Illicit Drug Use Among Students in The Cayman Islands: CISDUS Findings 1998 - 2006

Simon C. Miller
Angela Paglia-Boak
Edward M. Adlaf

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1.0 INTRODUCTION & METHOD

In this report we describe the extent and patterns of illicit drug use, excluding ganja, in 2006 among students in grades 7 to 12 in the Cayman Islands, and any changes since 1998. The findings are based on the 2006 cycle of the *Cayman Islands Student Drug Use Survey* (CISDUS 2006). Previous survey cycles were conducted in 1998, 2000, and 2002. Therefore, we are able to present data on changes in tobacco use that have occurred over the past 8 years (1998-2006).

This report is one of a series of focused CISDUS reports published by the National Drug Council (NDC) regarding substance use among Cayman Islands students. Readers should also be aware of the NDC's short "CISDUS Briefs," which provide highlights of selected CISDUS findings.

Surveys such as CISDUS contribute to a better understanding of both current and changing rates of substance use. Although the survey is based on a core set of questions in each cycle, changes have been made to reflect contemporary public health issues.

Survey Design

The CISDUS employs a census (i.e., a 100% sample) of students enrolled in grades 7-12. In 2006, 2,480 students in the twelve private and public schools were asked to complete anonymous, self-administered questionnaires between February 6th and 10th. Also, 2187, 2186, and 1946 students were interviewed in 2002, 2000 and 1998 respectively. (Please see the Appendix for the details about the procedure and questionnaire).

Although sample surveys are preferable for collecting data in large populations, there are several advantages to complete surveys when the population is small, as is the case for the Cayman Islands school population. First, public acceptance and compliance is often enhanced in complete surveys. In turn, this also strengthens political acceptance and credibility, especially in new research endeavors. Second, data analysis is less complicated because calculation of sampling error is irrelevant. Third, survey administration is easier. And fourth, complete surveys provide the maximum numbers required to study subgroup differences. In sum, complete surveys can increase reliability of collected data and public acceptance of it.

Sample Participation and Characteristics

All twelve middle and high schools in the Cayman Islands participated in the 1998, 2000, 2002 and 2006 surveys. Of the 2,945 enrolled students, 2,480 completed questionnaires in 2006; 2,187 completed questionnaires in 2002; 2,186 completed questionnaires in 2000 and 1,946 completed questionnaires in 1998. Student participation rates were 84% in 2006, 88% in 2002, 94% in 2000 and 86% in 1998, which is comparable to or exceeds other large-scale surveys conducted elsewhere (e.g., Ontario Student Drug Use Survey, 77%; U.S. Monitoring The Future survey, 85%).

As seen in Table 1, the major characteristics of the sample did not change significantly between 1998 and 2006. In sum, the high response rate and comparability between samples suggests a representative sample.

Table 1. Sample Characteristics, CISDUS 1998-2006

	1998		2000		2002		2006	
	Number Interviewed	%	Number Interviewed	%	Number Interviewed	%	Number Interviewed	%
Total	1946		2186		2187		2480	
Male	952	**48.9**	1063	**48.9**	1036	**48.5**	1228	**49.7**
Female	982	**50.5**	1111	**51.1**	1148	**51.5**	1242	**50.3**
Grade 7	359	**18.4**	409	**18.7**	429	**19.6**	427	**17.3**
Grade 8	376	**19.3**	378	**17.3**	420	**19.2**	432	**17.5**
Grade 9	329	**16.9**	361	**16.5**	340	**15.5**	452	**18.3**
Grade 10	349	**17.9**	372	**17.0**	368	**16.8**	438	**17.8**
Grade 11	300	**15.4**	369	**16.9**	321	**14.7**	405	**16.4**
Grade 12	228	**11.7**	297	**13.6**	309	**14.1**	313	**12.7**
West Bay	422	**21.7**	524	**24.1**	505	**23.1**	562	**22.8**
George Town	866	**44.5**	941	**43.3**	886	**42.9**	990	**40.2**
Bodden Town	390	**20.**	423	**19.5**	481	**20.6**	562	**22.8**
East End	71	**3.6**	79	**3.6**	79	**3.7**	99	**4.0**
North Side	76	**3.9**	77	**3.5**	75	**3.6**	84	**3.4**
Cayman Brac	110	**5.7**	127	**5.8**	140	**6.0**	168	**6.8**

Notes: sex-year difference: $X^2(3df)=2.6$, p=.46; grade-year difference: $X^2(15df)=23.6$, p=.07; district-year difference: $X^2(15df)=21.9$, p=.11.

Data Analysis, Interpretation and Presentation

Because the survey is based on a complete sample (i.e., a census) there is no sampling error attached to estimates (although estimates still have error based on non-sampling error such as mis-reporting). Thus, the calculation of confidence intervals is inappropriate. Although these data are population derived, there are still important reasons to perform inferential statistical analysis. First, a complete census can be regarded as a sample because it is subject to observational error (rates of tobacco smoking could vary slightly if the census was replicated the following day) and it has a population limited in time and space. Second, random sampling is not a prerequisite for drawing statistical inference. For example, if we were to find numerical differences in drug use among districts, we still need to rule out the possibility of chance processes in generating the differences. Consequently, in this report we employ statistical tests, primarily the chi-square (χ^2) test, to ensure that differences are not due to chance processes. We report a difference as statistically significant if the probability is at the .05 level or lower.

In order to analyze changes in substance use across time, we employ logit models that allow us to assess the overall change across the four survey cycles (1998, 2000, 2002, 2006). In addition, we assess the two most relevant point comparisons: (1) we compare the two most recent surveys (i.e., 2006 vs 2002), and (2) we compare the most recent survey (2006) and the first survey in 1998. In addition, to test for differential change according to sex, grade, or district, we assess the year-by-sex, year-by-grade, and year-by-district interactions.

Readers should note the following important points regarding the data analyses in this report, or any survey report: (1) Since there is still the element of chance findings, the element of non-sampling errors (such as mis-reporting), we cannot treat all absolute differences in percentages as meaningful and important; and (2) small percentages are more unreliable than larger percentages.

2.0 RESULTS

OVERVIEW OF ILLICIT DRUG USE, 2006

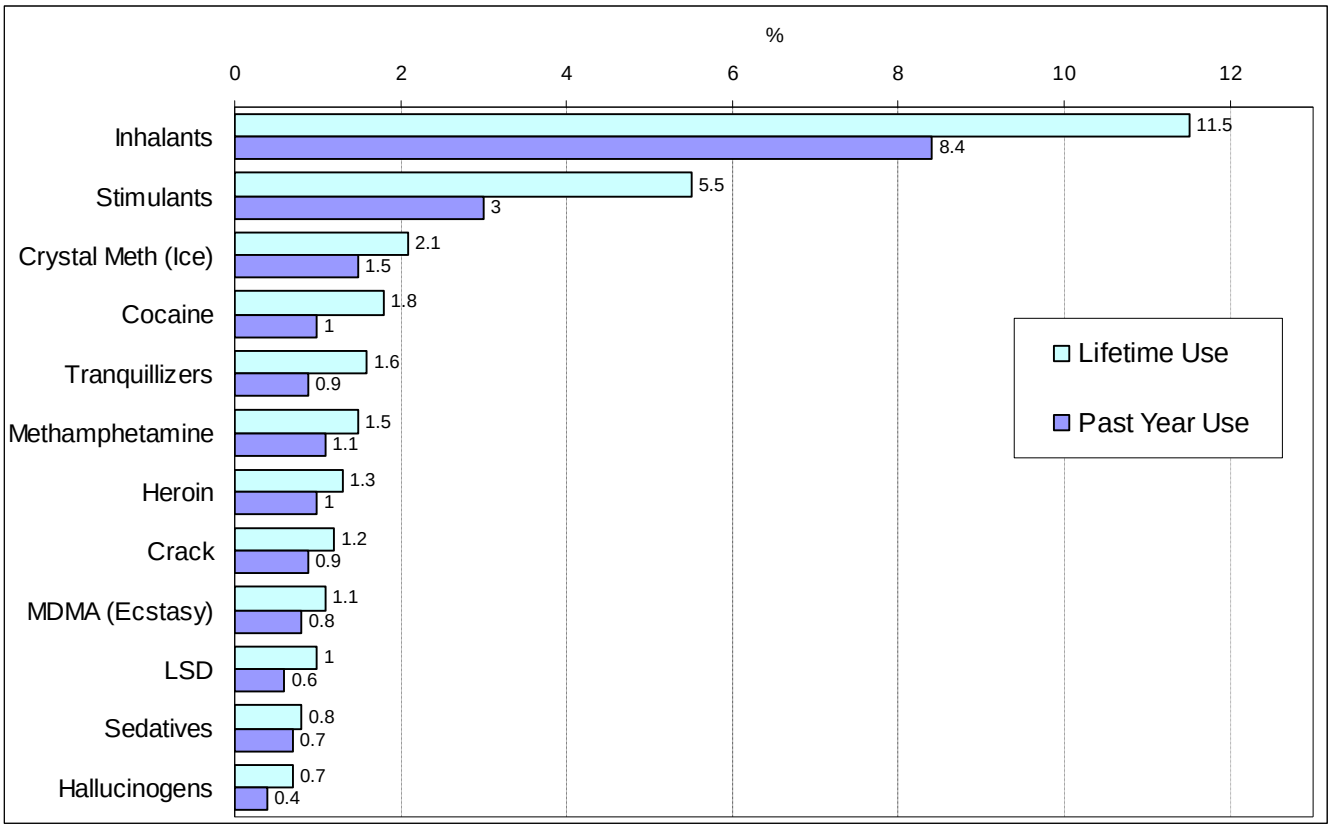
Lifetime Drug Use

Among the twelve drugs presented in Figure 1, inhalants (glue and other solvents) are the most commonly used, with just over one-in-ten (11.5%) students reporting use at least once in their lifetime. Stimulants are the next most common drug, with 5.5% ever using. The lifetime prevalence rates for the remaining drugs are 2% or less.

Past Year Drug Use

As shown in Figure 1, the pattern of past year prevalence rates for the twelve drugs parallels that of lifetime use. Inhalants are the most commonly used drugs in 2006, with 8.4% of students reporting use at least once during the past year, followed by stimulants (3.0%). The 2006 past year use rates for the remaining drugs do not exceed 2%.

Figure 1. Percentage of Students in Grades 7 to 12 Reporting Lifetime and Past Year Use of Various Drugs, 2006 CISDUS (N=2,480)



Notes: "lifetime use" refers to ever using the drug at least once; "past year use" refers to use of the drug at least once during the 12 months before the survey; inhalants include glue and other solvents, such as nail polish remover.

INHALANT USE

Past Year Inhalant Use, 2006

Overall, 8.4% of students used inhalants in the past year. There is no significant difference between males (7.7%) and females (9.2%). There is significant grade variation, as use declines with grade, from a high of 14.7% among 7th-graders to a low of 2.6% among 12th-graders. Despite some variation, there is no significant district effect.

Trends in Past Year Inhalant Use, 1998-2006

As shown in Table 2, inhalant use in 2006 (8.4%) is significantly higher than the rate found in 1998 (6.2%), but statistically similar to that found in 2002 (6.9%).

- **Sex:** Inhalant use did not significantly change over time among males. Females, however, showed a significant increase in use in 2006 (9.2%) compared to 2002 (6.4%) and 1998 (5.9%).
- **Grade:** Only 7th-graders showed a change in use, significantly increasing between 1998 (6.8%) and 2006 (14.7%). There was no change between 2002 and 2006 for any grade.
- **District:** Students in George Town showed a significant increase in inhalant use between 1998 (5.7%) and 2006 (8.1%). Similarly, inhalant use among Bodden Town students increased between 1998 (5.2%) and 2006 (9.5). No other district showed a significant change since 1998, and none of the districts showed a change between 2002 and 2006.

Table 2. Trends in Past Year Inhalant Use (%) by Sex, Grade, and District, 1998-2006 CISDUS

	(N=)	1998 (1920)	2000 (2153)	2002 (2173)	2006 (2452)		Overall Change 1998 to 2006	Comparing 2006 vs 2002	Comparing 2006 vs 1998
Total		6.2	6.1	6.9	8.4		**	ns	**
Sex	**Male**	6.6	6.5	7.6	7.7		ns	ns	ns
	Female	5.9	5.7	6.4	9.2		**	*	**
Grade	**7**	6.8	11.4	12.0	14.7		**	ns	***
	8	8.1	8.1	8.9	10.9		ns	ns	ns
	9	8.5	5.9	6.2	9.2		ns	ns	ns
	10	4.6	4.1	5.5	7.1		ns	ns	ns
	11	5.4	3.0	4.4	4.5		ns	ns	ns
	12	2.3	3.4	2.6	2.6		ns	ns	ns
District	**West Bay**	6.1	5.0	6.2	6.5		ns	ns	ns
	George Town	5.7	6.3	7.6	8.1		ns	ns	*
	Bodden Town	5.2	6.5	7.3	9.5		ns	ns	*
	East End	4.3	14.3	6.3	11.2		ns	ns	ns
	North Side	6.7	1.3	2.8	7.1		ns	ns	ns
	Cayman Brac	15.5	6.3	7.9	12.6		ns	ns	ns

Notes: (1) * p<.05; ** p<.01; *** p<.001; ns=not significant; (2) sex*year interaction=ns, grade*year interaction=ns, district*year interaction=ns.

Question: "In the last 12 months, how often did you sniff glue or solvents (for example, air plane glue, contact cement, nail polish remover, acetone, paints, gasoline, etc) in order to get high?"

Past Month Inhalant Use, 2006

Overall, 4.6% of students used inhalants during the 4 weeks before the 2006 survey (see Figure 2). Females are significantly more likely than males to be past month users (6.4% vs 2.8%, respectively). Past month inhalant use significantly declines with grade, from a high of 7.6% of 7th-graders to a low of 1.6% of 12th-graders. There is no significant district effect.

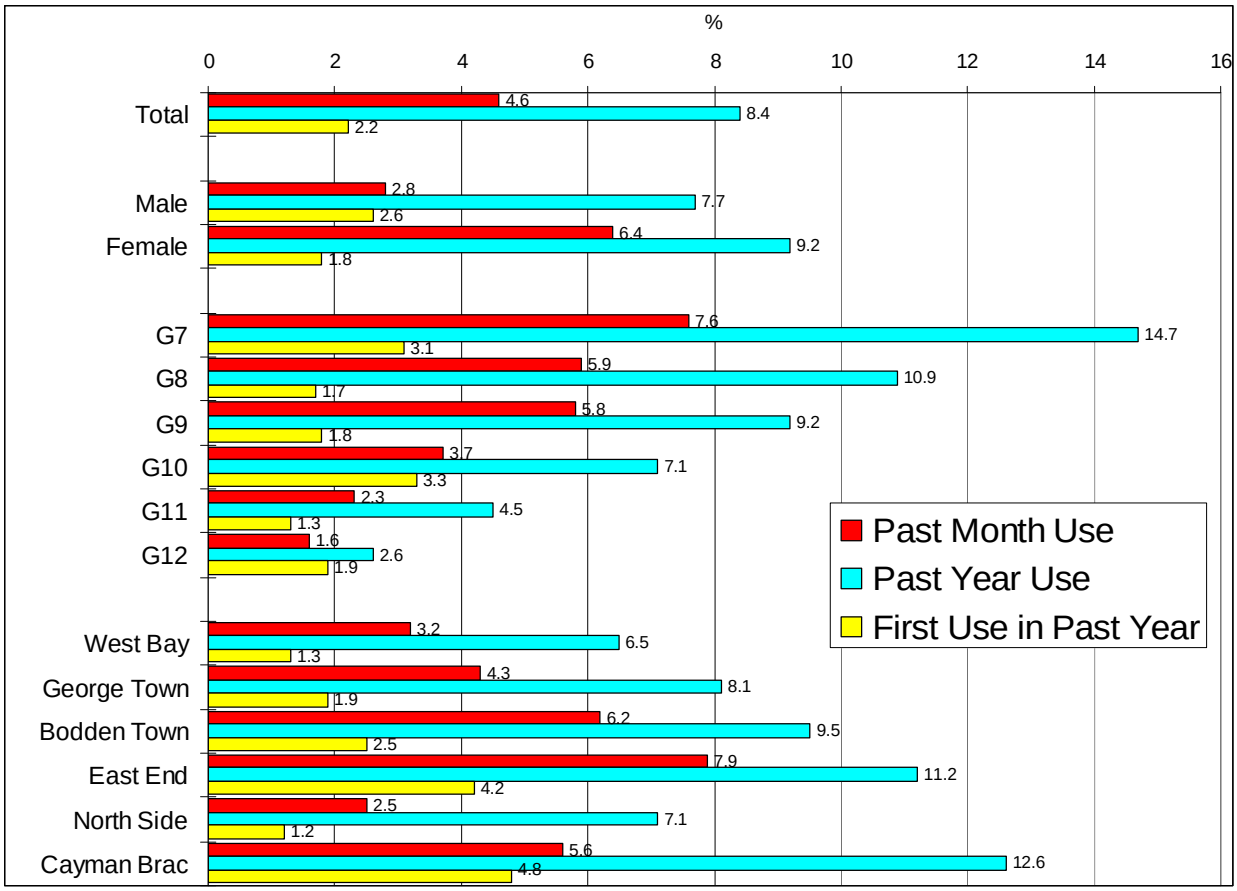
Among those using inhalants in the past month (N=111), the majority (69.4%) used once or twice, 15.3% used 3 to 5 times, and the remaining 15.3% used 6 or more times.

New Inhalant Users and Early Onset of Use, 2006

In 2006, 2.2% of students reported using inhalants for the very first time during the 12 months before the survey (see Figure 2). There is no significant difference between males and females regarding new inhalant users (2.6% vs 1.8%, respectively). Despite some variation among the grades, and among the districts, these differences are not statistically significant.

"Early" age of inhalant use onset is defined here as first using an inhalant (glue or other solvents) between the **ages of 6 and 10**. In 2006, about 43.1% of lifetime inhalant users (N=123) in all grades reported early onset. The average age onset among all students reporting ever using an inhalant was 11.0 years.

Figure 2. Percentage of Students Reporting Past Month and Past Year Use of Inhalants, and First Use During the Past Year, 2006 CISDUS (N=2,480)



ANY ILLICIT DRUG USE (EXCLUDING INHALANTS & GANJA)

In this section, we examine the past year prevalence of any illicit drug use, excluding inhalants and ganja. Because of their low rates (i.e., under 3%), reports of the use of the following eleven drugs were combined to create a composite indicator: sedatives, heroin, methamphetamine, crystallized methamphetamine ("Ice"), stimulants, tranquillizers, LSD, other hallucinogens, cocaine, crack, and MDMA ("Ecstasy").

Any Illicit Drug Use (excluding Inhalants & Ganja), 2006

Overall, 6.9% of students used any illicit drug, excluding ganja, at least once in the 12 months before the survey (see Table 3). There is no significant difference between males (6.8%) and females (7.8%). Despite some variation among the grades, and among the districts, these differences were not statistically significant.

Trends in Any Illicit Drug Use (excluding Inhalants & Ganja), 1998-2006

Illicit drug use, excluding ganja, among all students in 2006 (6.9%) does not differ from the rate found in 1998 (6.2%) or in 2002 (6.6%; see Table 3).

- **Sex:** Use of any illicit drug, excluding ganja, did not significantly change over time among males of females.
- **Grade:** 7th-graders showed a significant increase in use between 1998 (5.0%) and 2006 (8.7%). 10th-graders showed a decrease between 2002 (9.8%) and 2006 (5.9%). No other grades showed a significant change in any illicit drug use between 1998 and 2006.
- **District:** Despite some fluctuation over time, no district showed a significant change in the use of any illicit drug.

Table 3. Trends in Any Illicit Drug Use, excluding Inhalants & Ganja, in the Past Year (%) by Sex, Grade, and District, 1998-2006 CISDUS

	(N=)	1998 (1946)	2000 (2186)	2002 (2187)	2006 (2480)		Overall Change 1998 to 2006	Comparing 2006 vs 2002	Comparing 2006 vs 1998
Total		6.2	5.4	6.6	6.9		ns	ns	ns
Sex	**Male**	4.9	5.5	6.4	6.8		ns	ns	ns
	Female	7.4	5.4	6.7	7.0		ns	ns	ns
Grade	**7**	5.0	4.9	5.8	8.7		ns	ns	*
	8	4.5	4.0	7.1	6.3		ns	ns	ns
	9	6.4	6.1	4.4	6.0		ns	ns	ns
	10	5.2	6.2	9.8	5.9		ns	*	ns
	11	9.0	5.7	7.5	7.2		ns	ns	ns
	12	8.8	5.7	4.5	7.3		ns	ns	ns
District	**West Bay**	4.5	4.6	7.5	6.8		ns	ns	ns
	George Town	6.8	6.0	6.0	6.5		ns	ns	ns
	Bodden Town	5.9	4.3	6.9	6.4		ns	ns	ns
	East End	5.6	6.3	10.1	14.1		ns	ns	ns
	North Side	10.5	7.8	6.7	7.1		ns	ns	ns
	Cayman Brac	5.5	5.5	5.0	7.1		ns	ns	ns

Notes: (1) * p<.05; ** p<.01; *** p<.001; ns=not significant; (2) sex*year interaction=ns, grade*year interaction=ns, district* year interaction=ns; (3) Illicit Drug Use refers to past year use of one or more of the following drugs at least once: sedatives, heroin, methamphetamine, "Ice", stimulants, tranquillizers, LSD, other hallucinogens, cocaine, crack, or "Ecstasy".

ANY ILLICIT DRUG USE (INCLUDING GANJA, EXCLUDING INHALANTS)

In this section, we examine the past year prevalence of any illicit drug use, including ganja (but excluding inhalants). Reports of the use of the following twelve drugs were combined to create a composite indicator: ganja, sedatives, heroin, methamphetamine, crystallized methamphetamine ("Ice"), stimulants, tranquillizers, LSD, other hallucinogens, cocaine, crack, and MDMA ("Ecstasy").

Any Illicit Drug Use (including Ganja), 2006

Overall, 14.4% of students used any illicit drug, including ganja, at least once in the 12 months before the survey (see Table 3). There is a significant difference between males (16.9%) and females (11.9%). Use of any illicit drug significantly increases with grade, from about 10% of grades 7 to 9 up to 23.6% of 12th-graders. Despite some variation among the districts, these differences are not statistically significant.

Trends in Illicit Drug Use (including Ganja), 1998-2006

Illicit drug use, including ganja, among all students in 2006 (14.4%) is significantly higher than the rate found in 1998 (11.2%) and 2000 (10.8%), but is similar to 2002 (13.9%; see Table 4).

- **Sex: I**llicit drug use significantly increased among males between 1998 (11.7%) and 2002 (15.8%) and remained stable in 2006 at 16.9%. No significant change occurred among females.
- **Grade:** Only 10th-graders showed a significant change in any illicit drug use, increasing between 1998 (10.9%) and 2006 (16.4%). While the remaining grades fluctuated over time, these trends were not statistically significant.
- **District:** Any illicit drug use was higher in 2006 compared to 1998 for students in George Town (14.5% vs 11.2%, respectively), Bodden Town (13.7% vs 9.2%, respectively) and East End (22.2% vs 9.9%, respectively).

Table 4. Trends in Any Illicit Drug Use, Including Ganja (excluding Inhalants), in the Past Year (%) by Sex, Grade, and District, 1998-2006 CISDUS

	(N=)	1998 (1946)	2000 (2186)	2002 (2187)	2006 (2480)		Overall Change 1998 to 2006	Comparing 2006 vs 2002	Comparing 2006 vs 1998
Total		11.2	10.8	13.9	14.4		***	ns	***
Sex	**Male**	11.7	11.1	15.8	16.9		***	ns	***
	Female	10.6	10.4	12.0	11.9		ns	ns	ns
Grade	**7**	6.1	5.4	7.0	9.6		ns	ns	ns
	8	6.9	5.6	9.8	8.6		ns	ns	ns
	9	10.0	10.0	9.4	10.4		ns	ns	ns
	10	10.9	12.6	19.6	16.4		**	ns	*
	11	19.3	14.1	21.8	20.5		ns	ns	ns
	12	17.1	19.2	18.8	23.6		ns	ns	ns
District	**West Bay**	13.0	10.1	14.7	15.1		ns	ns	ns
	George Town	11.2	11.4	13.7	14.5		ns	ns	*
	Bodden Town	9.2	9.9	14.8	13.7		*	ns	*
	East End	9.9	11.4	13.9	22.2		ns	ns	*
	North Side	13.2	13.0	12.0	11.9		ns	ns	ns
	Cayman Brac	9.1	7.8	12.1	10.1		ns	ns	ns

Notes: (1) * p<.05; ** p<.01; *** p<.001; ns=not significant; (2) sex*year interaction=ns, grade*year interaction=ns, district* year interaction=ns; (3) Illicit Drug Use refers to past year use of one or more of the following drugs at least once: ganja, sedatives, heroin, methamphetamine, "Ice", stimulants, tranquillizers, LSD, other hallucinogens, cocaine, crack, or "Ecstasy".

INJECTION DRUG USE

The CISDUS asked students "In the last 12 months, have you used any illegal drug by injection or needles?" In 2006, 1.3% of students reported that they had used an illegal drug by injection. Males are more likely than females to report injecting a drug (2.0% vs 0.7%, respectively). There are no significant differences among the grades, or among the districts (data not presented).

The percentage of students that report injecting an illegal drug has not changed over time: 1.1% in 1998; 1.4% in 2000; 1.6% in 2002, and 1.3% in 2006.

NEW ILLICIT DRUG USERS

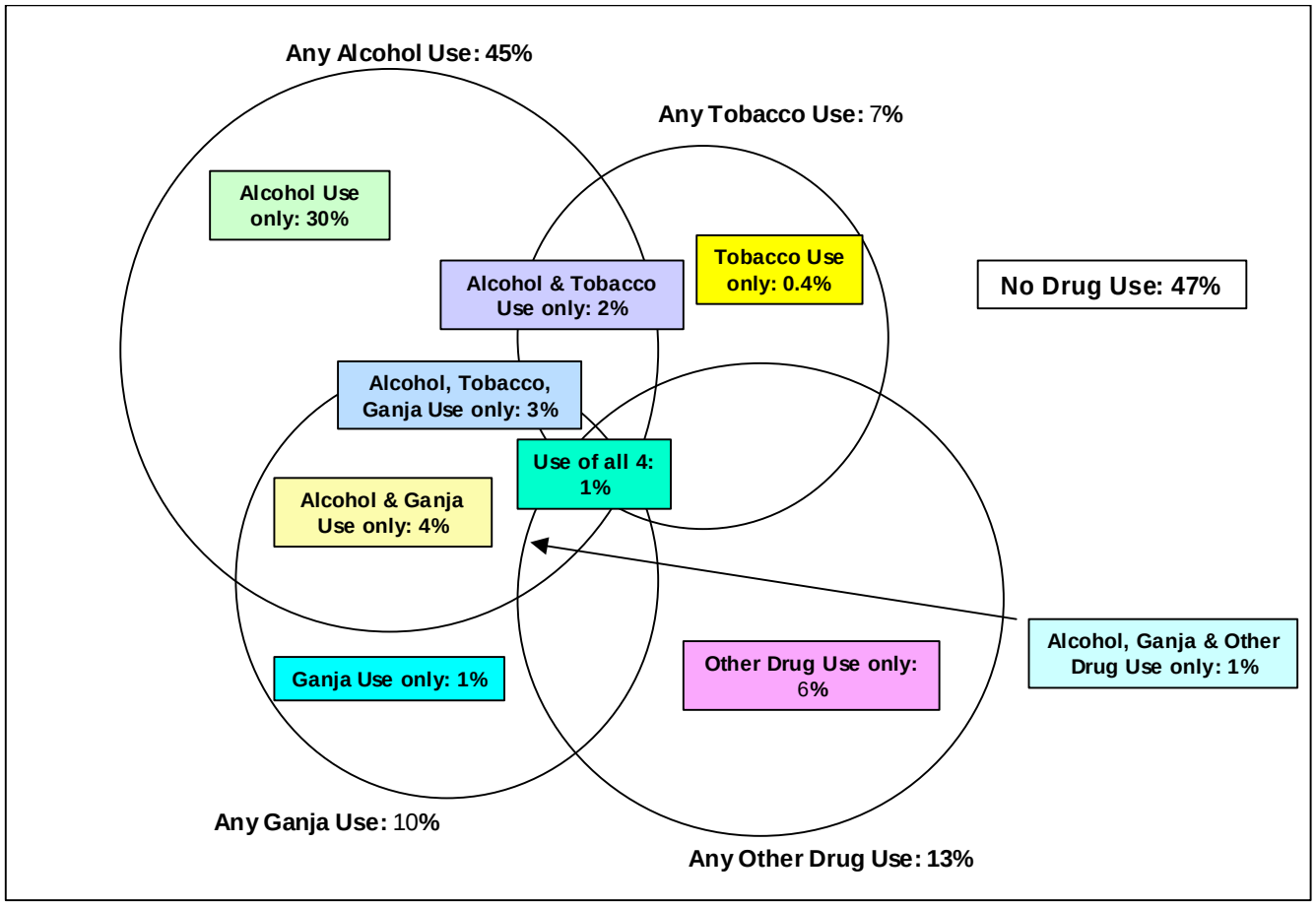
"New Drug Users" refers to those students who report using an illicit drug (other than ganja) for the first time during the past 12 months. In 2006, 0.8% of students in grades 7 to 12 used an illicit drug for the very first time during the past year. There is no significant difference between males (1.0%) and females (0.6%). Due to the small number, further breakdown by grade and district subgroups is not presented.

The percentage of students that became new drug users 2006 (0.8%) is similar to that found in past survey cycles (1.1% in 1998; 0.8% in 2000, 1.0% in 2002).

SUBSTANCE USE PATTERNS

Figure 3 presents the most common patterns of substance use among all students in 2006, while Table 5 presents more detailed patterns between 1998 and 2006. As seen in Figure 3, almost half (47%) of students report using no substance at all in 2006. About one-third (30%) use only alcohol. Very few students use only tobacco (less than 1%) or only ganja (about 1%). About 6% use another drug exclusively. (Further analysis in Table 5 shows that about 3% use inhalants exclusively, and 1.7% use another illicit drug exclusively.)

Figure 3. The Overlap of Alcohol, Tobacco, Ganja, and Other Drug Use During the Past Year, 2006 CISDUS (Grades 7 to 12, N=2,480)



Note: "Other Drug Use" refers to use of at least one of 12 drugs: inhalants, sedatives, heroin, methamphetamine, crystal methamphetamine ("Ice"), stimulants, tranquillizers, LSD, other hallucinogens, cocaine, crack, or "ecstasy"

Some trends are evident from Table 5. The most dominant change in patterns of use over time is the decline in "no substance use" that occurred between 2002 (54.7%) and 2006 (47.2%). The percentage of students that restrict their use to alcohol only increased during that same period, from 25.0% in 2002 to 30.3% in 2006.

Compared to 1998, the percentage of students in 2006 that report using only alcohol and tobacco decreased, from 3.1% to 1.7%. Further, there was an increase in the percentage of students that restrict their use to only alcohol and ganja between 1998 (1.6%) and 2006 (3.9%).

Table 5. Substance Use Patterns (%) in the Past Year, 1998-2006 CISDUS

	1998	**2000**	**2002**	**2006**
(N=)	(1901)	(2107)	(2158)	(2422)
No Substance Used in the Past Year	54.4	56.3	54.7	47.2
Alcohol only	26.5	26.4	25.0	30.3
Tobacco only	0.5	0.2	0.1	0.4
Alcohol + Tobacco only	3.1	2.0	1.6	1.7
Ganja only	0.5	0.7	0.9	0.6
Alcohol + Ganja only	1.6	2.4	3.0	3.9
Tobacco + Ganja only	0.2	0.3	0.2	0.2
Alcohol + Tobacco + Ganja only	2.3	1.8	2.4	2.5
Inhalants only	2.1	2.6	3.3	3.1
Alcohol + Inhalants only	1.7	1.5	1.3	2.6
Other Illicit Drugs only	1.9	1.4	1.8	1.7
Alcohol + Other Illicit Drugs only	1.4	1.2	1.6	1.6
Other Patterns Not Listed	3.8	3.2	4.1	4.2
	(100%)	(100%)	(100%)	(100%)

Notes: (1) substances are not necessarily used in combination with each other (i.e., on the same occasion);
(2) "other illicit drug" use refers to use of one or more of the following: sedatives, heroin, methamphetamine, crystal methamphetamine ("Ice"), stimulants, tranquillizers, LSD, other hallucinogens, cocaine, crack, or MDMA ("Ecstasy");
(3) test for year change in "no substance used": $X^2(3df)=45.5$, $p<.001$.

POTENTIAL DRUG USE PROBLEM

The CISDUS contains four questions to assess the extent of a potential drug use problem among the student population. The four questions are: (1) "Are you always able to stop using drugs when you want to?"; (2) "Have you gone to anyone for help for a drug problem?"; (3) "Have you had blackouts or flashbacks due to your drug use?", and (4) "Have you had any medical problems as a result of your drug use?" Experiencing two or more of these four symptoms is used here as an indicator of a potential drug use problem.

Drug Use Problem, 2006

Few Cayman Island students report symptoms of a drug use problem. As presented in Table 6, the most common symptom experienced is being unable to stop using drugs (uncontrolled use), reported by 3.4% of all students. The next most common symptom is experiencing blackouts or flashbacks (2.6%), followed by seeking help for a drug problem (1.0%), and having medial problems due to one's drug use (0.6%). Males are more likely than females to experience most of these symptoms.

Table 6. Percentage of Students Reporting Symptoms of a Potential Drug Use Problem, by Sex, 2006 CISDUS (N=2,480)

	Total	Males	Females
Symptom:			
(1) Not always able to stop using drugs when want to	3.4	4.8	2.0
(2) Gone to anyone for help for a drug problem	1.0	1.5	0.4
(3) Had blackouts for flashbacks due to drug use	2.6	3.6	1.6
(4) Had medical problems as a result of drug use	0.6	0.7	0.6

Note: significant sex difference for items #1, 2, and 3, $p<.01$.

A small percentage (1.2%) of students may have a problem with drug use in that they report experiencing at least two of the four symptoms. There is no difference between males (1.5%) and females (0.8%). Despite some vartiation, there are no signifincat differences among the grades, or among the districts (data not shown).

Drug Use Problem, 1998-2006

There has been no significant change in the percentage of students who report a potential drug use problem. The percentage was 0.8% in 1998, 0.9% in 2000, 1.0% in 2002, and 1.2% in 2006.

PERCEIVED AVAILABILITY OF COCAINE/CRACK & ECSTASY

Although rates of illicit drug use, such as cocaine, crack, and ecstasy are about 1% or lower, it is still be important to describe the contextual environment of such drugs. The CISDUS asked students how easy or difficult it would be to obtain cocaine or crack, and ecstasy if they wanted some. In this section, we present the percentage of reporting that it is "easy" or "very easy" to get these drugs.

Perveived Availablity, 2006

Overall, 8.7% of students report that it is easy to obtain cocaine or crack (see Table 7). There is no significant difference between males (9.7%) and females (7.7%). There is a significant difference among the grades, ranging from a low of 3.4% of 7th-graders up to 14.8% of 12th-graders. Despite some variation regarding cocaine availability, there is no significant district effect.

Among all students, 4.4% report that it is easy to obtain Ecstasy (see Table 8). There is a signficant difference between males (5.5%) and females (3.3%). Availability significantly increase with grade, from 1.3% of 7th-graders up to 8.2% of 12th-graders. Despite some variation, there are no significant differences among the districts regarding ease of obtaining Ecstasy.

Perceived Availability, 1998-2006

As seen in Table 7, the availability of cocaine/crack is significantly lower in 2006 (8.7%) compared to 2002 (12.4%), but is similar to that found in 1998 (10.2%).

As seen in Table 8, the availability of Ecstasy is significantly lower in 2006 (4.4%) compared to 2002 (6.5%), and compared to 2000 (6.0%).

Table 7. Trends in the Percentage of Students Reporting it is "Easy" or "Very Easy" to Get Cocaine or Crack, by Sex, Grade, and District, 1998-2006 CISDUS

	(N=)	1998 (1835)	2000 (2067)	2002 (2071)	2006 (2331)		Overall Change 1998 to 2006	Comparing 2006 vs 2002	Comparing 2006 vs 1998
Total		10.2	11.0	12.4	8.7		***	***	ns
Sex	**Male**	9.8	12.5	13.3	9.7		*	**	ns
	Female	10.8	9.6	11.7	7.7		**	***	**
Grade	**7**	3.4	3.1	3.2	3.4		ns	ns	ns
	8	6.3	4.5	7.1	4.8		ns	ns	ns
	9	6.8	9.3	9.5	6.4		ns	ns	ns
	10	11.4	12.6	16.4	11.4		ns	*	ns
	11	17.1	18.9	18.8	12.8		ns	*	ns
	12	21.7	19.2	22.6	14.8		ns	*	*
District	**West Bay**	11.5	12.1	14.7	10.0		ns	*	ns
	George Town	9.3	11.4	11.8	8.7		ns	*	ns
	Bodden Town	7.0	7.2	12.9	7.6		**	**	ns
	East End	14.1	10.0	7.2	9.4		ns	ns	ns
	North Side	17.8	13.2	8.8	7.7		ns	ns	ns
	Cayman Brac	17.9	16.1	11.7	8.2		ns	ns	*

Notes: (1) * p<.05; ** p<.01; *** p<.001; ns=not significant; (2) sex*year interaction=ns, grade*year interaction=ns, district*year interaction=.05.

Question: "How easy or difficult would it be for you to get cocaine or crack if you wanted some?"

Table 8. Trends in the Percentage of Students Reporting it is "Easy" or "Very Easy" to Get Ecstasy, by Sex, Grade, and District, 2000-2006 CISDUS

	(N=)	2000 (2078)	2002 (2081)	2006 (2339)		Overall Change 1998 to 2006	Comparing 2006 vs 2002	Comparing 2006 vs 2000
Total		6.0	6.5	4.4		**	**	*
Sex	**Male**	6.5	6.9	5.5		ns	ns	ns
	Female	5.5	6.2	3.3		**	**	*
Grade	**7**	0.6	1.3	1.3		ns	ns	ns
	8	2.5	2.8	2.2		ns	ns	ns
	9	3.5	4.8	3.6		ns	ns	ns
	10	8.7	7.9	6.1		ns	ns	ns
	11	12.5	10.1	5.7		**	*	**
	12	8.6	14.1	8.2		*	*	ns
District	**West Bay**	5.5	6.9	4.8		ns	ns	ns
	George Town	7.3	6.8	4.0		**	**	**
	Bodden Town	4.6	7.1	5.2		ns	ns	ns
	East End	4.3	1.4	2.4		ns	ns	ns
	North Side	2.7	5.9	0		ns	ns	ns
	Cayman Brac	5.7	4.3	5.7		ns	ns	ns

Notes: (1) * p<.05; ** p<.01; *** p<.001; ns=not significant; (2) sex*year interaction=ns, grade*year interaction=ns, district*year interaction=ns.

Question: "How easy or difficult would it be for you to get Ecstasy if you wanted some?"

PERCEPTIONS ABOUT COCAINE: RISK AND DISAPPROVAL

Perceived Risk

Students were asked how much risk they thought trying cocaine once or twice poses to one's health and well-being. Table 9 presents the percentage of students who report that trying cocaine is a "great risk" of harm. In 2006, about one-third (33.1%) of students believe that trying cocaine is a great risk. There is no significant difference between males (33.6%) and females (32.7%). Perception of great risk associated with trying cocaine increases with grade, from a low of about one-quarter of students in grades 7 to 9 up to about half (49%) of 12th-graders. There is no significant district variation.

Perceived risk associated with cocaine use decreased in 2006 (33.1%) compared to both the 1998 (43.4%) and 2000 (41.1%) rate, but is similar to the 2002 rate (34.6%).

Table 9. Trends in the Percentage of Students Reporting a "Great Risk" to Trying Cocaine, by Sex, Grade, and District, 1998-2006 CISDUS

	(N=)	1998 (1816)	2000 (2033)	2002 (2016)	2006 (2296)		Overall Change 1998 to 2006	Comparing 2006 vs 2002	Comparing 2006 vs 1998
Total		43.4	41.1	34.6	33.1		***	ns	***
Sex	**Male**	44.9	42.5	36.7	33.6		***	ns	***
	Female	42.1	39.9	32.7	32.7		***	ns	***
Grade	**7**	27.6	27.4	23.1	25.9		ns	ns	ns
	8	31.1	27.7	30.0	24.7		ns	ns	ns
	9	44.0	37.7	26.1	26.5		***	ns	***
	10	48.4	43.4	33.2	34.8		***	ns	***
	11	54.1	52.2	43.2	40.6		***	ns	***
	12	65.0	61.2	55.3	49.0		***	ns	***
District	**West Bay**	48.1	46.2	39.5	37.5		***	ns	***
	George Town	43.0	42.6	35.0	32.4		***	ns	***
	Bodden Town	43.4	34.2	31.7	29.8		***	ns	***
	East End	39.1	29.0	21.4	27.9		ns	ns	ns
	North Side	39.4	47.9	32.8	38.4		ns	ns	ns
	Cayman Brac	35.0	38.3	32.1	35.1		ns	ns	ns

Notes: (1) * p<.05; ** p<.01; *** p<.001; ns=not significant; (2) sex*year interaction=ns, grade*year interaction=ns, district*year interaction=ns.

Question: "How much do you think people risk harming themselves (physically or in other ways) if they try cocaine once or twice?"

Disapproval of Trying Cocaine

Students were asked how much they disapprove of someone aged 18 or older trying cocaine once or twice. Table 10 presents the percentage of students who "strongly disapprove" of this behavior. In 2006, a majority (59.7%) of students strongly disapprove of cocaine experimentation. There is no significant difference between males (60.6%) and females (59.1%). There is a significant grade difference, in that disapproval significantly decreases between 7th-grade and 9th-grade (53.9%), but then increases again up to grade 12. Despite some variation, there is no significant district effect.

Disapproval of adults trying cocaine decreased in 2006 (59.7%) compared to both the 1998 (66.6%) and 2000 (62.9%) rate, but is similar to the 2002 rate (59.3%).

Table 10. Trends in the Percentage of Students that Strongly Disapprove of Trying Cocaine, by Sex, Grade, and District, 1998-2006 CISDUS

	(N=)	1998 (1799)	2000 (2020)	2002 (1977)	2006 (2264)		Overall Change 1998 to 2006	Comparing 2006 vs 2002	Comparing 2006 vs 1998
Total		66.6	62.9	59.3	59.7		***	ns	***
Sex	**Male**	69.1	64.6	59.5	60.6		***	ns	***
	Female	64.5	61.6	59.1	59.1		*	ns	**
Grade	**7**	65.8	59.8	58.1	62.5		ns	ns	ns
	8	57.4	59.7	57.0	58.7		ns	ns	ns
	9	69.8	61.4	50.5	53.9		***	ns	***
	10	65.7	62.2	57.7	57.9		ns	ns	*
	11	68.3	63.2	60.8	62.5		ns	ns	ns
	12	79.0	72.9	72.8	64.4		**	*	***
District	**West Bay**	68.7	65.5	62.2	62.0		ns	ns	*
	George Town	65.2	62.4	58.2	56.8		***	ns	***
	Bodden Town	68.8	58.8	58.2	60.6		***	ns	**
	East End	63.1	68.2	55.2	60.0		ns	ns	ns
	North Side	60.9	61.1	60.0	61.2		ns	ns	ns
	Cayman Brac	71.4	68.4	56.8	65.6		ns	ns	ns

Notes: (1) * p<.05; ** p<.01; *** p<.001; ns=not significant; (2) sex*year interaction=ns, grade*year interaction=p<.05, district*year interaction=ns.

Question: "Do you disapprove of people (age 18 or older) trying cocaine once or twice?"

3.0 COMPARISONS WITH OTHER STUDENT SURVEYS

In this section, we compare the 2006 CISDUS drug use rates with those from similar school surveys in order to gain some perspective as to the extent of use among Cayman Islands students. Table 11 compares indicators among students in grades 8, 10 and 12 in the Cayman Islands, Ontario, Canada, and the United States. Generally, Cayman Island students in all three grades are similar in their inhalant use to students in Ontario and the US. Any illicit drug use, excluding ganja, among Cayman students in grades 10 and 12 is lower compared to their Canadian and American counterparts. Any illicit drug use, including ganja, is lower among all three grades of Cayman students compared to their counterparts.

Table 11. Substance Use for Grades 8, 10, and 12: Comparing the 2006 CISDUS, 2005 OSDUS, and 2006 MTF Survey Findings

	Grade 8			Grade 10			Grade 12		
(Past Year Use)	2006 CISDUS	2005 OSDUS	2006 MTF	2006 CISDUS	2005 OSDUS	2006 MTF	2006 CISDUS	2005 OSDUS	2006 MTF
Inhalants	**10.9**	9.3	9.1	**7.1**	5.7	6.5	**2.6**	1.6	4.5
Any Illicit Drug (no ganja)	**6.3**	7.2	7.7	**5.9**	14.2	12.7	**7.3**	17.0	19.2
Any Illicit Drug (ganja)	**8.6**	12.4	14.8	**16.4**	35.5	28.7	**23.6**	48.2	36.5

Notes: (1) OSDUS is the *Ontario Student Drug Use Survey*, which was conducted in Ontario, Canada; MTF is the *Monitoring the Future* survey, which was conducted across the USA; (2)

4.0 SUMMARY

As with all studies, there are some limitations that must be acknowledged before any discussion of results and implications can take place. Self-reported data cannot be easily verified. However, under conditions of anonymity, such as class administration, there is evidence that reports of substance use are reasonably accurate. Nevertheless, we must accept that self-reported substance use rates are underestimated to some unknown degree. Fortunately, underreporting would likely not change over time, and thus estimates of change remain valid and unbiased. The high response rate of the study has increased the validity of the results by reducing the bias due to non-responses from students present or absent from school. And finally, this study cannot be generalized to adolescents who are not attending school, for example drop-outs, street youth and adolescents in the workplace.

Table 12 summarizes some of the 2006 subgroup differences found in this report.

§ Females are more likely than males to be past-month inhalants users. Males, however, are more likely to use any illicit drug, including ganja, than females. Males are more likely to report that Ecstasy is easy to obtain.

§ Inhalant use decreases with grade, whereas any illicit drug use, including ganja, tends to increase with grade. Older grade are more likely to report cocaine/crack and Ecstasy are easy to obtain.

§ District is not a significant predictor of drug-using behavior.

Table 13 summarizes some of the trends found in this report, comparing 2006 to findings from the 2002 and the 1998 surveys, for the total sample of students as well as by subgroup. The points below reflect both encouraging findings and negative findings that should be viewed as warnings for public health professionals and those who work with adolescents.

POSITIVE FINDINGS

§ Almost half (47%) of all students do not use any substance, and another 30% restrict their use to alcohol only.

§ Any illicit drug use, excluding inhalants and ganja, has remained stable over time.

§ Injection drug use has remained low and stable over time.

§ The percentage of students who may be at risk for a drug use problem has remained low stable over time.

§ The reported availability of cocaine or crack, and of Ecstasy, has declined over time.

NEGATIVE FINDINGS

- Inhalant use is higher in 2006 compared to 1998.

- Any illicit drug use, including ganja but excluding inhalants, is higher in 2006 compared to 1998.

- The percentage of students reporting *no* substance use at all (including alcohol and tobacco) is lower in 2006 compared to all previous survey years.

- The perceive risk associated with trying cocaine has declined in 2006 compared to 1998.

- The disapproval of trying cocaine has declined in 2006 compared to 1998.

Table 12. Significant Subgroup Differences in the 2006 CISDUS (selected findings)

	Inhalant Use (past year)	Inhalant Use (past month)	New Inhalant Use	Any Illicit Drug Use (excl Ganja)	Any Illicit Drug Use (incl Ganja)	Drug Use Problem	Availability of Cocaine	Availability of Ecstasy
Males vs Females	ns	***	ns	ns	*	ns	ns	*
		F -			M -			M -
Overall Grade Effect	***	***	ns	ns	***	ns	***	***
	Decreases with grade	Decreases with grade			Increases with grade		Increases with grade	Increases with grade
Overall District Effect	ns	ns	ns	ns	ns	ns	ns	ns

Notes: overall tests of effect are based on a univariate chi-square statistic: *p<.05, **p<.01, ***p<.001, ns=non-significant.

Table 13. Significant Changes Over Time by Subgroup: 2006 vs. 2002 and 2006 vs. 1998, CISDUS (selected findings)

	Inhalant Use (past year)	Any Illicit Drug Use (excl Ganja)	Any Illicit Drug Use (incl Ganja)	Drug Use Problem	No Substance Use (past year)[§]	Availability of Cocaine	Availability of Ecstasy
Total	r		r		– s	–	– s
Males			r			–	
Females	- r					– s	– s
Grade 7	r	r					
Grade 8							
Grade 9							
Grade 10		–	r			–	
Grade 11						–	– s
Grade 12						– s	–
West Bay						–	
George Town	r		r			–	– s
Bodden Town	r		r			–	
East End			r				
North Side							
Cayman Brac						s	

Notes: (1) - – significant increase in 2006 vs. 2002, p<.05;

(2) r s significant increase or decrease in 2006 vs. 1998, p<.05 (vs. 2000 for Availability of Ecstasy);

(3) [§] "No Substance Use" trend analysis not performed by subgroup.

5.0 APPENDIX

PROCEDURES

With the Ministry of Education's approval, the National Drug Council (NDC) requested permission to survey students, grades 7 to 12, from every public and private high school in the Cayman Islands. In some schools, agreement to participate was conditional upon approval from school boards, teachers and parents. All twelve schools agreed to participate in the survey. An informational flyer was distributed to teachers and parents and students a week before the survey. Unless notified by a parental letter all students were included in the survey.

Volunteers from community service organisations and private corporations agreed to assist with the survey administration. In an effort to standardize survey administration, volunteers attended a training session, which lasted between 20-30 minutes one week prior to conducting the survey, on procedures and guidelines for conducting CISDUS. Two exceptions to these procedures occurred for special needs students with reading difficulties and for Spanish speaking students. In both of these cases, students were read the questions in small groups and recorded the answers themselves. In addition to ensure standardization of administration across islands, seven volunteers were also trained in Cayman Brac to administer the survey. All students recorded their responses directly on the questionnaire, which was then sent to the Institute for Social Research at York University, Toronto for data entry.

THE CISDUS QUESTIONNAIRE

The 2006 CISDUS questionnaire consisted of a total of 148 items presented in booklet form. Most items are in a multiple-choice response format. Students are instructed to choose one answer only, and to not put their names on the questionnaire. The average completion time for the CISDUS is about 45 minutes.

The questionnaire includes two broad areas: substance use outcomes (e.g., prevalence, frequency and consequences of use) and potential risk factors.

Substance Use:

- Lifetime and past year use of alcohol, tobacco, ganja and other drugs
- Problems related to alcohol, tobacco, ganja and other drugs
- New Users and onset of use.

Risk Factors and Correlates of Substance Use:

- Socio-demographic (e.g., sex, age, grade level)
- Family factors (e.g., family structure, parental monitoring)
- School factors (e.g., school performance and attachment)
- Environmental factors (e.g., drug availability, friends' use)
- Psychological health (e.g., self-esteem, depression).

QUESTIONNAIRE DEVELOPMENT: 1998 to 2006

The CISDUS questionnaire is based on an extensive development process, including international and national expert review, expert content review, and student debriefing pilot studies.

1. The initial development of the questionnaire in 1998 began with the evaluation of procedures and items employed by international studies including the Centre for Addiction and Mental Health's *Ontario Student Drug Use Survey*, the American *Monitoring The Future* survey and general guidelines developed by the World Health Organization. Representatives of NDC and CAMH evaluated items for cultural appropriateness and policy and informational needs.

2. National experts then assessed the content of the initial pool of items. The School Committee of the NDC reviewed and amended the questionnaire to ensure cultural and policy relevancy.

3. The questionnaire was administered to three classes (grades 7, 9 and 10) at the George Hicks High School in February 1998. (These students were re-sampled in the full survey because their pilot participation was also anonymous). The results of the pilot study were used to further revise the questionnaire, which was shortened considerably based on timing and content data.

SUBSTANCE USE MEASURES & DEFINITIONS

The CISDUS reports primarily emphasize the prevalence of substance use, i.e., the percentage of students who report using a given drug during the 12 months before the survey. It is important to note that prevalence does not imply regular, frequent or problematic use, but it is an important first-order epidemiological indicator of the size of the population that has, at minimum, tried a substance.

Primary Substance Use Measures Described in the CISDUS Reports

Cigarette Smoking	Percentage smoking more than one cigarette during the last 12 months before the survey
Alcohol Use	Percentage drinking alcohol (liquor, wine or beer) during the 12 months before the survey. Use includes drinking at special events (e.g., weddings, Christmas, etc.) and excludes those who tried a sip of alcohol
Ganja Use	Percentage using ganja (herb or marijuana) at least once during the last 12 months
Inhalant Use	Percentage inhaling glue or solvents in order to get high at least once during the last 12 months
Any Illicit Drug Use (including and excluding ganja)	Percentage reporting use of any of the following illicit drugs at least once during the last 12 months: ganja, sedatives, heroin, methamphetamine ("speed"), crystal methamphetamine ("ice"), stimulants, tranquilizers, LSD, other hallucinogens, cocaine, crack, or MDMA ("ecstasy"). A similar variable with ganja excluded is also presented.