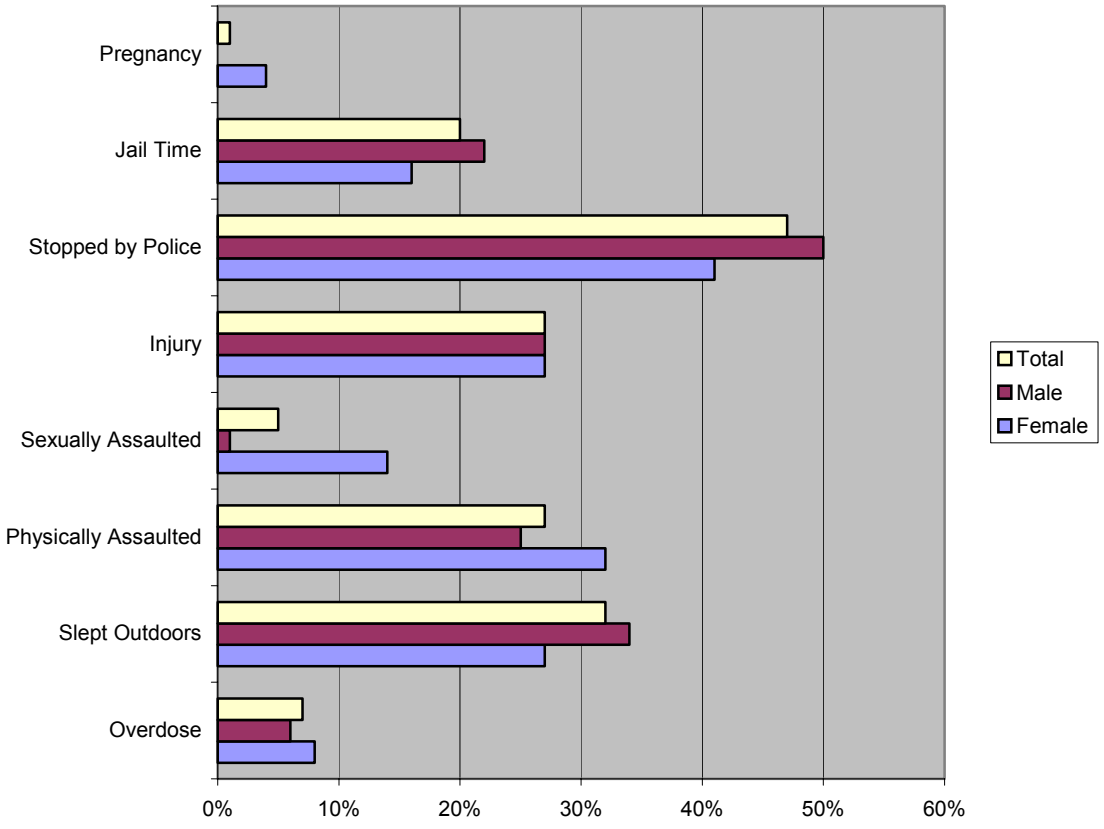
Figure 5.2e: Barriers to Health Care Access by Gender



Results indicate a high level of reported personal injury and events in the previous six months (see Figure 5.2f). Forty-seven percent of participants were stopped, questioned, or searched by police, 32% had slept outdoors, and 20% had recently been incarcerated. As well, 27% reported having been physically assaulted and 27% reported having experienced some sort of personal injury in the previous six months. Women were more likely than men to have been physically assaulted (32% versus 25%, $p<0.001$) and sexually assaulted (14% versus 1%, $p<0.001$) in the last six months. However, women were also less likely than men to have been stopped, questioned or searched by police (41% versus

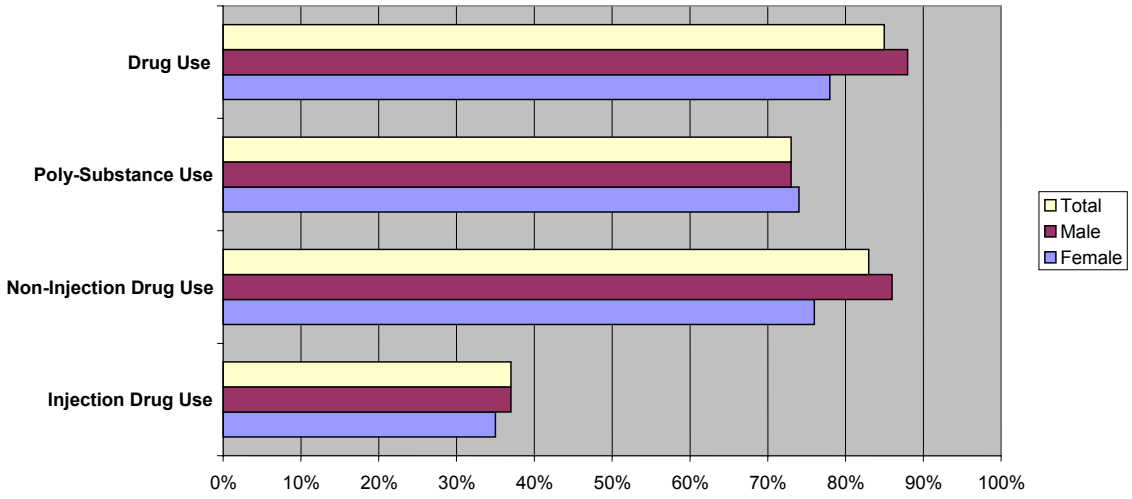
50%, p<0.001), to report recent incarceration (16% versus 22%, p<0.001), and to have slept outdoors (27% versus 34%, p<0.001) in the last six months.

Figure 5.2f: Personal Injuries and Events (last 6 months) by Gender



Participants were asked to report on drug use behaviours in the previous six months (see Figure 5.2g). A total of 85% of participants reported some form of illicit drug use, 73% were poly-substance users, and 37% had injected illicit drugs. Women were less likely than men to report any substance use in the last six months (78% versus 88%, p<0.001) and to have used non-injection illicit drugs (76% versus 86%, p<0.001).

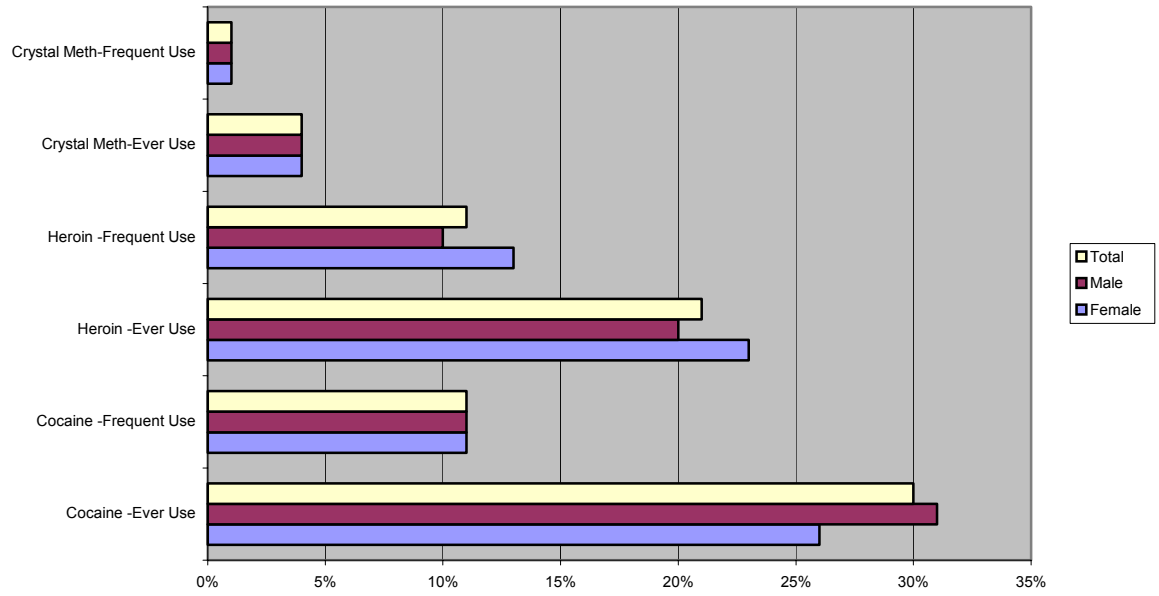
Figure 5.2g: Illicit Drug Use (last 6 months) by Gender



In terms of injection drug use patterns, 30% reported cocaine injection, 21% heroin injection, and 4% crystal methamphetamine injection in the last six months. Women were marginally less likely than men to report recent cocaine injection (26% versus 31%, p=0.002).

Intensive injection drug use was less commonly cited, with 13% of participants reporting frequent heroin injection (daily or most days) and 11% reporting frequent cocaine injection. Women were more likely than men to report frequent heroin injection (13% versus 10%, p=0.02).

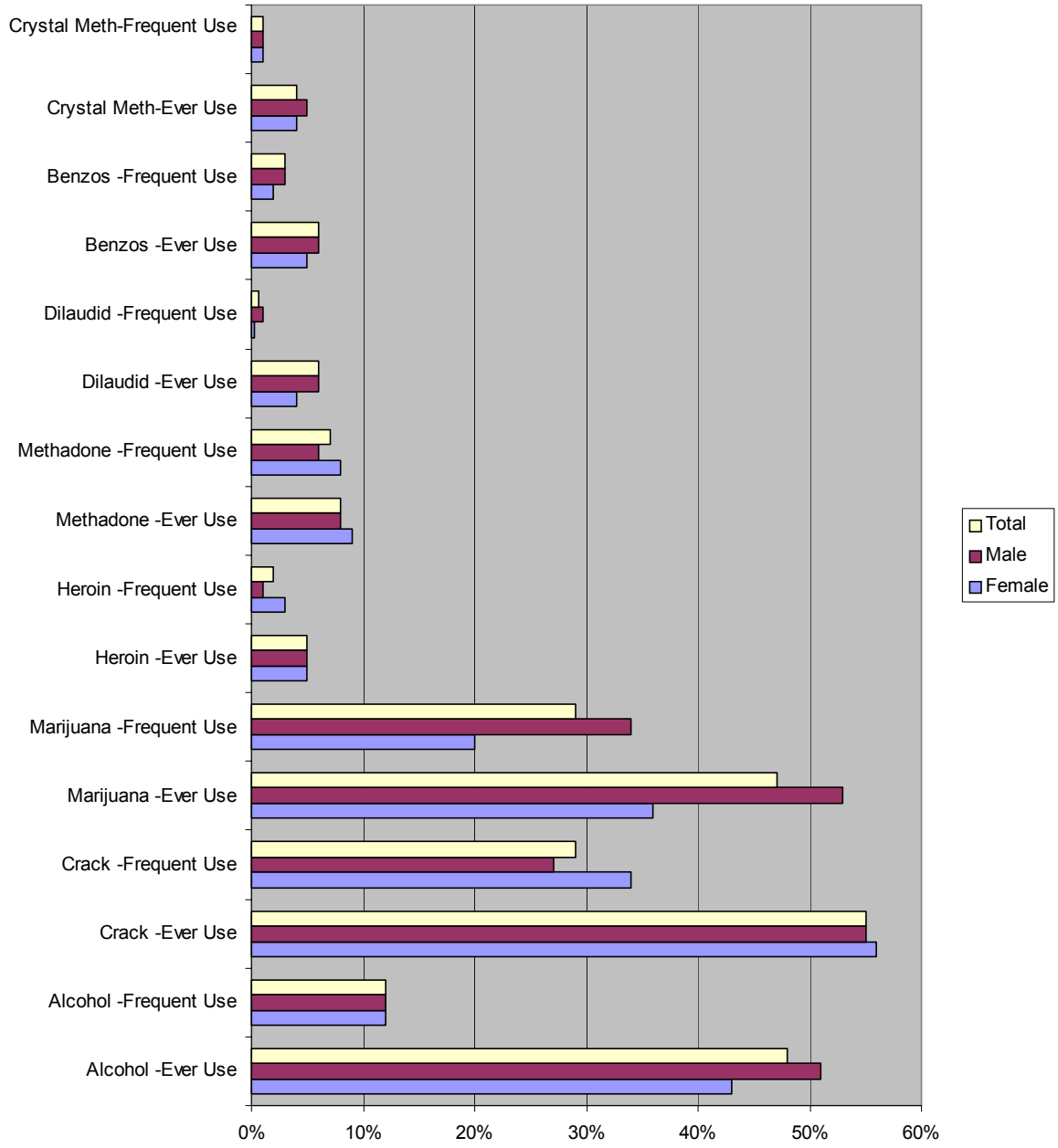
Figure 5.2h: Injection Drug Use (last 6 months) by Gender



In terms of non-injection drug use patterns, 55% reported crack cocaine use, 48% alcohol use, and 47% marijuana use. Less commonly reported non-injection drug use included buying methadone off the street (8%), dilaudid (6%) and benzos (6%). Women were less likely than men to have used marijuana (36% versus 53%, $p<0.001$), alcohol (43% versus 51%, $p<0.001$) and dilaudid (4% versus 6%, $p=0.001$) in the last six months.

Close to a third of participants reported intensive non-injection drug use, with 29% reporting frequent crack cocaine use (daily, most days) and 29% reporting frequent marijuana use. Frequent alcohol use was reported by a smaller number of participants (13%). Women more likely to report frequent of crack cocaine use (34% versus 27%, $p<0.001$), and less likely to report frequent marijuana use (20% versus 34%, $p<0.001$).

Figure 5.2i: Non-Injection Drug Use (last 6 months) by Gender



5.3 Discussion

The CHASE cohort is characterized by high rates of unstable housing, low levels of education and high rates of unemployment. The CHASE participants show very high uptake of health services and high rates of infectious diseases. A large proportion use both injection and non-injection illicit drugs. As well, many participants in this study report experiencing adverse life events such as sleeping outdoors, physical and sexual assault, and being questioned or searched by police.

Health service utilization continues to be high among participants in the CHASE cohort. While illicit drug use remains common among participants, and drug users are known to avoid primary care in favour of hospital care (11), participants in this study displayed high rates of both primary care and hospital use. One study of an adult HIV/AIDS-focused day program did find that participation in the program was associated with increased rates of emergency department use and reduced rates of acute hospital bed use (12), a finding believed to have resulted from earlier intervention and appropriate referral to emergency departments. Further analysis of hospital utilization is needed to explain the phenomenon observed in the present study. The vast majority of participants also reported accessing VCHA clinics and other services (HCC, LSC). However, some clinics (e.g., DCHC) are accessed by a much greater number of participants than others (e.g., PCHC). The HCC and LSC also continue to be utilized by a substantial proportion of CHASE participants.

While some addictions services (e.g., needle exchange) are accessed by a great number of participants, others are not (e.g., daytox, recovery houses). The trend in terms of addictions services use suggests a higher use of harm reduction services and a lower use of abstinence-based services. This finding is consistent with the results of studies in Europe that have found that the proportion of drug users engaged in abstinence-based services (5-15%) tends to be comparatively smaller than the number of drug users accessing harm reduction services (13).

While these findings indicate a need for continued support for harm reduction services, it should be noted that issues of access to abstinence-based services might partially explain the low rates of service use observed.

Participants in this study also relied heavily on food banks, suggesting that access to nutrition continues to be a challenge for many individuals. A majority of participants (71%) also reported receiving care from outreach workers, an indication that front-line services of this kind continue to be greatly needed. This need may be explained in part by the fact that many participants reported long wait lists as a barrier to health service access. These individuals are perhaps deterred from seeking care at clinics, and instead eventually receive the care they need from outreach workers.

Barriers to health service access were noted by many participants, with long wait lists being the barrier cited by the greatest proportion of participants, followed by difficulty with keeping appointments, and poor treatment by health care professionals. Again, this finding may reflect high demand for primary care services, including flexible services that can accommodate, on a drop-in basis, individuals who have difficulty keeping appointments. These results suggest that an expansion of current services is warranted in terms of hours of operation and structure of service provision. As well, given that many individuals reported having been poorly treated by health care professionals, further process evaluation is needed to determine the nature of these dynamics and methods for addressing them. The finding that injection drug users were more likely to experience poor treatment by health care staff is consistent with previous findings indicating that local injection drug users often experience discrimination in health care settings (14). These findings indicate the need for additional sensitivity and harm reduction training. Perhaps most disturbing is the finding that women were more likely than men to report being treated poorly by health care professionals.

While high rates of illicit drug use persist within the CHASE cohort, crack cocaine continues to be the drug used most frequently by participants. However, many individuals continue to inject cocaine—a concern, given that cocaine injection has been shown locally to be associated with HIV infection in dose-dependent fashion (15). It should be noted, however, that poly-drug use is the norm rather than the exception among CHASE participants, indicating potential limitations with interventions that address one type of drug use only.

The findings summarized here also point to several gender-based differences, many of which place women in this cohort at heightened risk. Although women were more likely than men to report living in stable housing outside of the DTES—a factor that could potentially reduce risk—they were also more likely to report lower levels of education, frequent heroin and crack use, and incidents of physical and sexual assault. Women in this cohort also had higher rates of ambulance use, hospital admissions, and use of outreach services. Lastly, women were more likely than men to report having difficulty keeping appointments and being treated poorly by health care professionals.

It is likely that the health risks facing women in the DTES are a result of a complex interaction of social factors. For example, while lower levels of education, frequent drug use, and gender-based discrimination may put women at heightened risk for adverse health outcomes, women in this cohort are also more likely to be of Aboriginal ancestry, and therefore also live with multi-generational consequences of oppression, cultural dislocation, and racism (16,17). The health consequences of these interactions are illuminated in recent studies of injection drug users in Vancouver that found both women and individuals of Aboriginal ancestry to be at heightened risk for HIV infection (18, 19), and in the present study by the observed rates of physical and sexual assault and hospitalization experienced by women. Further, a recent study examining death due to HIV/AIDS in British Columbia found that women and individuals of

Aboriginal ancestry were most likely to die without ever receiving antiretroviral therapies (20).

These findings suggest women may be best served by a health system staffed by professionals who are educated and "sensitized" to gender issues and women's health. This, it is hoped, will in turn make encounters between women and the health system more positive for women. Given the findings concerning high rates of physical and sexual assault, it should also be recognized that women may be less likely to access local health services out of fear of encountering someone who has assaulted them. Therefore, women-specific services or women-only hours may produce a health system that is safer and more welcoming for women. Further, outreach services are necessary so that women can be served "where they are at", and to promote safety and support through accompaniment to medical appointments.

It should be noted, however, that while the health system may be improved to better meet the needs of women, the social determinants of poor health among women cannot be addressed to any great extent by modifying the delivery of health services. In order to make substantial changes to the environment of risk facing women in the DTES, societal changes are needed to ensure equal access to education, employment, and income for women, and further efforts are required to address the multitude of gender-based abuses and human rights violations currently encountered by women, especially those living in poverty.

6. CHASE LINKED DATA

6.1 Data Linkage Summary

In two years, from January 2003 to December 2004, CHASE enrolled almost 4,400 people. About 1,000 of the participants were enrolled under special themes. As shown in Table 6.1a, in addition to the CHASE core recruit which amounts to 3375, there are three special themes of recruitment. They are: HIV/HCV theme recruited 452 people, CRACK theme enrolled 438 people and STD theme recruited another 130 people. During the final cohort preparation process, it is found that 96 were enrolled twice, 121 did not agree to link with external health records and 648 of the participants in the thematic recruitment were duplicates. Therefore, approximately 800 people were eliminated as a result of these cleanups, leaving the final count of the CHASE cohort at 3,530.

Table 6.1a	Total Enrollment Summary		
1	CORE		3375
2	HCVHIV theme		452
3	CRACK theme		438
4	STD theme		130
		Total Enrolled:	4395
After these cleanups:			
1	remove duplicates		96
2	filter out those do not allow linkage		121
3	remove overlaps among CORE and different themes		648
Total remained for analyses:			3530

The CHASE cohort is linked with external health data sources by matching health care number (PHN) first and then by names and dates of birth for those with no match by PHN. Table 6.1b provides a summary of some initial data linkages. With St. Paul's Hospital Emergency Room data, 66% were successfully linked. For linkage with BCCDC data, different rates related to specific diseases are reported: 51% for HIV, 60% for HCV and 12% for Tuberculosis.

Figure 6.1c	Linkage summary			
			N linked	% linked
1	HIV	(1991-2004)	1809	51%
2	HCV	(1990-2004)	2121	60%
3	TB	(1988-2005)	425	12%
4	SPH ERD	(1998-2004)	2325	66%
5	DTP	(1993-2005)	365	10%
6	PARIS	(2003-2004)	1871	53%
Total CHASE cohort N:			3530	

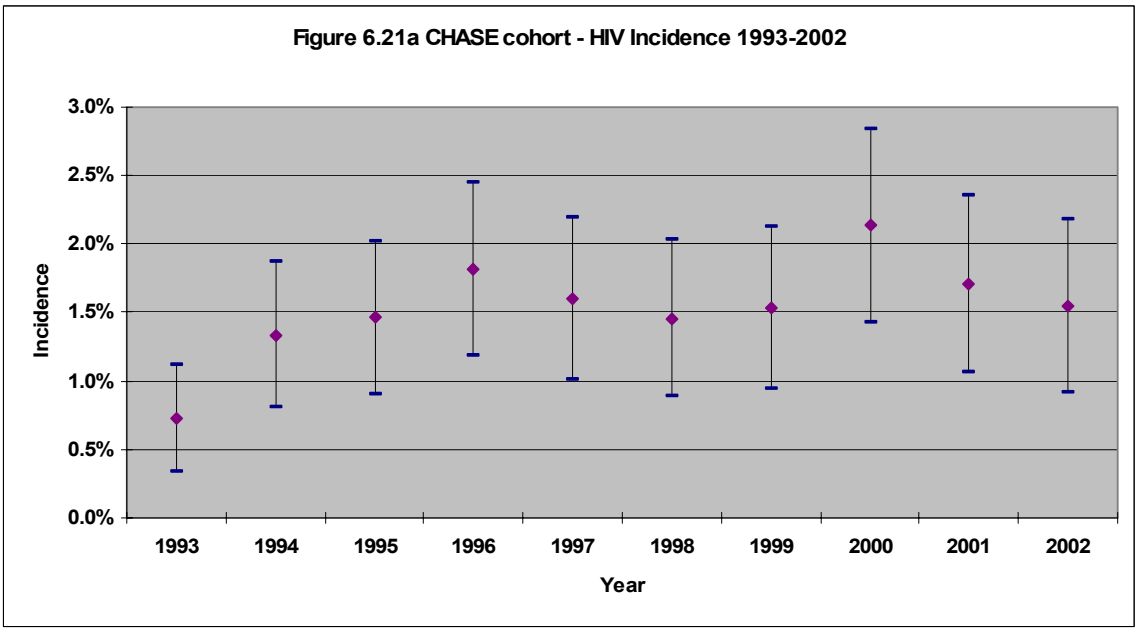
Linking with the data from the Drug Treatment Program at the BC Centre for Excellence in HIV/AIDS produced 10% or 365 matches. With roughly over a year's data, mainly from 2004, the match with VCH PARIS database generated a linkage rate of 53%.

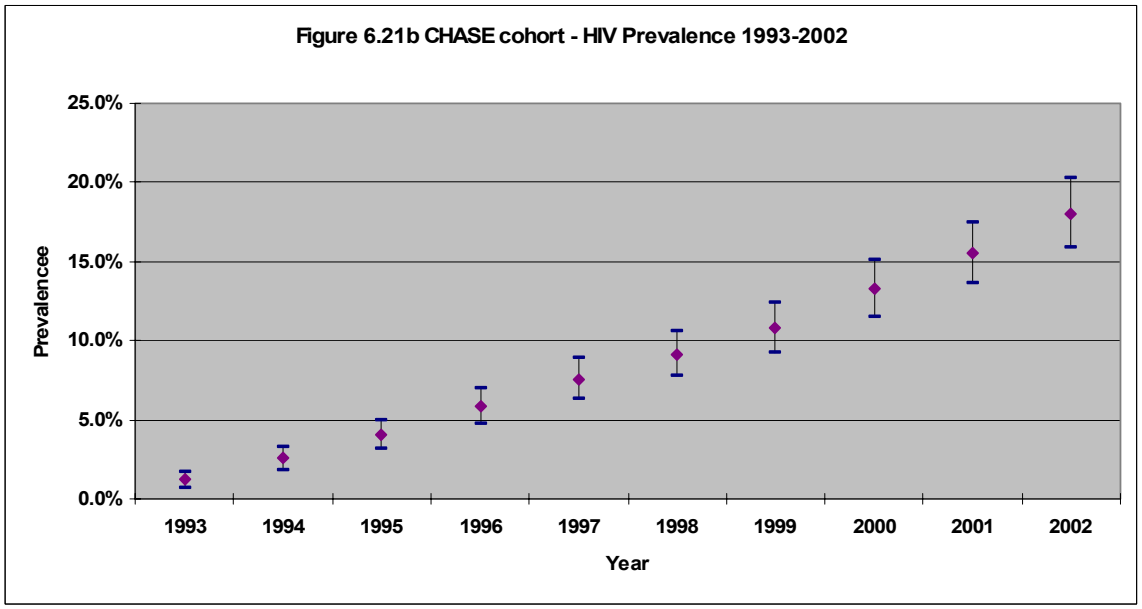
6.2 British Columbia Control Disease Centre (BCCDC)

Similar to high HIV and HepC mortality rates observed in the area, high rates of infection HIV and HepC are found in DTES. Other infectious disease such as Sexually Transmitted Diseases (STD) as well as Tuberculosis (TB) are also high in comparison to other parts of the province. In order to estimate the incidence and prevalence rates of these infectious diseases, the CHASE cohort was submitted for linking with all BCCDC laboratory data. Below are the linkage results by the type of disease.

6.2.1 HIV Incidence & Prevalence

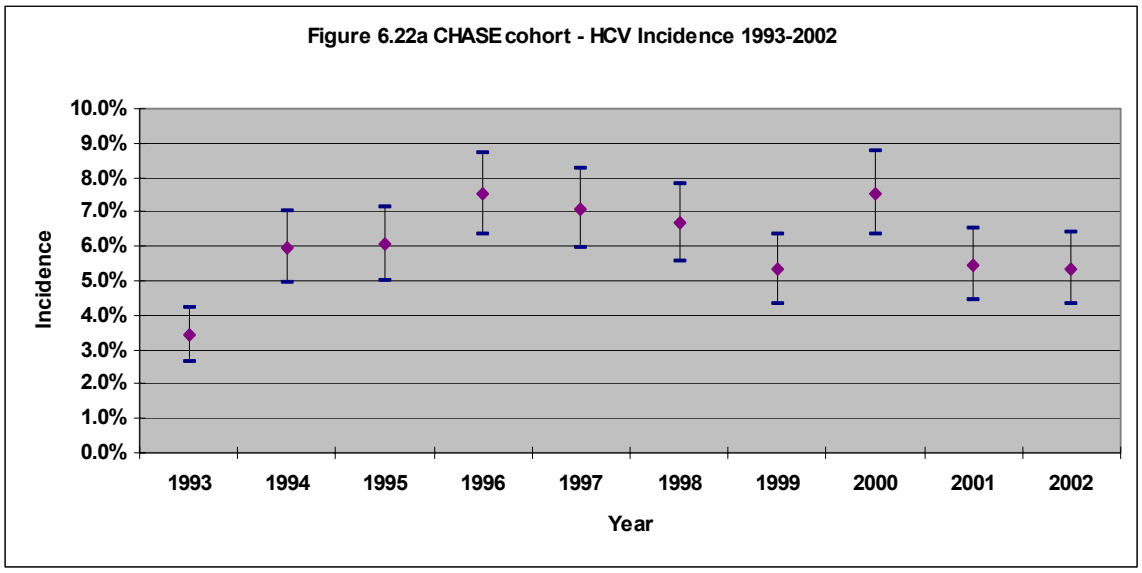
HIV infection among injection drug users living in the DTES is extremely high. Based on 1,817 CHASE participants who were successfully linked with BCCDC and 287 HIV seroconversions, the HIV incidence and prevalence rates from 1993 to 2002 were estimated. As shown in Figure 6.21a, the incidence was the highest in 1996 (1.8%) and in 2000 (2.1%). The prevalence rate has risen consistently and stands at 18% in 2002.

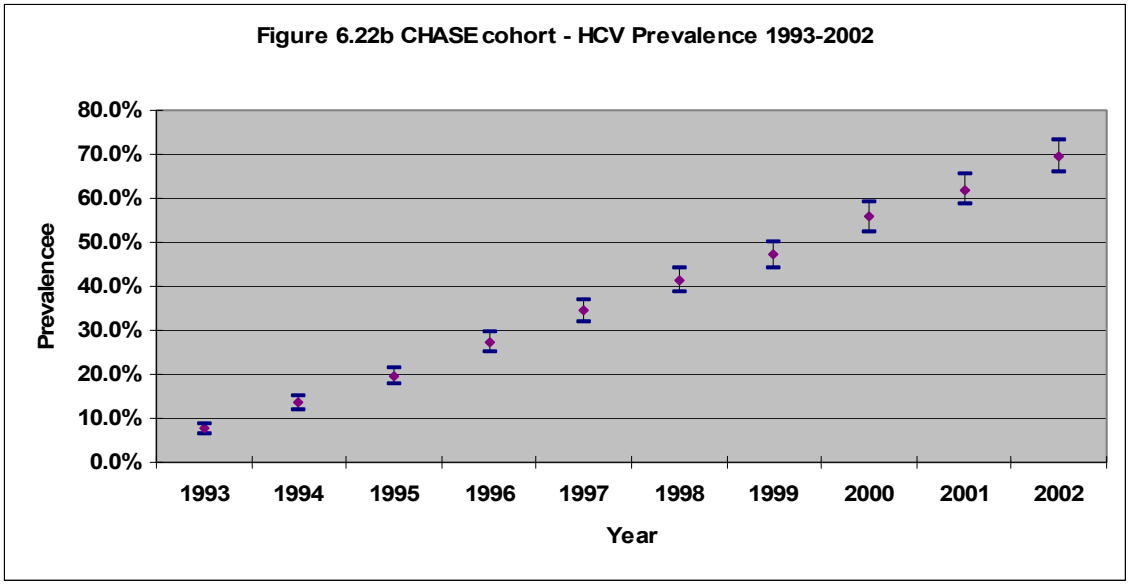




6.2.2 Hepatitis C Incidence & Prevalence

The estimated HepC incidence and prevalence rates among the CHASE cohort from 1993 to 2002 are based on 2129 CHASE people linked with BCCDC and 1360 HepC seroconversions. The incidence was highest in 1996 and 2002 at 7.8%. The estimated HepC prevalence rate is very high at almost 70% in 2002 . See Figure 6.22a below.

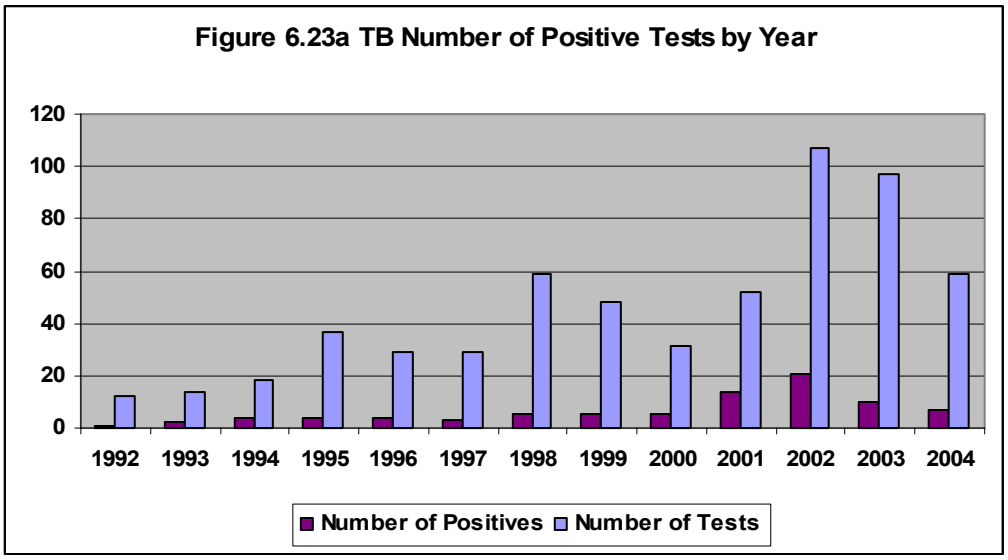




6.2.3 Tuberculosis (TB) Incidence

There are 425 CHASE people successfully linked with the TB database at the BCCDC. Tuberculosis incidence rates from 1992 to 2004 were estimated by the number of positive tests over the total number of tests. The rates are

calculated on a yearly basis. The raw number of positive counts are also high in 2001 and 2002. This observed pattern by CHASE cohort is similar to the TB report in DTES area produced by BCCDC.

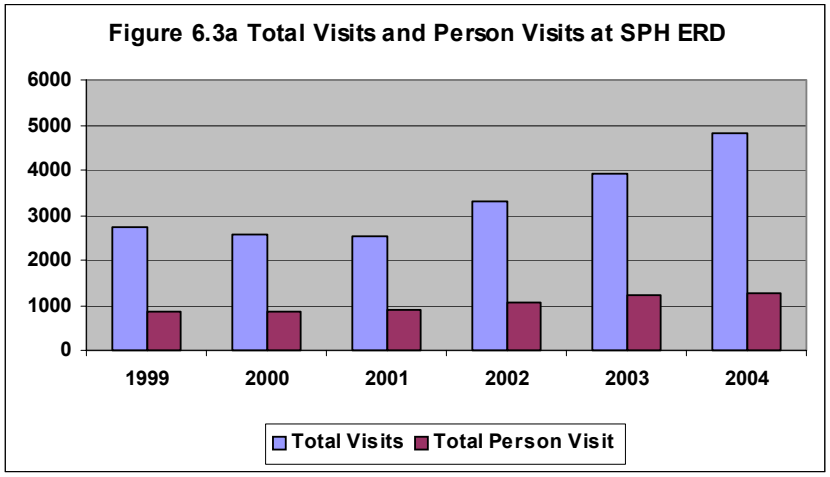


6.3 St. Paul's Hospital Emergency Room Use

In order to estimate emergency room (ER) use among the CHASE participants, a series of data linkages to the St. Paul's Hospital emergency room database were performed. CHASE Project data have shown that this is the emergency room used most often by CHASE participants. For the purpose of assessing the potential impact of VCHA services on the use of St. Paul's emergency room, the primary period of interest is before (1999-2001) and after (2002-2004) the new VCH services were launched.

A total of 2325 (66%) CHASE participants' records were successfully linked to the St. Paul's ER database.

The total number of persons visiting the emergency room and the total number of visits incurred by these individuals broken down by year (1999-2004) are shown in Figure 6.3a.



The mean number of visits per individual was also determined. For example in 2004, the average number of visits to the Emergency Room was 3.78 per person, as shown in Table 6.3a.

As indicated in Table 6.3a, the number of visits to the St. Paul's ER rose from about 7,864 visits from the pre-launch period of 1999 to 2001 to approximately 12,059 in the post-launch period of 2002 to 2004. In persons, there were 1,499 people attended in 1999-2001 and 1,997 in 2002-2004. On average,

Table 6.3a Visits to SPH Emergency

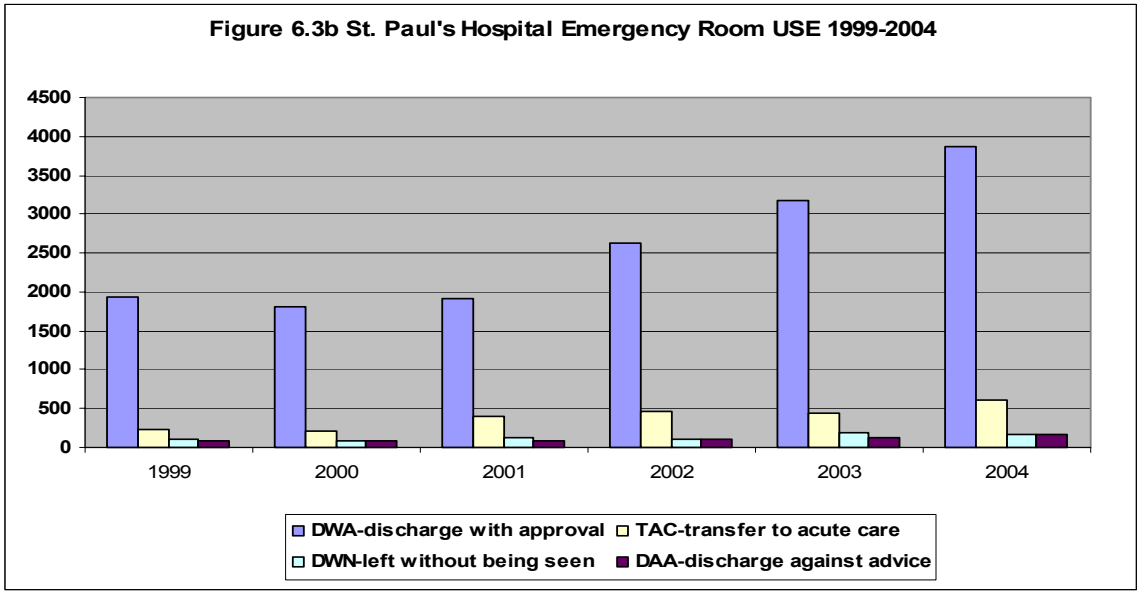
	Year	Total Visit	Person Visit	Yearly Avg
	1999	2,749	838	3.28
	2000	2,573	853	3.02
	2001	2,542	902	2.82
1999-2001	**3 yr total**	**7,864**	**1499**	**5.25**
	2002	3,317	1049	3.16
	2003	3,924	1219	3.22
	2004	4,818	1275	3.78
2002-2004	**3 yr total**	**12,059**	**1997**	**6.04**

the number of visits per person was 5.25 for the three years period (1999-2001) compared to 6.04 for the three year period (2002-2004).

As expected, the CHASE cohort included a large number of intensive Emergency room users. For the six years of follow-up data (1999-2004), more than 50% of the people used the Emergency service more than once a year. Table 6.3b provides a detailed breakdown of the intensive users.

Table 6.3b Intensive Users at St.Pauls' Hospital Emergency Room												
Freq per year	**1999**		**2000**		**2001**		**2002**		**2003**		**2004**	
1 time	360	43%	379	44%	428	47%	452	43%	543	45%	493	39%
2-4 times	313	37%	319	37%	329	36%	400	38%	443	36%	479	38%
5-12 times	135	16%	133	16%	123	14%	167	16%	189	16%	243	19%
13-24 times	25	3%	19	2%	19	2%	24	2%	36	3%	54	4%
25-85 times	5	1%	3	0%	3	0%	6	1%	8	1%	6	0%
Total:	**838**		**853**		**902**		**1049**		**1219**		**1275**	

Figure 6.3b lists the various reasons for discharge from the ER. Over the entire period, the "discharge with approval" reason accounts for the majority (80%) of discharges. However, for the purpose of this analysis, the reason for discharge of greatest interest is "transfer to acute care", as this gives the proportion of ER visits that result in a hospitalization.

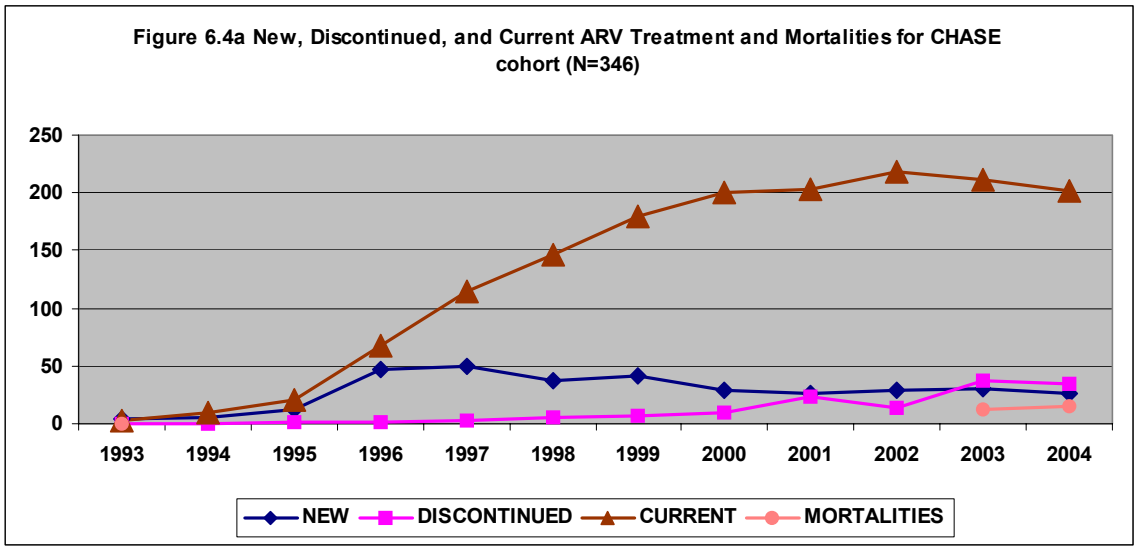


As indicated in Table 6.3c, discharges to acute care increased from 238 in 1999 to 617 in 2004 among the CHASE participants. Other reasons for leaving the ER were "discharge against medical advice" and "leaving ER without being seen".

Table 6.3c SPH Emergency	1999	2000	2001	2002	2003	2004	Total:
DWA-discharge with approval	1,926	1,814	1,919	2,629	3,165	3,860	**15,313**
TAC-transfer to acute care	238	216	408	457	437	617	**2,373**
DWN-left without being seen	100	83	121	105	183	178	**770**
DAA-discharge against advice	79	85	87	106	128	159	**644**
DTA-transfer to another hospital	2	3		10	8	3	**26**
Total:	2,345	2,201	2,535	3,307	3,921	4,817	**19,126**

6.4 Drug Treatmemt Program - Antiretroviral Access & Discontinuation

In order to estimate antiretroviral (ART) uptake within the CHASE cohort, a series of data linkages were made with the British Columbia Centre for Excellence Drug Treatment Program (DTP). Data obtained from the DTP included first and last dispensation of ART. The total number of individuals initiating and discontinuing ART were calculated for each year.



In total, 346 (10%) CHASE participant records were successfully linked with the DTP, and have initiated therapy between 1993 and 2004. As indicated in Figure 24, while current treatment numbers have increased over time, starting in 1997 discontinuation rates began to rise while the number of new patients initiating treatment began to decline. Of the 346 participants who ever began ART, 211 remain on treatment. The total number of participants on ART appears to have peaked in 2002 (n=218), with a slight decline in current treatment seen in 2003 (n=211) and 2004 (n=202). In addition, since recruitment began in January 2003, there have been a total of 30 deaths (9%) among the 346 linked participants, with 13 deaths in 2003, 15 deaths in 2004, and 2 deaths within the first two months of 2005

6.5 Primary Access Regional Information System (PARIS)

VCH started implementing new medical management software called PARIS across almost all VCH clinics and facilities in 2001. Among the data available from PARIS, the ones that are of most interest to CHASE are the primary care clinics DCHC and PCHC as well as Daytox, Detox and Strathcona Mental Health data. Complete data is available from 2004 only. It is found that 1879 or 53% of the CHASE cohort has at least one PARIS open referral. Specific rates of linkage for each of the PARIS sites are summarized in Table 6.5a below.

TABLE 6.5a PARIS SUMMARY	Person		Total	Number of Visits			
PARIS LINKAGE SUMMARY FOR 2004	Visit	Pct	visit	min	mean	med	max
Primary Care at DCHC Link status	761	21.6%	18880	1	24.8	4	401
Primary Care at PCHC Link status	315	8.9%	2937	1	9.3	4	194
Primary Care at HCC Link status	11	0.3%	11				
A&D Counselling at DCHC Link status	154	4.4%	1313	1	8.5	2	58
A&D Counselling at PCHC Link status	109	3.1%	640	1	6.1	4	44
Medical Management at DCHC Link status	81	2.3%	260	1	3.2	1	67
Medical Management at PCHC Link status	40	1.1%	171	1	4.3	2	52
Housing Referrals at DCHC Link status	12	0.3%	20				
Housing Referrals at PCHC Link status	3	0.1%	3				
Mental Health at DCHC Link status	10	0.3%	105	1	10.5	9	30
Mental Health at PCHC Link status	13	0.4%	41	1	3.2	2	9
MAT Program at DCHC Link status	71	2.0%	11718	1	165.0	183	337
Daytox Link status	95	2.7%	125	1	1.3	1	4
Detox Link status	152	4.3%	240	1	1.6	1	4
Mental Health at Strathcona Link status	115	3.3%	133	1	1.6	1	3
Any open referrals	1879	53.2%					

Out of all primary care visits (35,945) to DCHC in 2004, 18,880 or 53% of the visits are from the CHASE cohort (Table 6.5b). Table 6.5c shows the total person visits for both DCHC and PCHC. While there are a total of 3,314 people visited DCHC in 2004, 761 or 23% of them were unique CHASE clients.

TABLE 6.5b UPTAKE OF DCHC and PCHC by CHASE for 2004

	DCHC - TOTAL VISITS				PCHC - TOTAL VISITS		
	CHASE PC	TOTAL PC	%CHS PC		CHASE PC	TOTAL PC	%CHS PC
Jan	1438	2716	53%	Jan	45	107	42%
Feb	1351	2614	52%	Feb	240	711	34%
Mar	1547	2922	53%	Mar	352	990	36%
Apr	1588	2886	55%	Apr	309	750	41%
May	1579	2968	53%	May	273	760	36%
Jun	1573	2803	56%	Jun	230	724	32%
Jul	1684	2992	56%	Jul	240	665	36%
Aug	1584	2786	57%	Aug	250	608	41%
Sep	1689	3344	51%	Sep	209	654	32%
Oct	1665	3356	50%	Oct	269	850	32%
Nov	1694	3457	49%	Nov	303	864	35%
Dec	1488	3101	48%	Dec	217	615	35%
Total	18880	35945	53%	Total	2937	8298	35%

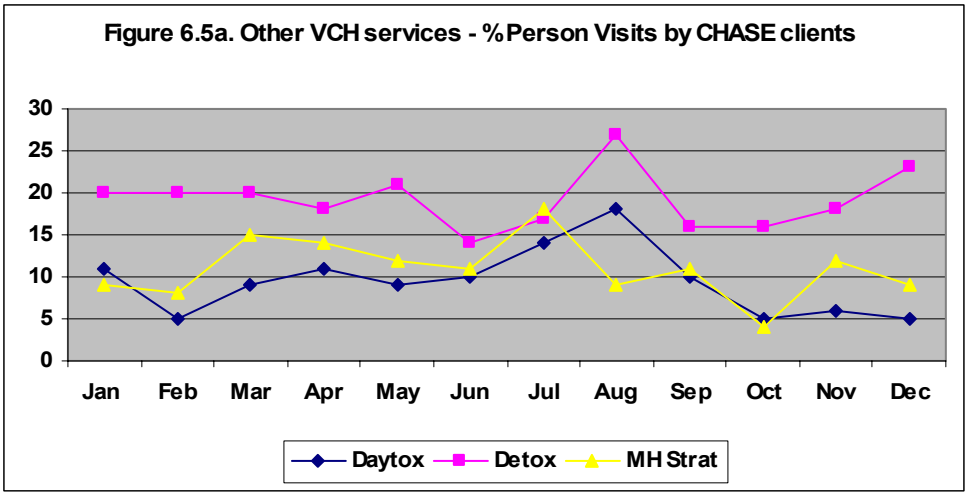
In comparison, 2,937 or 35% of the total visits (8,298) at PCHC are visits by CHASE cohort. However, out of 1,099 different clients at PCHC, 315 are from CHASE cohort.

TABLE 6.5c UPTAKE OF DCHC and PCHC by CHASE for 2004

	DCHC - TOTAL PERSON VISITS				PCHC - TOTAL PERSON VISITS		
	CHASE PC	TOTAL PC	%CHS PC		CHASE PC	TOTAL PC	%CHS PC
Jan	276	851	32%	Jan	37	89	42%
Feb	243	869	28%	Feb	107	330	32%
Mar	262	943	28%	Mar	128	387	33%
Apr	269	847	32%	Apr	129	346	37%
May	246	847	29%	May	111	346	32%
Jun	252	765	33%	Jun	102	321	32%
Jul	231	768	30%	Jul	114	322	35%
Aug	238	721	33%	Aug	108	300	36%
Sep	272	907	30%	Sep	114	324	35%
Oct	272	874	31%	Oct	122	379	32%
Nov	279	930	30%	Nov	131	406	32%
Dec	261	863	30%	Dec	100	315	32%
Total	**761**	3314	23%	Total	**315**	1099	29%

There is a high percentage of intensive CHASE users for both clinics as the yearly average number of visits are 24 (18,880/761) for DCHC and 9 (2,937/315) for PCHC.

In 2004, 95, 152 and 115 different CHASE members used services at Daytox, Detox and Strathcona Mental Health respectively, as shown in Figure 6.5a. The person visits as compared to the total visits are very similar (125, 240, 133 respectively) indicating the repeated users are not high. The length of stay for each of these services is also recorded and the median length of stay is 19 days for Daytox, 4 days for Detox and 31 days for Strathcona Mental Health Centre for the 2004 data.



Since only 2004 data from PARIS is available, comparison between years are not possible. However, based on the self report data, the uptake of DCHC and PCHC can be classified into 2003 and 2004 by enrolment year. As illustrated in Table 6.5b, it is important to note that there is a decrease in the use of these four centres among CHASE participants between 2003 and 2004.

Table 6.5b Self Report Facility Usage						
	Y2003-04 [N=3530]		Y2003 [N=2181]		Y2004 [N=1348]	
DCHC	1592	45%	1106	51%	486	36%
PCHC	682	19%	476	22%	206	15%
HCC	1260	36%	870	40%	389	29%
LSC	1036	29%	697	32%	339	25%
VNH	708	20%	460	21%	248	18%
Any Clinics	2335	66%	1581	72%	753	56%
DCHC, PCHC, VNH						
Any 4 Centres	2232	63%	1513	69%	719	53%
DCHC, PCHC, HCC, LSC						

6.6 BC Vital Statistics - Mortality

The CHASE cohort is linked with Vital Statistics on a regular basis to monitor the mortality rate. The last match was performed in the summer of 2004. Out of 3,000 people enrolled at that time, there were 51 deaths. This amounts to a very high ASMR of 180 per 10,000.

7. VCH FACILITIES (4 CENTRES) AND PARIS ANALYSIS

7.1 Downtown Community Health Centre (DCHC) 2002,2004

For DCHC, 2002 data is available directly from the clinic and 2004 data is based on PARIS. Unfortunately, 2003 is the year of transition for PARIS and very little data is available.

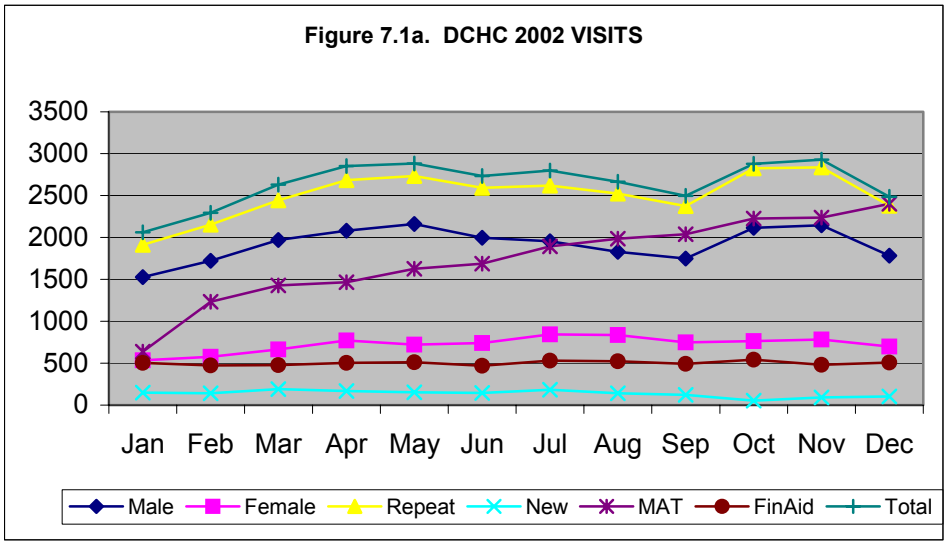
In order to assess the flow of patients through DCHC, data pertaining to the number of patient visits during the year 2002 were obtained. Included are data pertaining to the number of visits by all patients, men, women, new patients, and repeat visitors. Also included is the number of visits to the Maximally Assisted Therapy (MAT) and financial aid programs.

Table 7.1a Total Visits to DCHC for Year 2002

	Total (%)	Monthly Average	(Min – Max)
Total*	31704 (100)	2642	(2062 – 2926)
Female	8678 (27)	723	(535 - 844)
Male	23026 (73)	1918	(1527 - 2162)
Repeat	30064 (95)	2505	(2062 – 2401)
New	1640 (5)	136	(55 – 190)
MAT	20858	1738	(637 – 2401)
Financial Aid	6013	501	(471 – 541)

*** Total number does not include visits to MAT or Financial Aid**

Figure 7.1a. DCHC 2002 VISITS



As indicated in Figure 7.1a, levels of visits to DCHC were fairly stable throughout the year. The only notable trends included a slight increase in the number of visits throughout the late winter and early spring months. The only other notable trend was a steady increase in the number of visits to the MAT program throughout the year.

The 2004 DCHC attendance are summarized in Table7.1b and Table 7.1c. The yearly total number of visits for primary care at DCHC is 35,945 averaging 2,995 a month, as shown in Table 7.1b.

Table 7.1b Total Visits to DCHC for 2004

	PC	A&D Couns	MH Ref	MEDI Mgt	House Ref	MAT
Jan	2716	289	59	139	4	896
Feb	2614	265	59	105	6	974
Mar	2922	324	63	108	7	1141
Apr	2886	277	60	97	11	1173
May	2968	287	52	151	8	1153
Jun	2803	293	43	83	5	1061
Jul	2992	232	51	100	12	1218
Aug	2786	136		99	1	1212
Sep	3344	298	40	115	20	1102
Oct	3356	218	35	113	20	1190
Nov	3457	252	51	122	12	1121
Dec	3101	154	37	105	3	1065
Total	**35945**	3025	550	1337	109	13306
mavg	**2995**	252	46	111	9	1109

The primary care services at DCHC are broken down into Alcohol and Drug Counselling, Mental Health Referrals, Medical Management, Housing Referral and Maximally Assistance Therapy (MAT). There approximately 252 monthly visits for A& D Counselling, 111 monthly visits for medical management and 1,109 visits for MAT program. Visits for Mental Health referrals and Housing referrals are relatively low at 46 and 9 monthly respectively.

Table 7.1c shows the total person visits for primary care services and its components at DCHC for 2004.

Table 7.1c Total Person Visits to DCHC for 2004						
	PC	A&D Couns	MH Ref	MEDI Mgt	House Ref	MAT
Jan	851	152	23	65	3	63
Feb	869	145	27	53	3	61
Mar	943	149	25	49	3	66
Apr	847	130	21	27	5	66
May	847	132	24	26	5	68
Jun	765	139	18	16	3	68
Jul	768	119	18	29	7	71
Aug	721	89		30	1	66
Sep	907	137	19	38	5	71
Oct	874	115	18	37	7	66
Nov	930	130	22	36	7	73
Dec	863	88	18	28	1	67
Unique ID	**3314**	570	55	254	40	98
Mavg	**848.8**	127	19	36	4	67

Overall 3,314 different persons visited the DCCHC in 2004 for a monthly average of 848 person. On a yearly basis, there were 570 different people who visited DCHC for A&D counseling, 254 people used their medical management service and 98 people were in the MAT program. Fewer people used the mental health referrals (55) and housing referrals (40).

It is also noted that there is a high percentage of high intensity users for DCHC , as shown in the Table 7.1d. There are 22% of the users who attended the clinic more than 5 times a year, with 5% more than 36 times a year.

Table 7.1d- Intensive Users for 2004		
Description	N	%
1. 4 times a year	**2261**	**68%**
2. 5-12 times a year	**620**	**19%**
3 13-36 times a year	**267**	**8%**
4. > 36 times a year	**166**	**5%**
Total users	**3314**	

7.2 Pender Community Health Centre (PCHC) 2002, 2004

In order to assess the flow of patients through PCHC, data pertaining to the number of patient visits during the year 2002 were obtained. Included are data pertaining to the number of visits by all patients, men, women, new patients, and repeat visitors.

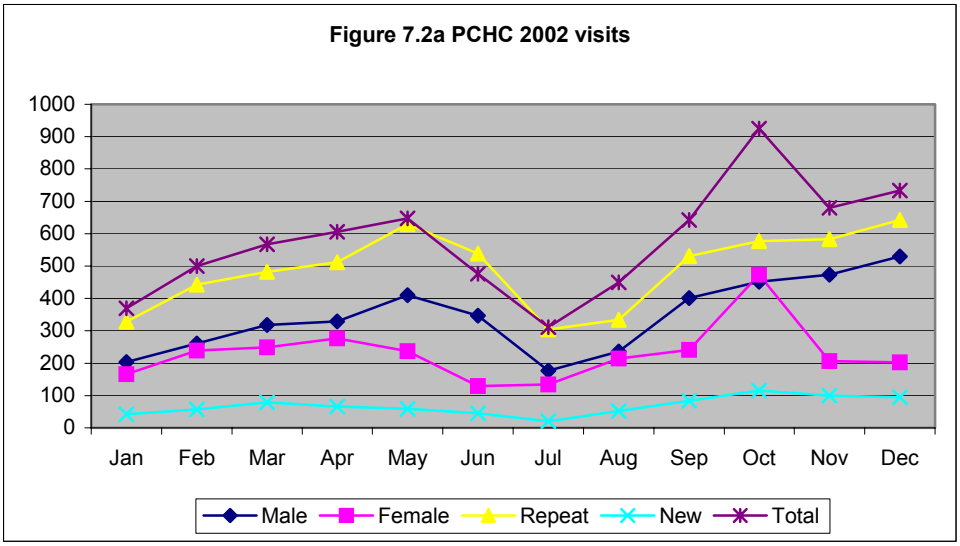
The total number of visits to PCHC in 2002 was 6,907; of these, 2,769 visits (40%) were made by women, and 4,138 visits (60%) were made by men. As well, 5,904 visits (85%) were made by repeat visitors (i.e., individuals who had previously visited the clinic), and 816 visits (12%) were made by new patients.

Table 7.2a Total Visits to PCHC for Year 2002

	Total (%)	Monthly Average	(Min – Max)
Total	6907 (100)	575	(311-925)
Female	2769 (40)	230	(129-473)
Male	4138 (60)	344	(177-530)
Repeat	5904 (85)	492	(304-642)
New	816 (12)	68	(21-116)

As indicated in Figure 7.2a, considerable variation in the number of visits occurs throughout the year. However, general trends include a rise in patient visits in the spring months, a decline in the middle of summer, and a rise again in the fall months.

Figure 7.2a PCHC 2002 visits



PCHC is notable for its higher female to male patient ratio.

Similar to DCHC, the 2004 data from PCHC is captured in PARIS.

Table 7.2b shows the 2004 total visits for primary care at PCHC. As the data indicated, January data is still in transition and hence is low in volume. Disregarding January data, the monthly visits at PCHC is about 750. The monthly visits for A&D Counselling and Medical Management visit are about 152 and 47 respectively. The referrals in both Mental Health and Housing are very low.

Table 7.2b Total Visits to PCHC for 2004

	PC	A&D Couns	MH Ref	MEDI Mgt	House Ref
Jan	107	14		10	
Feb	711	168		19	
Mar	990	261		30	1
Apr	750	146		35	7
May	760	158		45	1
Jun	724	206		48	
Jul	665	139		64	
Aug	608	104	13	65	
Sep	654	158	61	63	1
Oct	850	179	54	60	1
Nov	864	164	47	74	
Dec	615	127	55	46	
Total	**8298**	1824	230	559	11
mavg	**692**	152	19	47	1

Table 7.2c Total Visits to PCHC for 2004

	PC	A&D Couns	MH Ref	MEDI Mgt	House Ref
Jan	89	10		9	
Feb	330	94		14	
Mar	387	119		19	1
Apr	346	89		27	3
May	346	95		26	1
Jun	321	108		23	
Jul	322	59		27	
Aug	300	65	11	20	
Sep	324	78	30	28	1
Oct	379	91	27	32	1
Nov	406	80	25	33	
Dec	315	64	26	24	
Unique ID	**1099**	322	50	115	7
Mavg	**322**	79	10	24	1

Table 7.2c shows the total person visits to PCHC for the year of 2004. There are 1,099 different people who visited PCHC for primary care for the year, with 79 attended the clinic for A&D counseling and 24 for Medical Management. The monthly average is pretty consistent at about 350 visits, with the exception of January.

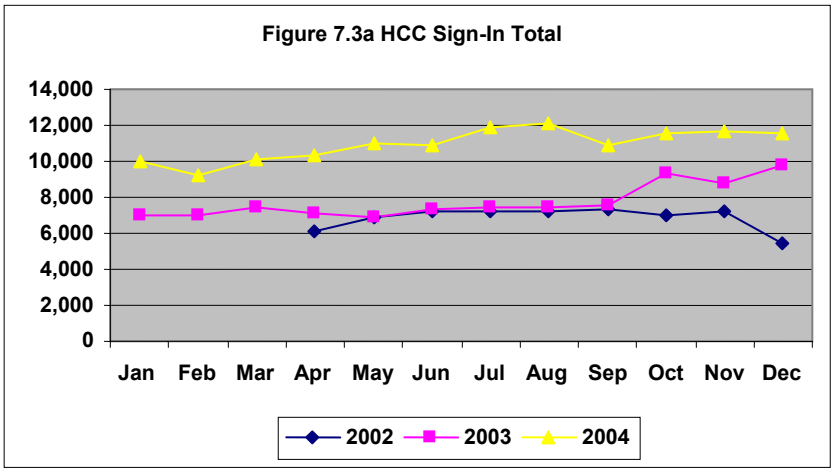
Higher percentage of intensive users are also found in PCHC. As illustrated in Table 7.2d, there are more than 42% of PCHC patients attending the clinic more than 5 times a year.

Table 7.2d- Intensive Users for 2004

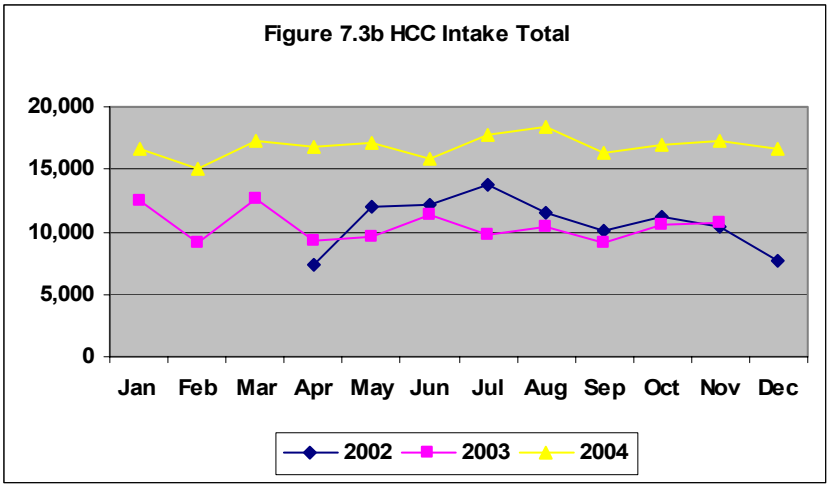
Description	N	%
1. 4 times a year	**632**	58%
2. 5-12 times a year	**234**	21%
3 13-36 times a year	**215**	20%
4. > 36 times a year	**18**	2%
Total users	**1099**	

7.3 Health Contact Centre (HCC) 2002-2004

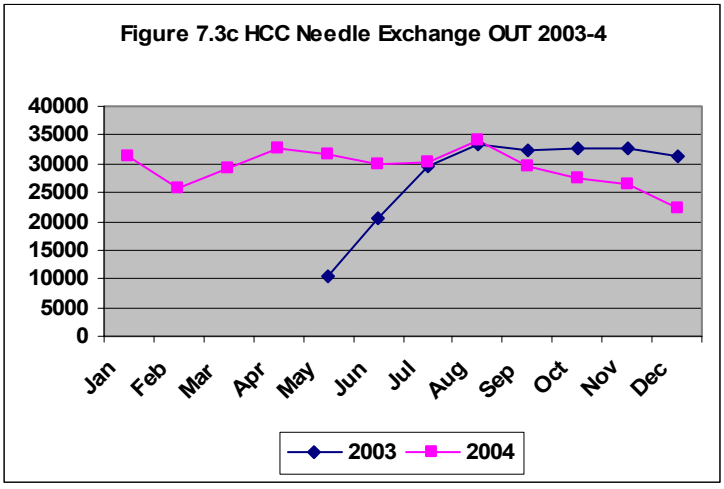
The Health Contact Centre was established as a place to seek emergency assistance and to have easy access to health care workers. Figure 7.3a shows the total number of people signing into the HCC.



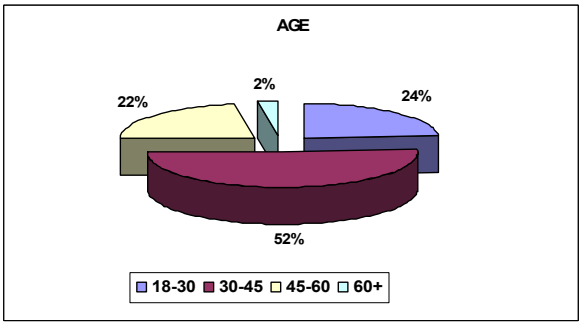
The Intake total shown in Figure 7.3b is the observed total number of people going through the entrance as tracked by the Healthcare worker at the desk. As both of these figures show, there is a steady increase in both sign-in total and intake total. For Sign-In, the 2002 monthly average is about 7,000, going up to over 8,000 in 2003 and 11,000 in 2004. A similar pattern occurs for intake total, except the numbers are even more impressive, going from 11,000 in 2002 and 2003 to 17,000 in 2004.

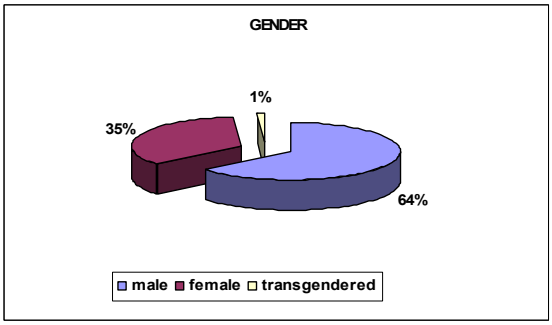


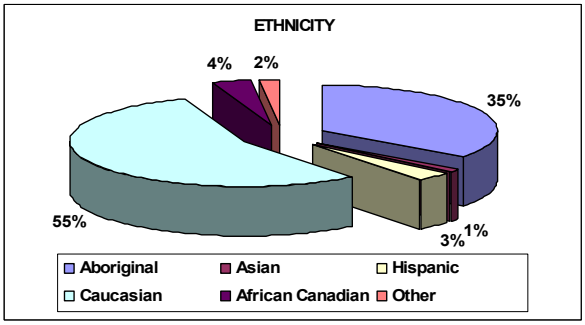
In May 2003, the Health Contact Centre started a Needle Exchange Program. The number of needles given out increased very quickly to 30,000 monthly average within the first three months the program. While the number of outgoing needles remained at about 30,000 for the first three quarters of 2004, the number started to drop from September 2004 to just over 22,000.

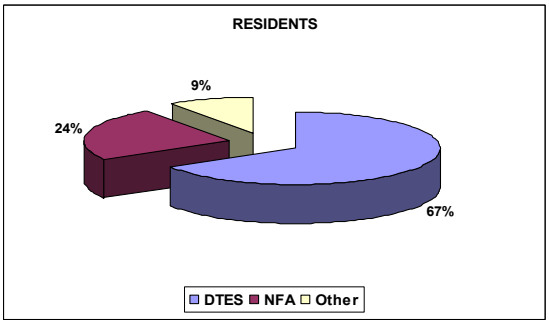


HCC support workers and Healthcare nurses have been keeping track of the demographics of the clients, as well as their referrals and issues since April 2002. The data reported here are based on three years of data from 2002 to 2004. The following figures show the demographics of the users at HCC.

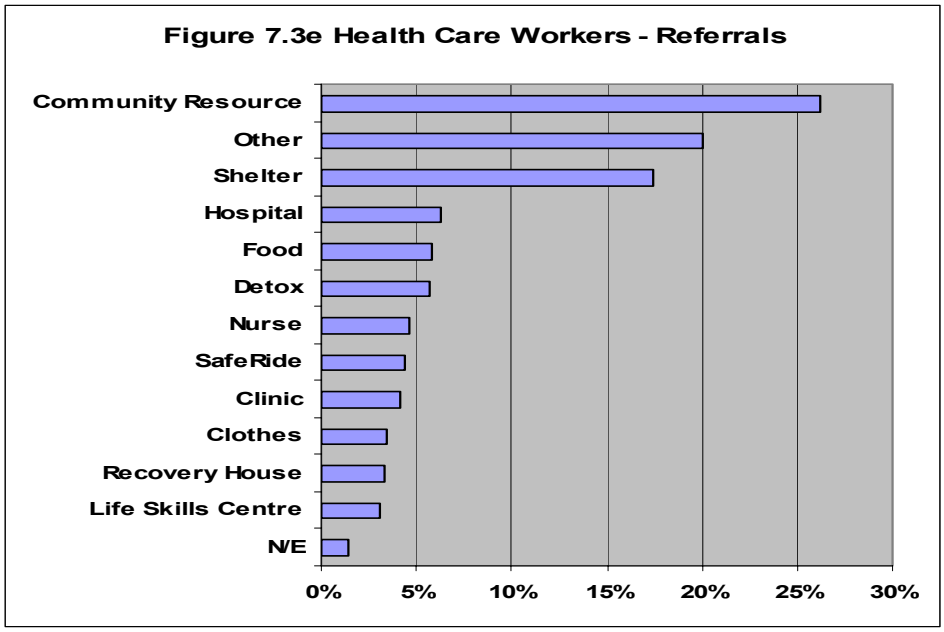


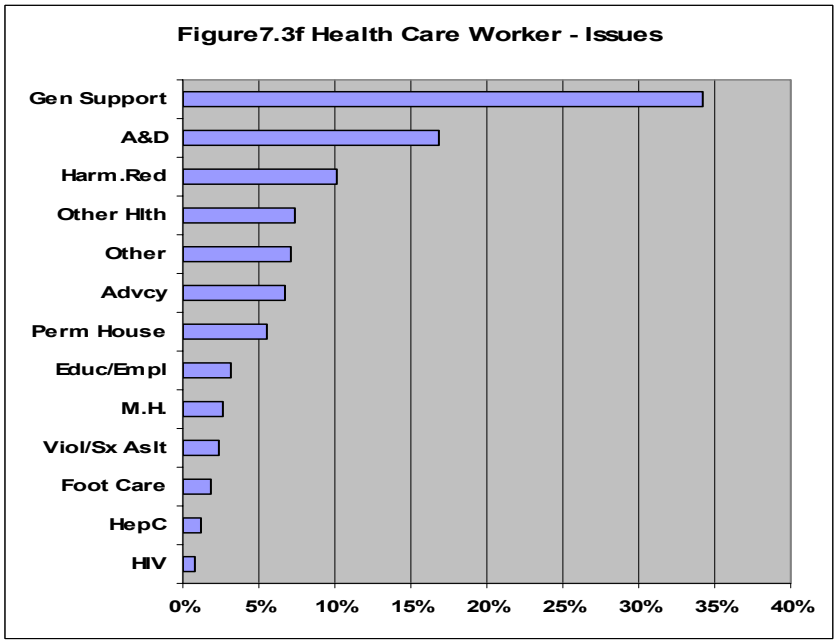




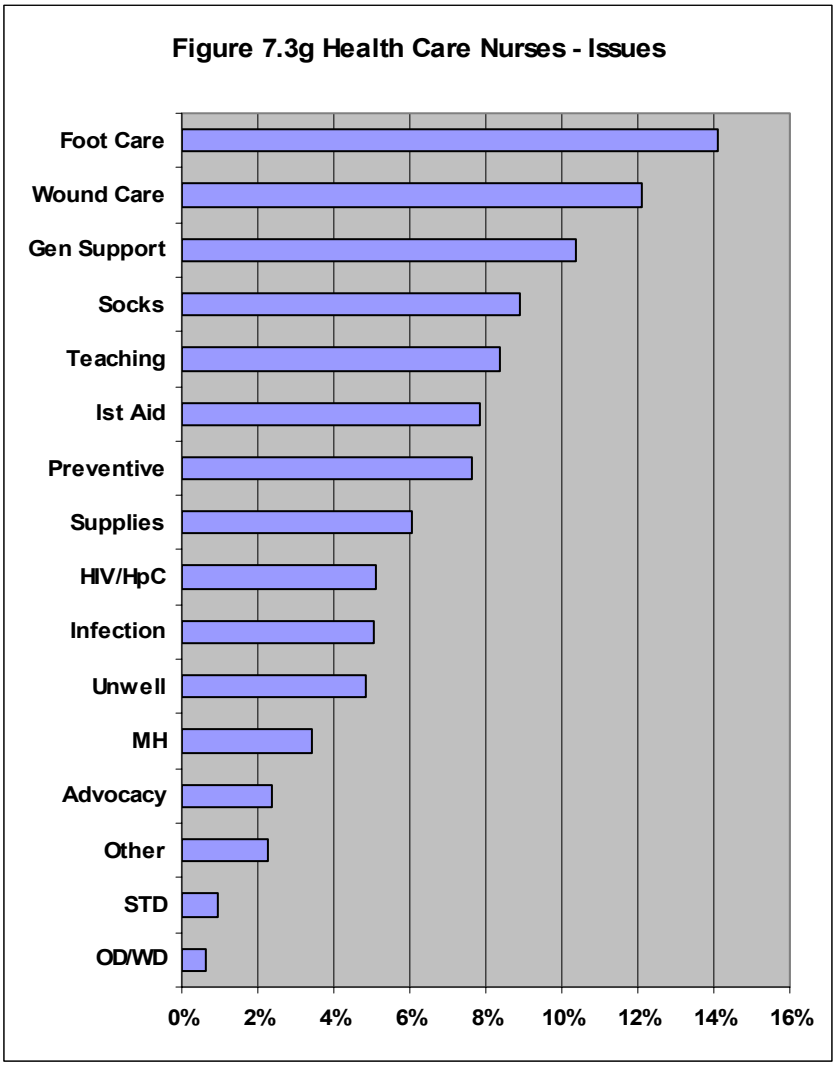


The proportion of referrals and reasons for the visit are summarized in the following figures 7.3e and 7.3f, ordered by the most common to the least.





Similar statistics on clients' issues are also kept by the Healthcare Nurses. They are summarized in the following figure 7.3g.



As indicated by these statistics, the HCC is an extremely active VCH facility.

7.4 Life Skills Centre (LSC) 2003-2004

The major purpose of the Lifeskills Centre (LSC) is to provide low threshold program to promote reintegration into the community. Operating on an empowerment based peer model, it is self governed by a volunteer base with a mandate to create a place to restabilize, to engage in harm reduction based methods of self care, and to develop and liaise with pre-employment training programs.

The LSC provides onsite services such as laundry, showers, coffee, basic first aid, and a hot lunch. Both staff and peer workers provide referrals to health, housing, counselling, youth support and many others as needed.

In keeping with the low threshold nature of the LSC, data collection is limited to ensure confidentiality of the participants and to support the development of trusting relationships with the membership. Through periodic head counts it has been estimated that for 2003-2004 the daily visit average was 541, with the yearly total for 2003 being 141,700 and for 2004, 133,453. In an average month the LSC served 1575 lunches as part of its pre-vocational skills training program; and 3360 cups of coffee. It has provided for 336 loads of laundry per month and 399 showers. There have been 84 shifts of pre-vocational skills training; and 300 Peer Harm Reduction training shifts per month.

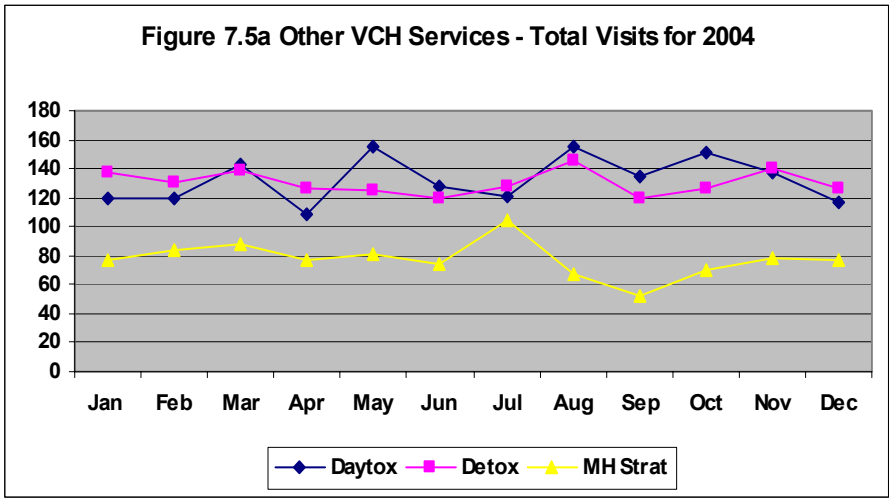
In the process evaluation reported on in the CHASE first Annual Report (October 2003), participants at the LSC spoke favourably of the programs and services offered at the LSC, but felt that these services should also be expanded to meet demand. In particular, the need for specific programs for women, especially programs that engage sex workers and work to increase their safety was mentioned. In 2004 the LSC instituted a new Women's Wellness program

which has a mandate to create a more "women friendly space" in all LSC programming and to nurture women specific programming as part of the day to day activities of the LSC. Their efforts have resulted in a significant increase in the number of women arriving for volunteer opportunities and to use the basic services. Women are increasingly involved in literacy activities, structured class work, building leadership skills and mentoring their peers.

A hub of activity, the LSC has welcomed and partnered with more than forty health, research and community service organizations and numerous individuals interested in sharing their skills with the community. Collectively, they have delivered an impressive array of more than 100 programs, services, support and training for the community. In essence the LSC has invited a microcosm of the community at large under its roof to observe, pilot and implement peer run programming for the community. In previous reports, participants and staff at the LSC emphasized that the participatory and respectful approach at the LSC is at the heart of its success. Many also mentioned that they liked the LSC because they did not feel judged and they could be honest about their drug use. The level of acceptance of all individuals and the choices participants have when attending the LSC are also keys to the success of the Centre. It has been further suggested that the choices and opportunities for participation afforded those attending the LSC translate into a sense of ownership. By gaining a sense of ownership, the participants of the LSC self-regulate their collective behaviours, which reduces the need for staff to make or enforce rules. Overall, the LSC is regarded as a success by those who attend, volunteer and work there.

7.5 Daytox and Detox and Strathcona Mental Health 2004

While VCH was mostly interested in the use pattern of their health facilities in DCHC, PCHC, HCC and LSC launched in 2001, it is interesting to see the uptake of other service facilities such as Daytox, Detox and Strathcona Mental Health. In 2004, there are a yearly total of 1,591 visits to Daytox, 1,564 visits to Detox and 937 visits to Strathcona Mental Health. These amount to monthly visits of 133, 130, 78 to Daytox, Detox and Strathcona Mental Health respectively, as shown in Figure 7.5a. The number of monthly visits to Detox is fairly stable at 130 whereas to Daytox fluctuates more from 100 to 160. 2004 monthly visits to Strathcona Mental Health tend to be around at 80 .



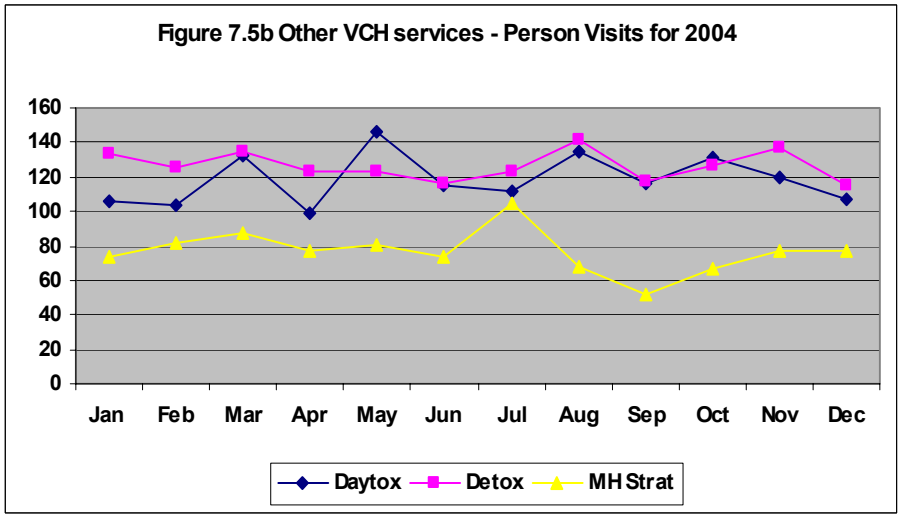


Figure 7.5b shows the 2004 yearly person vistis to these facilities. The total person visits are very close to the total visits,

indicating there are few repeated visitors to these facilities. Table 7.5a shows the length of stay for each of these facilities. The mean stay for Daytox is 32 days, Detox is 4.5 days and Strathcona Mental Health is 56 days, as shown in Table 7.5a.

Table 7.5a Length of Stay in days

	Daytox	Detox	MH Strat
mean	32.5	4.5	56.0
median	27.0	4.0	33.5
N	776	1514	622

8. PULICATIONS AND PRESENTATIONS

8.1 Publications

1. Kerr T, Wood E, Grafstein E, Ishida T, Shannon K, Lai C, Montaner JSG, Tyndall MW, High rates of primary care and emergency department use among injection drug users in Vancouver. J Public Health 2004; Nov 25; [Epub ahead of print].

8.2 Conference Presentations

XIV Annual Canadian Conference on HIV/AIDS, Vancouver, Canada, May 2005

1. ML Rusch, K Shannon, C Lai, T Ishida, Tyndall MW, Association of HIV Serostatus and Testing Positive for Syphilis, Chlamydia and Gonorrhea Among A Population-based Cohort From Vancouver's Downtown Eastside. [Abstract published Can J Infect Dis Med Microbiol; 16 (Suppl A): May/June 2005, Abstract 159]
2. K Shannon, T Kerr, C Lai, T Ishida, M Rusch, J Montaner, R Hogg, Tyndall MW, Low Adherence Rates To Antiretroviral Therapy Among A Community With Endemic Rates of Injection Drug Use. [Abstract published Can J Infect Dis Med Microbiol; 16 (Suppl A): May/June 2005, Abstract 234]
3. T Ishida, K Shannon, A Bear, R Morgan, M Oleson, Tyndall MW, Health Related Harms of Crack Cocaine Smoking [Abstract published Can J Infect Dis Med Microbiol; 16 (Suppl A): May/June 2005, Abstract 325P]
4. N Press, C Lai, K Shannon, T Ishida, T Kerr, J Montaner, Tyndall MW, Rate of Hospitalization in HIV+ IDUs is not Associated With Access To Primary Care [Abstract published Can J Infect Dis Med Microbiol; 16 (Suppl A): May/June 2005, Abstract 354P]
5. C Patton, D Culhane, I Goldstone, Tyndall MW , Patters of Housing and Service Access Among Actively Injecting Drug Users [Abstract published Can J Infect Dis Med Microbiol; 16 (Suppl A): May/June 2005, Abstract 359P]
6. K Shannon, T Kerr, C Lai, T Ishida, A Palepu, E Wood Tyndall MW, Poor Health Outcomes and More Intensive Drug Use Among Residents of Unregulated Single Room Occupancy Hotels [Abstract published Can J Infect Dis Med Microbiol; 16 (Suppl A): May/June 2005, Abstract 366P]

7. IL Goldstone, T Kerr, C Lai, W Small, J Montaner, Tyndall MW, HIV/AIDS and Hospital Utilization Among Recently Incarcerated Injection Drug Users [Abstract published Can J Infect Dis Med Microbiol; 16 (Suppl A): May/June 2005, Abstract 371P]

8. T Ishida, T Kerr, Tyndall MW, A Method For Involving Marginalized Communities In Health Research [Abstract published Can J Infect Dis Med Microbiol; 16 (Suppl A): May/June 2005, Abstract 377P]

9. K Shannon, E Wood, C Callon, C Collins, K Lai, Tyndall MW, T Kerr, Factors Associated With Crack Pipe Sharing Among A Cohort Of Injection Drug Users in Vancouver [Abstract published Can J Infect Dis Med Microbiol; 16 (Suppl A): May/June 2005, Abstract 384P]

XV International AIDS Conference, Bangkok, Thailand, July, 2004

10. Tyndall MW, C. Li, T. Ishida, K. Shannon, E. Wood, D. Cook, T. Kerr. Continued high rates of HIV and Hepatitis C transmission among injection drug users in Vancouver, Canada: The CHASE Project.

11. Ishida T, T Kerr, C Lai, K Shannon, Tyndall MW. HIV infection and related risks among Aboriginal injection drug users in Vancouver, Canada.

12. Kerr T, T. Ishida, C. Lai, K. Shannon, E. Grafstein, Tyndall MW The impact of HIV infection on primary care access and emergency room use in Vancouver, Canada. Presented at the 15th International AIDS Conference, Bangkok, July 11-16, 2004.

13. Shannon K, V. Bright, T. Ishida, J. Duddy, T. Serasidis, Tyndall MW. Uptake and acceptance of antiretroviral medications among female sex workers in Vancouver's downtown eastside. Presented at the 15th International AIDS Conference, Bangkok, July 11-16, 2004.

XIII Annual Canadian Conference on HIV/AIDS Research, May 2004

14. Ishida T, Kerr T, Shannon K, Lai C, Tyndall MW. Peer Involvement in The Community Health and Safety Evaluation (CHASE) Project Cohort

15. Kerr T, Ishida T, Lai C, Shannon K, Graftstein E, Tyndall MW. Primary Care Access and Emergency Room Use Among Injection Drug Users in Vancouver's Downtown Eastside

16. Tyndall MW, Lai C, Ishida C, Shannon K, Cook D, Kerr T. Continued High Rates of HIV and Hepatitis C Transmission Among a Vulnerable Community in Vancouver: The CHASE Project

XII Annual Canadian Conference on HIV/AIDS Research, Halifax, April 2003

17. Kerr T, T Ishida, C Lai, L Kuyper, Tyndall MW. The Community Health and Safety Evaluation (CHASE) Project.

9. COMMUNITY DISSEMINATION

Making research results accessible to communities and their members is fundamental to a successful community-based participatory research process. In addition to the community itself, stakeholders in the CHASE research process and its results included other researchers and the regional health authority. As such, the CHASE Project has sought to make its results available to other researchers in the form of academic papers submitted and / or published in peer reviewed journals, and through presentations to relevant conferences to ensure that other researchers received the information. The CHASE project also met regularly with a steering committee of Vancouver Coastal Health executives, and delivered bi-annual reports to ensure that VCH partners were kept up to date and informed on the progress and results of the CHASE Project research.

In November 2003 a Community Forum was organized at Carnegie Community Centre to introduce the CHASE Project to the community and to deliver preliminary findings from the first 2189 individuals recruited between January and November of 2003. By March 2004 recruitment included 3,071 individuals. Using self-reported and linkage data from these 3071 analyses of emergency room use; of highly active antiretroviral treatment access and discontinuation; and of HIV incidence in the community were conducted. The results of these analyses were delivered to an ad hoc committee of concerned citizens representing the five communities and special interest groups such as police, drug users, sex trade workers and service providers (Neighbourhood Liaison Committee). By August 2004 enrollment into the CHASE cohort had reached 3338 unique individuals. A process was undertaken with the peer researchers to translate epidemiological data into ideas that were appropriate to their realities. Giving consideration to lower literacy levels in the community, the peers translated and contextualized the findings into key messages using accessible language and community activities to gain interest in the messages.

The "Got Rock" campaign was undertaken in partnership with Carnegie Community Centre's Endless Summer event in Oppenheimer Park. Prior to the event, CHASE reports were posted on our website so that the community could access and utilize the data as needed and a short version handout for community and service providers was developed. An update letter and invitation to the event was circulated to CBO's and community stakeholders. Using a catchphrase familiar to a community in which widespread use of "rock" or crack cocaine is used, the peers transformed the phrase into a health and harm reduction invitation. Colourfully painted rocks with health messages were handed out along with brochures informing the community of the CHASE Project key findings at this community event in the park. Peers distributed 200 rocks and handouts to their peers in the park. A second Community Forum in coordination with a meeting of the Neighbourhood Liaison Committee and broad range of stakeholders will be scheduled in April 2005 to deliver the final results of the CHASE research to members of the community. All reports will be made available on the CHASE website at: http://chase.hivnet.ubc.ca.

10. FUTURE LINKAGES AND ANALYSIS

The recruitment of the CHASE cohort will allow prospective monitoring of the health outcomes and service uptake in this population through ongoing linkages, including:

1. Uptake of medical clinics through the PARIS database
2. Uptake of detox and daytox through the PARIS database
3. HIV, Hepatitis C testing through the BC CDC and St. Paul's virology lab
4. STD testing and results through the BC CDC
5. Use of Emergency Rooms through St. Paul's and VGH records
6. Hospital admissions and length of stay at St. Paul's hospital
7. Hospital admission diagnosis
8. Uptake of antiretroviral medications through the Drug Treatment Program
9. Use of illicit drugs through the VIDUS cohort
10. Attendance at the Supervised Injection Site through the eSIS cohort
11. Mortality rates through Vital Statistics
12. Overdose mortality through Vital Statistics and the Coroner's Office

11. CONCLUSION

The obstacles facing the residents of the DTES are daunting. The data presented in this report further documents the severe health and social environment that has become entrenched within the DTES. Following decades of neglect, there appears to be a renewed commitment on many levels to provide some relief to the residents of this neighbourhood. The VCH has taken some bold steps forward by opening these four new health facilities. The positive health impacts on the individuals using these facilities cannot be questioned. Further, the innovative programs offered through the Heath Contact Centre and the Life Skills Centre has added a range of opportunities that were not previously available. On many levels these new facilities have been highly successful.

From a public health perspective, it remains to be seen how effective these programs will be in reversing the adverse health outcomes that have been gathering momentum over so many years. Clearly, for many of the long-time residents, the challenges of addiction, mental illness, and chronic physical disabilities will not be reversed through the opening of new health facilities. However, through coordinated and innovative health and social interventions, health outcomes should improve over time. The "virtual" CHASE cohort now provides an opportunity to monitor health indicators in this community over the coming years.

12. ACKNOWLEDGEMENTS

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APPENDICES

TABLE 3.2b - Death Counts and ASMR by 5 Communities for 2001, 2002 and 2003

		Cause of Death													
		All Causes		Drug-Induced		Alcohol Induced		HIV		HEPC		Liver		TB	
		N	ASMR	N	ASMR	N	ASMR	N	ASMR	N	ASMR	N	ASMR	N	ASMR
1. Chinatown															
	2001	25	57.98	4	15.58	2	4.57	2	5.09	-	-	-	-	-	-
	2002	43	87.14	2	4.06	1	2.30	2	5.86	-	-	-	-	-	-
	2003	31	52.92	3	6.93	1	2.31	1	2.15	-	-	-	-	-	-
2. DTES															
	2001	162	208.39	12	18.38	8	10.06	12	17.92	1	1.42	2	2.14	-	-
	2002	132	176.18	11	15.83	4	5.26	10	25.86	1	0.92	3	3.87	-	-
	2003	160	220.95	6	11.17	5	6.04	22	40.19	1	1.28	3	3.38	-	-
3. Gastown															
	2001	12	107.35	1	8.53	-	-	1	9.21	-	-	-	-	-	-
	2002	8	65.43	1	6.39	-	-	-	-	-	-	-	-	-	-
	2003	15	125.87	1	7.99	1	8.65	3	20.62	1	8.65	-	-	-	-
4. Strathcona															
	2001	81	59.87	-	-	-	-	1	1.57	-	-	-	-	-	-
	2002	76	53.98	-	-	-	-	1	1.30	-	-	1	0.67	-	-
	2003	78	51.61	-	-	-	-	2	2.95	-	-	3	2.39	-	-
5. Victory Square															
	2001	51	250.59	2	6.30	3	17.69	3	17.08	-	-	1	2.98	-	-
	2002	37	164.37	-	-	4	10.23	5	14.18	1	2.96	-	-	-	-
	2003	62	297.44	7	27.88	3	11.00	7	20.83	-	-	2	8.07	-	-
Total 5 Communities															
	2001	331	123.06	19	9.88	13	4.99	19	9.61	1	0.50	3	1.16	-	-
	2002	296	109.60	14	6.03	9	3.56	18	8.37	2	0.76	4	1.60	-	-
	2003	346	126.34	17	8.61	10	4.21	35	**17.43**	2	0.90	8	2.80	-	-
LHA 162															
	2001	536	88.54	31	4.60	9	3.32	23	3.52	2	0.30	3	0.47	1	0.14
	2002	515	83.18	27	3.91	16	2.47	27	4.03	6	0.87	8	1.31	-	-
	2003	547	84.29	29	4.61	17	2.69	40	6.09	5	0.87	10	1.57	-	-
B.C.															
	2001	28164	55.08	309	0.72	299	0.64	109	0.25	70	0.14	181	0.38	25	0.05
	2002	28686	54.36	279	0.64	316	0.64	104	0.23	79	0.15	201	0.41	13	0.03
	2003	29092	54.18	302	0.69	313	0.63	125	**0.28**	79	0.15	216	0.41	10	0.04

Note: ASMR per 10,000 standard population (Canada census 1991)
The population estimates are very small for some coummunites.
In general, ASMR with less than In general, ASMR with less than 5 deaths should be interpreted with caution

Figure 3.2b Death Counts for All Causes by 4 Centres for 2001, 2002 and 2003

	2001	2002	2003
CC	12	11	15
DCHC	8	6	7
PCHC	27	30	37
LSC	13	2	11
Total:	60	49	70

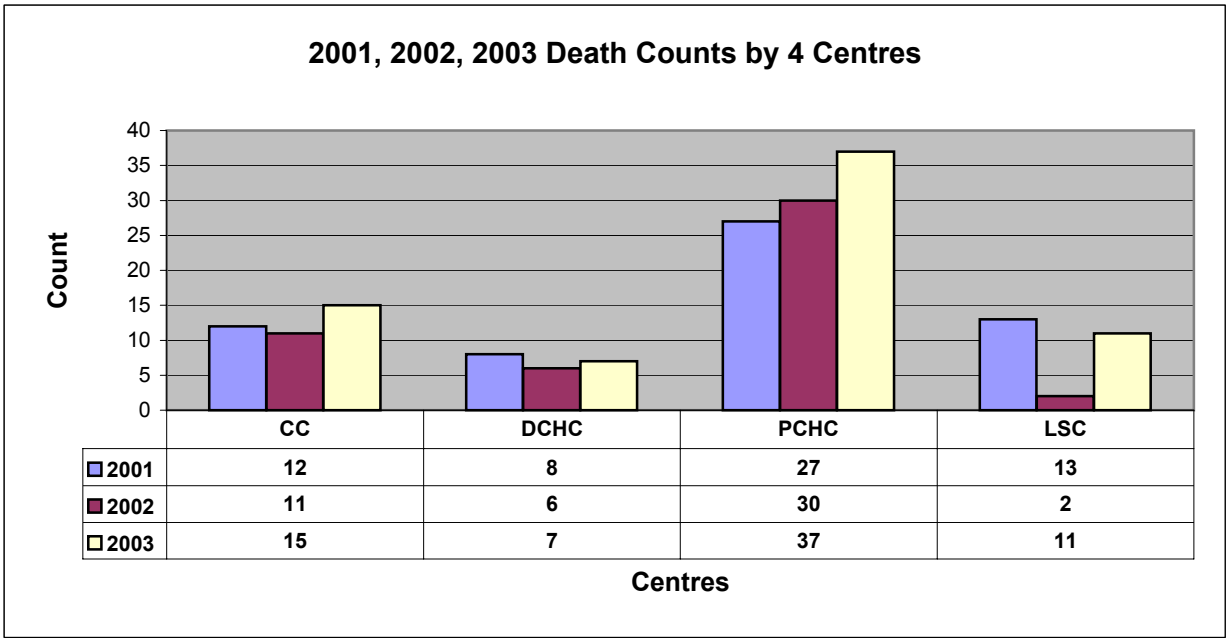


TABLE 3.3a. CRIME STATISTICS BY TYPES BY FIVE COMMUNITIES

Drug Possession — Chinatown													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	AVG
2001					15	14	31	21	18	21	20	21	20.1
2002	28	18	33	33	19	13	29	22	17	14	13	16	21.3
2003	24	17	23	23	17	15	9	9	12	30	38	24	20.1
2004	30	23	53	30	51	27	26	37	38	27	35	28	33.8

Drug Trafficking — Chinatown													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	AVG
2001					21	46	57	50	57	33	50	53	45.9
2002	49	48	52	46	25	22	18	55	12	17	16	21	31.8
2003	16	17	74	48	35	31	23	18	23	32	22	29	30.7
2004	33	18	21	34	31	24	23	24	37	20	27	32	27.0

Drug Possession — DTES													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	AVG
2001					43	31	63	46	38	36	48	49	44.3
2002	59	51	76	66	55	55	61	51	37	31	32	36	50.8
2003	58	41	41	36	35	44	46	44	39	57	77	75	49.4
2004	73	73	126	92	111	86	85	100	88	81	70	68	87.8

Drug Trafficking — DTES													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	AVG
2001					38	59	91	75	95	55	83	87	72.9
2002	87	79	85	125	46	60	32	78	32	36	29	35	60.3
2003	43	40	169	112	64	67	50	47	38	49	51	66	66.3
2004	82	62	41	57	63	69	57	44	60	37	44	46	55.2

Drug Possession — Gastown													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	AVG
2001					2	3	6	3	3	5	5	1	3.5
2002	0	5	8	4	2	5	2	1	3	3	2	3	3.2
2003	3	2	3	2	3	4	2	5	4	6	12	7	4.4
2004	7	15	8	13	18	9	9	8	8	7	15	11	10.7

Drug Trafficking — Gastown													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	AVG
2001					1	6	8	9	14	7	5	5	6.9
2002	4	7	8	36	7	3	7	4	2	0	2	4	7.0
2003	1	6	58	26	7	9	5	7	2	5	6	22	12.8
2004	22	6	3	7	5	13	16	5	13	7	8	14	9.9

Drug Possession — Strathcona													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	AVG
2001					9	5	5	6	2	3	2	9	5.1
2002	8	1	9	6	4	5	2	3	4	0	1	4	3.9
2003	1	5	8	3	3	6	3	7	7	9	11	13	6.3
2004	12	8	16	19	15	15	20	18	12	14	10	8	13.9

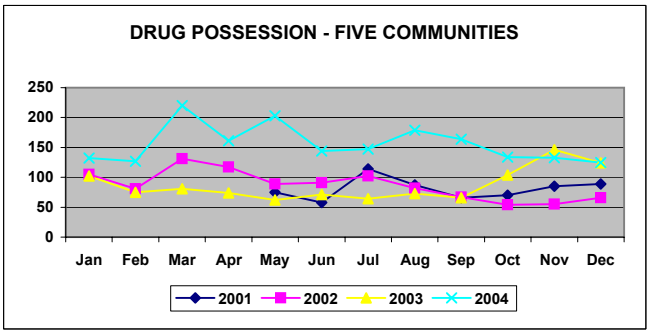
Drug Trafficking — Strathcona													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	AVG
2001					7	1	2	3	5	9	7	7	5.1
2002	12	8	3	3	4	4	1	1	1	2	4	2	3.8
2003	2	1	2	18	15	5	8	11	8	7	20	17	9.5
2004	17	11	6	3	11	25	15	9	4	8	7	1	9.8

Drug Possession — Victory Square													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	AVG
2001					6	5	9	11	5	5	10	9	7.5
2002	10	6	5	8	9	13	8	5	6	6	7	7	7.5
2003	16	10	6	10	4	2	4	8	4	2	8	5	6.6
2004	10	8	17	7	8	7	7	16	18	5	3	10	9.7

Drug Trafficking — Victory Square													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	AVG
2001					3	6	15	14	21	6	19	16	12.5
2002	14	18	16	67	4	23	4	10	5	6	4	6	14.8
2003	22	12	72	38	6	21	13	6	2	6	3	1	16.8
2004	8	20	2	12	12	8	2	5	11	2	3	5	7.5

Drug Possession — Five Communities													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	AVG
2001					75	58	114	87	66	70	85	89	80.5
2002	105	81	131	117	89	91	102	82	67	54	55	66	86.7
2003	102	75	81	74	62	71	64	73	66	104	146	124	86.8
2004	132	127	220	161	203	144	147	179	164	134	133	125	155.8

Drug Trafficking — Five Communities													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	AVG
2001					70	118	173	151	192	110	164	168	143.3
2002	166	160	164	277	86	112	62	148	52	61	55	68	117.6
2003	84	76	375	242	127	133	99	89	73	99	102	135	136.2
2004	162	117	73	113	122	139	113	87	125	74	89	98	109.3



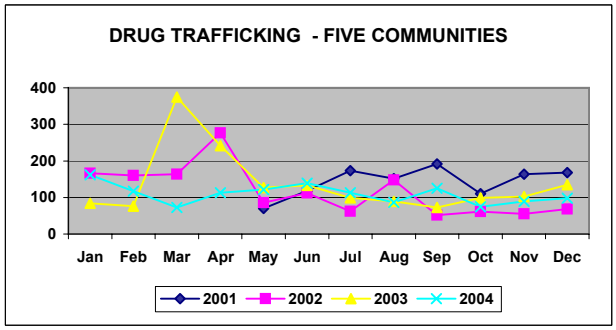


TABLE 3.3b. CRIME STATISTICS BY TYPES BY FIVE COMMUNITIES

Assaults & Robbery												Chinatown	
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	AVG
2001					37	22	44	34	27	33	30	21	31.0
2002	37	32	35	28	42	22	36	27	34	43	27	40	33.6
2003	27	28	37	20	32	30	24	20	28	29	29	33	28.1
2004	24	27	38	31	23	25	31	42	33	31	32	31	30.7

Vehicle Theft												Chinatown	
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	AVG
2001					29	37	45	47	52	43	41	33	40.9
2002	44	32	40	15	28	30	44	32	35	33	22	21	31.3
2003	24	18	17	18	34	26	39	41	31	29	24	18	26.6
2004	17	25	24	33	15	17	29	29	29	16	13	16	21.9

Assaults & Robbery												DTES	
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	AVG
2001					121	102	113	95	91	87	74	80	95.4
2002	91	80	106	102	106	96	107	93	90	101	87	122	98.4
2003	97	90	114	83	117	98	100	95	90	100	100	95	98.3
2004	104	94	114	107	97	103	121	113	100	100	111	94	104.8

Vehicle Theft												DTES	
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	AVG
2001					212	235	259	219	259	254	190	162	223.8
2002	230	206	230	164	176	231	289	222	245	200	140	198	210.9
2003	166	132	129	137	169	158	155	225	189	146	147	122	156.3
2004	87	94	109	142	98	101	151	142	146	97	90	115	114.3

Assaults & Robbery												Gastown	
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	AVG
2001					21	20	16	18	12	12	9	16	15.5
2002	15	11	18	21	21	11	21	18	22	11	9	22	16.7
2003	20	12	17	16	26	11	17	23	12	17	15	14	16.7
2004	20	9	17	16	13	17	31	18	17	21	22	16	18.1

Vehicle Theft												Gastown	
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	AVG
2001					61	74	100	61	75	67	54	39	66.4
2002	64	59	78	60	40	56	92	74	75	67	33	71	64.1
2003	38	25	34	37	32	33	36	66	32	33	29	21	34.7
2004	17	17	25	29	19	24	37	31	30	12	12	18	22.6

Assaults & Robbery												Strathcona	
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	AVG
2001					20	13	20	17	18	12	9	11	15.0
2002	13	16	13	16	7	15	13	12	7	6	11	15	12.0
2003	13	12	24	18	18	20	12	15	19	17	14	9	15.9
2004	17	11	12	10	12	15	19	17	15	16	15	13	14.3

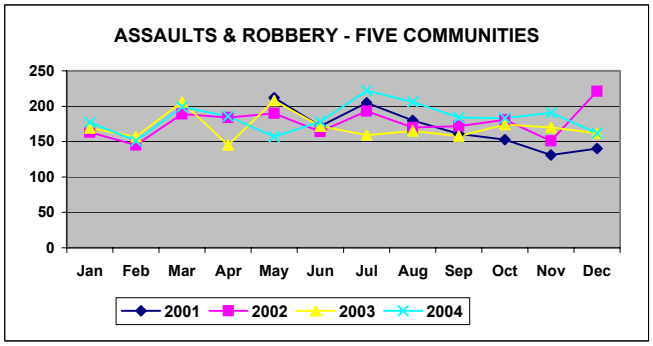
Vehicle Theft												Strathcona	
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	AVG
2001					40	44	31	34	43	45	37	32	38.3
2002	36	40	41	26	35	49	50	33	43	36	24	35	37.3
2003	46	32	26	31	31	25	19	41	40	31	41	29	32.7
2004	18	15	16	14	20	17	29	46	31	22	32	38	24.8

Assaults & Robbery												Victory Square	
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	AVG
2001					13	15	12	16	13	9	9	12	12.4
2002	7	6	17	17	14	20	16	20	19	20	17	22	16.3
2003	12	15	14	8	15	13	6	12	9	11	12	11	11.5
2004	12	10	18	22	12	18	20	16	19	15	11	8	15.1

Vehicle Theft												Victory Square	
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	AVG
2001					45	68	47	57	67	66	42	34	53.3
2002	74	47	45	48	38	55	70	54	49	34	28	43	48.8
2003	41	23	34	33	41	39	35	33	33	26	27	30	32.9
2004	20	24	32	41	16	16	32	35	29	22	17	20	25.3

Assaults & Robbery												Five Communities	
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	AVG
2001					212	172	205	180	161	153	131	140	169.3
2002	163	145	189	184	190	164	193	170	172	181	151	221	176.9
2003	169	157	206	145	208	172	159	165	158	174	170	162	170.4
2004	177	151	199	186	157	178	222	206	184	183	191	162	183.0

Vehicle Theft												Five Communities	
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	AVG
2001					387	458	482	418	496	475	364	300	422.5
2002	448	384	434	313	317	421	545	415	447	370	247	368	392.4
2003	315	230	240	256	307	281	284	406	325	265	268	220	283.1
2004	159	175	206	259	168	175	278	283	265	169	164	207	209.0



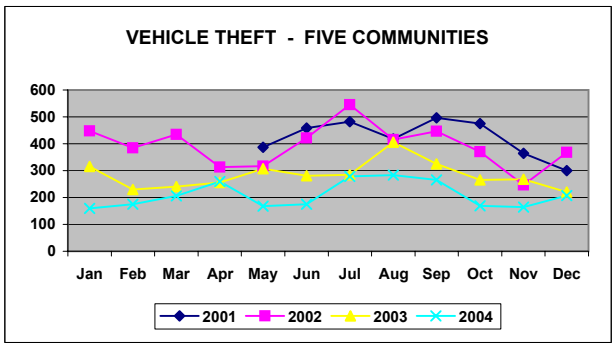
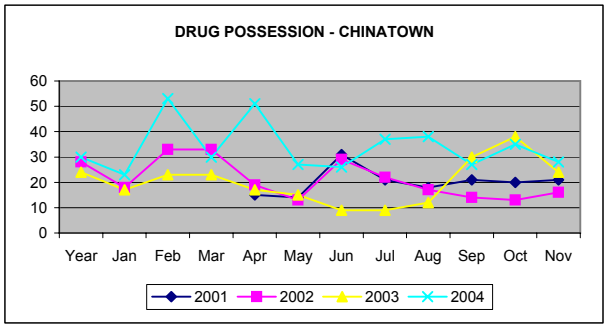
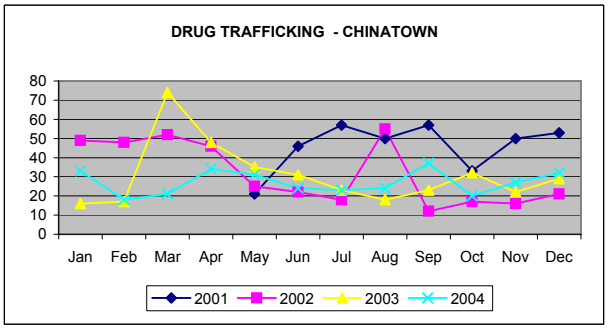
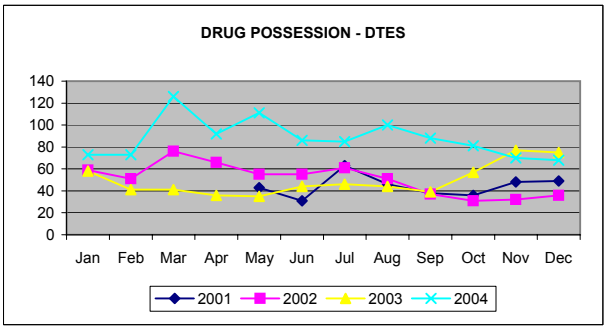
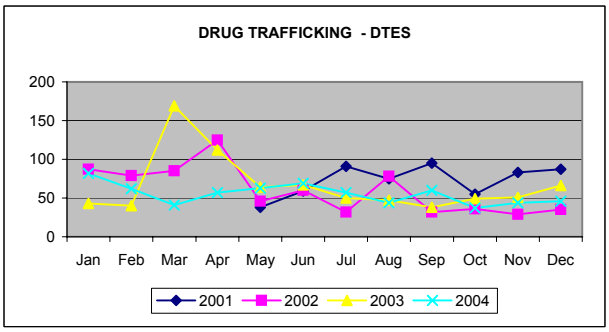


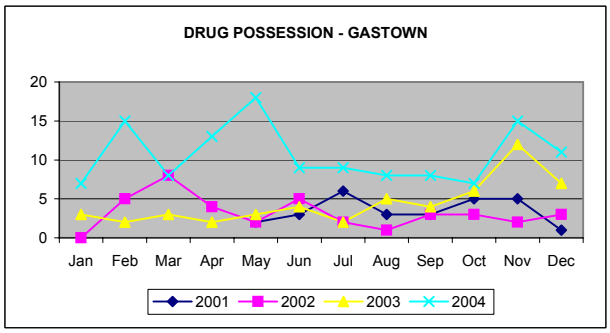
FIGURE 3.3a. CRIME STATISTICS BY TYPES BY FIVE COMMUNITIES

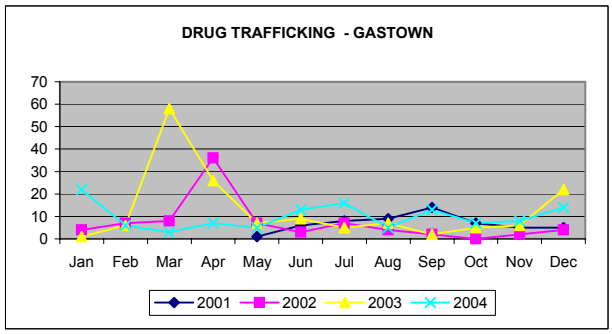


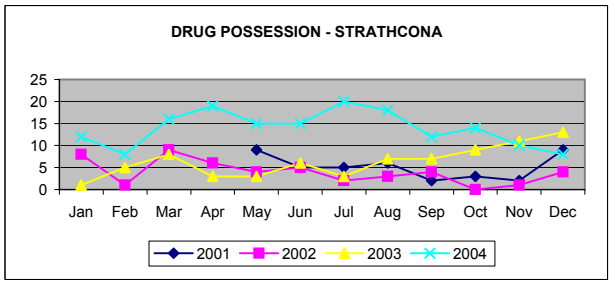


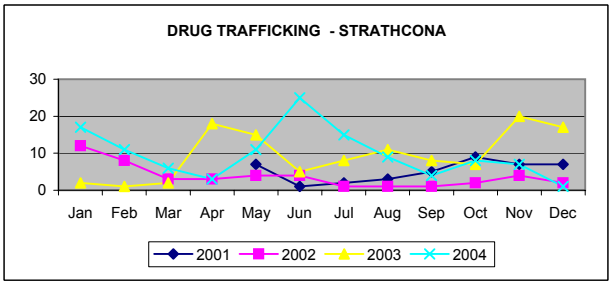


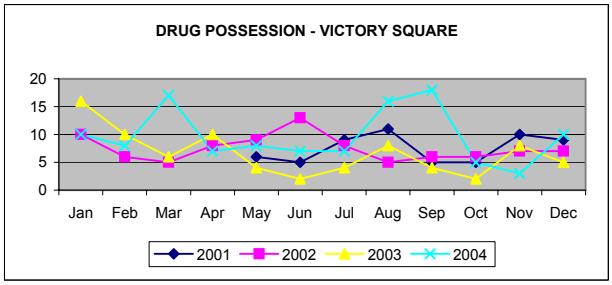












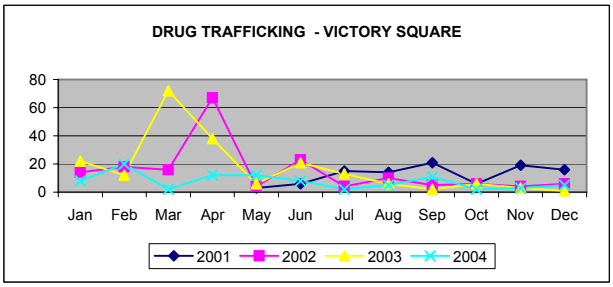
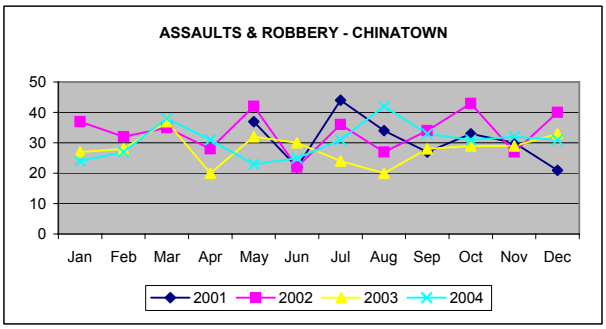
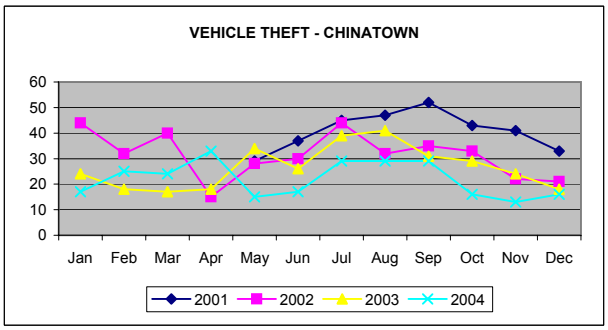
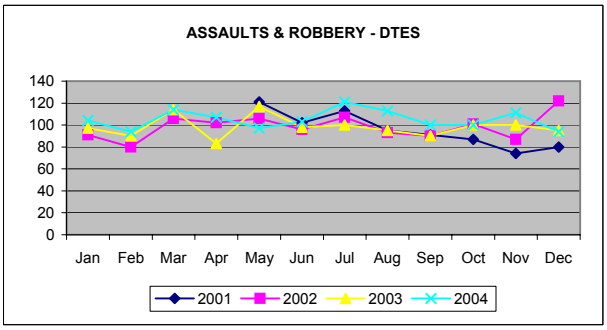
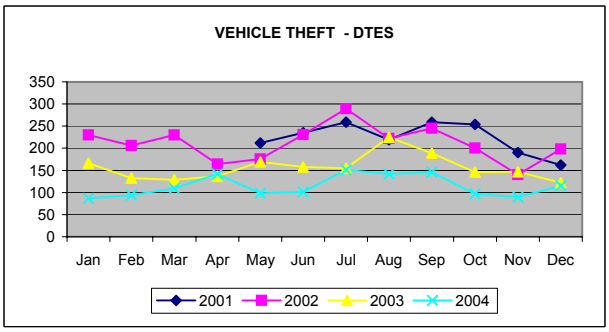


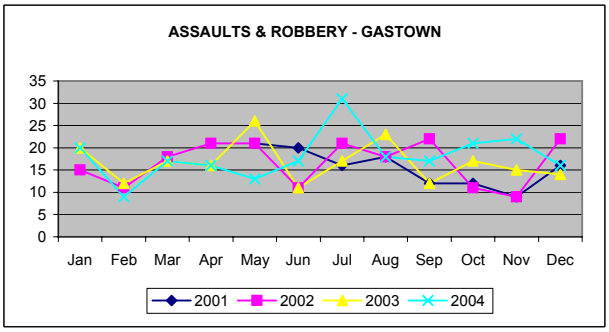
FIGURE 3.3b. CRIME STATISTICS BY TYPES BY FIVE COMMUNITIES

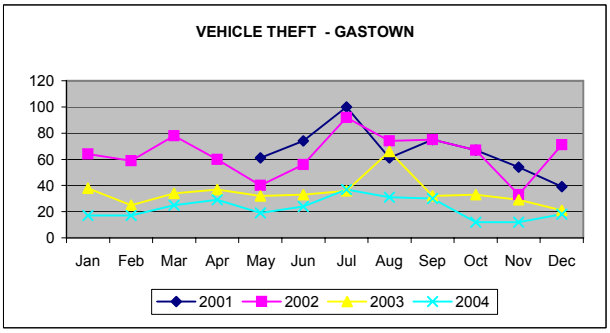


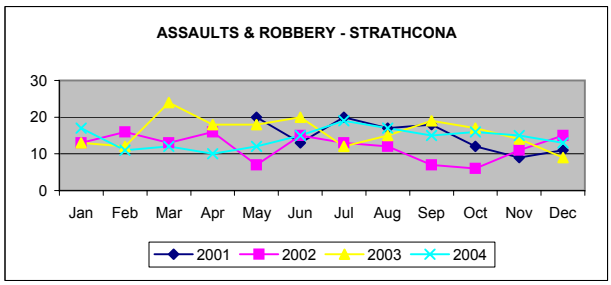


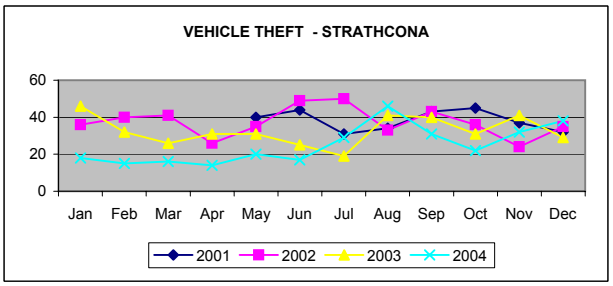


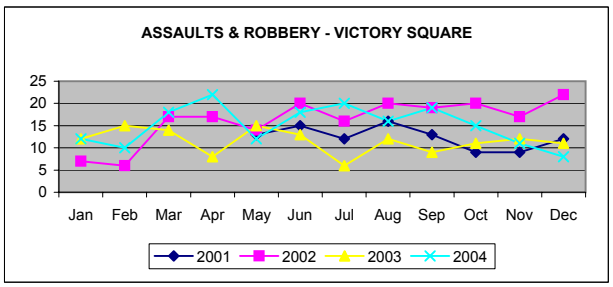












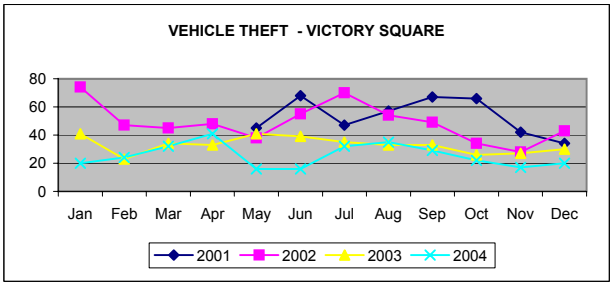


TABLE 3.3c CRIME STATISTICS BY TYPES BY FOUR CENTRES

Drug Possession — HCC													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	AVG
2001					14	13	28	20	17	18	19	20	18.6
2002	24	19	32	25	17	8	25	15	9	13	11	13	17.6
2003	18	12	16	16	12	14	6	8	13	19	29	23	15.5
2004	25	18	32	22	28	17	17	27	27	21	24	22	23.3

Drug Trafficking — HCC													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	AVG
2001					22	41	50	45	46	25	45	47	40.1
2002	51	43	49	37	24	17	14	52	7	14	12	16	28.0
2003	15	14	19	20	28	23	16	15	18	31	20	17	19.7
2004	22	12	11	15	21	14	13	11	16	13	16	10	14.5

Drug Possession — DCHC													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	AVG
2001					0	0	0	0	1	0	1	0	0.3
2002	0	1	0	1	0	0	0	2	0	0	1	0	0.4
2003	2	2	2	1	2	6	2	8	4	5	2	9	3.8
2004	2	3	2	2	2	6	2	10	5	5	4	9	4.3

Drug Trafficking — DCHC													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	AVG
2001					0	0	0	0	0	0	0	0	0.0
2002	0	0	0	0	0	0	0	0	0	1	1	1	0.3
2003	0	2	0	0	0	5	5	4	0	0	0	3	1.6
2004	4	1	6	1	0	1	4	5	3	1	1	1	2.3

Drug Possession — PCHC													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	AVG
2001					0	2	3	4	3	6	4	3	3.1
2002	2	2	3	5	5	6	2	6	7	1	3	2	3.7
2003	10	10	7	5	4	2	6	5	1	9	9	3	5.9
2004	5	8	6	33	10	3	10	9	12	5	6	9	9.7

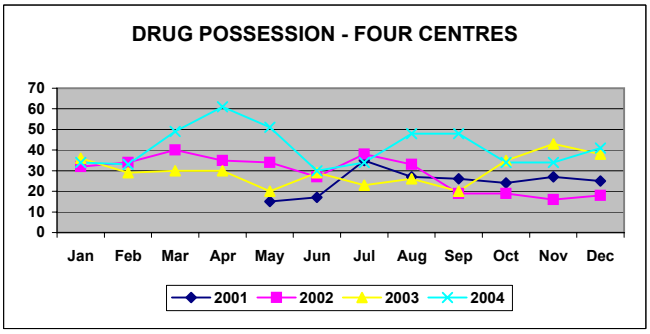
Drug Trafficking — PCHC													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	AVG
2001					4	5	17	6	18	6	10	8	9.3
2002	7	8	7	18	4	16	1	6	3	5	8	7	7.5
2003	17	11	105	52	5	9	4	5	5	3	2	14	19.3
2004	13	7	11	46	8	10	8	8	22	6	7	15	13.4

Drug Possession — LSC													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	AVG
2001					1	2	4	3	5	0	3	2	2.5
2002	6	12	5	4	12	13	11	10	3	5	1	3	7.1
2003	6	5	5	8	2	7	9	5	2	2	3	3	4.8
2004	2	4	9	4	11	4	5	2	4	3	0	1	4.1

Drug Trafficking — LSC													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	AVG
2001					4	2	8	2	1	4	4	5	3.8
2002	4	2	8	7	6	7	2	3	8	8	1	2	4.8
2003	0	3	15	3	5	5	1	2	1	0	0	1	3.0
2004	0	3	1	1	1	6	0	0	1	0	0	0	1.1

Drug Possession — Four Centres													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	AVG
2001					15	17	35	27	26	24	27	25	24.5
2002	32	34	40	35	34	27	38	33	19	19	16	18	28.8
2003	36	29	30	30	20	29	23	26	20	35	43	38	29.9
2004	34	33	49	61	51	30	34	48	48	34	34	41	41.4

Drug Trafficking — Four Centres													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	AVG
2001					30	48	75	53	65	35	59	60	53.1
2002	62	53	64	62	34	40	17	61	18	28	22	26	40.6
2003	32	30	139	75	38	42	26	26	24	34	22	35	43.6
2004	39	23	29	63	30	31	25	24	42	20	24	26	31.3



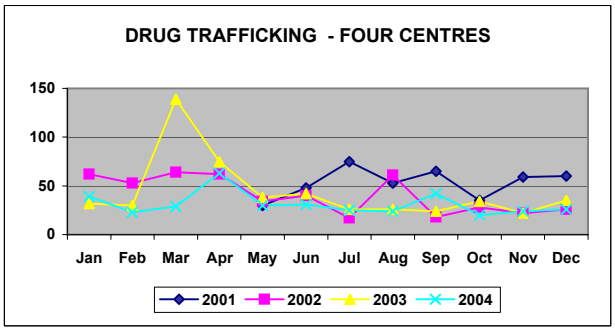


TABLE 3.3d CRIME STATISTICS BY TYPES BY FOUR CENTRES

Assaults & Robbery													HCC
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	AVG
2001					27	18	27	21	15	28	25	16	22.1
2002	24	21	25	18	25	14	21	11	25	31	18	25	21.5
2003	19	19	29	7	23	20	23	16	17	21	21	23	19.8
2004	18	20	22	20	11	14	12	20	15	24	18	19	17.8

Vehicle Theft													HCC
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	AVG
2001					25	15	22	3	15	15	19	10	15.5
2002	18	16	13	4	13	8	14	8	17	8	7	9	11.3
2003	5	5	3	10	7	12	10	15	18	11	8	5	9.1
2004	4	6	6	10	9	5	9	12	10	6	1	6	7.0

Assaults & Robbery													DCHC
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	AVG
2001					3	5	2	3	2	5	0	7	3.4
2002	5	3	4	4	5	6	4	2	5	5	4	5	4.3
2003	4	5	4	5	6	5	4	7	2	9	5	9	5.4
2004	9	11	6	5	13	15	10	8	8	6	6	4	8.4

Vehicle Theft													DCHC
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	AVG
2001					2	5	4	3	1	3	3	4	3.1
2002	2	0	2	2	3	5	6	1	8	6	2	5	3.5
2003	4	5	3	5	7	1	3	6	5	7	3	3	4.3
2004	3	2	3	5	5	7	4	1	3	4	3	4	3.7

Assaults & Robbery													PCHC
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	AVG
2001					14	15	14	13	13	11	7	9	12.0
2002	10	9	16	13	13	12	10	15	11	12	14	20	12.9
2003	10	11	13	15	11	11	4	6	11	6	10	9	9.8
2004	8	10	17	28	11	8	9	15	12	8	17	9	12.7

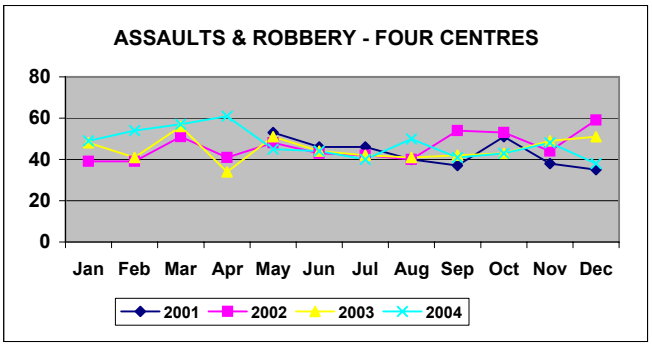
Vehicle Theft													PCHC
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	AVG
2001					14	20	23	24	32	24	18	13	21.0
2002	25	19	17	13	14	15	20	21	12	15	7	12	15.8
2003	13	6	9	11	14	12	18	14	18	15	13	6	12.4
2004	7	12	17	15	5	5	7	6	8	4	7	5	8.2

Assaults & Robbery													LSC
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	AVG
2001					9	8	3	3	7	7	6	3	5.8
2002	0	6	6	6	5	11	7	12	13	5	8	9	7.3
2003	15	6	10	7	11	8	11	12	12	7	13	10	10.2
2004	14	13	12	8	10	7	9	7	6	5	7	6	8.7

Vehicle Theft													LSC
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	AVG
2001					7	6	5	4	3	7	4	4	5.0
2002	1	2	0	1	4	2	6	6	5	6	3	4	3.3
2003	3	3	2	3	5	4	2	6	2	2	2	1	2.9
2004	4	2	2	4	5	2	5	0	2	4	0	3	2.8

Assaults & Robbery													Four Centres
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	AVG
2001					53	46	46	40	37	51	38	35	43.3
2002	39	39	51	41	48	43	42	40	54	53	44	59	46.1
2003	48	41	56	34	51	44	42	41	42	43	49	51	45.2
2004	49	54	57	61	45	44	40	50	41	43	48	38	47.5

Vehicle Theft													Four Centres
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	AVG
2001					48	46	54	34	51	49	44	31	44.6
2002	46	37	32	20	34	30	46	36	42	35	19	30	33.9
2003	25	19	17	29	33	29	33	41	43	35	26	15	28.8
2004	18	22	28	34	24	19	25	19	23	18	11	18	21.6



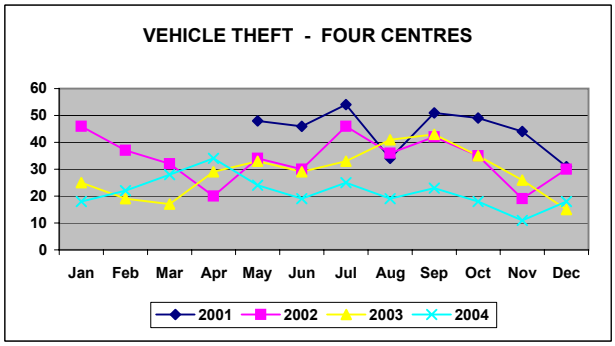
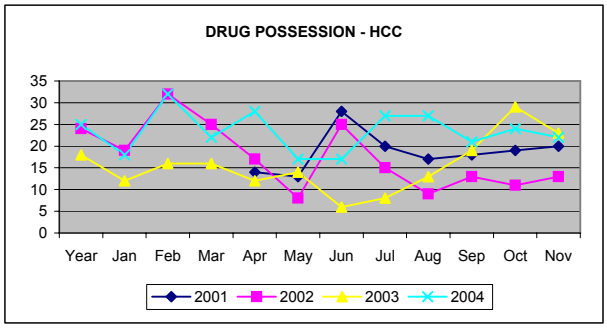
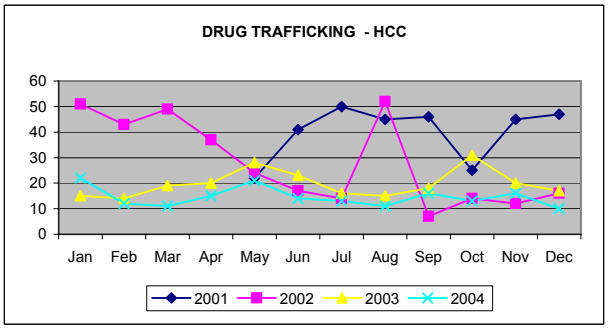
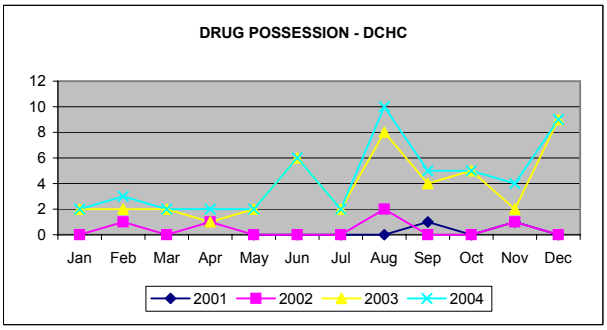
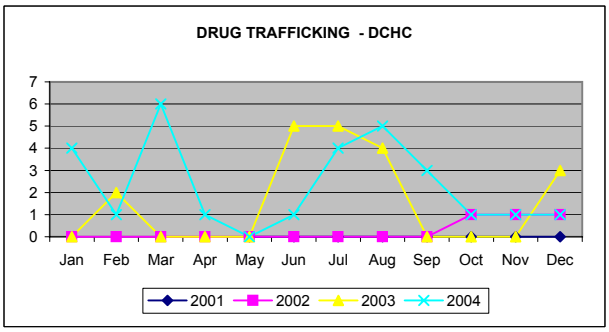


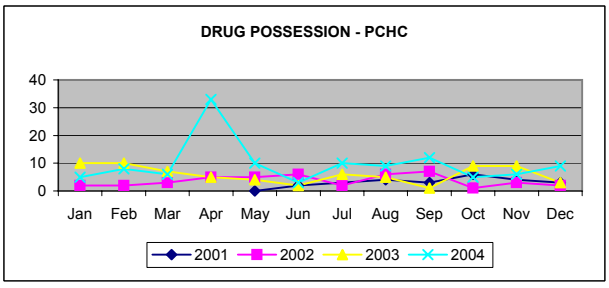
FIGURE 3.3c. CRIME STATISTICS BY TYPES BY FIVE COMMUNITIES

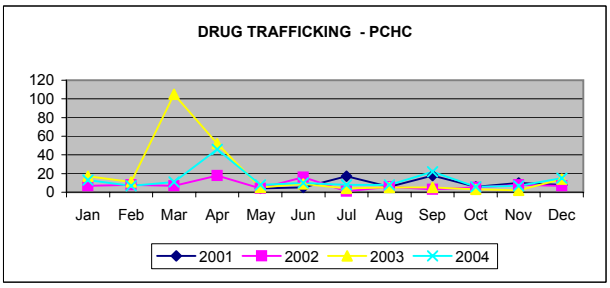


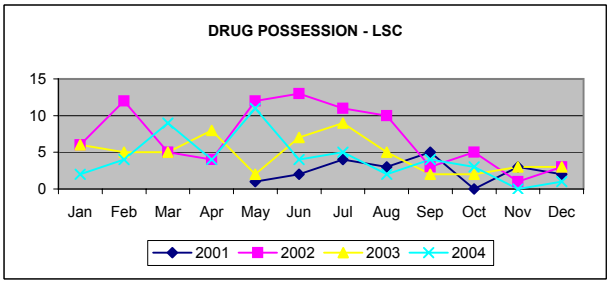












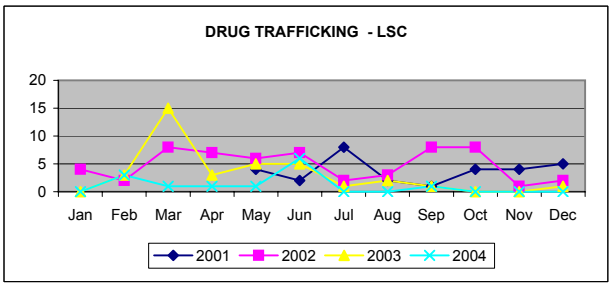
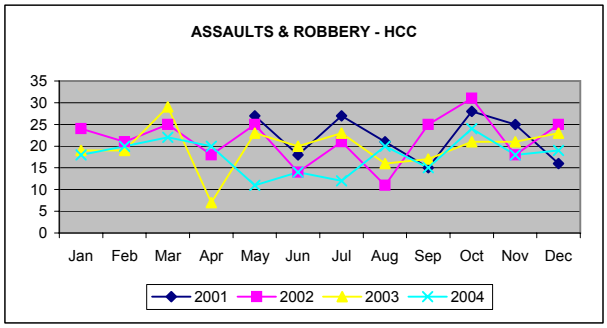
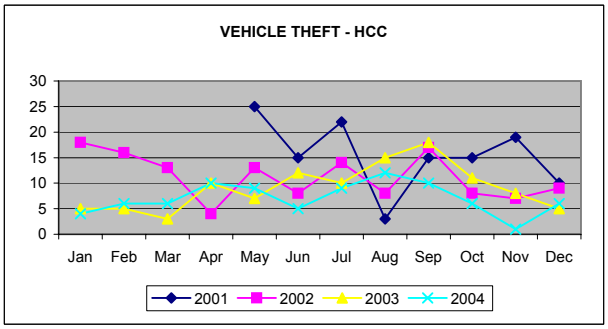
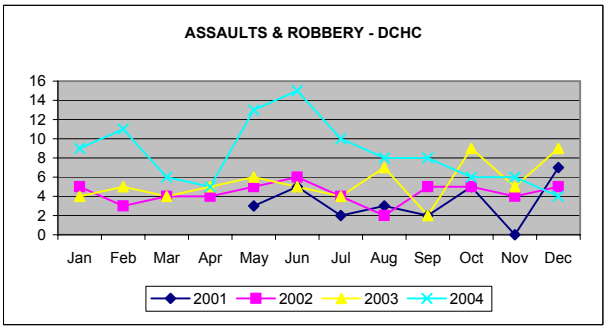
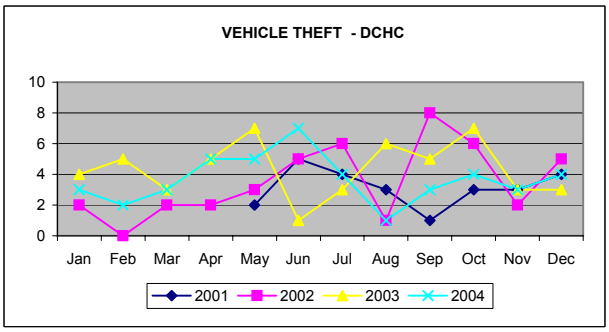


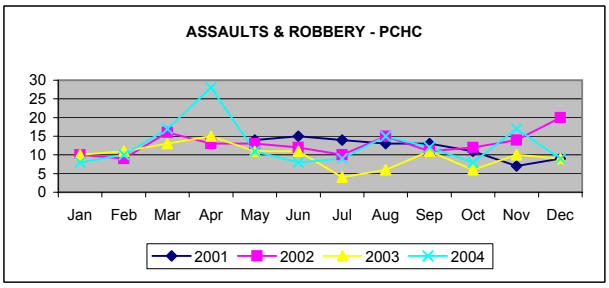
FIGURE 3.3d. CRIME STATISTICS BY TYPES BY FIVE COMMUNITIES

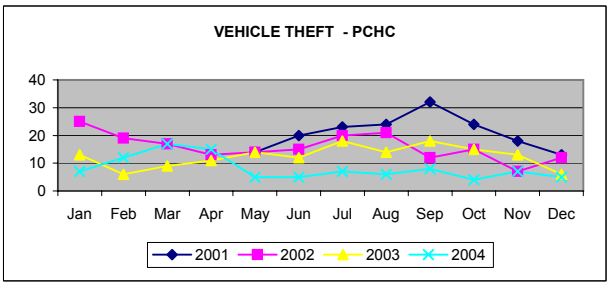


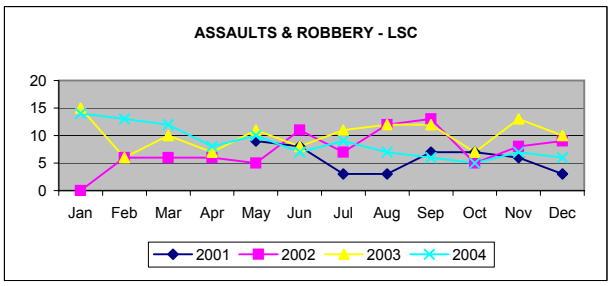












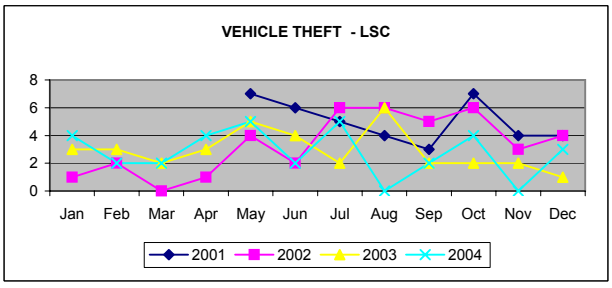


TABLE 3.4a. BASIC INCOME ASSISTANCE RECIPIENTS AS A PERCENT OF POPULATION

CHINATOWN

	Age 19-64						Age 19-24						Age 25-54						Age 55-64					
Year	Popn	Q1	Q2	Q3	Q4	AVG	Popn	Q1	Q2	Q3	Q4	AVG	Popn	Q1	Q2	Q3	Q4	AVG	Popn	Q1	Q2	Q3	Q4	AVG
2001	1,956	18.1	17.0	16.7	17.5	17.3	86	20.2	16.5	17.4	19.0	18.3	1,555	19.5	18.8	18.4	19.2	19.0	315	10.7	8.5	8.2	8.8	9.1
2002	1,966	17.4	17.4	14.8	14.9	16.1	86	19.9	19.4	14.4	n.a.	17.9	1,550	19.2	19.4	16.3	16.7	17.9	330	8.5	7.8	7.4	n.a.	7.9
2003	1,970	14.4	14.0	10.1	8.5	11.8	85	8.9	n.a.	9.4	9.4	9.2	1,552	15.9	15.9	11.1	9.5	13.1	333	8.9	n.a.	5.1	3.6	5.9

DTES

	Age 19-64						Age 19-24						Age 25-54						Age 55-64					
Year	Popn	Q1	Q2	Q3	Q4	AVG	Popn	Q1	Q2	Q3	Q4	AVG	Popn	Q1	Q2	Q3	Q4	AVG	Popn	Q1	Q2	Q3	Q4	AVG
2001	3,580	48.2	48.7	47.2	47.6	47.9	142	51.7	51.6	53.4	55.0	52.9	2,732	51.2	51.9	50.2	50.4	50.9	706	35.9	35.9	34.2	35.4	35.4
2002	3,600	46.1	43.4	40.9	41.3	42.9	142	44.1	38.8	26.7	30.5	35.0	2,717	49.8	46.5	44.0	44.3	46.2	741	32.8	32.9	32.4	32.4	32.6
2003	3,604	41.9	41.8	31.5	29.0	36.1	141	31.7	39.0	40.4	49.6	40.2	2,710	45.5	45.0	36.5	33.0	40.0	753	30.9	30.6	12.2	10.5	21.1

GASTOWN

	Age 19-64						Age 19-24						Age 25-54						Age 55-64					
Year	Popn	Q1	Q2	Q3	Q4	AVG	Popn	Q1	Q2	Q3	Q4	AVG	Popn	Q1	Q2	Q3	Q4	AVG	Popn	Q1	Q2	Q3	Q4	AVG
2001	696	52.3	50.0	48.0	53.6	51.0	39	69.4	63.0	33.7	56.9	55.8	564	55.1	53.0	52.8	57.2	54.5	93	28.1	26.024	24.9	30.1	27.7
2002	701	54.7	50.0	47.1	49.5	50.3	40	60.9	43.0	30.8	n.a.	44.9	564	57.7	54.0	49.4	52.2	53.3	97	35.1	29.9	37.3	n.a.	34.1
2003	702	53.3	47.0	30.9	32.9	41.0	40	63.0	n.a.	32.5	35.0	43.5	563	55.9	49.8	33.0	34.8	43.4	99	34.4	n.a.	18.2	21.4	24.7

STRATHCONA

	Age 19-64						Age 19-24						Age 25-54						Age 55-64					
Year	Popn	Q1	Q2	Q3	Q4	AVG	Popn	Q1	Q2	Q3	Q4	AVG	Popn	Q1	Q2	Q3	Q4	AVG	Popn	Q1	Q2	Q3	Q4	AVG
2001	3,517	18.8	18.4	17.8	17.5	18.1	332	13.3	14.6	10.7	10.8	12.4	2,621	19.5	19.3	18.7	18.5	19.0	564	18.4	16.4	17.5	18.0	17.6
2002	3,526	17.3	16.2	14.8	14.1	15.6	335	11.3	10.7	10.1	7.7	10.0	2,611	18.4	16.9	15.3	14.6	16.3	580	15.9	16.4	15.5	15.3	15.8
2003	3,524	14.1	13.5	8.7	6.9	10.8	334	7.3	6.0	5.4	4.5	5.8	2,606	14.8	14.4	9.6	7.8	11.7	584	14.6	13.8	6.7	4.6	9.9

VICTORY SQUARE

	Age 19-64						Age 19-24						Age 25-54						Age 55-64					
Year	Popn	Q1	Q2	Q3	Q4	AVG	Popn	Q1	Q2	Q3	Q4	AVG	Popn	Q1	Q2	Q3	Q4	AVG	Popn	Q1	Q2	Q3	Q4	AVG
2001	1,484	32.7	34.5	33.4	35.0	33.9	40	89.1	100.0	91.5	100.0	95.2	1,226	32.9	34.9	33.3	34.8	34.0	218	20.9	19.9	23.4	23.0	21.8
2002	1,496	35.3	30.1	30.8	32.3	32.1	41	100.0	73.9	63.3	74.2	77.9	1,223	35.8	29.9	31.1	32.4	32.3	232	20.8	23.3	23.8	24.2	23.0
2003	1,496	33.8	32.2	20.1	17.4	25.9	42	65.4	76.5	59.2	49.8	62.7	1,221	34.2	32.4	20.6	18.2	26.4	233	25.5	23.3	10.7	7.3	16.7

FIVE COMMUNITIES

	Age 19-64						Age 19-24						Age 25-54						Age 55-64					
Year	Popn	Q1	Q2	Q3	Q4	AVG	Popn	Q1	Q2	Q3	Q4	AVG	Popn	Q1	Q2	Q3	Q4	AVG	Popn	Q1	Q2	Q3	Q4	AVG
2001	11,233	32.0	31.9	30.9	31.7	31.6	639	31.0	31.6	27.6	30.6	30.2	8,698	33.7	33.8	32.8	33.5	33.5	1,896	24.4	23.2	23.2	23.0	23.5
2002	11,290	31.2	29.0	27.3	27.5	28.8	645	28.7	24.1	19.1	18.6	22.6	8,652	30.0	29.1	21.3	19.2	24.9	1,980	22.5	22.6	22.5	22.7	22.6
2003	11,296	28.1	27.2	19.1	17.2	22.9	642	20.2	20.1	18.9	19.9	19.8	8,652	45.5	45.0	36.5	33.0	40.0	2,002	22.0	21.1	9.5	7.8	15.1

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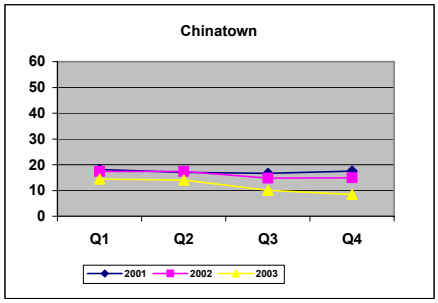
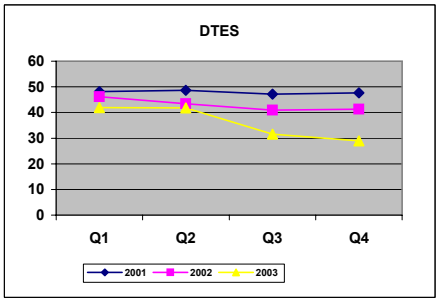
	Age 19-64						Age 19-24						Age 25-54						Age 55-64					
Year	Popn	Q1	Q2	Q3	Q4	AVG	Popn	Q1	Q2	Q3	Q4	AVG	Popn	Q1	Q2	Q3	Q4	AVG	Popn	Q1	Q2	Q3	Q4	AVG
2001	36,186	17.6	17.4	16.6	16.8	17.1	2,797	18.2	18.1	16.4	17.5	17.6	28,775	17.9	17.7	16.9	17.0	17.4	4,614	15.7	15.2	15.0	15.2	15.3
2002	36,438	16.6	15.1	14.2	14.1	15.0	2,827	18.4	14.8	12.5	12.1	14.5	28,760	16.9	15.4	14.4	3.3	12.5	4,851	14.2	13.9	13.7	13.7	13.9
2003	36,493	14.1	13.6	9.7	8.8	11.6	2,825	12.0	11.3	10.1	10.5	11.0	28,742	14.5	14.4	9.6	7.8	11.6	4,926	13.2	12.6	6.0	5.1	9.2

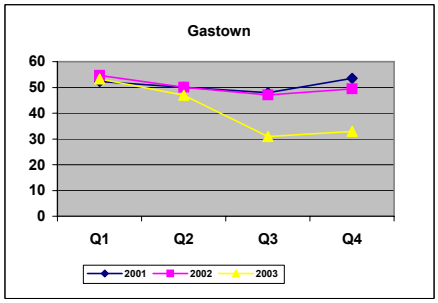
B.C. PROVINCE

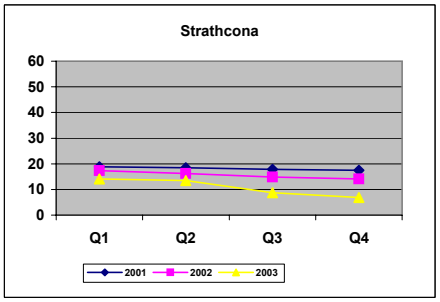
	Age 19-64						Age 19-24						Age 25-54						Age 55-64					
Year	Popn	Q1	Q2	Q3	Q4	AVG	Popn	Q1	Q2	Q3	Q4	AVG	Popn	Q1	Q2	Q3	Q4	AVG	Popn	Q1	Q2	Q3	Q4	AVG
2001	2,589,450	4.7	4.6	4.4	4.3	4.5	324,631	6.6	6.5	6.0	6.0	6.3	1,876,586	4.7	4.6	4.4	4.4	4.5	388,233	2.8	2.8	2.7	2.7	2.8
2002	2,625,493	4.2	3.6	3.2	3.0	3.5	335,020	5.7	4.5	3.8	3.3	4.3	1,877,831	4.4	3.7	3.3	3.1	3.6	412,642	2.6	2.4	2.2	2.2	2.4
2003	2,658,591	2.8	2.6	1.0	1.8	2.1	344,739	3.2	2.9	2.5	2.3	2.7	1,877,204	3.0	2.8	2.1	2.0	2.5	436,648	2.0	1.8	1.0	0.9	1.4

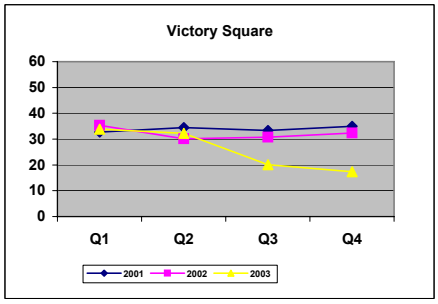
Figure 3.4a BASIC INCOME ASSISTANCE FOR RECIPIENTS AGE=19-64 AS A PERCENT OF POPULATION

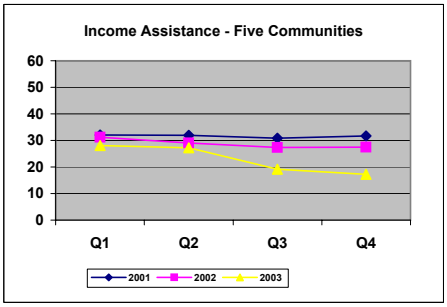


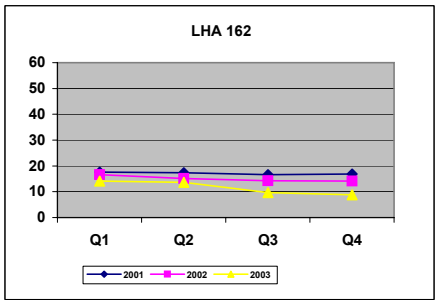












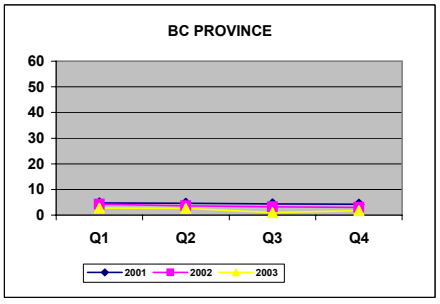


TABLE 3.4b EMPLOYMENT INSURANCE RECIPIENTS AS A PERCENT OF POPULATION

CHINATOWN

	Age 19-64						Age 19-24						Age 25-54						Age 55-64					
Year	Popn	Q1	Q2	Q3	Q4	AVG	Popn	Q1	Q2	Q3	Q4	AVG	Popn	Q1	Q2	Q3	Q4	AVG	Popn	Q1	Q2	Q3	Q4	AVG
2001	1,956	0.9	1.2	1.2	1.3	1.2	86	n.a.	n.a.	n.a.	n.a.	n.a.	1,555	1.2	1.4	1.4	1.6	1.4	315	n.a.	n.a.	n.a.	n.a.	n.a.
2002	1,966	1.5	1.7	1.6	1.9	1.7	86	n.a.	n.a.	n.a.	n.a.	n.a.	1,550	1.7	2.0	1.7	2.1	1.9	330	n.a.	n.a.	n.a.	n.a.	n.a.
2003	1,970	1.6	1.4	1.1	1.3	1.4	85	n.a.	n.a.	n.a.	n.a.	n.a.	1,552	1.9	1.7	1.2	1.4	1.6	333	n.a.	n.a.	n.a.	n.a.	n.a.

DTES

	Age 19-64						Age 19-24						Age 25-54						Age 55-64					
Year	Popn	Q1	Q2	Q3	Q4	AVG	Popn	Q1	Q2	Q3	Q4	AVG	Popn	Q1	Q2	Q3	Q4	AVG	Popn	Q1	Q2	Q3	Q4	AVG
2001	3,580	2.8	2.4	2.2	2.7	2.5	142	n.a.	n.a.	n.a.	n.a.	n.a.	2,732	3.1	2.8	2.4	3.0	2.8	706	n.a.	n.a.	n.a.	n.a.	n.a.
2002	3,600	2.2	2.4	2.3	2.4	2.3	142	3.5	3.5	n.a.	n.a.	3.5	2,717	2.5	2.6	2.4	2.6	2.5	741	1.1	1.5	n.a.	n.a.	1.3
2003	3,604	2.2	2.3	1.9	2.5	2.2	141	4.3	n.a.	n.a.	3.5	3.9	2,710	2.3	2.5	2.1	2.8	2.4	753	1.6	n.a.	n.a.	1.3	1.5

GASTOWN

	Age 19-64						Age 19-24						Age 25-54						Age 55-64					
Year	Popn	Q1	Q2	Q3	Q4	AVG	Popn	Q1	Q2	Q3	Q4	AVG	Popn	Q1	Q2	Q3	Q4	AVG	Popn	Q1	Q2	Q3	Q4	AVG
2001	696	2.0	3.7	3.0	3.3	3.0	39	n.a.	n.a.	n.a.	n.a.	n.a.	564	1.8	3.5	3.4	3.7	3.1	93	n.a.	n.a.	n.a.	n.a.	n.a.
2002	701	3.3	3.4	4.3	4.0	3.8	40	n.a.	n.a.	n.a.	n.a.	n.a.	564	3.0	2.8	4.3	3.7	3.5	97	n.a.	n.a.	n.a.	n.a.	n.a.
2003	702	5.0	3.7	3.6	4.3	4.2	40	n.a.	n.a.	n.a.	n.a.	n.a.	563	5.0	3.0	3.4	4.4	4.0	99	n.a.	n.a.	n.a.	n.a.	n.a.

STRATHCONA

	Age 19-64						Age 19-24						Age 25-54						Age 55-64					
Year	Popn	Q1	Q2	Q3	Q4	AVG	Popn	Q1	Q2	Q3	Q4	AVG	Popn	Q1	Q2	Q3	Q4	AVG	Popn	Q1	Q2	Q3	Q4	AVG
2001	3,517	3.8	3.6	3.0	4.4	3.7	332	1.5	n.a.	n.a.	1.8	1.7	2,621	4.5	4.0	3.4	5.3	4.3	564	2.0	n.a.	n.a.	1.6	1.8
2002	3,526	4.8	4.5	3.6	4.3	4.3	335	2.1	3.0	1.8	3.0	2.5	2,611	5.9	5.2	4.2	5.0	5.1	580	1.9	2.2	1.9	1.7	1.9
2003	3,524	4.5	4.3	3.4	3.9	4.0	334	3.3	1.8	2.4	3.0	2.6	2,606	5.0	4.9	3.7	4.1	4.4	584	3.1	n.a.	n.a.	n.a.	3.1

VICTORY SQUARE

	Age 19-64						Age 19-24						Age 25-54						Age 55-64					
Year	Popn	Q1	Q2	Q3	Q4	AVG	Popn	Q1	Q2	Q3	Q4	AVG	Popn	Q1	Q2	Q3	Q4	AVG	Popn	Q1	Q2	Q3	Q4	AVG
2001	1,484	0.7	1.1	1.6	1.8	1.3	40	n.a.	n.a.	n.a.	n.a.	n.a.	1,226	0.8	1.2	1.7	1.6	1.3	218	n.a.	n.a.	n.a.	n.a.	n.a.
2002	1,496	2.1	1.9	1.3	1.5	1.7	41	n.a.	n.a.	n.a.	n.a.	n.a.	1,223	2.1	2.1	1.4	1.4	1.8	232	n.a.	n.a.	n.a.	n.a.	n.a.
2003	1,496	1.5	1.5	1.5	1.6	1.5	42	n.a.	n.a.	n.a.	n.a.	n.a.	1,221	3.1	3.0	2.4	2.8	2.8	233	n.a.	n.a.	n.a.	n.a.	n.a.

FIVE COMMUNITIES

	Age 19-64						Age 19-24						Age 25-54						Age 55-64					
Year	Popn	Q1	Q2	Q3	Q4	AVG	Popn	Q1	Q2	Q3	Q4	AVG	Popn	Q1	Q2	Q3	Q4	AVG	Popn	Q1	Q2	Q3	Q4	AVG
2001	11,233	2.5	2.5	2.2	2.9	2.5	639	1.9	1.6	1.7	2.5	1.9	8,698	2.8	2.7	2.5	3.3	2.8	1,896	1.2	1.6	1.2	1.2	1.3
2002	11,290	3.0	2.9	2.6	2.9	2.9	645	2.8	3.4	2.6	3.3	3.0	8,652	3.4	3.2	2.8	3.1	3.1	1,980	1.4	1.5	1.6	1.5	1.5
2003	11,296	2.9	2.8	2.3	2.7	2.7	642	3.6	2.2	2.8	3.0	2.9	8,652	3.1	3.0	2.4	2.8	2.8	2,002	1.9	1.9	1.3	2.1	1.8

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	Age 19-64						Age 19-24						Age 25-54						Age 55-64					
Year	Popn	Q1	Q2	Q3	Q4	AVG	Popn	Q1	Q2	Q3	Q4	AVG	Popn	Q1	Q2	Q3	Q4	AVG	Popn	Q1	Q2	Q3	Q4	AVG
2001	36,186	2.9	3.0	3.0	3.7	3.2	2,797	2.4	2.6	2.6	3.5	2.8	28,775	3.1	2.8	2.4	3.0	2.8	4,614	1.8	2.1	1.7	2.1	1.9
2002	36,438	3.8	3.4	3.0	3.6	3.5	2,827	3.4	2.7	2.0	3.0	2.8	28,760	4.1	3.7	3.4	3.9	3.8	4,851	2.1	2.0	1.8	2.1	2.0
2003	36,493	3.6	3.2	3.0	3.6	3.4	2,825	3.1	2.3	2.7	3.2	2.8	28,742	3.8	3.6	3.2	3.9	3.6	4,926	2.5	1.8	1.7	2.2	2.1

B.C. PROVINCE

	Age 19-64						Age 19-24						Age 25-54						Age 55-64					
Year	Popn	Q1	Q2	Q3	Q4	AVG	Popn	Q1	Q2	Q3	Q4	AVG	Popn	Q1	Q2	Q3	Q4	AVG	Popn	Q1	Q2	Q3	Q4	AVG
2001	2,589,450	3.4	2.8	2.8	4.1	3.3	324,631	3.3	2.6	2.5	3.8	3.1	1,876,586	4.7	4.6	4.4	4.4	4.5	388,233	2.2	1.6	1.4	2.5	1.9
2002	2,625,493	4.2	3.4	3.0	3.9	3.6	335,020	3.9	3.0	2.6	3.4	3.2	1,877,831	4.7	3.8	3.4	4.3	4.1	412,642	2.5	1.8	1.5	2.5	2.1
2003	2,658,591	3.9	3.4	3.1	3.9	3.6	344,739	3.5	2.9	2.7	3.4	3.1	1,877,204	4.3	3.8	3.6	4.3	4.0	436,648	2.4	1.9	1.6	2.6	2.1

Figure 3.4b EMPLOYMENT INSURANCE FOR RECIPIENTS AGE=19-64 AS A PERCENT OF POPULATION