HIV SURVEILLANCE REPORT – 2011 UPDATE

Special Preventive Programme
Centre for Health Protection
Department of Health
Hong Kong Special Administrative Region
December 2012

This report is produced and published by:

Surveillance Team
Special Preventive Programme
Centre for Health Protection
Department of Health
Hong Kong Special Administrative Region

Team members:

Dr KH WONG
Dr Raymond LEUNG
Dr Philip WONG
Ms WK CHAN
Ms SL CHENG

Correspondence:

Special Preventive Programme
c/o 2/F, Wang Tau Hom Jockey Club Clinic
200 Junction Road East
Kowloon, Hong Kong
Tel: (852) 3143 7225 Fax: (852) 2780 9580
Website: http://www.aids.gov.hk
E-mail: aids@dh.gov.hk

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PREFACE

Hong Kong, located in Asia the new burning place of HIV infection, is still having a relatively low prevalence of HIV infection. While sexual transmission is the predominant route of transmission in Hong Kong, various public health measures have kept the HIV prevalence of other routes including perinatal transmission and drug users at low level thus far locally, as compared with neighboring cities. Nevertheless, an upsurge of infection in injecting drug users is always a concern from the worldwide and regional experience on HIV and drug.

A continuous rising trend has been detected in men who have sex with men (MSM) in Hong Kong in recent years. The *HIV Surveillance Report - 2011 Update* analysed the attributes of the observed increase of HIV infections in MSM. The number of HIV reports in MSM community was still the largest amongst all at risk populations, echoing the highest HIV prevalence recorded. All these signified that the heightened risk of transmission of HIV in the MSM community still persisted.

With the expansion of community-based HIV voluntary testing services, non-governmental organisations were playing an increasing role in understanding the HIV epidemiology in most-at-risk populations. Through their service networks, many non-governmental organisations are contributing to the conduct of HIV prevalence & behavioral surveys and data collection in different at-risk populations.

This *annual surveillance report* is an initiative of Special Preventive Programme (SPP), Centre for Health Protection of the Department of Health. The report aims to provide strategic information to facilitate planning of services and intervention activities for the prevention, care and control of HIV/AIDS. Following a commentary, data collected from five main components of our surveillance programme (the HIV/AIDS voluntary reporting system, HIV prevalence surveys, Social Hygiene Service caseload statistics, risk behaviour studies and HIV-1 genotyping studies) are presented as tables and graphs. Some changes have been made in this Report to enhance its contents. First, selected findings of previous rounds of the HIV Prevalence and Behavioral Risk Survey of Men who have sex with Men (PRISM) were described. Second, the prevalence of drug resistance mutation from the HIV resistance threshold survey was added.

Electronic copy of this report is accessible in our website http://www.aids.gov.hk, so are the quarterly bulletins, factsheets on yearly situation and specific surveys, and other information relating to HIV surveillance and epidemiology. Your comments and suggestions are always welcome.

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ACKNOWLEDGEMENTS

The synthesis of this report is only made possible with the concerted efforts contributed by many people. First and foremost, we must thank our colleagues of the Social Hygiene Service, the Narcotics and Drug Administration Unit, Tuberculosis & Chest Service, Family Health Service, Surveillance and Epidemiology Branch and the Virology Division of Public Health Laboratory Services Branch who have provided the necessary data and support over the years. For data collected in the prison setting, we are indebted to the staff of the Correctional Services Department for their invaluable assistance in carrying out HIV prevalence studies on a regular basis.

Next come the many agencies including the Hong Kong Red Cross Blood Transfusion Service, the Society for the Aid and Rehabilitation of Drug Abusers, the Narcotics Division of the Security Bureau, the Department of Microbiology of the University of Hong Kong, the School of Public Health and Primary Care of the Chinese University of Hong Kong, many of our local AIDS and non-AIDS non-governmental organisations and various public hospitals/clinics, in particular Queen Elizabeth Hospital, Prince of Wales Hospital and Princess Margaret Hospital, which have helped collect and update the relevant statistics referred by this report. We also take this opportunity to thank all doctors, health care professionals and related workers who have contributed to HIV/AIDS reporting and other surveillance components.

Finally, this update would not have been possible without the usual excellent support from the SPP staff in terms of collecting, collating, compiling and analyzing the information as well as the editing and production of this report.

ABBREVIATION

ACTS	AIDS Counseling and Testing Service
ADI	AIDS Defining Illness
AIDS	Acquired Immune Deficiency Syndrome
AC	AIDS Concern
AIMSS	Asia Internet MSM Sex Survey
CDC	Centers for Disease Control and Prevention
CRiSP	Community based Risk behavioral and SeroPrevalence survey for female sex workers
CD4	Cluster of Differentiation (CD) 4 molecule
CHOICE	Community Health Organisation for Intervention, Care and Empowerment
CRDA	Central Registry of Drug Abuse
CHP	Centre for Health Protection
CRF	Circulating Recombinant Form
CRPA	Community Research Programme on AIDS
DH	Department of Health
DRS-M	Drug Rehabilitation Services – Methadone clinics
DRS-S	Drug Rehabilitation Services – ShekKwuChau Treatment and Rehabilitation Centre
ELISA	Enzyme-linked Immunosorbent Assay
F	Female
HE	Heterosexual
HAART	Highly Active Antiretroviral Therapy
HIV	Human Immunodeficiency Virus
IDU	Injecting Drug User
ITC	Integrated Treatment Centre
MUT	Methadone Universal HIV Antibody (Urine) Testing
M	Male
MSM	Men who have Sex with Men
NSGI	Non-specific Genital Infection
NGU	Non-gonococcal Urethritis
PCP	Pneumocystis Pneumonia
PCR	Polymerase Chain Reaction
PRiSM	HIV Prevalence and Risk behavioral Survey of Men who have sex with men
SADRA	The Society for the Aid and Rehabilitation of Drug Abusers
SKC	ShekKwuChau Treatment and Rehabilitation Centre
STI	Sexually Transmitted Infection
SPP	Special Preventive Programme
SHS	Social Hygiene Service
SAS	Street Addict Survey
TB	Tuberculosis
ul	microliter
UN	Unknown

1. SUMMARY REVIEW

Background

1. The HIV surveillance system in Hong Kong comprises 5 main programmes to provide a detailed description of the local HIV/AIDS situation. They are (a) voluntary HIV/AIDS case-based reporting; (b) HIV prevalence surveys; (c) sexually transmitted infections (STI) caseload statistics; (d) behavioral studies; and (e) HIV-1 genotyping studies. The data is collected, analyzed and disseminated regularly by the surveillance team of Special Preventive Programme (SPP), Centre for Health Protection (CHP), Department of Health (DH). At present, the latest HIV/AIDS statistics are released at quarterly intervals at press media briefings and in electronic format (http://www.aids.gov.hk). Data from various sources are compiled annually and released in this report.

2. The following paragraphs highlight the main findings from HIV/AIDS surveillance activities undertaken in 2011 and before. Please refer to the following pages for the details of the programmes. Surveillance information gathered from two large public health universal HIV testing programmes, targeting drug users at methadone clinics and expectant mothers via antenatal testing programme is also included in the report.

HIV/AIDS reporting system

3. The Department of Health has implemented a voluntary anonymous HIV/AIDS reporting system since 1984. The system receives reports from doctors and laboratories. Doctors report newly diagnosed positive cases by a standard form (DH2293) which was lately revised in March 2010. In the past, only cases with Western Blot confirmed HIV antibody positive laboratory result were counted as HIV infection for cases aged above 18 months. Since the 4th quarter of 2006, cases with a PCR positive result and clinical or laboratory indication of recent infections were also counted as HIV infection in the reporting system, in view of the increasing regular detection of such cases.

HIV Surveillance at a glance (2011)

- 438 HIV reports and 82 AIDS reports
- Gender: 78.5% male
- Ethnicity:67.1% Chinese
- Age: Median 37
- Risks:
  - 44.3% Homo/bisexual contact
  - 26.7% Heterosexual contact
  - 3.2% Injecting drug use
  - 0.5% Blood transfusion
  - 0% Perinatal
  - 25.3% Undetermined
- CD4 at reporting: Median 259/ul
- HIV-1 subtypes: commonest are CRF01_AE and B
- Primary AIDS defining illness: Commonest are PCP and TB
- HIV prevalence
  - Blood donors: <0.01%
  - Antenatal women: 0.01%
  - STI clinic attendees: 0.17%
  - Methadone clinic attendees: 0.53%
  - MSM: 4.08%

4. In 2011, DH received 438 HIV and 82 AIDS reports. The number of HIV cases in 2011 reached a record yearly high after the slight decrease in 2009 and 2010. This brought the cumulative total to 5270 and 1267 for HIV and AIDS reports respectively. (Box 2.1) Under the revised definition, 19 PCR positive cases with clinical or laboratory indication of recent infections were included as HIV infection in 2011. Public hospitals/clinics/laboratories were still the commonest source of HIV reports in 2011, which accounted for 39.7% of all. Private hospitals/clinics/laboratories were another common source of HIV reports (23.7%). The number of reports from other sources has largely remained stable. (Box 2.2)

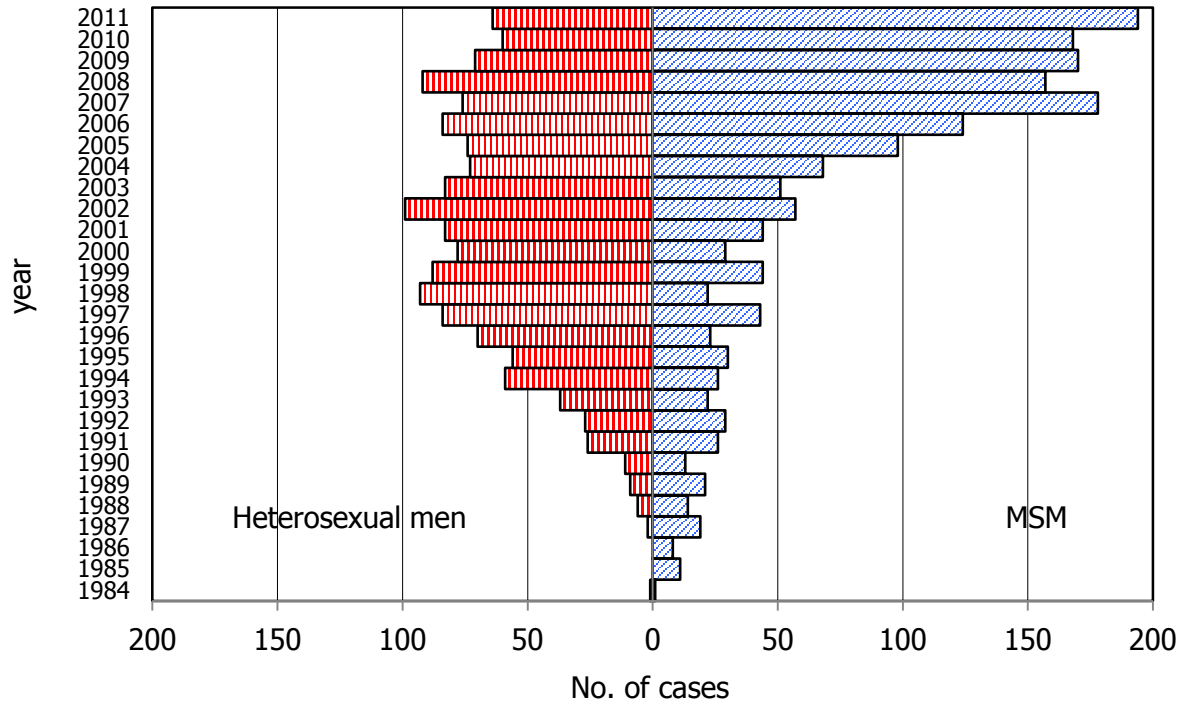
5. Around 79% of reported HIV cases were male. The male-to-female ratio was 3.7:1 in 2011, considerably higher than that in 2010 of 2.6:1, which suggested further increasing male predominance. About 67% of reported cases were Chinese. Asian non-Chinese accounted for 13.2% of reports. (Box 2.3) The median age of reported HIV cases was 37 (Box 2.4) and 20-49 was the commonest age group in both male and female cases. There was no children case with age < 13 reported in 2011. Around 71% of reported cases were believed to have acquired the virus through sexual transmission in 2011, including homosexual (40.4%), heterosexual (26.7%), and bisexual exposure (3.9%). Injecting drug use accounted for 3.2% of HIV infections in 2011. There were 2 cases of HIV transmission via blood/blood product in 2011, both cases occurred outside Hong Kong. The suspected routes of transmission were not reported in more than a quarter (25.3%) of cases. This means that, after excluding those with undetermined exposure category, sexual transmission accounted for about 95% among HIV reports with defined risks. (Box 2.5(a))

Persistent rising trend in men who have sex with men cases

6. Sexual contact remained the commonest route of HIV transmission in Hong Kong. In 2011, 71% of all reported cases were transmitted via sexual contact. Both heterosexual and homosexual/bisexual contacts were considered as the most important risk factors. In 1980s and early 1990s, the early years of HIV/AIDS epidemic in Hong Kong, it used to report more cases from men who have sex with men, who had homosexual or bisexual contacts. The trend then reversed with heterosexual transmission overtaking homosexual / bisexual transmission from 1993 onwards. Since 2004, a rising trend in MSM has been observed and the situation remained consistent in 2011 with 194 MSM cases (59.3%) identified out of 327 cases with defined risks. (Box 2.5(a)).

7. Similar to the previous few years, a high weighting of MSM in HIV reports continued in 2011. 56.4% of male HIV reports in 2011 contracted the virus through homosexual or bisexual contact. Heterosexual contact in male cases accounted for about 19%, whereas the routes of transmission were undetermined in another 22% of the male cases. The ratio of heterosexual men against MSM dropped from its peak of 4.2:1 in 1998 to 0.3:1 in 2011. (Box 1.1 and 2.7(c)) The marked disproportion with more infections among MSM than heterosexual males was evident. Similar trend of increasing AIDS cases among MSM was observed, the ratio decreased from 5.9:1 in 1998 to 0.4:1 in 2011.

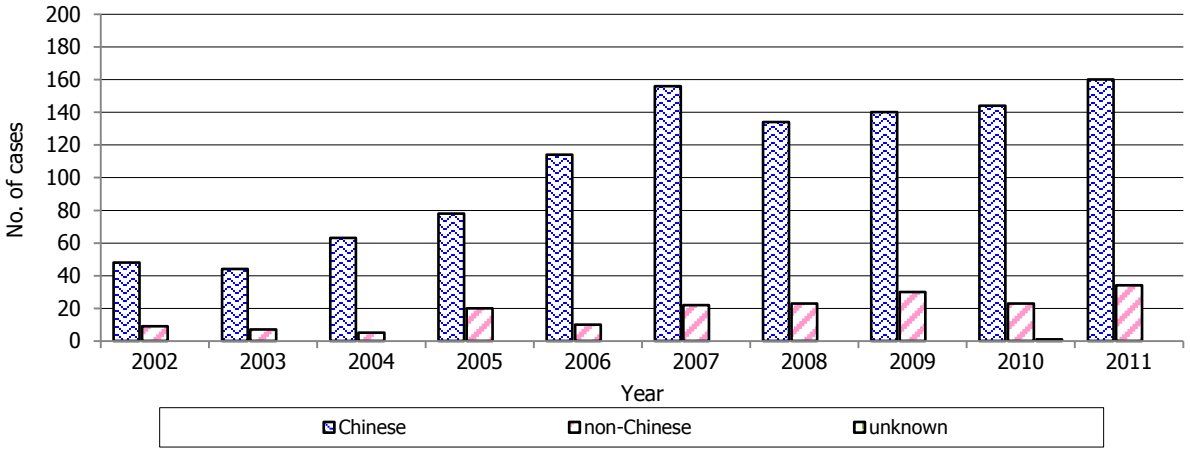
Box 1.1 The number of MSM cases has taken over heterosexual men cases in the reporting system since 2005 and the gap continued to widen.



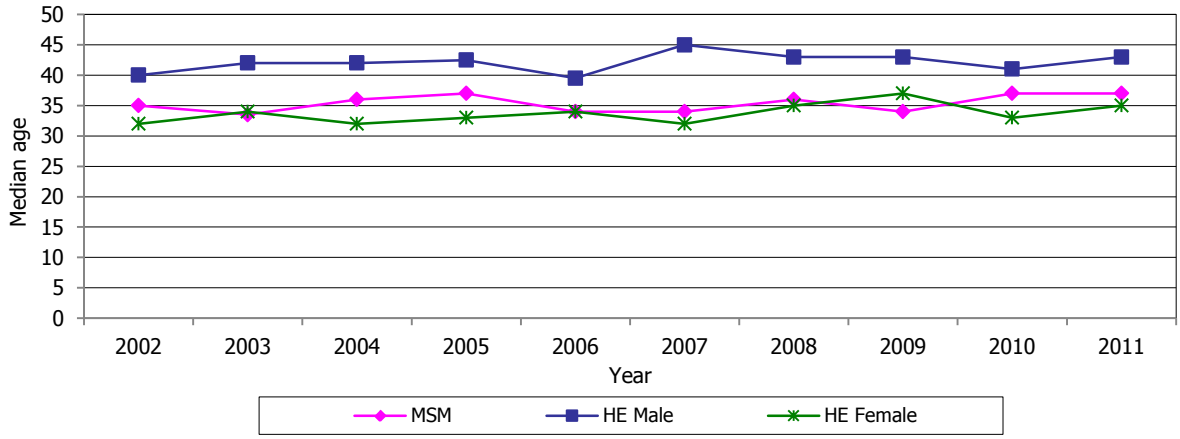
8. The major attributes of the rise in MSM were Chinese and of age group 20-49. About 82.5% of MSM cases in 2011 were Chinese. A rising trend in the number of reported Chinese MSM cases was observed in recent years despite a modest drop between 2007 and 2008. (Box 1.2) In 2011, the median age of MSM cases at report was 37, which was lower

as compared to 43 of heterosexual male cases. The median age of HIV infected MSM population, similar to that of heterosexual men, has been relatively stable in the last decade. (Box 1.3) Age group 40-49 became the commonest age group of reporting in MSM, which accounted for 28.9% in 2011, followed by 28.4% in the age group 20-29 and 27.3% in the age group 30-39. (Box 1.4) Reported data since 2006 suggested that a relatively higher proportion of MSM infections were occurred in Hong Kong, as compared to a much lower proportion of around 40% in heterosexual men. Despite that, there was a decreasing trend of MSM infection occurred locally from 74.4% in 2010 to 56.2% in 2011. (Box 1.5) On the other hand, the proportion infected in Mainland China increased from 6% in 2010 to 11.3% in 2011.

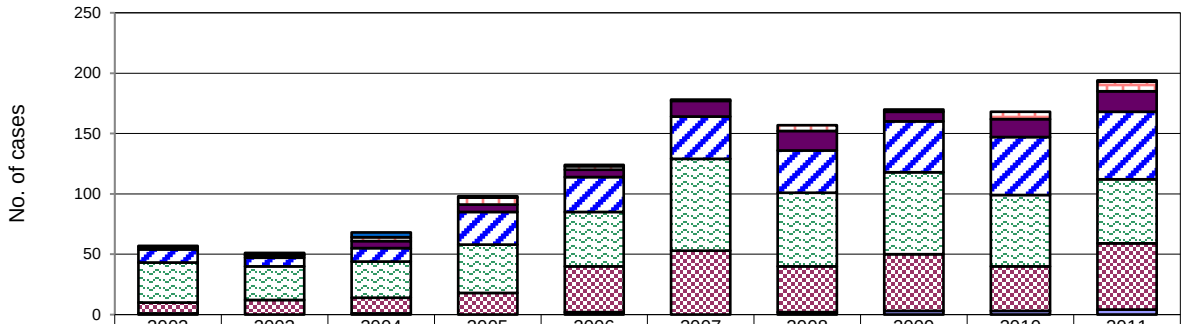
Box 1.2 Ethnicity Breakdown of HIV-infected MSM cases (2002-2011)



Box 1.3 Median HIV reporting age of HIV-infected MSM cases, heterosexual man and heterosexual women (2002-2011)



Box 1.4 Age breakdown of HIV-infected MSM cases (2002 - 2011)

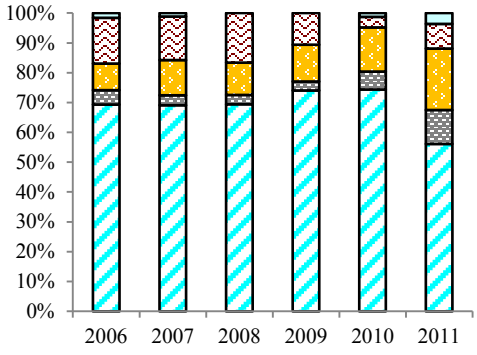


	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Unknown	0	1	4	1	1	0	0	0	0	1
>60	1	1	3	6	3	1	5	2	6	8
50-59	2	2	6	6	6	13	16	8	15	17
40-49	11	7	11	27	29	35	35	42	48	56
30-39	33	28	30	40	45	76	61	68	59	53
20-29	9	12	13	18	38	53	38	47	37	55
< 20	1	0	1	0	2	0	2	3	3	4

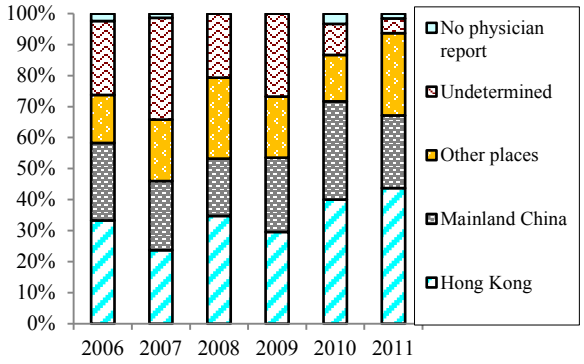
Year

Box 1.5 Suspected location of HIV cases (2006 - 2011)

(a) MSM



(b) Heterosexual men



9. Efforts have been made to gauge the HIV prevalence among MSM and their risky behaviors in Hong Kong. The third community-based survey (PRiSM) in gay saunas, bars and beaches was conducted in 2011 and it revealed that the HIV prevalence among local MSM was around 4.08%, which remained relatively stable as compared to 4.05% and 4.31% in the previous two rounds in 2006 and 2008 respectively. (Box 1.6 and Box 3.9) The level of consistent condom use increased as compared to previous rounds. In 2011, it was around 52% for regular sex partner, 80% with non-regular sex partner in Hong Kong and 84% with non-regular sex partner outside Hong Kong, which were higher than the figures in the previous two rounds. Both the ever HIV testing rate (67%) and HIV testing rate in past one year (40%) increased in 2011 round, as compared with 2008 figures (57% and 36% respectively), which might suggest an increased awareness to undergo HIV testing and even regular test in the MSM community.

10. On top of the traditional venue-based surveillance, a subproject iPRiSM which involved the conduction of the survey through internet was introduced for the first time in 2011. It

found out that the HIV prevalence was around 3.3%, as compared to a self-reported 5.5% in an on-line survey Asia Internet MSM sex survey (AIMSS) conducted in 2010.

11. AIDS Concern's voluntary HIV testing service targeting MSM was another source to estimate the HIV prevalence in MSM, although the data was affected by participant bias to a larger extent. It showed a prevalence of 1.95% in 2011 which remained relatively stable in the past few years. (Box 3.8) A rising HIV prevalence among MSM had been observed until 2004 when it appeared to remain at a level of around 2%. The pattern may be affected by the increasing norm of HIV testing among the whole MSM population, including those average or lower-risk MSM populations, but not just higher-risk MSM in the past years.

Box 1.6 **Comparison between 2006, 2008 and 2011 PRiSM results**

PRiSM results	2006 Venue-based	2008 Venue-based	2011 Venue-based	2011 internet-based
Sample Size	859	833	816	180
Adjusted HIV prevalence	4.05%	4.31%	4.08%	3.30% (Crude)
Consistent condom use in anal sex with regular sex partners	41%	45%	52%	41%
Consistent condom use in anal sex with non-regular sex partners (in HK)	73%	75%	80%	60%
Consistent condom use in anal sex with non-regular sex partners (outside HK)	NA	NA	84%	71%
Ever test for HIV	48%	57%	67%	63%
HIV test within past one year	24%	36%	40%	41%
Ever tested for STI	23%	16%	47%	54%

12. The median number of casual sex partners among MSM attending the AIDS Counseling and Testing Service (ACTS) were consistently higher than those heterosexual men. (Box 5.1) Moreover, the consistent condom use rate among MSM attending ACTS with regular partners and causal partners gradually decreased in the past few years after a peak in 2009. The rate were around 37% and 52% respectively in 2011, which was similar to the figures in the on-line survey Asia Internet MSM sex survey (AIMSS) conducted in 2010 but was lower than the findings of the PRiSM in 2011. Besides, the condom use rate from ACTS for

last anal sex with both regular partners and causal partners also decreased in 2011. In contrast, the trends derived from MSM attending AIDS Concern's testing service increased in 2011 for consistent condom use with any sex partners and remain stable for condom use for last anal sex. (Box 5.5)

The proportion of heterosexual cases continue to decrease

13. The number of heterosexual cases reported was 117 in 2011 which accounted for about one-quarter of the reported cases, and was lower than the one-third proportion in 2010. (Box 2.5(a)). The proportion of heterosexual male cases among all reported HIV cases dropped from its peak of 57% in 1994 to 14.6% in 2011, a record low figure in the period. The male to female ratio for heterosexual cases gradually decreased in the past decade from 2.1:1 in 2000 to 1.2:1 in 2011 which showed the increasing female proportion in heterosexual cases. The median age of heterosexual cases in 2011 was 39. Heterosexual male cases were mainly Chinese (78% in year 2011) whereas Chinese accounted for less than half (38% in year 2011) of female cases.

14. STI caseload statistic is an important component of the local HIV surveillance programme as the presence of STI is by itself an indicator of high risk sexual behaviors which also increase the risk of contracting HIV. More than half of Social Hygiene Clinics male attendees reported unprotected heterosexual contact from on-going behavioral surveys. Moreover, more than one third of the STI cases were without any symptoms which may delay the diagnosis. (Box 4.5). The HIV prevalence of Social Hygiene Clinic attendees remained stable in the previous few years at below 0.3% (0.17% in 2011). (Box 3.2) It continued to record a decrease in the total number of STI cases in Social Hygiene Clinics, an aggregate of 11,638 in 2011 as compared with 12,344 cases in 2010. A drop of 5.7% was observed in overall STI diagnosis. A decrease of cases was observed in all types of STI except for gonorrhea which showed an increase from 968 cases in 2010 to 1179 cases in 2011, a more than 20% increment. (Box 4.1, 4.2)

15. In 2011, the consistent condom use rate among heterosexual men attending Social Hygiene Clinics with commercial / casual partners slightly increased, i.e. at about 48% in past 3 months but a steady level was observed among those attending AIDS Counseling and Testing Service (ACTS), i.e. about 56% in past 12 months. Heterosexual men attending ACTS reported an even higher level of consistent condom usage with their commercial partners alone, i.e. 67%. (Box 5.4) Discrepancy was observed when the consistent condom use reported from client's side was compared with that from the sex worker's side. In the venue-based cross sectional survey of female sex worker (CRiSP) conducted in 2009, a much higher condom use level was revealed among female sex workers in Hong Kong, that the consistent condom use rate for vaginal/anal sex with their male clients in past week was 91% after adjustment for various types of sex workers.

HIV infection among drug users remained low but significant level of risky behaviors reported

16. In 2011, the reporting system recorded 14 cases of HIV transmission through injecting drug use, which accounted for 3.2% of all cases. The number was similar to previous 2 years but significantly smaller than the 42 cases in 2008. (Box2.5(a)) More than half of the cases were male and Chinese. (Box 2.6(a)) The median age was 35. 6 out of the 14 injecting drug user cases were reported from methadone clinics.

17. The Methadone Universal HIV Antibody (Urine) Testing Programme (MUT) launched in 2004 replaced the unlinked anonymous screening (UAS) in methadone clinics to enhance HIV surveillance as well as individual diagnosis and subsequent care of the infected. A total of 6,234 attendees participated in the programme in 2011 with a HIV testing coverage of 69%, a lower coverage rate than that of 77% in 2010. The programme tested 6,960 urine samples, with 37 positive attendees in 2011. The HIV prevalence over the years was stable at below 1%. The HIV prevalence of methadone clinic attendees in 2011 was 0.53%, which remained at a similar level as in previous years. (Box 3.3)

18. Despite the fact that HIV infection remained low among drug users in 2011 as reflected from surveillance data at methadone clinics, the potential risk of HIV upsurge among drug users cannot be neglected as a significant proportion of them were currently injecting drugs, from about 20% to 75% across different surveys. (Box 5.6) Various surveys revealed different proportions of current needle sharing among those who were current drug injectors, ranging from 1.3% to 31.3%, presumably due to the differences in the nature of samples, survey methodology as well as in the timeframe it was measuring. (Box 5.7)

Two cases of transmission via blood/blood product transfusion recorded

19. In 2011, there were 2 reported cases of HIV infection via contaminated blood or blood product transfusion outside Hong Kong. The HIV prevalence of new blood donors at Hong Kong Red Cross Blood Transfusion Service remained at a low level of 0.002% in 2011 (Box 3.1(b)).

20. In 2011, there was no perinatal transmission case reported. The Universal Antenatal HIV Testing was launched in September 2001. Over 40,000-50,000 pregnant women attending public antenatal services were tested every year and the coverage of the programme reached 98.8% in 2011 and revealed the prevalence of HIV infection in pregnant women to be 0.01%, which remained at a low level as in previous years. Six pregnant women were tested positive in the programme in 2011. (Box 3.7(b)) One woman terminated her pregnancy, while remaining four delivered their babies by Caesarean Sections, while remaining one case was without sufficient information. Of these 4 newborn babies, 3 were put on anti-retroviral chemoprophylaxis while 1 remaining case was without sufficient information. None of the babies was confirmed to have HIV infection at the time of report writing.

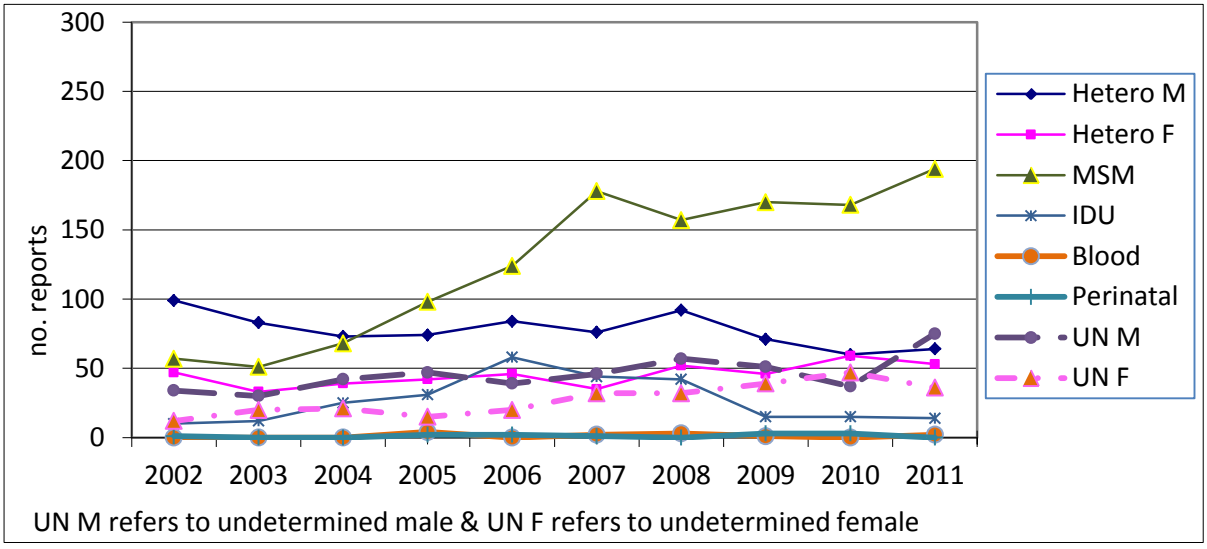
Reconstruction of cases with undetermined risk factor

21. The HIV reporting system in Hong Kong is voluntary and anonymous. The completeness of the surveillance database is largely dependent on the percentage of cases with the report form DH2293 received. Incomplete data with increasing proportion of cases reported without a risk factor may pose a risk of skewing the whole epidemic picture. In 2011, more than 25% of the cases reported did not have a suspected route of transmission reported, as compared to around 20% in 2010. In order to factor in the weightings of undetermined risk cases, to assess the risk for local transmission and to guide appropriate actions for prevention, a systematic reconstruction method was proposed by Dr. Tim Brown, a renowned HIV epidemiologist as an external consultant, in 2010.

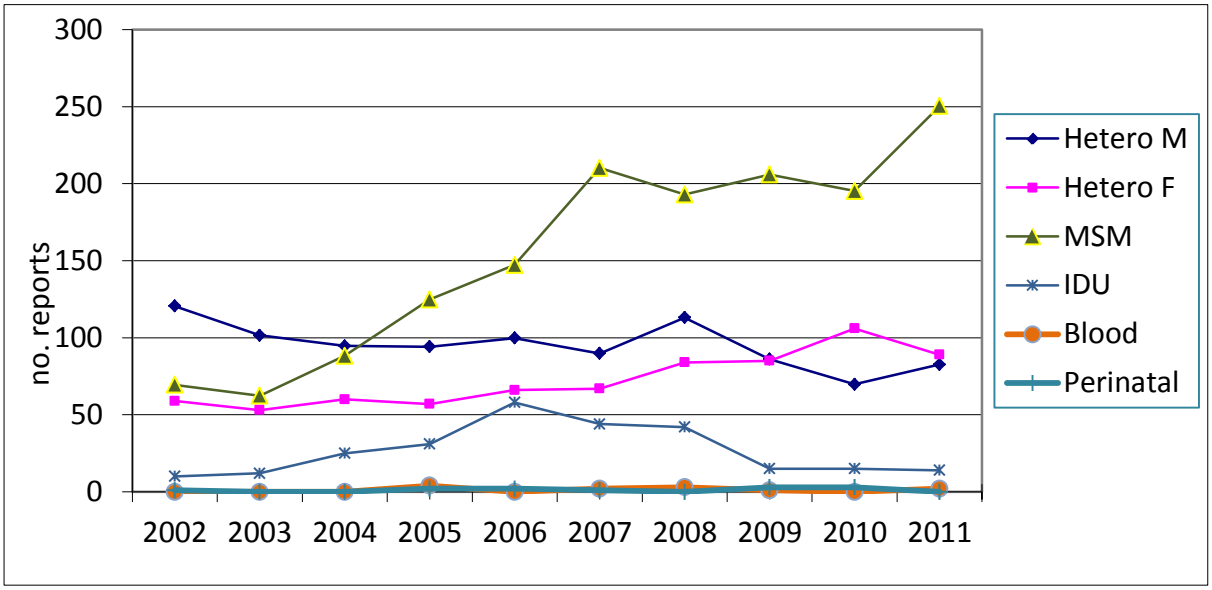
22. Reconstruction was carried out by assigning one suitable transmission to the undetermined cases. After the analysis of the features of these cases with undetermined risk factor and the prevailing epidemic, it was assessed that all female infections shall be assumed to be heterosexual transmission, unless there is clear indication suggesting otherwise. As for the male cases of undetermined risk factor, it was assessed that they shall be assumed to be either heterosexual contact or homosexual contacts as the risk factor of transmission, subject to the observed ratio in the prevailing year between heterosexual and homosexual contact in the cases with determined risk factors, providing there is no other indication suggesting otherwise.

23. By using the above methodology of reconstruction, a modified epidemic was constructed by applying our local 10-year data from 2002 to 2011. (Box 1.7(a)), and (Box 1.7(b)). After the reconstruction, the cases of MSM and heterosexual female showed a mark increase since 2003 and 2005 respectively, while the change in heterosexual male appeared to be moderate. (Box. 1.7 (c)). Although the suggested method might simplify the complex local epidemic, it provides one possible solution to fill the gap in the HIV surveillance system information. Yet, measures to promote a more complete return of information regarding each HIV report should be developed.

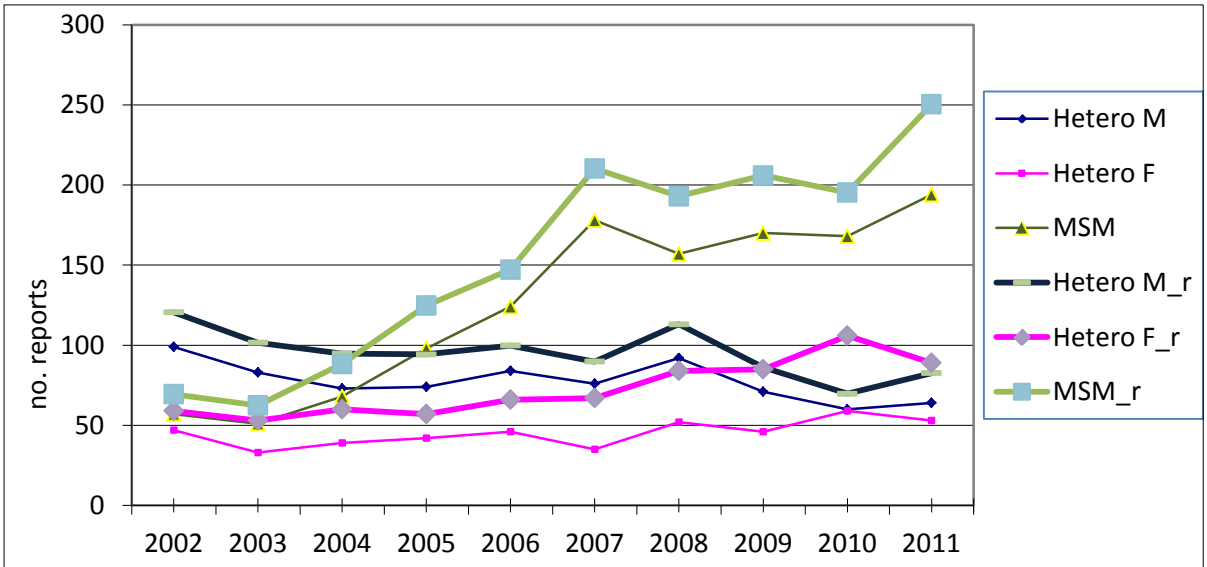
Box 1.7(a) HIV reports before risk factor reconstruction (2002-2011)



Box 1.7(b) HIV reports after risk factor reconstruction (2002-2011)



Box 1.7(c) HIV reports before and after risk factor reconstruction in MSM, heterosexual male and heterosexual female cases (2002-2011)



Regular HIV testing before diagnosis was a rarity

24. The HIV/AIDS Report Form (DH2293) was revised in March 2010 and become available for reporting use since July 2010, where one data field was added to capture the previously negative HIV result among the newly diagnosed, which could better inform the epidemiology of those recently HIV-seroconverted. Among 438 cases reported in 2011, data of the HIV/AIDS Report Form was available in 328 cases and among them, only 120 cases (37%) had previously negative HIV results, which implied regular testing among HIV patients

before their diagnoses was rare. Forty cases (33.3%) had previously negative HIV results within one year of the HIV diagnosis, i.e. recently HIV seroconvert and this suggested that at least one-third of the cases were recently infected. However, it was not possible to judge whether the cases with previously negative HIV results beyond one year of HIV diagnosis were recently HIV seroconvert or not, as the observation was limited by the infrequent testing behaviour.

Pneumocystis Pneumonia and *Tuberculosis* remained the commonest Primary AIDS Defining Illnesses

25. The annual number of reported AIDS cases has been dropping since 1997, the year of introducing highly active antiretroviral therapy (HAART) in Hong Kong but a slowly increasing trend was observed since 2005. A total of 82 AIDS cases were reported in 2011 as compared with 79 cases in 2010 (Box 2.5(b)). Majority (95%) of the AIDS reports in the year had their AIDS diagnosis within 3 months of HIV diagnosis, suggesting late presentation of the cases.

26. The primary AIDS defining illness (ADI) pattern of the reported cases also changed slightly in recent years. *Pneumocystis jirovechi* pneumonia (previously named *Pneumocystis carinii*) was the commonest ADI in Hong Kong in 2011 which accounted for 37 cases (45.1%), which is similar to the proportion in 2010. This year, 22 cases (26.8%) reported *Mycobacterium tuberculosis* as the primary ADI which was following right after *Pneumocystis jirovechi* pneumonia as the second commonest ADI. They were followed by fungal infections including *penicilliosis* (12.2%), and *Cytomegalovirus* diseases (6.1%). (Box 2.8) Because of the high coverage from universal voluntary testing at TB & Chest Clinics, it has literally replaced unlinked anonymous screening since 2009 in informing the HIV prevalence among TB patients. In 2011, the HIV testing coverage in patients attending government TB & Chest Clinic was more than 90% and HIV prevalence was 0.9%, which remained stable in the past few years. (Box 3.6(b))

27. The median CD4 of newly reported HIV cases in 2011 was 259/ul, which was higher than previous year, as was the proportion with CD4>=200/ul. Reporting of CD4 level was becoming a routine practice in physician. It provided useful information on the timing of diagnosis in the course of HIV infection. In 2011, 68.7% of HIV cases had their CD4 level at diagnosis reported, which was lower than that in the past few years. (Box 1.8) The median CD4 for those aged less than 55 has remain stable at around 250 (210 – 299) for the past 5 years. On the other hand, the median CD4 count among those who are aged 55 and above was consistently lower, suggesting that more patients reported at age 55 or above were diagnosed at a late disease stage. (Box 1.9)

Box 1.8 – Reported CD4 levels at HIV diagnosis

Year	No. of HIV reports	No. of CD4 reports (%)		Median CD4 (cell/ul)	CD4>=200 (cell/ul) (%)	
2002	260	201	(77.3%)	197	100	(49.8%)
2003	229	167	(72.9%)	202	85	(50.9%)
2004	268	181	(67.5%)	208	96	(53.0%)
2005	313	230	(73.5%)	197	114	(49.6%)
2006	373	282	(75.6%)	224	152	(53.9%)
2007	414	311	(75.1%)	241	174	(55.9%)
2008	435	305	(70.1%)	193	149	(48.9%)
2009	396	282	(71.2%)	278	176	(62.4%)
2010	389	287	(73.8%)	210	148	(51.6%)
2011	438	301	(68.7%)	259	179	(59.5%)

Box 1.9 – CD4 Reports by age group*

Age	Year	No. of HIV reports	No. of CD4 reports (%)		Median CD4 (cell/ul)	% of CD4 >= 200 (cell/ul)
<55	2002	230	183	(79.6%)	196	(49.7%)
	2003	190	140	(73.7%)	225.5	(52.1%)
	2004	225	160	(71.1%)	220.5	(55.6%)
	2005	282	207	(73.4%)	196	(49.3%)
	2006	341	256	(75.1%)	239	(56.6%)
	2007	377	286	(75.9%)	254.5	(57.7%)
	2008	380	262	(68.9%)	219.5	(52.7%)
	2009	357	253	(70.9%)	299	(66.4%)
	2010	353	255	(72.2%)	220	(52.9%)
	2011	384	265	(69.0%)	280	(62.3%)
>=55	2002	24	18	(75.0%)	212.5	(50.0%)
	2003	32	27	(84.4%)	108	(44.4%)
	2004	32	21	(65.6%)	82	(33.3%)
	2005	29	23	(79.3%)	223	(52.2%)
	2006	29	26	(89.7%)	154.5	(26.9%)
	2007	33	25	(75.8%)	90	(36.0%)
	2008	53	43	(81.1%)	74	(25.6%)
	2009	38	29	(76.3%)	72	(27.6%)
	2010	36	32	(88.9%)	121	(40.6%)
	2011	53	36	(67.9%)	124	(38.9%)

*: there may be a slight discrepancy between the sum of individual reports in Box 1.9 and the figures showed in Box 1.8 because of unknown age.

The commonest HIV-1 subtypes were CRF01_AE and B, but with increasing genetic diversity. The level of drug resistance mutation remained low.

28. In 2011, about 85% of HIV reports had their subtypes documented, at a comparable level as in the past years. (Box 6.1) Subtype CRF01_AE and B of HIV-1 strains remained the first and second most common subtypes identified in Hong Kong, respectively at 45% and 37% of all cases having subtype identified from 2001 to 2011. In 2011, they together accounted for 71% of all HIV cases with subtype documented. (Box 6.2) Over the past years, CRF_01AE was consistently found to be commoner in female, Asian non-Chinese, heterosexuals and IDU. (Box 6.4) On the other hand, subtype B was commoner in male, MSM, Chinese and Caucasian. (Box 6.5) Over the past few years, both the proportion of Subtype CRF01_AE and B showed a decreasing trend. In contrast, an increasing diversity of subtypes and its circulating recombinant forms was noted, in particular since 2009. (Box 6.3) The proportion of subtype CRF07_BC have increased from 3.4% in 2008 to 8.5% in 2011 while that subtype CRF08_BC increased from 0.5% to 5.6%.

29. According to the HIV resistance threshold survey conducted since 2003, the prevalence of intermediate or high level Drug Resistance related mutations maintained at a relatively low level in the past few years (from 0% to 4.3%) (Box. 6.7).

Discussion

30. The number of HIV reports reached a record high level in 2011, after a modest drop in recent two years, while the annual HIV reports used to be less than or around 300 before 2006. The total number of HIV reports in 2011 was 438, which increased for about 13% as compared to 2010. The increasing reports from MSM were the major factor contributing to the high HIV level. The level of heterosexual contact remained stable in the past few years after a peak in 2008. The increase of cases in injecting drug users in 2008 was observed to be calming down since 2009 and remained at a level of around 15 cases per year. Due to the considerable proportion of needle sharing behaviour among injecting drug users as captured by various cross-sectional surveys, the drug user's population still remained a challenge for both surveillance effort and intervention.

31. The increasing number of HIV reports among MSM continued to play a significant role in 2011 and accounted for the largest proportion of cases every year since 2007. This increasing trend will likely to continue in the near future and pose the major challenge in the HIV prevention work. By using the reconstruction methodology described in paragraph 22 above, we can see a more dramatic increase in the infection cases among MSM. The third community-based HIV prevalence survey (PRISM) in 2011 revealed a HIV prevalence of 4.08% which was similar to the previous studies in 2006 and 2008. The consistent condom use rate with both regular and non-regular sex partners improved over the past years. Moreover, the HIV testing rate has also increased which may reflect a growing norm of regular HIV testing among MSM community. Although the prevalence data and behavioral data suggested a stable situation, the number of infections continued to rise. The increasing HIV testing rate among MSM might explain partly but not entirely of the picture. Moreover, the situation should not be taken lightly given the decreasing trend of the proportion of

locally acquired cases among MSM in the past 2 years coupled with increasing trends of MSM HIV infections in the neighboring cities/countries.

32. Heterosexual transmission appeared to be on a stable trend over the years although the number of cases appeared to increase in 2008 which soon settled back since 2009. The high proportion of female among heterosexual cases remained in 2011 (45%) as in the past few years. Upon reconstruction of undetermined female cases, it showed an even more obvious increase for female heterosexual cases. The HIV prevalence in social hygiene clinics attendees and antenatal women were all below 0.2% and 0.01% respectively. However, consistent condom use rates of commercial / casual sex especially gauged from the reports of heterosexual male remained far from satisfactory.

33. Although the number of HIV-infected injecting drug user reports remained at a relatively low level since 2009, the prevalence of injection and risky needle-sharing behaviour among the drug users remained at a significant level which poses a potential threat of cluster outbreak and rapid upsurge of infection among the population. The dropping in HIV testing coverage in methadone clinics was also a concern that the diagnosis and subsequent care of infected drug users may be timely made.

34. In conclusion, newly reported HIV infections in Hong Kong stayed on a high level. Similar to the situation in many developed countries, MSM infection was obviously dominating the HIV epidemic in Hong Kong and will likely to exert its effect in the near future. The situation of heterosexual population and local injecting drug user population was relatively stable thus far. As a considerable proportion of cases were acquired outside Hong Kong, the local HIV epidemiology was also affected by the situation of neighbouring countries and the increasing cross border travel. With the effort on promotion of HIV testing in the past years, the testing rate among MSM increased according to the latest behavioral surveys. On the other hand, the HIV testing coverage in certain most-at-risk population such as the drug users have dropped. The number of people living with HIV in 2011 was estimated to be about 4000, based on the HIV estimation and projection using Asian Epidemic Model. With various sources of data, HIV prevalence was estimated to remain at less than 0.1% among the general population in Hong Kong.

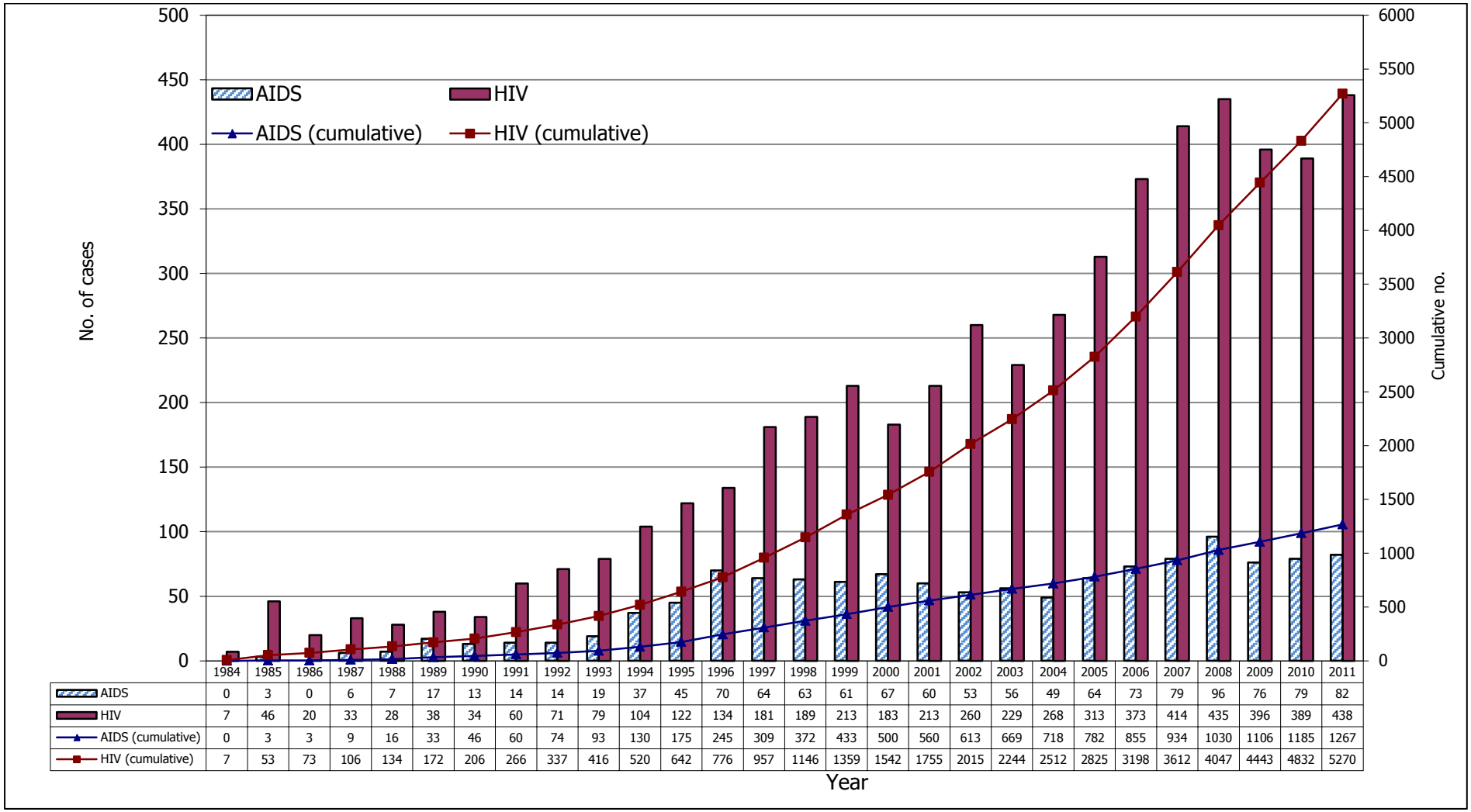
2. TABULATED RESULTS OF HIV/AIDS REPORTING

System description

- The HIV/AIDS reporting system is a case-based notification system conducted on a voluntary basis since 1984, with input from clinicians and laboratories.

System layout

Box 2.1 Annual and cumulative reports of HIV/AIDS cases

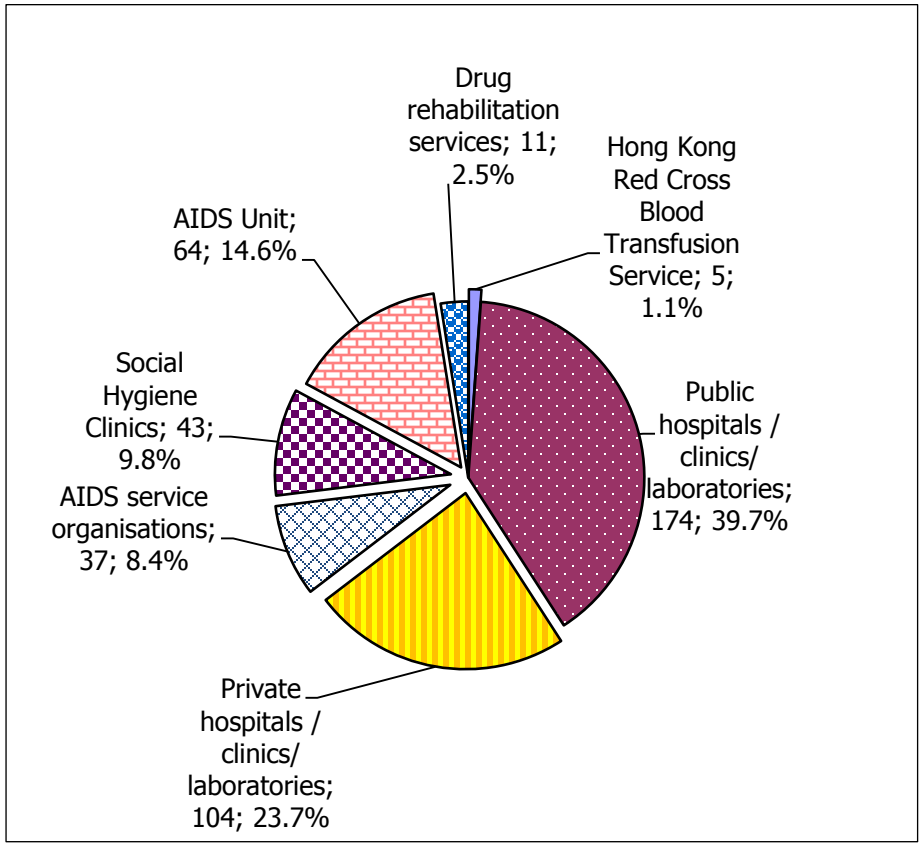


	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
AIDS	0	3	0	6	7	17	13	14	14	19	37	45	70	64	63	61	67	60	53	56	49	64	73	79	96	76	79	82
HIV	7	46	20	33	28	38	34	60	71	79	104	122	134	181	189	213	183	213	260	229	268	313	373	414	435	396	389	438
AIDS (cumulative)	0	3	3	9	16	33	46	60	74	93	130	175	245	309	372	433	500	560	613	669	718	782	855	934	1030	1106	1185	1267
HIV (cumulative)	7	53	73	106	134	172	206	266	337	416	520	642	776	957	1146	1359	1542	1755	2015	2244	2512	2825	3198	3612	4047	4443	4832	5270

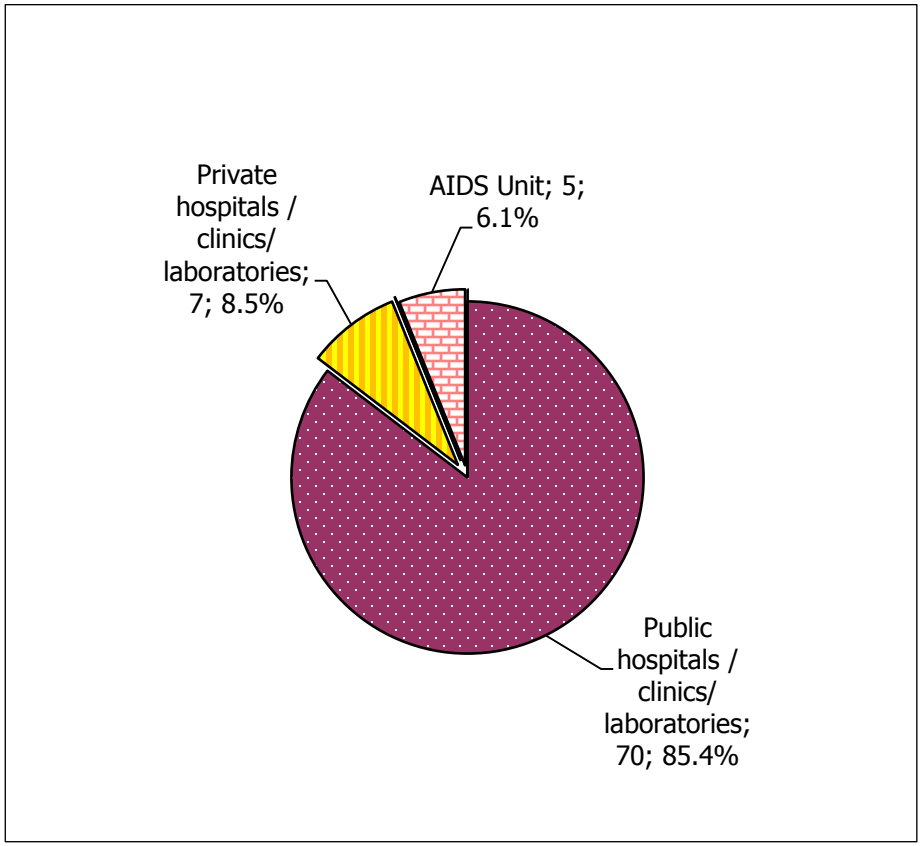
Box 2.2 Source of reporting of HIV/AIDS cases

(a) Year 2011

(i) HIV

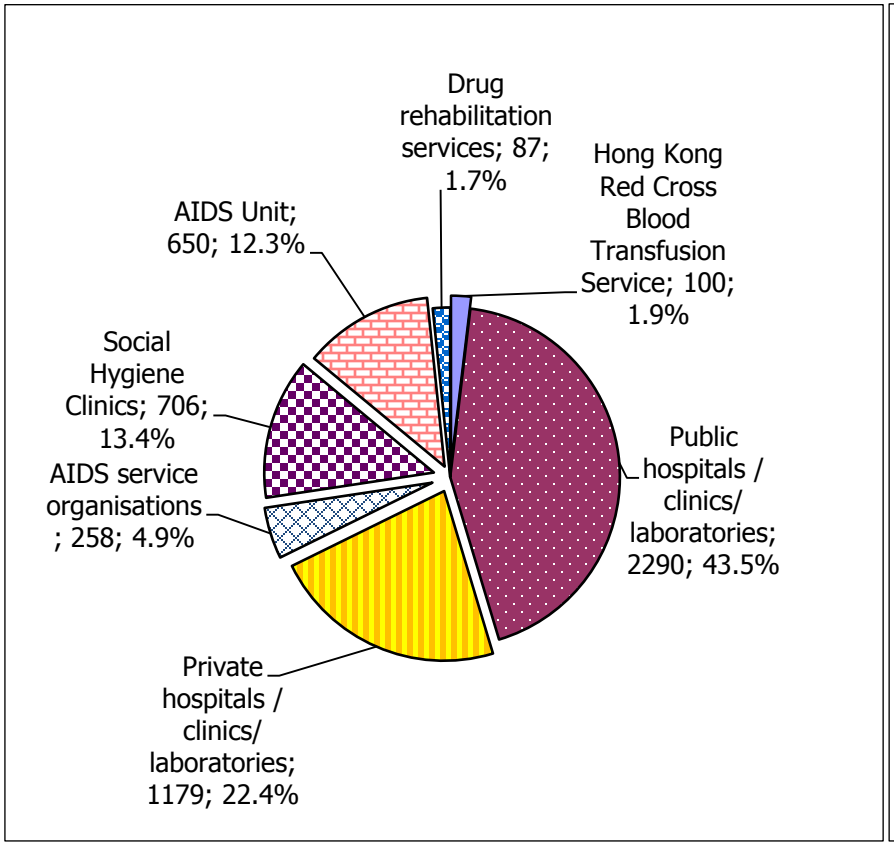


(ii) AIDS

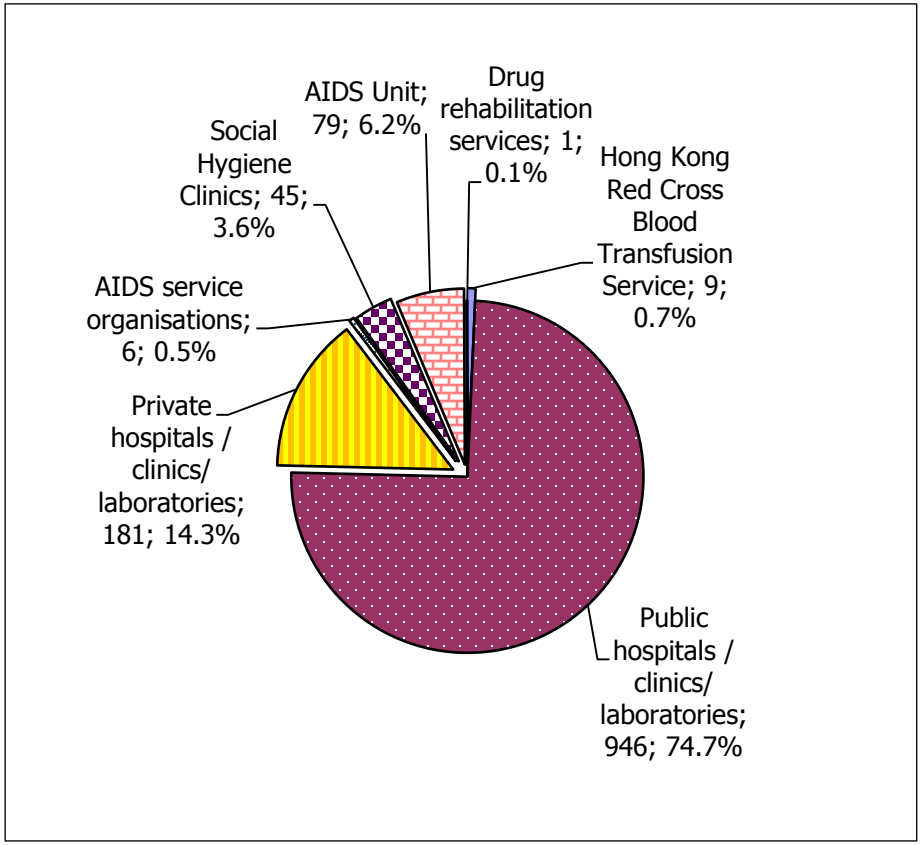


(b) Cumulative (1984 - 2011)

(i) HIV



(ii) AIDS



Box 2.3 Ethnicity & gender of reported HIV/AIDS cases

(a) Year 2011

Ethnicity	HIV						AIDS					
	Male		Female		Total		Male		Female		Total	
Chinese	263	(76.5%)	31	(33.0%)	294	(67.1%)	51	(82.3%)	11	(55.0%)	62	(75.6%)
Non-Chinese	74	(21.5%)	61	(64.9%)	135	(30.8%)	11	(17.7%)	9	(45.0%)	20	(24.4%)
Asian	29	(8.4%)	29	(30.9%)	58	(13.2%)	8	(12.9%)	9	(45.0%)	17	(20.7%)
White	24	(7.0%)	2	(2.1%)	26	(5.9%)	1	(1.6%)	0	(0.0%)	1	(1.2%)
Black	7	(2.0%)	7	(7.4%)	14	(3.2%)	1	(1.6%)	0	(0.0%)	1	(1.2%)
Others	14	(4.1%)	23	(24.5%)	37	(8.4%)	1	(1.6%)	0	(0.0%)	1	(1.2%)
Unknown	7	(2.0%)	2	(2.1%)	9	(2.1%)	0	(0.0%)	0	(0.0%)	0	(0.0%)
Total	344	(100.0%)	94	(100.0%)	438	(100.0%)	62	(100.0%)	20	(100.0%)	82	(100.0%)

(b) Cumulative (1984 - 2011)

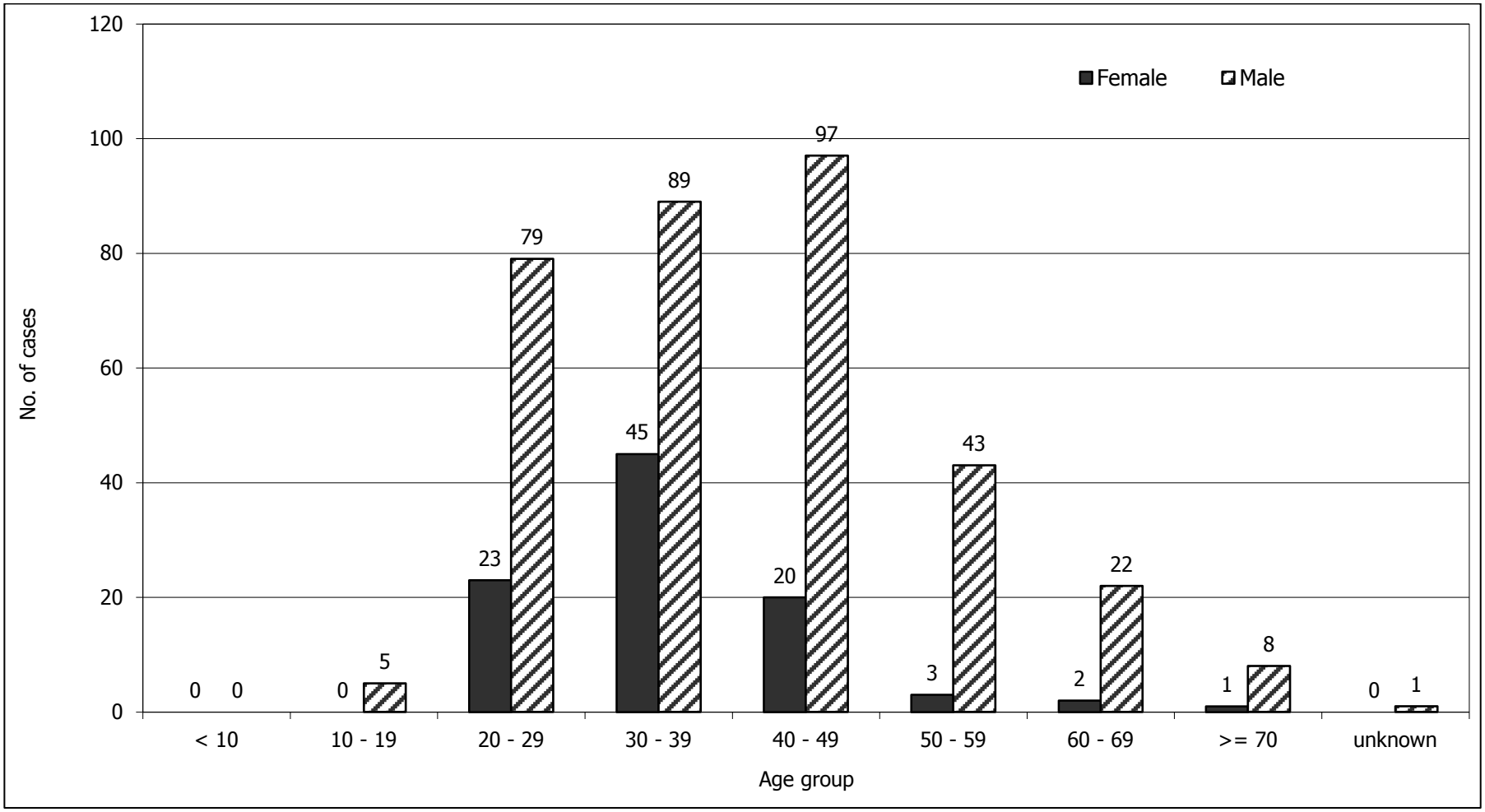
Ethnicity	HIV						AIDS					
	Male		Female		Total		Male		Female		Total	
Chinese	3071	(73.1%)	429	(40.1%)	3500	(66.4%)	888	(82.8%)	92	(47.2%)	980	(77.3%)
Non-Chinese	1092	(26.0%)	633	(59.2%)	1725	(32.7%)	184	(17.2%)	103	(52.8%)	287	(22.7%)
Asian	519	(12.4%)	377	(35.2%)	896	(17.0%)	95	(8.9%)	98	(50.3%)	193	(15.2%)
White	345	(8.2%)	21	(2.0%)	366	(6.9%)	75	(7.0%)	2	(1.0%)	77	(6.1%)
Black	66	(1.6%)	37	(3.5%)	103	(2.0%)	13	(1.2%)	3	(1.5%)	16	(1.3%)
Others	162	(3.9%)	198	(18.5%)	360	(6.8%)	1	(0.1%)	0	(0.0%)	1	(0.1%)
Unknown	37	(0.9%)	8	(0.7%)	45	(0.9%)	0	(0.0%)	0	(0.0%)	0	(0.0%)
Total	4200	(100.0%)	1070	(100.0%)	5270	(100.0%)	1072	(100.0%)	195	(100.0%)	1267	(100.0%)

Box 2.4 Age distribution of reported HIV/AIDS cases

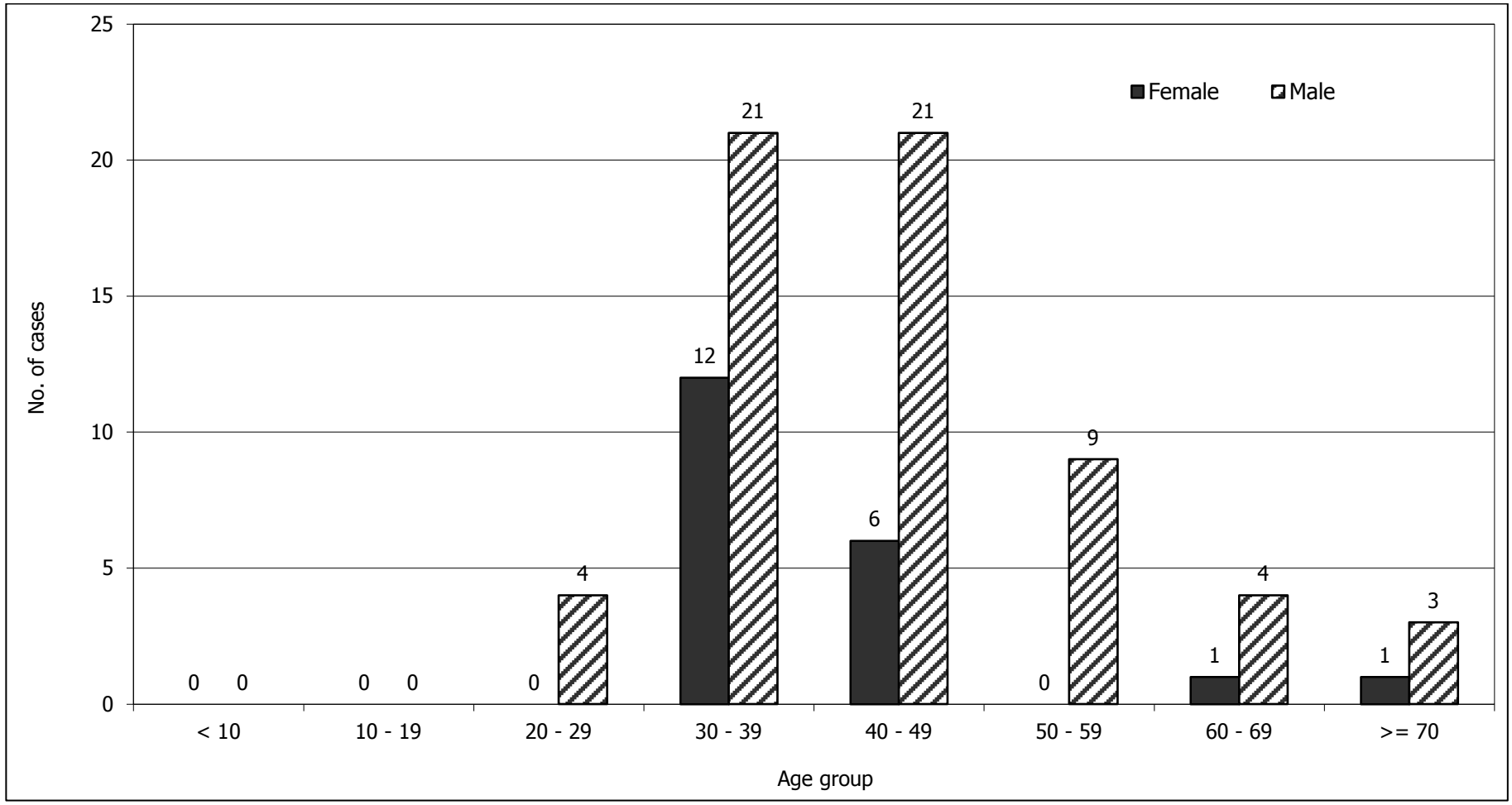
(a) Median age of reported HIV/AIDS cases

Year	HIV			AIDS		
	Median age	Inter quartile range		Median age	Inter quartile range	
		25%	75%		25%	75%
1992	34	28	40	39	34.75	45.5
1993	33	27	39	38	29	41
1994	34	28	40	36	33	40.5
1995	32	26	40	36	30	44.5
1996	34	30	41.5	38	31.75	43
1997	35	28.5	42	37	32	48
1998	34	29	40	39	32	48
1999	35	29	43	40	34	51
2000	35	29	43	40	33	50
2001	34.5	29	42	38	30.25	46.75
2002	36	30	44	41	34	48
2003	36	30.75	45	39	35	49.75
2004	36	30	44.5	42	35	51
2005	36	30	44	40	33.25	47.75
2006	34	28	42	38	31	47
2007	34	29	41	41	34	51
2008	36	29	45	41	34	54
2009	36	29	44	41	34	51
2010	36	30	44	42	37	53
2011	37	30	47	41	34	49
Cumulative (1984 – 2011)	35	29	43	39	33	48

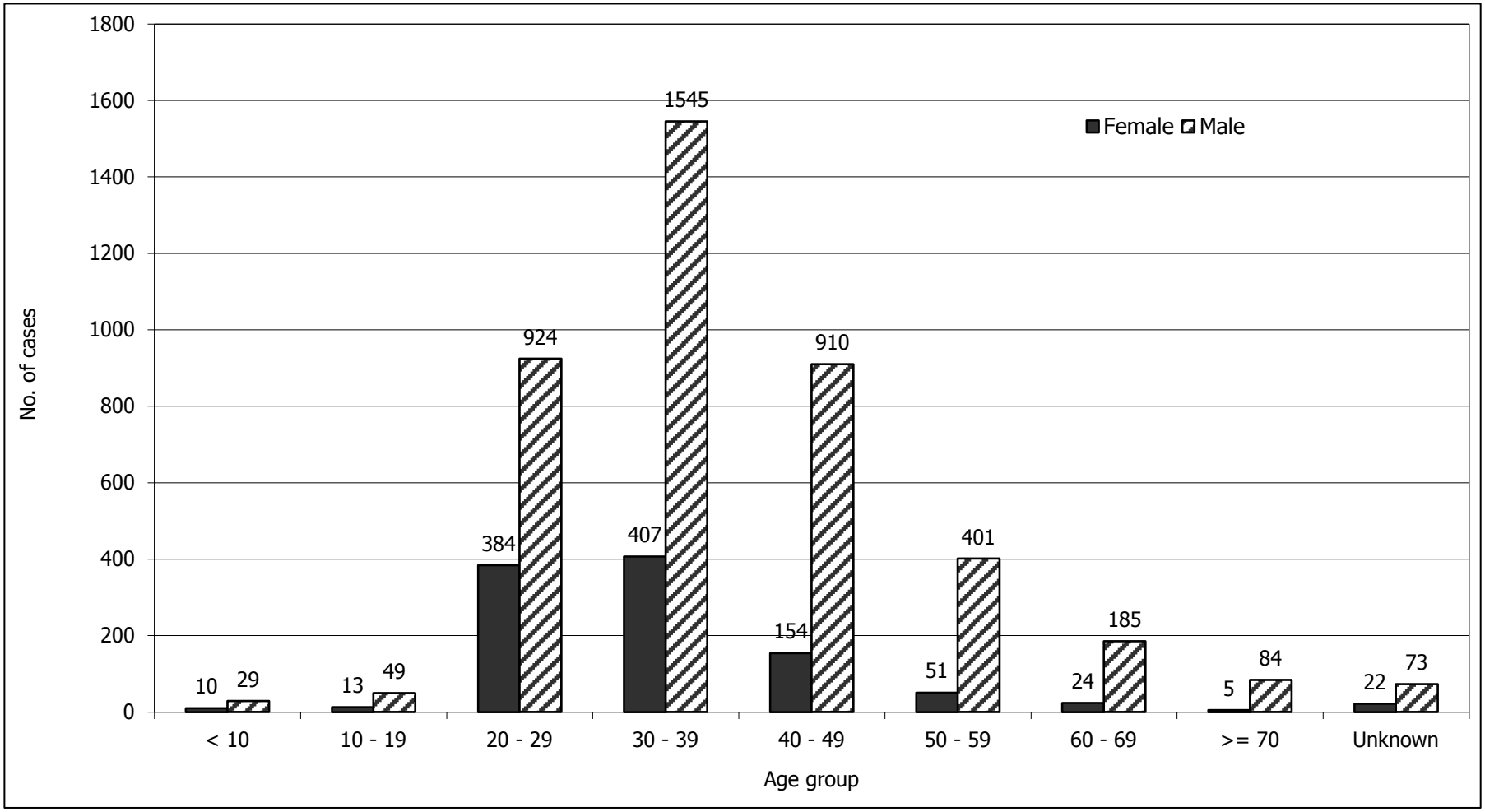
(b) Age & gender of reported HIV cases (Year 2011)



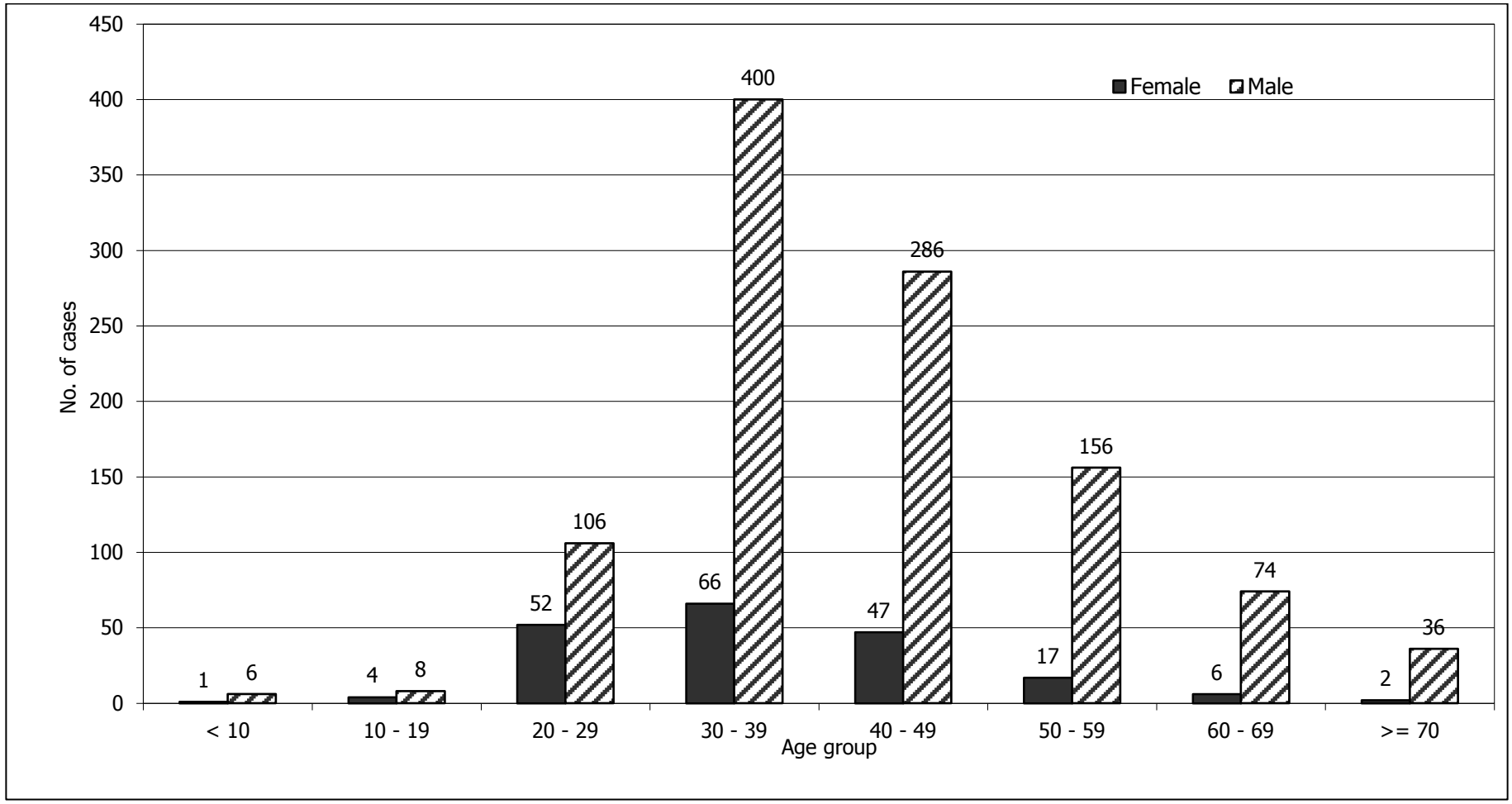
(c) Age & gender of reported AIDS cases (Year 2011)



(d) Age & gender of reported HIV cases (cumulative, 1984 - 2011)



(e) Age & gender of reported AIDS cases (cumulative, 1985 - 2011)



(f) Adults & children with reported HIV/AIDS in 2011

Age	HIV			AIDS		
	Male	Female	Total	Male	Female	Total
Adult	344	94	438	62	20	82
Children (age <=13)	0	0	0	0	0	0
Total	344	94	438	62	20	82

Box 2.5 Exposure category of reported HIV/AIDS case

(a) Distribution of reported HIV cases by exposure category (1992 - 2011)

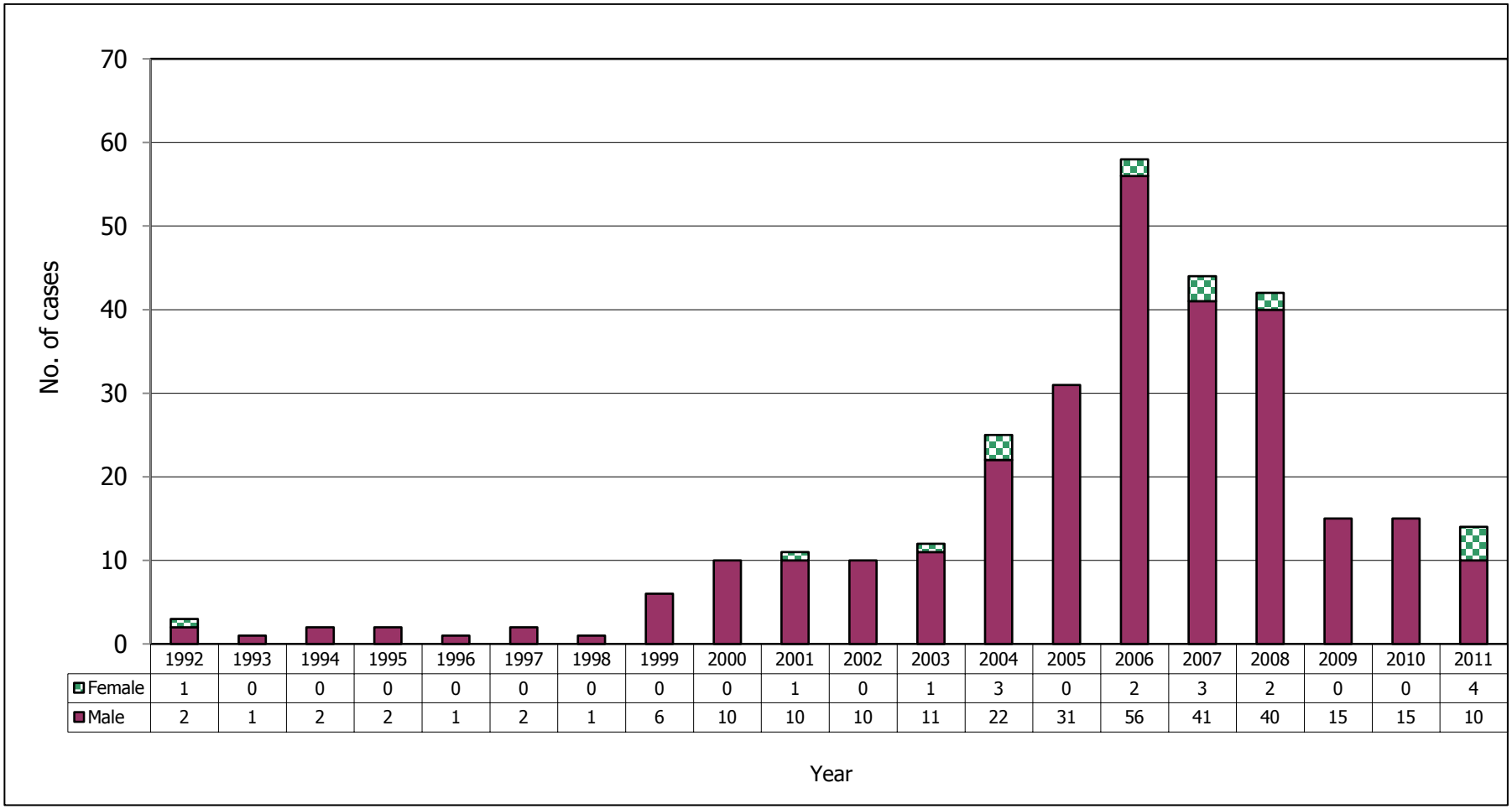
Year / Exposure Category (%)	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Cumulative (1984 - 2011)
Heterosexual	32 (45%)	47 (59%)	73 (70%)	81 (66%)	94 (70%)	117 (65%)	135 (71%)	127 (60%)	115 (63%)	127 (60%)	146 (56%)	116 (51%)	112 (42%)	116 (37%)	130 (35%)	111 (27%)	144 (33%)	117 (30%)	119 (31%)	117 (27%)	2238 (42%)
Homosexual	27 (38%)	20 (25%)	22 (21%)	26 (21%)	20 (15%)	33 (18%)	16 (8%)	34 (16%)	22 (12%)	37 (17%)	48 (18%)	46 (20%)	62 (23%)	87 (28%)	109 (29%)	159 (38%)	139 (32%)	161 (41%)	145 (37%)	177 (40%)	1472 (28%)
Bisexual	2 (3%)	2 (3%)	4 (4%)	4 (3%)	3 (2%)	10 (6%)	6 (3%)	10 (5%)	7 (4%)	7 (3%)	9 (3%)	5 (2%)	6 (2%)	11 (4%)	15 (4%)	19 (5%)	18 (4%)	9 (2%)	23 (6%)	17 (4%)	218 (4%)
Injecting drug use	3 (4%)	1 (1%)	2 (2%)	2 (2%)	1 (1%)	2 (1%)	1 (1%)	6 (3%)	10 (5%)	11 (5%)	10 (4%)	12 (5%)	25 (9%)	31 (10%)	58 (16%)	44 (11%)	42 (10%)	15 (4%)	15 (4%)	14 (3%)	310 (6%)
Blood contact	1 (1%)	1 (1%)	1 (1%)	0 (0%)	0 (0%)	1 (1%)	0 (0%)	2 (1%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	4 (1%)	0 (0%)	2 (0%)	3 (1%)	1 (0%)	0 (0%)	2 (0%)	81 (2%)
Perinatal	0 (0%)	0 (0%)	1 (1%)	2 (2%)	1 (1%)	0 (0%)	2 (1%)	4 (2%)	2 (1%)	2 (1%)	1 (0%)	0 (0%)	0 (0%)	2 (1%)	2 (1%)	1 (0%)	0 (0%)	3 (1%)	3 (1%)	0 (0%)	26 (0%)
Undetermined	6 (8%)	8 (10%)	1 (1%)	7 (6%)	15 (11%)	18 (10%)	29 (15%)	30 (14%)	27 (15%)	29 (14%)	46 (18%)	50 (22%)	63 (24%)	62 (20%)	59 (16%)	78 (19%)	89 (20%)	90 (23%)	84 (22%)	111 (25%)	925 (18%)
Total	71 (100%)	79 (100%)	104 (100%)	122 (100%)	134 (100%)	181 (100%)	189 (100%)	213 (100%)	183 (100%)	213 (100%)	260 (100%)	229 (100%)	268 (100%)	313 (100%)	373 (100%)	414 (100%)	435 (100%)	396 (100%)	389 (100%)	438 (100%)	5270 (100%)

(b) Distribution of reported AIDS cases by exposure category (1992 - 2011)

Year / Exposure Category (%)	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Cumulative (1985 - 2011)
Heterosexual	5 (36%)	10 (53%)	16 (43%)	31 (69%)	55 (79%)	44 (69%)	50 (79%)	44 (72%)	56 (84%)	49 (82%)	38 (72%)	46 (82%)	35 (71%)	38 (59%)	30 (41%)	40 (51%)	52 (54%)	35 (46%)	36 (46%)	29 (35%)	749 (59%)
Homosexual	8 (57%)	7 (37%)	13 (35%)	9 (20%)	6 (9%)	10 (16%)	6 (10%)	8 (13%)	1 (1%)	5 (8%)	8 (15%)	7 (13%)	8 (16%)	13 (20%)	21 (29%)	20 (25%)	25 (26%)	28 (37%)	27 (34%)	32 (39%)	286 (23%)
Bisexual	1 (7%)	1 (5%)	4 (11%)	3 (7%)	1 (1%)	3 (5%)	1 (2%)	1 (2%)	1 (1%)	2 (3%)	2 (4%)	0 (0%)	0 (0%)	3 (5%)	3 (4%)	1 (1%)	3 (3%)	3 (4%)	5 (6%)	4 (5%)	52 (4%)
Injecting drug use	0 (0%)	1 (5%)	0 (0%)	1 (2%)	1 (1%)	1 (2%)	0 (0%)	1 (2%)	2 (3%)	1 (2%)	1 (2%)	0 (0%)	3 (6%)	1 (2%)	11 (15%)	9 (11%)	9 (9%)	2 (3%)	3 (4%)	5 (6%)	53 (4%)
Blood contact	0 (0%)	0 (0%)	3 (8%)	0 (0%)	2 (3%)	1 (2%)	1 (2%)	2 (3%)	1 (1%)	0 (0%)	0 (0%)	1 (2%)	0 (0%)	1 (2%)	0 (0%)	1 (1%)	2 (2%)	0 (0%)	0 (0%)	0 (0%)	24 (2%)
Perinatal	0 (0%)	0 (0%)	1 (3%)	1 (2%)	0 (0%)	0 (0%)	1 (2%)	1 (2%)	1 (1%)	1 (2%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (1%)	1 (1%)	0 (0%)	8 (1%)
Undetermined	0 (0%)	0 (0%)	0 (0%)	0 (0%)	5 (7%)	5 (8%)	4 (6%)	4 (7%)	5 (7%)	2 (3%)	4 (8%)	2 (4%)	3 (6%)	8 (13%)	8 (11%)	8 (10%)	5 (5%)	7 (9%)	7 (9%)	12 (15%)	95 (7%)
Total	14 (100%)	19 (100%)	37 (100%)	45 (100%)	70 (100%)	64 (100%)	63 (100%)	61 (100%)	67 (100%)	60 (100%)	53 (100%)	56 (100%)	49 (100%)	64 (100%)	73 (100%)	79 (100%)	96 (100%)	76 (100%)	79 (100%)	82 (100%)	1267 (100%)

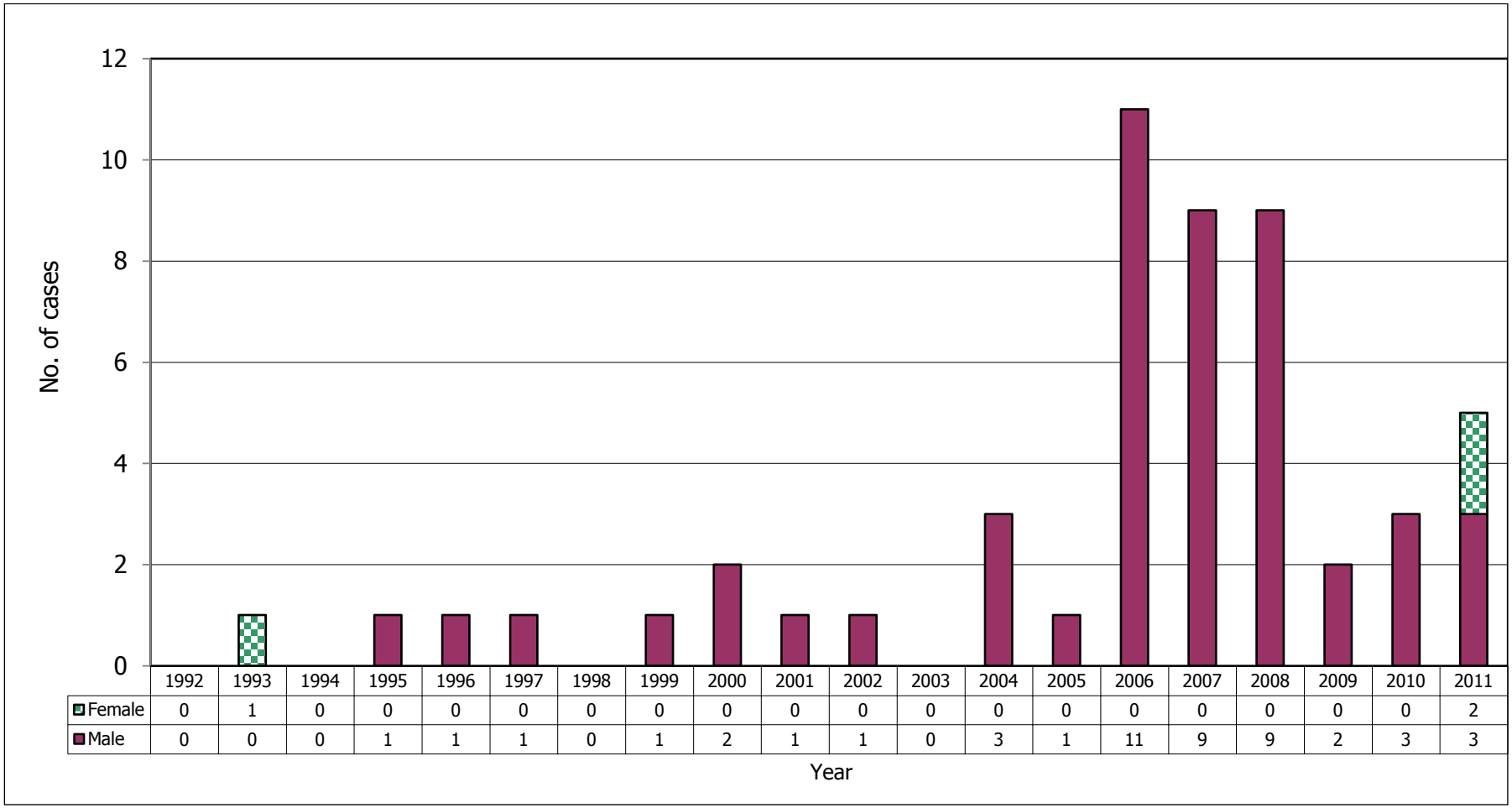
Box 2.6 Reported HIV/AIDS cases in injecting drug users (1992 – 2011)

(a) Reported HIV-infected injecting drug users - by gender



	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Female	1	0	0	0	0	0	0	0	0	1	0	1	3	0	2	3	2	0	0	4
Male	2	1	2	2	1	2	1	6	10	10	10	11	22	31	56	41	40	15	15	10

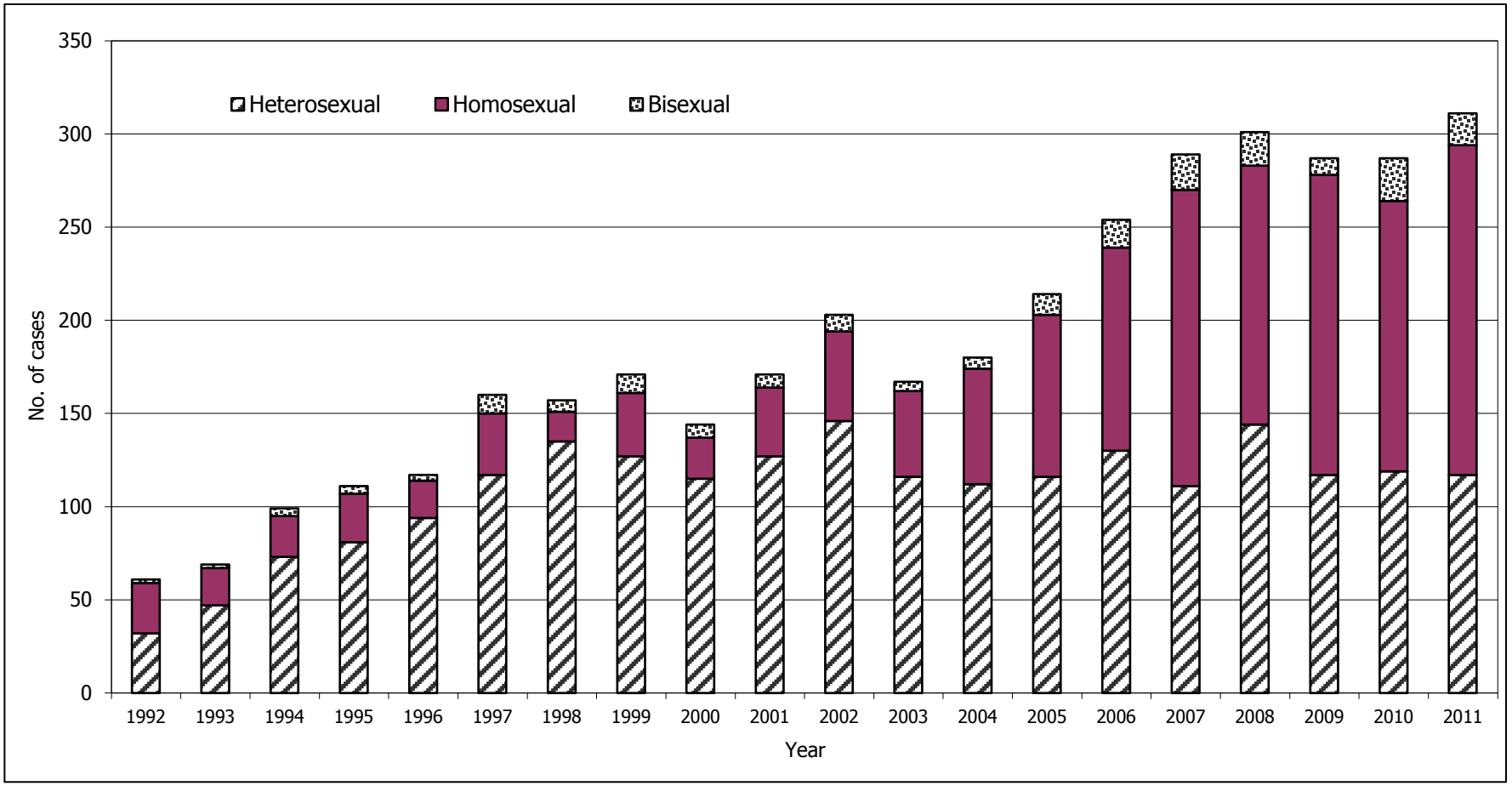
(b) Reported AIDS case in injecting drug users - by gender



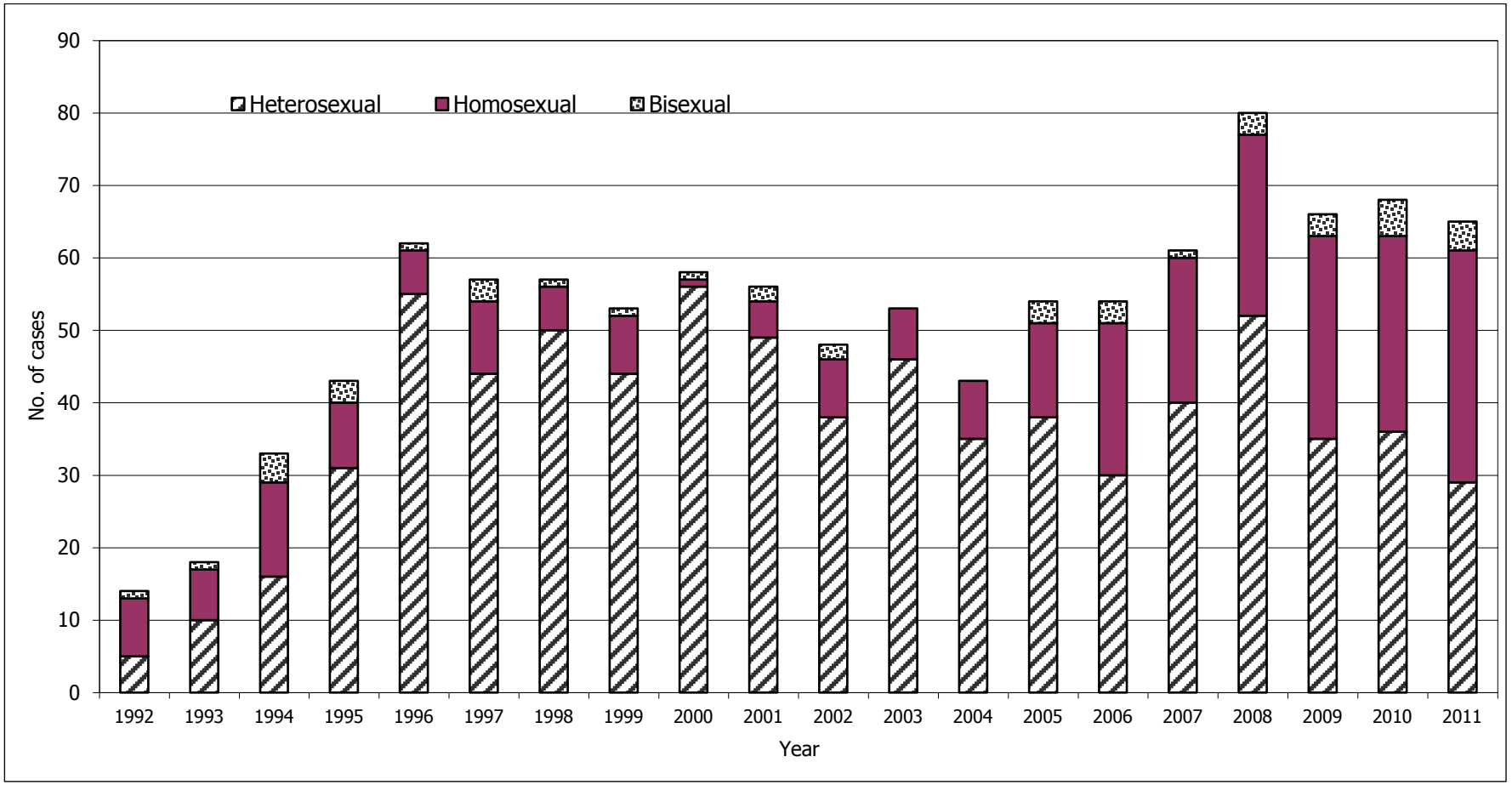
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Female	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Male	0	0	0	1	1	1	0	1	2	1	1	0	3	1	11	9	9	2	3	3

Box 2.7 Reported sexually acquired HIV/AIDS cases (1992 – 2011)

(a) Yearly reports of sexually acquired HIV cases



(b) Yearly reports of sexually acquired AIDS cases



(c) Ratio of heterosexual vs. homosexual/bisexual men reported with HIV/AIDS

Year	HIV	AIDS
1992	0.9 : 1	0.6 : 1
1993	1.7 : 1	0.9 : 1
1994	2.3 : 1	0.8 : 1
1995	1.9 : 1	2.0 : 1
1996	3.0 : 1	7.1 : 1
1997	2.0 : 1	2.5 : 1
1998	4.2 : 1	5.9 : 1
1999	2.0 : 1	4.2 : 1
2000	2.7 : 1	23.5 : 1
2001	1.9 : 1	5.3 : 1
2002	1.7 : 1	2.7 : 1
2003	1.6 : 1	4.9 : 1
2004	1.1 : 1	3.8 : 1
2005	0.8 : 1	1.8 : 1
2006	0.7 : 1	0.8 : 1
2007	0.4 : 1	1.5 : 1
2008	0.6 : 1	1.4 : 1
2009	0.4 : 1	0.8 : 1
2010	0.4 : 1	0.8 : 1
2011	0.3 : 1	0.4 : 1
Cumulative (1984 – 2011)	**0.8 : 1**	**1.4 : 1**

Box 2.8 Profile of primary AIDS defining illnesses (ADI) (1992 - 2011)

Year / ADI (%)	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Cumulative (1985 - 2011)
Pneumocystic Pneumonia (PCP)	7 (50%)	10 (53%)	12 (32%)	17 (38%)	21 (30%)	20 (31%)	26 (41%)	23 (38%)	30 (45%)	26 (43%)	25 (47%)	22 (39%)	22 (45%)	20 (31%)	27 (37%)	28 (35%)	37 (39%)	32 (42%)	36 (46%)	37 (45%)	502 (40%)
Mycobacterium Tuberculosis	1 (7%)	2 (11%)	4 (11%)	8 (18%)	21 (30%)	17 (27%)	18 (29%)	13 (21%)	19 (28%)	17 (28%)	9 (17%)	15 (27%)	13 (27%)	25 (39%)	26 (36%)	32 (41%)	32 (33%)	24 (32%)	20 (25%)	22 (27%)	344 (27%)
Other fungal infections	2 (14%)	1 (5%)	4 (11%)	7 (16%)	6 (9%)	10 (16%)	8 (13%)	5 (8%)	4 (6%)	5 (8%)	8 (15%)	4 (7%)	6 (12%)	5 (8%)	4 (5%)	3 (4%)	3 (3%)	6 (8%)	5 (6%)	8 (10%)	112 (9%)
Penicilliosis	0 (0%)	1 (5%)	6 (16%)	7 (16%)	7 (10%)	5 (8%)	2 (3%)	7 (11%)	5 (7%)	1 (2%)	7 (13%)	5 (9%)	4 (8%)	7 (11%)	11 (15%)	4 (5%)	6 (6%)	1 (1%)	6 (8%)	2 (2%)	96 (8%)
Cytomegalovirus diseases	1 (7%)	2 (11%)	1 (3%)	3 (7%)	4 (6%)	4 (6%)	3 (5%)	2 (3%)	3 (4%)	2 (3%)	0 (0%)	3 (5%)	1 (2%)	2 (3%)	3 (4%)	4 (5%)	6 (6%)	3 (4%)	3 (4%)	5 (6%)	58 (5%)
Non-TB mycobacterial infections	0 (0%)	1 (5%)	0 (0%)	0 (0%)	2 (3%)	1 (2%)	0 (0%)	5 (8%)	1 (1%)	5 (8%)	2 (4%)	1 (2%)	2 (4%)	0 (0%)	1 (1%)	0 (0%)	1 (1%)	2 (3%)	0 (0%)	0 (0%)	28 (2%)
Kaposi's sarcoma	2 (14%)	0 (0%)	4 (11%)	1 (2%)	2 (3%)	3 (5%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (2%)	0 (0%)	1 (2%)	0 (0%)	1 (1%)	4 (4%)	2 (3%)	1 (1%)	2 (2%)	29 (2%)
Others	1 (7%)	2 (11%)	6 (16%)	2 (4%)	7 (10%)	4 (6%)	6 (10%)	6 (10%)	5 (7%)	4 (7%)	2 (4%)	5 (9%)	1 (2%)	4 (6%)	1 (1%)	7 (9%)	7 (7%)	6 (8%)	8 (10%)	6 (7%)	98 (8%)
Total	14 (100%)	19 (100%)	37 (100%)	45 (100%)	70 (100%)	64 (100%)	63 (100%)	61 (100%)	67 (100%)	60 (100%)	53 (100%)	56 (100%)	49 (100%)	64 (100%)	73 (100%)	79 (100%)	96 (100%)	76 (100%)	79 (100%)	82 (100%)	1267 (100%)

3. TABULATED RESULTS OF HIV PREVALENCE SURVEYS

System description

- This is a collection of data from HIV prevalence studies and public service records that contribute to the understanding of the HIV situation in selected community groups or settings.

System layout

Target population	Setting	System	Since	Sample size	Data available in 2011
(a) Community with predisposing risk factors					
STI patients	Social Hygiene Clinics	Voluntary testing offered to clients	1985	25000 – 50000 / year	Yes
Drug users (1)	Methadone Clinics	Unlinked anonymous screening (Urine samples)*	1992 (to 2003)	2000 – 4000 / year	No
		Universal HIV Antibody (Urine samples) Testing Programme	2003	7000 – 9000 / year	Yes
Drug users (2)	Inpatient drug treatmet centres/institution	Unlinked anonymous screening (Urine samples)	1998	150 – 400 / year	Yes
Drug users (3)	Street drug users approached by outreach workers	Unlinked Anonymous Voluntary testing (saliva samples)	1993 (to 1997)	200 – 500 / year	No
Men who have Sex with Men (MSM)	AIDS Concern	Voluntary testing offered to MSM (rapid tests)	2000	200 - 1000 / year	Yes
	HIV Prevalence and Risk behavioural Survey of Men who have sex with men in Hong Kong(PRISM)	Unlinked anonymous screening (urine samples) Voluntary testing (urine samples)	2006 round 2008,2011 rounds	800 / study	Yes
Female Sex Worker (FSW)	Community Based Risk Behavioral and Seroprevalence Survey for Female Sex Workers in Hong Kong (CRISP)	Unlinked anonymous screening (urine samples) Voluntary testing (urine samples)	2006 round 2008 round	900/study	No
(b) Community without known risk factors					
Blood donors	Hong Kong Red Cross Blood Transfusion Service	A requirement for all potential donors	1985	Around 190000 – 230000 / year	Yes
Antenatal women	All maternal and child health centres and public hospitals	Universal voluntary testing (blood samples)	Sept 2001	Around 40000 - 50000/ year	Yes
Delivery women	Testing of Cord blood from delivery women at labour wards	Unlinked anonymous screening (blood samples)*	1990 (to 2000)	4000 / year	No
Civil servants	Pre-employment health check	Unlinked anonymous screening on blood samples	1991 (once)	1553	No

Target population	Setting	System	Since	Sample size	Data available in 2011
(c) Community with undefined risk					
TB patients (1)	TB and Chest Clinics of the Department of Health	Unlinked anonymous screening (blood/urine samples)	1990 (to 2008)	1000 / year	No
TB patients (2)	TB and Chest Clinics of the Department of Health	Voluntary testing (blood samples)	1993	2000 – 4500 / year	Yes
Prisoners	Penal institutions	Unlinked anonymous screening (blood /urine samples)	1992	Around 1000 – 2500 / year	Yes

*replaced by methadone clinics universal HIV testing programme and universal voluntary testing of antenatal women respectively

Box 3.1 HIV prevalence in blood donors at Hong Kong Red Cross Blood Transfusion Service

(a) HIV detection rate by number of donated blood units (1992 - 2011)

Year	Units of blood donated	No. of units anti-HIV+	Positive detection rate of donated units (%)	95% C.I. for prevalence (%)
1992	176,492	9	0.005	(0.0023 - 0.0097)
1993	165,053	3	0.002	(0.0004 - 0.0053)
1994	172,151	7	0.004	(0.0016 - 0.0084)
1995	133,058	4	0.002	(0.0008 - 0.0077)
1996	140,169	5	0.003	(0.0012 - 0.0083)
1997	122,325	7	0.004	(0.0023 - 0.0118)
1998	136,267	7	0.003	(0.0021 - 0.0106)
1999	117,058	7	0.004	(0.0024 - 0.0123)
2000	189,482	9	0.005	(0.0022 - 0.0090)
2001	193,835	3	0.002	(0.0003 - 0.0045)
2002	193,702	3	0.002	(0.0003 - 0.0045)
2003	179,962	5	0.003	(0.0009 - 0.0065)
2004	198,420	1	0.001	(0.0000 - 0.0028)
2005	197,974	3	0.002	(0.0003 - 0.0044)
2006	196,332	6	0.003	(0.0011 - 0.0067)
2007	205,645	9	0.004	(0.0020 - 0.0083)
2008	212,739	10	0.005	(0.0023 - 0.0086)
2009	214,709	3	0.001	(0.0003 - 0.0041)
2010	224,483	4	0.002	(0.0005 - 0.0046)
2011	234,086	5	0.002	(0.0007 - 0.0050)

(b) HIV prevalence in new and repeat blood donors (1992 - 2011)

Year	New donors			Repeat donors		
	No. of donors	No. of donors anti-HIV+	HIV positivity rate (%) (95% C.I. (%))	No. of donors	No. of donors anti-HIV+	HIV positivity rate (%) (95% C.I. (%))
1992	43,674	1	0.002 (0.0001 - 0.0128)	132,818	8	0.006 (0.0026 - 0.0119)
1993	36,146	1	0.003 (0.0001 - 0.0154)	128,907	2	0.002 (0.0002 - 0.0056)
1994	38,077	2	0.005 (0.0006 - 0.0190)	134,074	5	0.004 (0.0012 - 0.0087)
1995	39,778	2	0.005 (0.0006 - 0.0182)	93,280	2	0.002 (0.0003 - 0.0077)
1996	40,875	1	0.002 (0.0001 - 0.0136)	99,294	4	0.004 (0.0011 - 0.0103)
1997	40,419	1	0.002 (0.0001 - 0.0138)	81,906	6	0.007 (0.0027 - 0.0159)
1998	43,756	3	0.007 (0.0014 - 0.0200)	92,511	4	0.004 (0.0012 - 0.0111)
1999	40,960	1	0.002 (0.0001 - 0.0136)	76,098	6	0.008 (0.0029 - 0.0172)
2000	41,116	5	0.012 (0.0039 - 0.0284)	148,366	4	0.003 (0.0007 - 0.0069)
2001	43,415	0	0 (---)	150,420	3	0.002 (0.0004 - 0.0058)
2002	42,292	1	0.002 (0.0001 – 0.0132)	151,410	2	0.001 (0.0002 – 0.0048)
2003	36,732	3	0.008 (0.0017 – 0.0239)	143,230	2	0.001 (0.0002 – 0.0050)
2004	41,679	0	0 (---)	156,741	1	0.001 (0.0000 – 0.0036)
2005	42,643	1	0.002 (0.0001 – 0.0131)	155,331	2	0.001 (0.0002 – 0.0047)
2006	40,029	2	0.005 (0.0006 – 0.0180)	156,303	4	0.003 (0.0007 – 0.0066)
2007	40,287	3	0.007 (0.0015 – 0.0218)	165,358	6	0.004 (0.0013 – 0.0079)
2008	40,909	5	0.012 (0.0040 – 0.0285)	171,830	5	0.003 (0.0009 – 0.0068)
2009	46,158	1	0.002 (0.0001 – 0.0121)	168,551	2	0.001 (0.0001 – 0.0043)
2010	41,980	2	0.005 (0.0006 – 0.0172)	182,503	2	0.001 (0.0001 – 0.0040)
2011	42,684	2	0.005 (0.0006 – 0.0169)	191,402	3	0.002 (0.0003 – 0.0046)

Box 3.2 HIV prevalence in clients attending Social Hygiene Services, from voluntary blood testing (1992 – 2011)

Year	No. of blood samples	No. of samples tested anti-HIV+	Prevalence (%)	95% C.I. for prevalence (%)
1992	27,334	12	0.044	(0.023 - 0.077)
1993	28,736	16	0.056	(0.032 - 0.090)
1994	30,162	29	0.096	(0.064 - 0.138)
1995	33,896	14	0.041	(0.023 - 0.069)
1996	37,126	25	0.067	(0.044 - 0.099)
1997	38,779	27	0.070	(0.046 - 0.101)
1998	46,127	27	0.059	(0.039 - 0.085)
1999	51,639	31	0.060	(0.041 - 0.085)
2000	51,197	20	0.039	(0.024 - 0.060)
2001	51,209	31	0.061	(0.041 - 0.086)
2002	53,363	41	0.077	(0.055 - 0.104)
2003	42,764	34	0.080	(0.055 - 0.111)
2004	43,980	46	0.105	(0.077 - 0.140)
2005	38,978	28	0.072	(0.048 - 0.104)
2006	37,120	47	0.127	(0.093 - 0.168)
2007	33,841	50	0.148	(0.110 - 0.195)
2008	31,040	72	0.232	(0.181 - 0.292)
2009	29,152	50	0.172	(0.127 - 0.226)
2010	26,300	40	0.152	(0.109 - 0.207)
2011	25,599	44	0.172	(0.125 - 0.231)

Box 3.3 HIV prevalence in drug users attending methadone clinics

(a) HIV prevalence in drug users attending methadone clinics from unlinked anonymous screening (1992 - 2003)*

Year	No. of urine samples	No. of samples tested anti-HIV+	Prevalence (%)	95% C.I. for prevalence (%)
1992	2,189	0	0	(--- - ---)
1993	3,219	0	0	(--- - ---)
1994	4,113	2	0.049	(0.006 - 0.176)
1995	2,240	1	0.045	(0.001 - 0.249)
1996	3,714	1	0.027	(0.001 - 0.150)
1997	1,816	0	0	(--- - ---)
1998	2,838	6	0.211	(0.078 - 0.460)
1999	2,674	3	0.112	(0.023 - 0.328)
2000	3,644	10	0.274	(0.132 - 0.505)
2001	3,811	4	0.105	(0.029 - 0.269)
2002	4,037	10	0.248	(0.119 - 0.456)
2003	1,949	5	0.257	(0.083 - 0.599)

* Replaced by MUT programme since 2004

(b) HIV prevalence in drug users attending methadone clinics from voluntary testing (1991 - 2003)**

Year	*No. of blood samples	No. of samples tested anti-HIV+	Prevalence (%)	95% C.I. for prevalence (%)
1991	379	0	0	(--- - ---)
1992	212	0	0	(--- - ---)
1993	198	0	0	(--- - ---)
1994	296	1	0.338	(0.009 - 1.882)
1995	102	0	0	(--- - ---)
1996	302	0	0	(--- - ---)
1997	254	0	0	(--- - ---)
1998	250	1	0.400	(0.010 - 2.229)
1999	599	3	0.501	(0.103 - 1.464)
2000	602	1	0.166	(0.004 - 0.926)
2001	363	0	0	(--- - ---)
2002	318	0	0	(--- - ---)
2003	148	0	0	(--- - ---)

* all were blood samples, with a small proportion being urine samples since late 1999

** Replaced by MUT programme since 2004

(c) HIV prevalence in drug users attending methadone clinics from Universal HIV Antibody (Urine) Testing Programme (2003 - 2011)

Year	No. of Urine samples	No. of samples tested anti-HIV+	Prevalence (%)	95% C.I. for prevalence (%)
2003 (Jul – Sep)	1,834	9	0.491	(0.224 - 0.932)
2004	8,812	18	0.204	(0.121 - 0.323)
2005	8,696	28	0.322	(0.214 - 0.465)
2006	7,730	28	0.362	(0.241 - 0.524)
2007	7,314	26	0.355	(0.232 - 0.521)
2008	7,955	37	0.465	(0.327 - 0.641)
2009	7,765	38	0.489	(0.346 - 0.672)
2010	7,445	36	0.484	(0.339 - 0.669)
2011	6,960	37	0.53	(0.374 - 0.733)

Box 3.4 HIV prevalence in drug users attending inpatient drug treatment centres / institutions, from unlinked anonymous screening (1998 - 2011)

Year	No. of urine samples	No. of samples tested anti-HIV+	Prevalence (%)	95% C.I. for prevalence (%)
1998	2,286	3	0.131	(0.027 - 0.384)
1999	1,675	3	0.179	(0.037 - 0.523)
2000	1,165	7	0.601	(0.242 - 1.238)
2001	1,137	2	0.176	(0.021 - 0.635)
2002	761	0	0	(--- - ---)
2003	361	1	0.277	(0.007 - 1.543)
2004*	---	---	---	(--- - ---)
2005	630	0	0	(--- - ---)
2006	786	4	0.509	(0.139 - 1.303)
2007	387	0	0	(--- - ---)
2008	369	0	0	(--- - ---)
2009	430	3	0.698	(0.144 - 2.039)
2010	165	0	0	(--- - ---)
2011	396	1	0.253	(0.006 - 1.407)

* Unlinked anonymous screening was not performed in 2004;

Box 3.5 HIV prevalence in newly admitted prisoners from unlinked anonymous screening (1995 - 2011)

Year	No. of Samples*	No. of samples tested anti-HIV+	Prevalence (%)	95% C.I. for prevalence (%)
1995	653	3	0.459	(0.095 - 1.343)
1996	1,503	6	0.399	(0.147 - 0.869)
1997	1,474	3	0.204	(0.042 - 0.595)
1998	1,571	4	0.255	(0.069 - 0.652)
1999	1,580	10	0.633	(0.303 - 1.164)**
2000	1,516	4	0.264	(0.072 - 0.676)
2001	1,502	5	0.333	(0.108 - 0.777)
2002	1,500	6	0.400	(0.147 - 0.871)
2003	1,502	5	0.333	(0.108 - 0.777)
2004	1,980	7	0.354	(0.142 - 0.728)
2005	2,007	6	0.299	(0.110 - 0.651)
2006	2,796	13	0.465	(0.248 - 0.795)
2007	2,718	7	0.258	(0.104 - 0.531)
2008	2,231	21	0.941	(0.583 - 1.439)
2009	1,929	15	0.778	(0.435 - 1.283)
2010	1,450	14	0.966	(0.528 - 1.620)
2011	1,445	27	1.869	(1.231 - 2.718)

* Only samples of 1995 were blood samples. All others were urine samples.

Box 3.6 HIV prevalence in patients with tuberculosis

(a) HIV prevalence in patients attending government TB & Chest Clinics, from unlinked anonymous screening (1990 - 2008)*

Year	No. of blood/urine samples**	No. of samples tested anti-HIV+	Prevalence (%)	95% C.I. for prevalence(%)
1990	1,548	0	0	(--- - ---)
1991	485	0	0	(--- - ---)
1992	1,469	2	0.136	(0.016 - 0.492)
1993	1,173	0	0	(--- - ---)
1994	-	-	-	(--- - ---)
1995	895	2	0.223	(0.027 - 0.807)
1996	998	4	0.401	(0.109 - 1.026)
1997	1,003	2	0.199	(0.024 - 0.720)
1998	833	4	0.480	(0.131 - 1.229)
1999	1,166	8	0.686	(0.296 - 1.352)
2000	1,018	5	0.491	(0.159 - 1.146)
2001	1,071	4	0.373	(0.102 - 0.956)
2002	1,000	8	0.800	(0.345 - 1.576)
2003	920	6	0.652	(0.239 - 1.420)
2004	1,056	9	0.852	(0.390 - 1.618)
2005	840	7	0.833	(0.335 - 1.717)
2006	841	5	0.595	(0.193 - 1.387)
2007	887	11	1.240	(0.619 - 2.219)
2008	783	4	0.511	(0.139 - 1.308)

* Unlinked anonymous screening was not performed in 1994, and suspended since 2009

** Only samples before 1994 were blood samples. urine samples provided since 1995.

(b) HIV prevalence in patients attending government TB & Chest Clinics, from voluntary blood testing (1993 - 2011)

Year	No. of blood samples	Coverage*		No. of anti-HIV+	Prevalence (%)	95% C.I. for prevalence (%)
		A	B			
1993	2,116	---	---	0	0	(--- - ---)
1994	2,534	---	---	2	0.079	(0.010 - 0.285)
1995	2,548	---	---	2	0.078	(0.010 - 0.284)
1996	3,157	---	---	2	0.063	(0.008 - 0.229)
1997	3,524	---	---	2	0.057	(0.007 - 0.205)
1998	3,726	---	---	6	0.161	(0.059 - 0.350)
1999	3,633	---	---	11	0.303	(0.151 - 0.542)
2000	3,426	92.8%	44.8%	3	0.088	(0.018 - 0.256)
2001	3,404	94.2%	45.3%	9	0.264	(0.121 - 0.502)
2002	3,186	94.2%	47.4%	7	0.220	(0.088 - 0.453)
2003	3,122	92.3%	50.4%	2	0.064	(0.008 - 0.231)
2004	3,202	93.1%	44.4%	10	0.312	(0.150 - 0.574)
2005	4,209	81.2%	68.3%	35	0.832	(0.579 - 1.157)
2006	4,511	91.0%	78.2%	33	0.732	(0.504 - 1.027)
2007	4,075	88.7%	74.6%	41	1.006	(0.722 - 1.365)
2008	4,121	89.9%	73.1%	48	1.165	(0.859 - 1.544)
2009	3,993	89.0%	76.9%	40	1.002	(0.716 - 1.364)
2010	3,833	90.2%	75.3%#	28	0.730	(0.485 - 1.056)
2011	3,656	90.6%	74.2%**	33	0.903	(0.621 - 1.268)

* coverage A is the proportion of patients attended government TB & Chest Clinics who have been tested for HIV in TB Clinic. (For year 2000-2004, it used to be the proportion of patients who started on TB tx at government TB & Chest Clinics who have been tested for HIV in TB Clinic);
B is the proportion of total TB notifications who have been tested for HIV at government TB & Chest Clinics.

figures revised

** provisional figure

Box 3.7 HIV prevalence among antenatal women

(a) HIV prevalence among antenatal women from unlinked anonymous screening (1990 - 2000)

Year	No. of blood samples	No. of anti-HIV+	Prevalence (%)	95% C.I. for prevalence (%)
1990	993	0	0	(--- - ---)
1991	5,253	0	0	(--- - ---)
1992	5,796	0	0	(--- - ---)
1993	4,532	0	0	(--- - ---)
1994	4,762	0	0	(--- - ---)
1995	4,648	1	0.02	(0.0005 - 0.1199)
1996	3,968	1	0.03	(0.0006 - 0.1404)
1997	3,331	0	0	(--- - ---)
1998	3,031	1	0.03	(0.0008 - 0.1838)
1999	3,125	1	0.03	(0.0008 - 0.1783)
2000	3,478	1	0.03	(0.0007 - 0.1602)

(b) HIV prevalence among antenatal women from Universal Antenatal HIV Antibody Testing Programme (2001 - 2011)

Year	Number of blood samples	Coverage*	Number of positive tests	Prevalence (%)	95% C.I. for prevalence (%)
2001 (Sep-Dec)	12,965	96.6%	7	0.05	(0.0217 - 0.1112)
2002	41,932	97.2%	8	0.02	(0.0082 - 0.0376)
2003	36,366	96.9%	6	0.02	(0.0061 - 0.0359)
2004	41,070	97.9%	6	0.01	(0.0054 - 0.0318)
2005	42,750	98.1%	5	0.01	(0.0038 - 0.0273)
2006	43,297	98.0%	9	0.02	(0.0095 - 0.0395)
2007	47,472	97.4%	11	0.02	(0.0116 - 0.0415)
2008	51,737	98.2%	2	0.004	(0.0005 - 0.0140)
2009	51,227	98.3%	7	0.01	(0.0055 - 0.0282)
2010	54,360**	98.6%	10	0.02	(0.0088 - 0.0338)
2011	55,984	98.8%	6	0.01	(0.0039 - 0.0233)

* coverage is the proportion of women attending public antenatal services who have been tested for HIV
** revised figures

Box 3.8 HIV prevalence among MSM tested by AIDS Concern (2000 - 2011)

Year	Number of test*	Number of positive tests	Prevalence (%)	95% C.I. for prevalence (%)
2000	38	0	0	(--- - ---)
2001	107	1	0.93	(0.024 - 5.207)
2002	130	1	0.77	(0.019 - 4.286)
2003	223	2	0.90	(0.109 - 3.240)
2004	332	6	1.81	(0.663 - 3.934)
2005	483	12	2.48	(1.284 - 4.340)
2006	610	10	1.64	(0.786 - 3.015)
2007	723	17	2.35	(1.370 - 3.765)
2008	905	15	1.66	(0.928 - 2.734)
2009	909	18	1.98	(1.174 - 3.130)
2010	854	18	2.11	(1.249 - 3.331)
2011	1,026	20	1.95	(1.191 - 3.011)

* HIV rapid test

Box 3.9 HIV prevalence among MSM – PRISM* (2006 - 2011)

Year	Number of urine specimen collected	Number of positive tests	Crude Prevalence (%)	Adjusted Prevalence (%)	95% C.I. for adjusted prevalence (%)
2006	859	37	4.31	4.05	(3.03 - 5.94)
2008	833	37	4.44	4.31	(2.95 - 5.67)
2011	816	30	3.68	4.08	(3.44 - 4.85)

*PRISM: HIV Prevalence and Risk behavioural Survey of Men who have sex with men in Hong Kong, a venue based survey including bars and saunas both in 2006 and 2008 round. Beaches was newly added in 2011 round.

4. TABULATED RESULTS OF STATISTICS ON SEXUALLY TRANSMITTED INFECTIONS (STI)

System description:

- This is a clinic based disease reporting system contributed by Social Hygiene Service, Department of Health. Summary tables are submitted quarterly by Social Hygiene Service. The clinics included in this surveillance system are: Chai Wan, Lek Yuen[1], Wan Chai, Western[2], Yau Ma Tei, South Kwai Chung[3], Yung Fung Shee, Tuen Mun, Fanling ITC[4], Tai Po, and Shek Wu Hui[5].

[1]Lek Yuen Clinic was closed since April 2005

[2]Western Social Hygiene Clinic was merged with Wan Chai Social Hygiene Clinic and Sai Ying Pun Dermatology Clinic wef 2.7.2003

[3]South Kwai Chung Clinic was closed on 27.3.2004

[4]Venereal Diseases Clinics in Fanling ITC was commenced operation in part-time basis on 1.9.2003 by appointment only.

[5]Tai Po and Shek Wu Hui clinics were closed since 2001

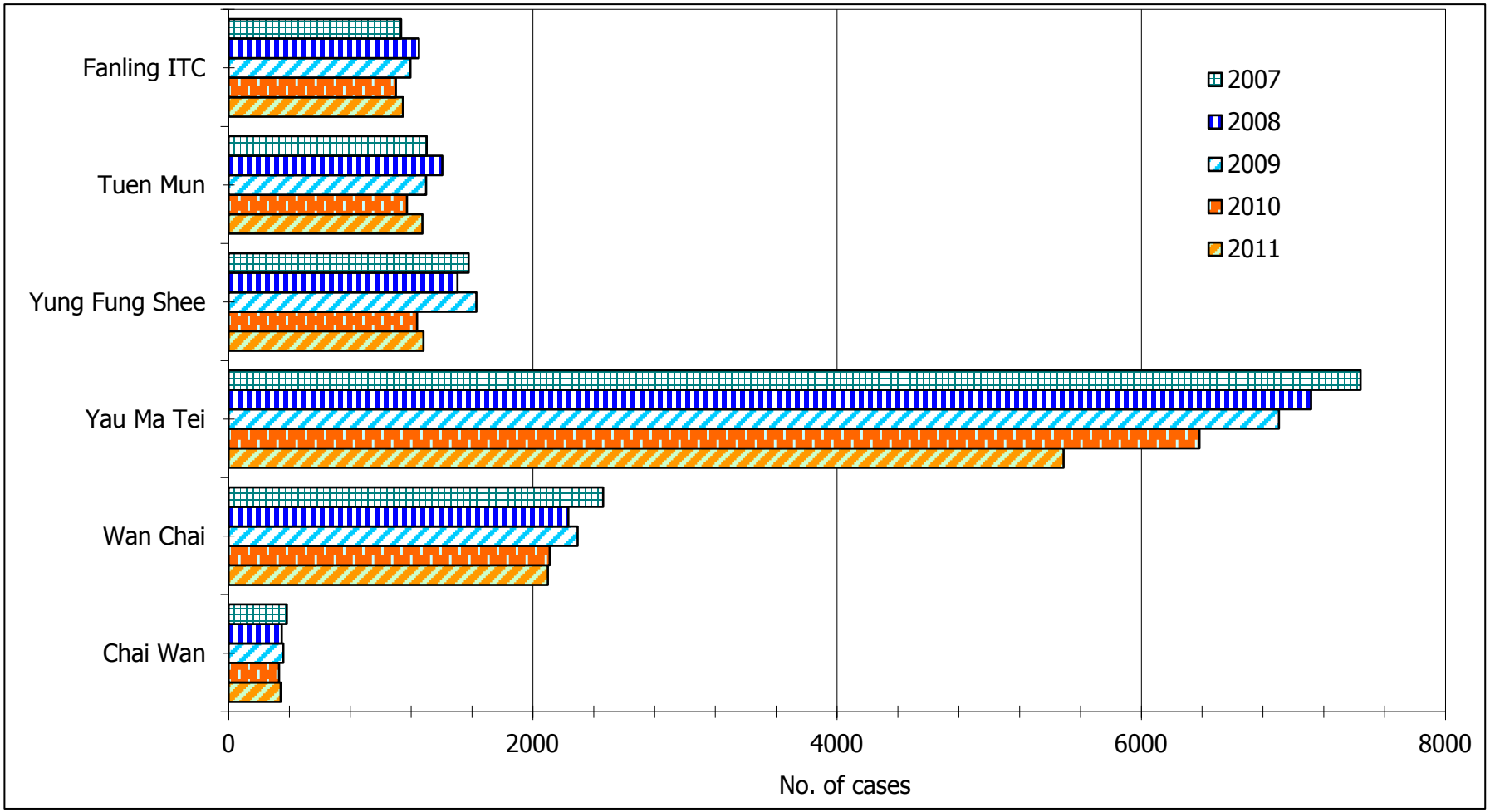
Box 4.1 Total number of STI newly reported by individual Social Hygiene Clinic

(a) Year 2011

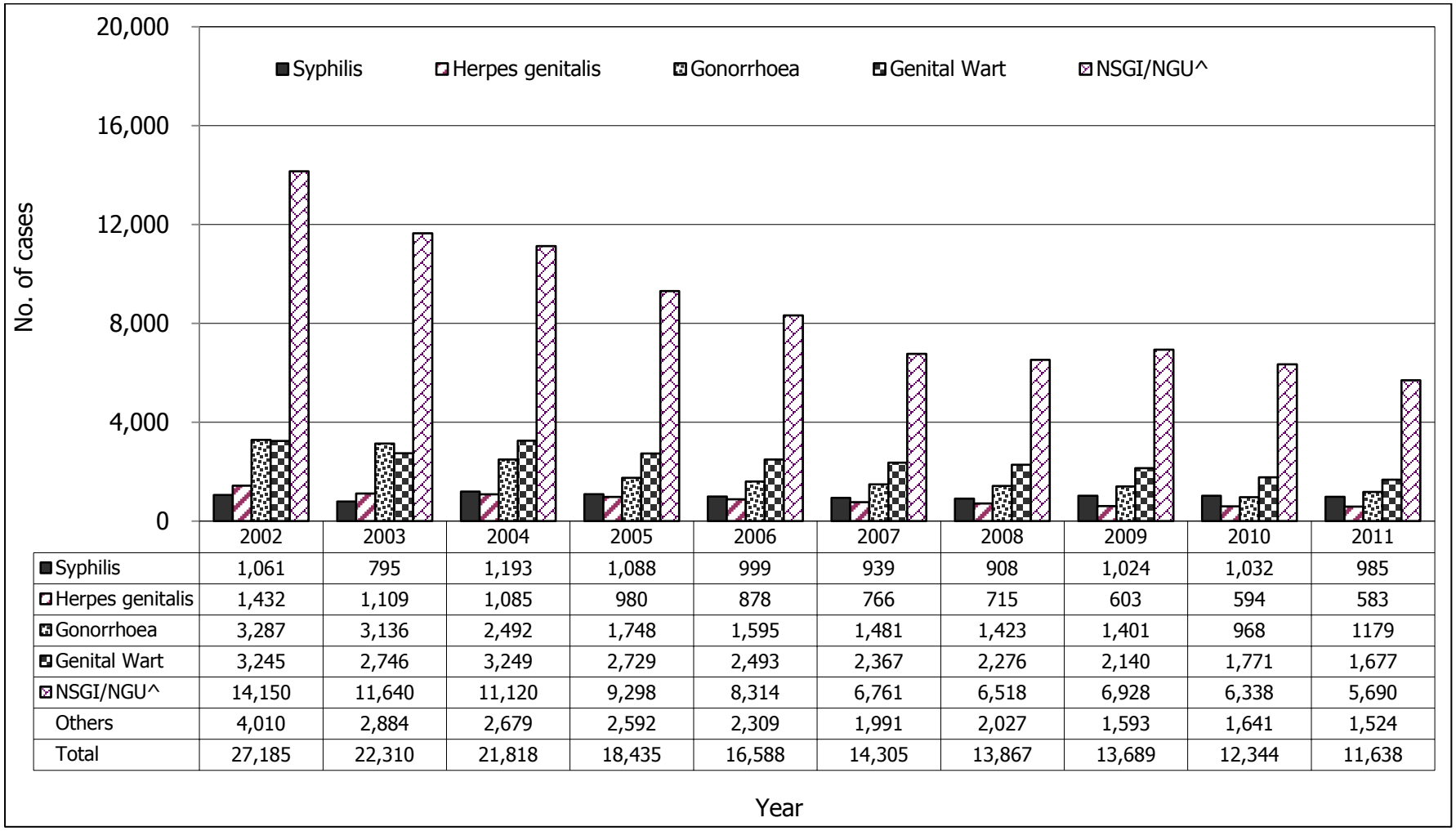
	Chai Wan	Wan Chai	Yau Ma Tei	Yung Fung Shee	Tuen Mun	Fanling ITC[#]	Total
Male	144	1,380	3,067	875	642	647	6,755
Female	200	720	2,423	407	633	500	4,883
Total	344	2,100	5,490	1,282	1,275	1,147	11,638

Venereal Diseases Clinics in Fanling ITC commenced operation in part-time basis on 1.9.2003 by appointment only.

(b) 2007 - 2011


Fanling ITC
Tuen Mun
Yung Fung Shee
Yau Ma Tei
Wan Chai
Chai Wan
2007
2008
2009
2010
2011
0
2000
4000
6000
8000
No. of cases

Box 4.2 Annual newly reported STIs in Social Hygiene Clinics



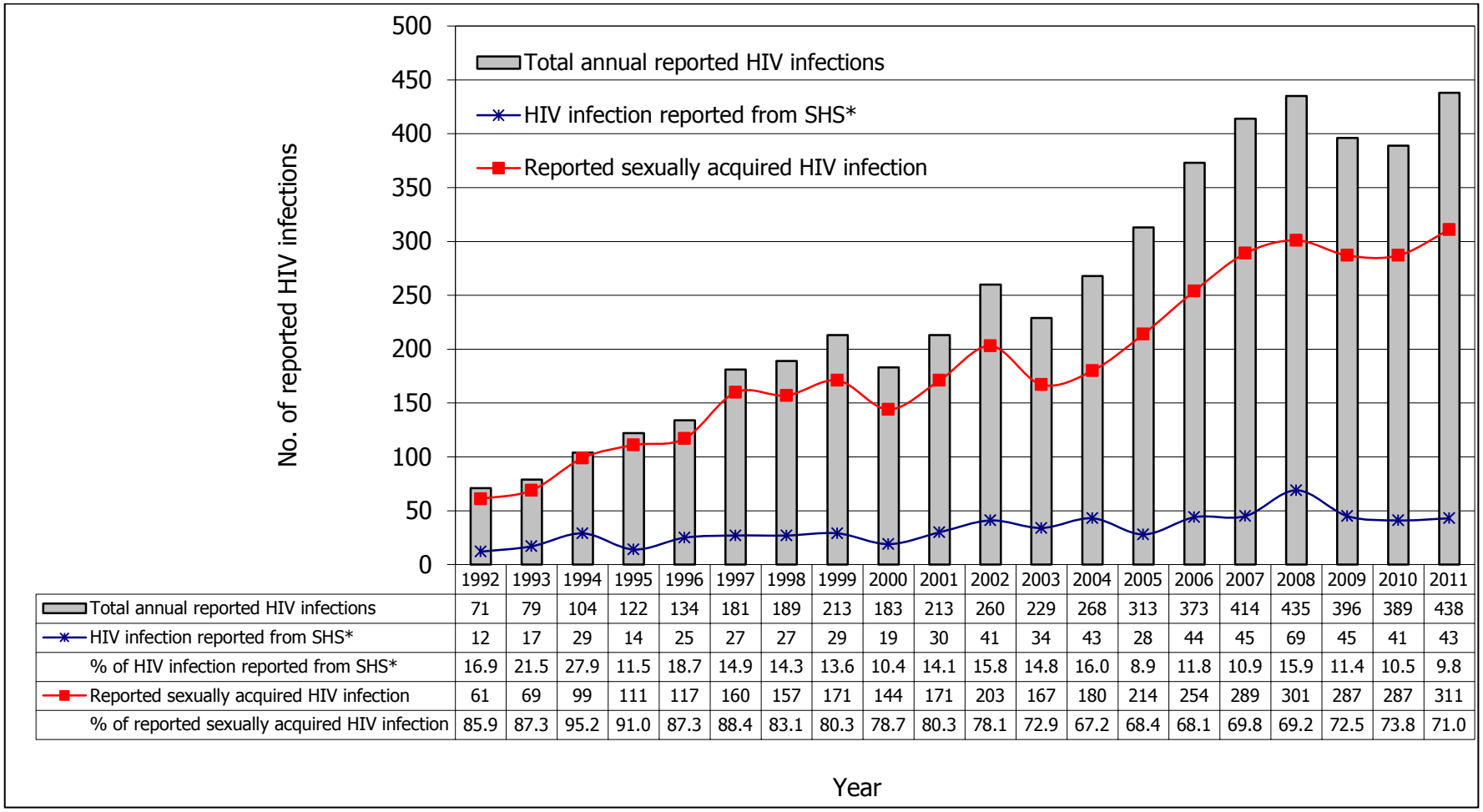
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Syphilis	1,061	795	1,193	1,088	999	939	908	1,024	1,032	985
Herpes genitalis	1,432	1,109	1,085	980	878	766	715	603	594	583
Gonorrhoea	3,287	3,136	2,492	1,748	1,595	1,481	1,423	1,401	968	1179
Genital Wart	3,245	2,746	3,249	2,729	2,493	2,367	2,276	2,140	1,771	1,677
NSGI/NGU^	14,150	11,640	11,120	9,298	8,314	6,761	6,518	6,928	6,338	5,690
Others	4,010	2,884	2,679	2,592	2,309	1,991	2,027	1,593	1,641	1,524
Total	27,185	22,310	21,818	18,435	16,588	14,305	13,867	13,689	12,344	11,638

^ NSGI / NGU : Non-specific Genital Infection / Non-gonococcal Urethritis

Box 4.3 Syphilis newly reported by Social Hygiene Clinics (2007 - 2011)

Year / Syphilis	2007	2008	2009	2010	2011
Primary	50	45	63	50	52
Secondary	58	56	69	54	51
Early latent	63	82	61	91	64
Late latent	764	720	816	821	805
Late (cardiovascular / neuro)	3	5	12	16	8
Congenital (early)	0	0	0	0	0
Congenital (late)	1	0	3	0	5
Total	939	908	1,024	1,032	985

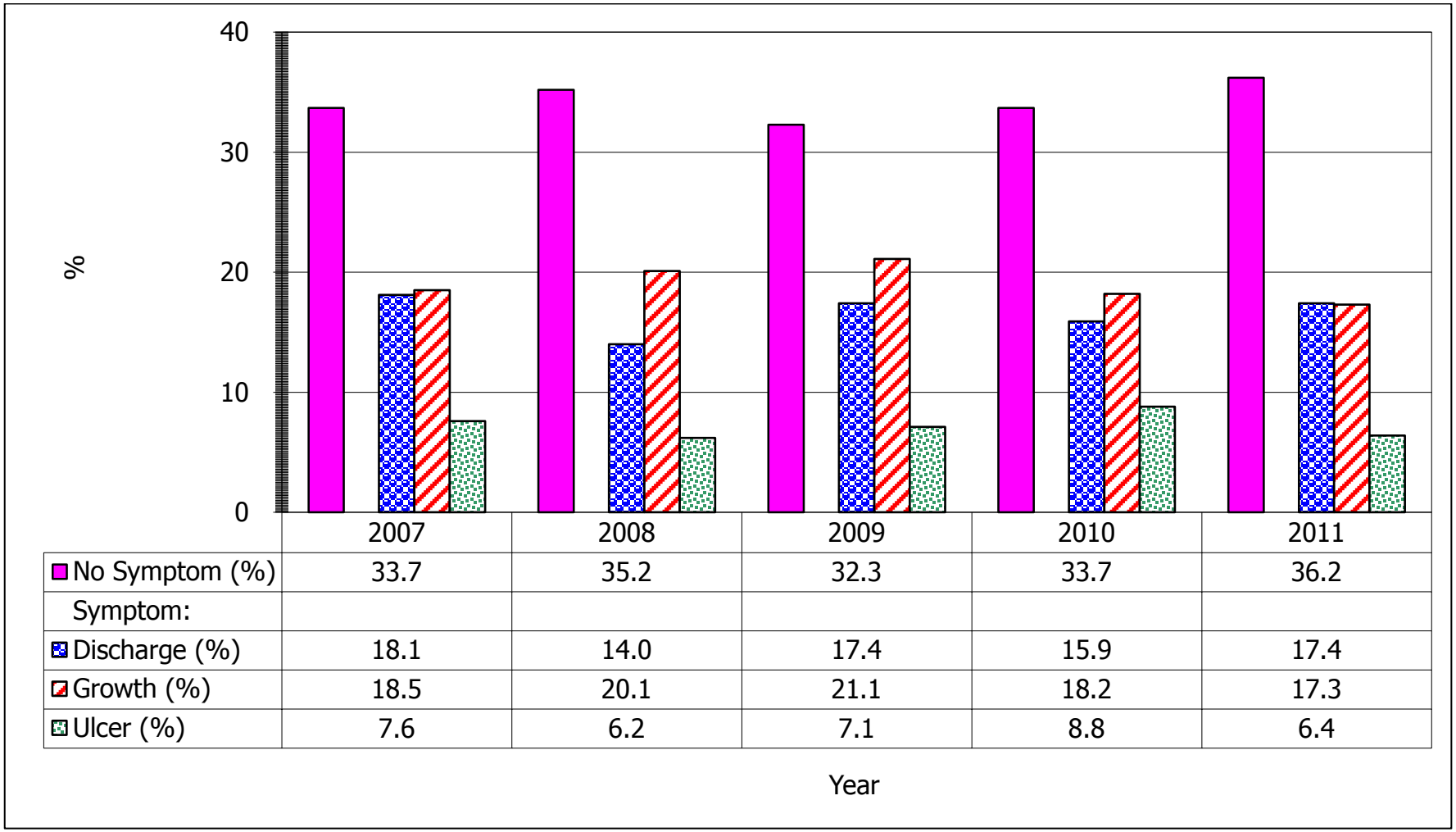
Box 4.4 Sexually acquired HIV infection in Hong Kong



	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Total annual reported HIV infections	71	79	104	122	134	181	189	213	183	213	260	229	268	313	373	414	435	396	389	438
HIV infection reported from SHS*	12	17	29	14	25	27	27	29	19	30	41	34	43	28	44	45	69	45	41	43
% of HIV infection reported from SHS*	16.9	21.5	27.9	11.5	18.7	14.9	14.3	13.6	10.4	14.1	15.8	14.8	16.0	8.9	11.8	10.9	15.9	11.4	10.5	9.8
Reported sexually acquired HIV infection	61	69	99	111	117	160	157	171	144	171	203	167	180	214	254	289	301	287	287	311
% of reported sexually acquired HIV infection	85.9	87.3	95.2	91.0	87.3	88.4	83.1	80.3	78.7	80.3	78.1	72.9	67.2	68.4	68.1	69.8	69.2	72.5	73.8	71.0

* SHS: Social Hygiene Service

Box 4.5 Syndromic presentations of STI from Behavioural Survey of Social Hygiene Service



	2007	2008	2009	2010	2011
No Symptom (%)	33.7	35.2	32.3	33.7	36.2
Symptom:					
Discharge (%)	18.1	14.0	17.4	15.9	17.4
Growth (%)	18.5	20.1	21.1	18.2	17.3
Ulcer (%)	7.6	6.2	7.1	8.8	6.4

5. TABULATED RESULTS ON BEHAVIOURAL MONITORING

System description

- This is a tabulation of behavioural data relating to HIV risk collected from different sources in Hong Kong

System layout

Source	Sexual behaviour	Drug-taking behaviour	Data available in 2011
AIDS Counselling and Testing Service (ACTS), Special Preventive Programme	- Median no. of sexual partners in heterosexual men - Recent history of commercial sex - Condom use in heterosexual men - Median no. of sexual partners and Condom use in MSM		Yes
Social Hygiene Service (SHS)	- Recent history of commercial sex / casual sex - Condom use in heterosexual men		Yes
Methadone clinics (DRS-M)		- Proportion of current injectors - Practice of current needle-sharing	Yes
Shek Kwu Chau (SKC) Treatment and Rehabilitation Centre (DRS-S)		- Proportion of current injectors - Practice of current needle-sharing	Yes
Central Registry of Drug Abuse (CRDA)		- Proportion of current injectors in all drug users - Proportion of current injectors in new drug users	Yes
Street Addict Survey (SAS) (From the Society for the Aid and Rehabilitation of Drug Abusers)		- Proportion of current injectors - Practice of current needle-sharing	Yes
AIDS Concern testing service for MSM (AC)	- Condom use in MSM		Yes

Box 5.1 Median number of sex partners in the previous year among adult^ heterosexual men / MSM attending AIDS Counselling and Testing Service (ACTS)

	2003	2004	2005	2006	2007	2008	2009	2010	2011
Heterosexual men - Regular sex partners*	1	1	1	1	1	1	1	1	1
Heterosexual men - Commercial sex partners**	2	2	2	2	2	2	3	3	2
Heterosexual men - Casual sex partners***	1	1	1	1	1	1	1	1	1
MSM - Regular sex partners*	1	1	1	1	1	1	1	1	1
MSM - Commercial sex partners**	2.5	2	1	1.5	1	2	3	1.5	1
MSM - Casual sex partners***	3	4	3	3	3	4	4	3.5	3

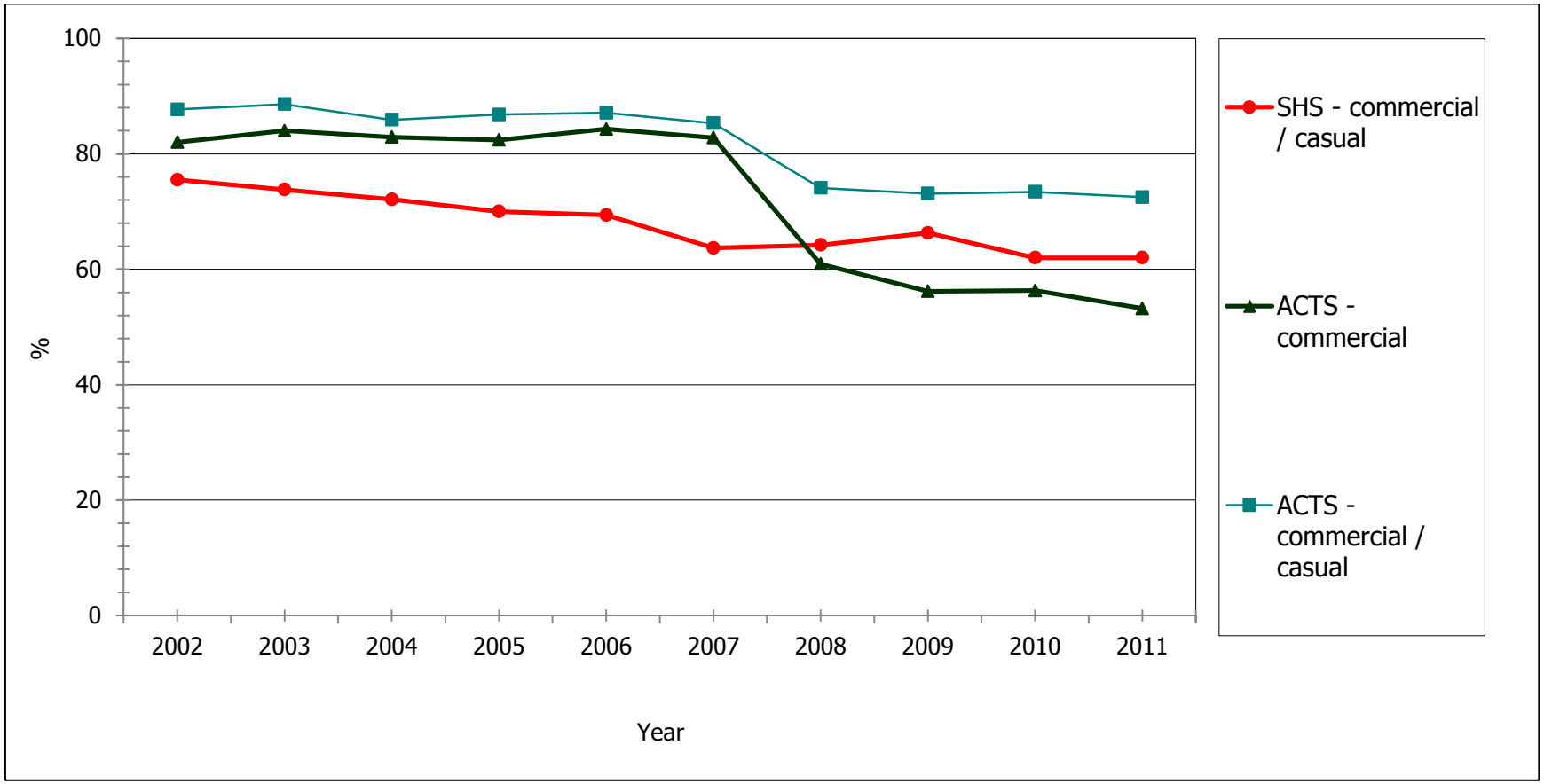
^ Adult: aged 18 or above

* Regular sex partners used to refer to long-term sex partners including spouse, mistress, and steady boyfriends/girlfriends for at least one year, or if less than one year, one with whom is expected to continue sexual relationship. This definition of regular sex partners in 2008 has been further refined to include (other than the long-term sex partners) sex buddy that refers to regular sex only partner for at least 6 months, or if less than 6 months, one with whom is expected to continue sexual relationship

** Commercial sex partners are defined as those who have sexual intercourse in exchange for money, goods or services. Examples are prostitutes and customers of prostitutes.

*** Casual sex partners, the two do not have steady relationship.

Box 5.2 Recent history* of commercial / casual sex among adult^ heterosexual men



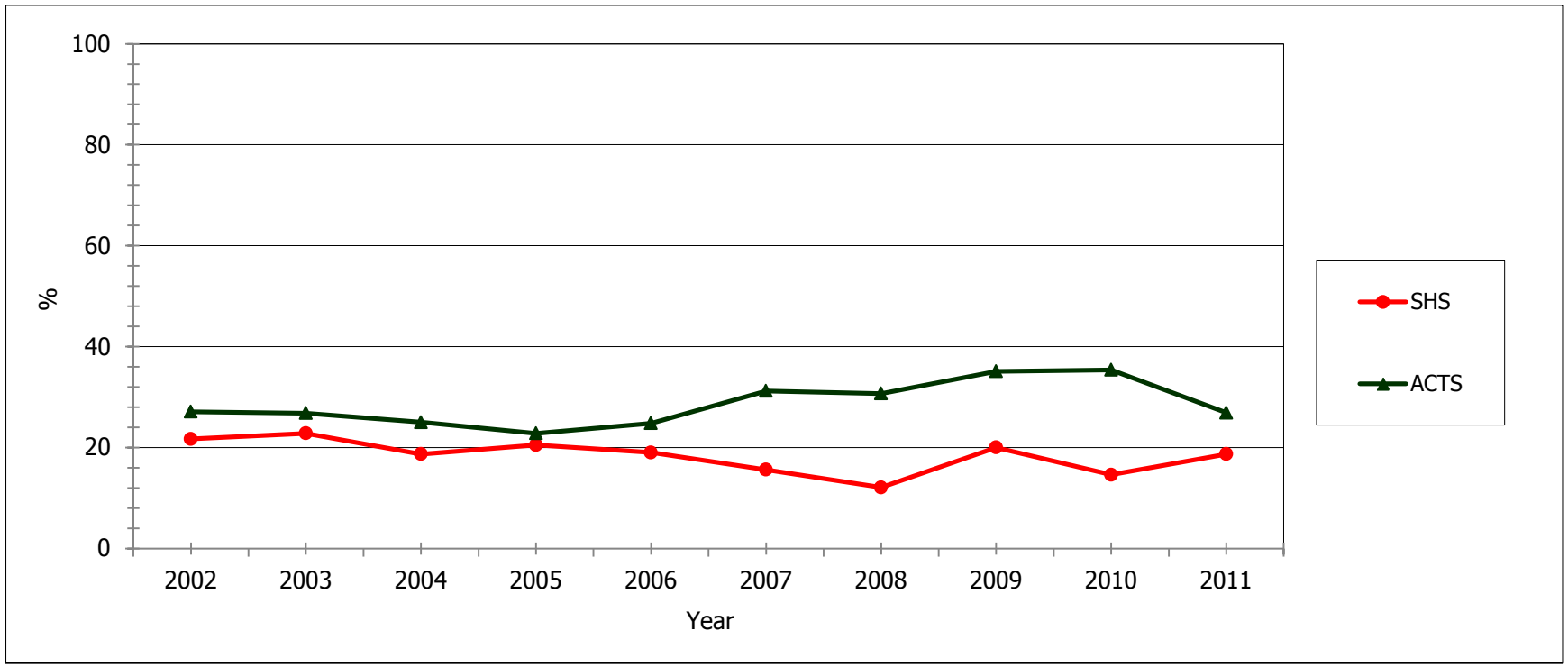
* Commercial sex partners are defined as those who have sexual intercourse in exchange for money, goods or services. Examples are female sex workers and their clients. Casual sex partners are defined as those who are non-regular and non-commercial. Examples are those on one-night stand. SHS & ACTS refers to such history in past one year;

^ Adult: aged 18 or above

Remarks : SHS – Social Hygiene Services
ACTS - AIDS Counselling and Testing Service

Box 5.3 Condom use with regular partners among adult heterosexual men

(a) Consistent condom use* with regular partners among adult^ heterosexual men**



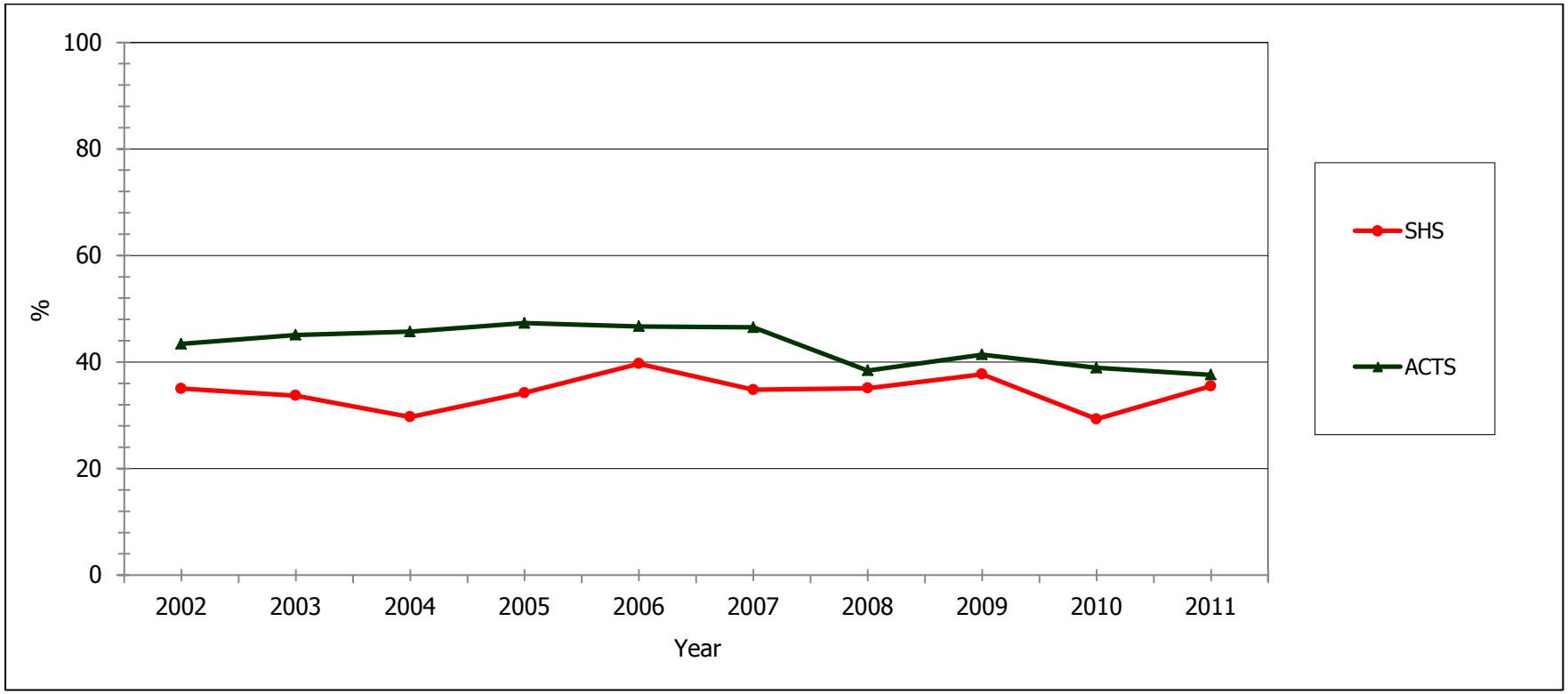
* Consistent condom use is defined as always or 100% of the time using a condom
ACTS captures such condom usage in past one year while SHS captures such usage in past 3 months

** Regular sex partners used to refer to long-term sex partners including spouse, mistress, and steady girl friends for at least one year, or if less than one year, one with whom is expected to continue sexual relationship. This definition of regular sex partners in 2008 has been further refined to include (other than the long-term sex partners) sex buddy that refers to regular sex only partner for at least 6 months, or if less than 6 months, one with whom is expected to continue sexual relationship

^ Adult: aged 18 or above

Remarks : SHS – Social Hygiene Services
ACTS - AIDS Counselling and Testing Service

(b) Condom use for last sex with regular partners* among adult^ heterosexual men



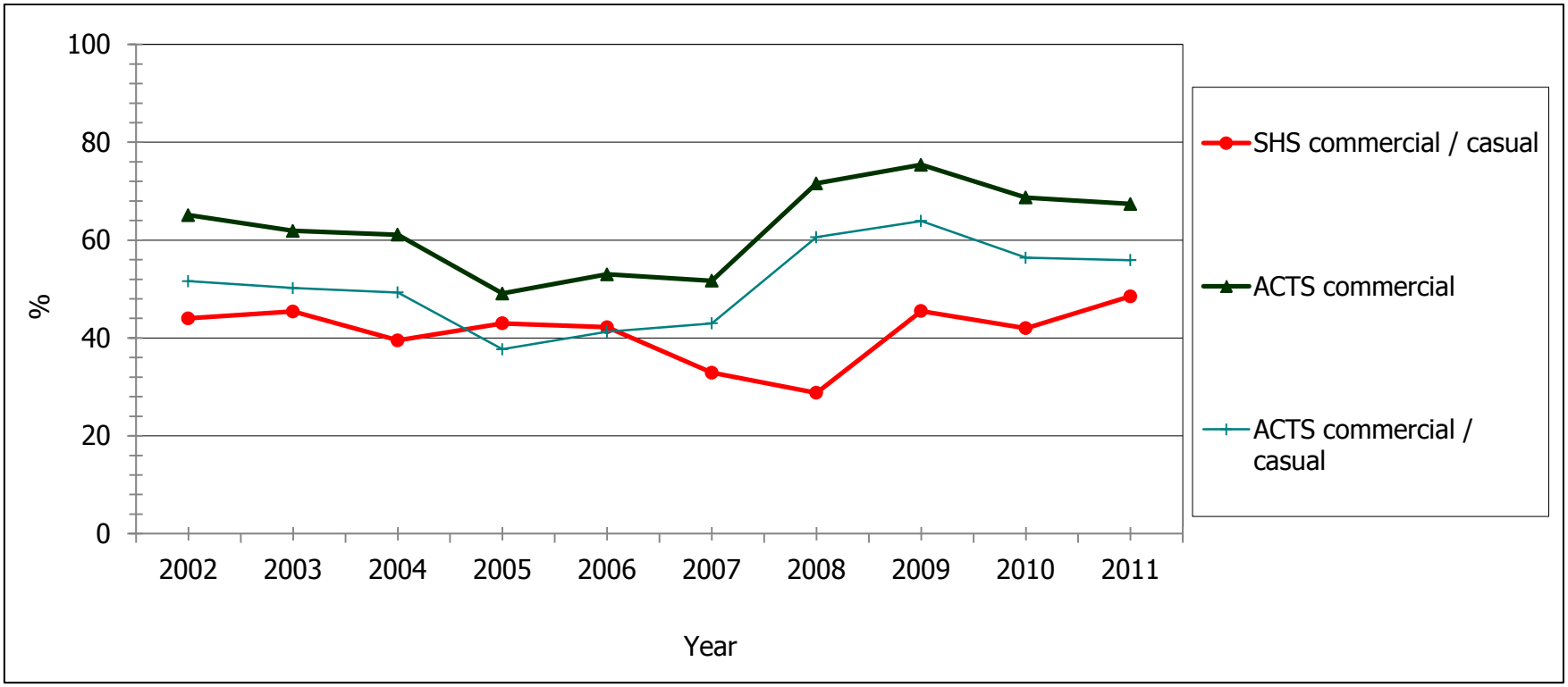
* Regular sex partners used to refer to long-term sex partners including spouse, mistress, and steady girl friends for at least one year, or if less than one year, one with whom is expected to continue sexual relationship. This definition of regular sex partners in 2008 has been futher refined to include (other than the long-term sex partners) sex buddy that refers to regular sex only partner for at least 6 months, or if less than 6 months, one with whom is expected to continue sexual relationship Regular sex partners refer to the spouse or other long-term sex partners for at least one year, or if less than one year.

^ Adult: aged 18 or above

Remarks : SHS – Social Hygiene Services
ACTS - AIDS Counselling and Testing Service

Box 5.4 Condom use with commercial / casual partners among adult heterosexual men

(a) Consistent condom use* with commercial / casual partners among adult^ heterosexual men**



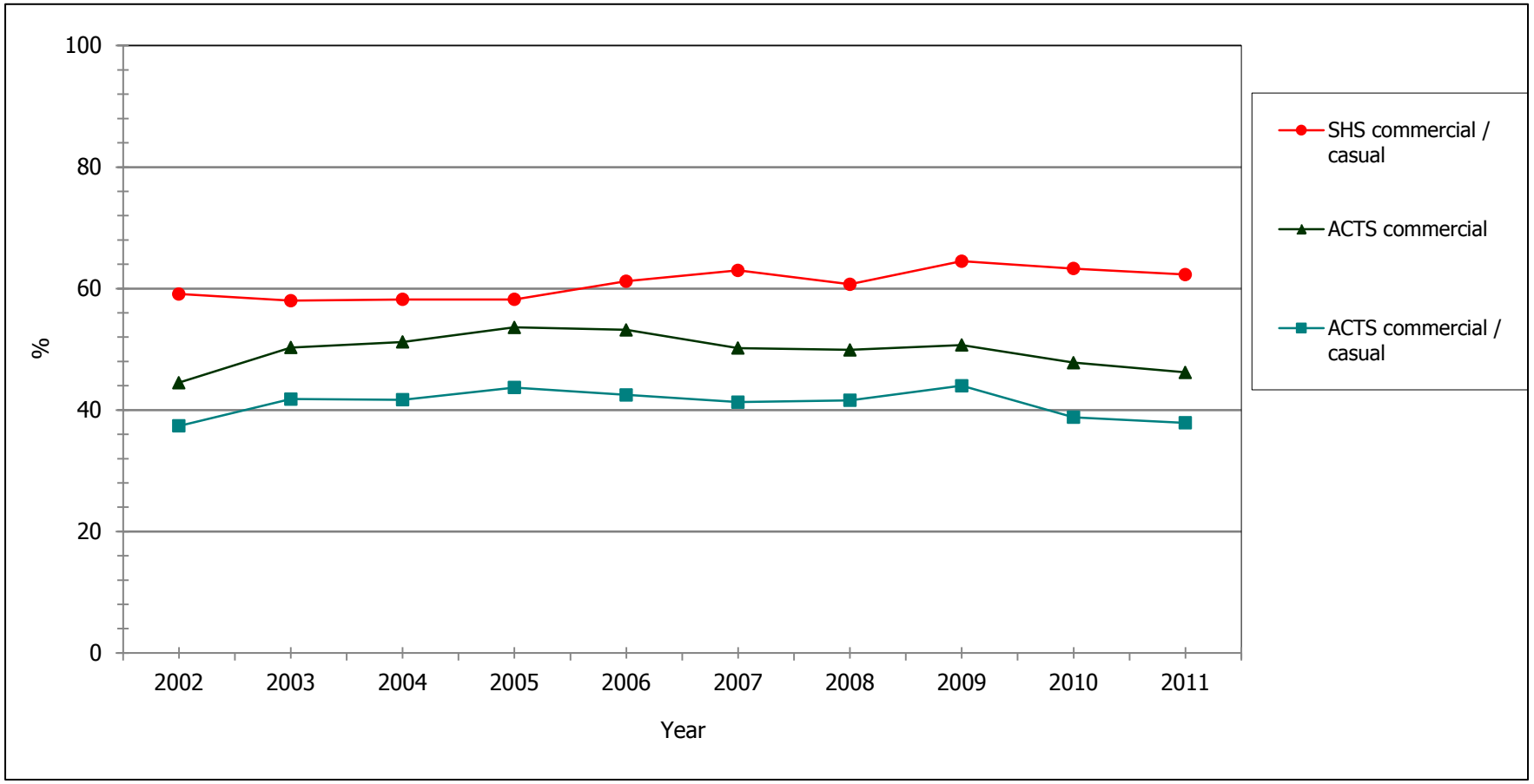
* Consistent condom use is defined as always or 100% of the time using a condom
ACTS captures such condom usage in past one year while SHS captures such usage in past 3 months

** Commercial sex partners are defined as those who have sexual intercourse in exchange for money, goods or services. Examples are female sex workers and their clients. Casual sex partners are defined as those who are non-regular and non-commercial. Examples are those on one-night stand.

^ Adult: aged 18 or above

Remarks : SHS – Social Hygiene Services
ACTS - AIDS Counselling and Testing Service

(b) Condom use for last sex with commercial / casual partners* among adult^ heterosexual men



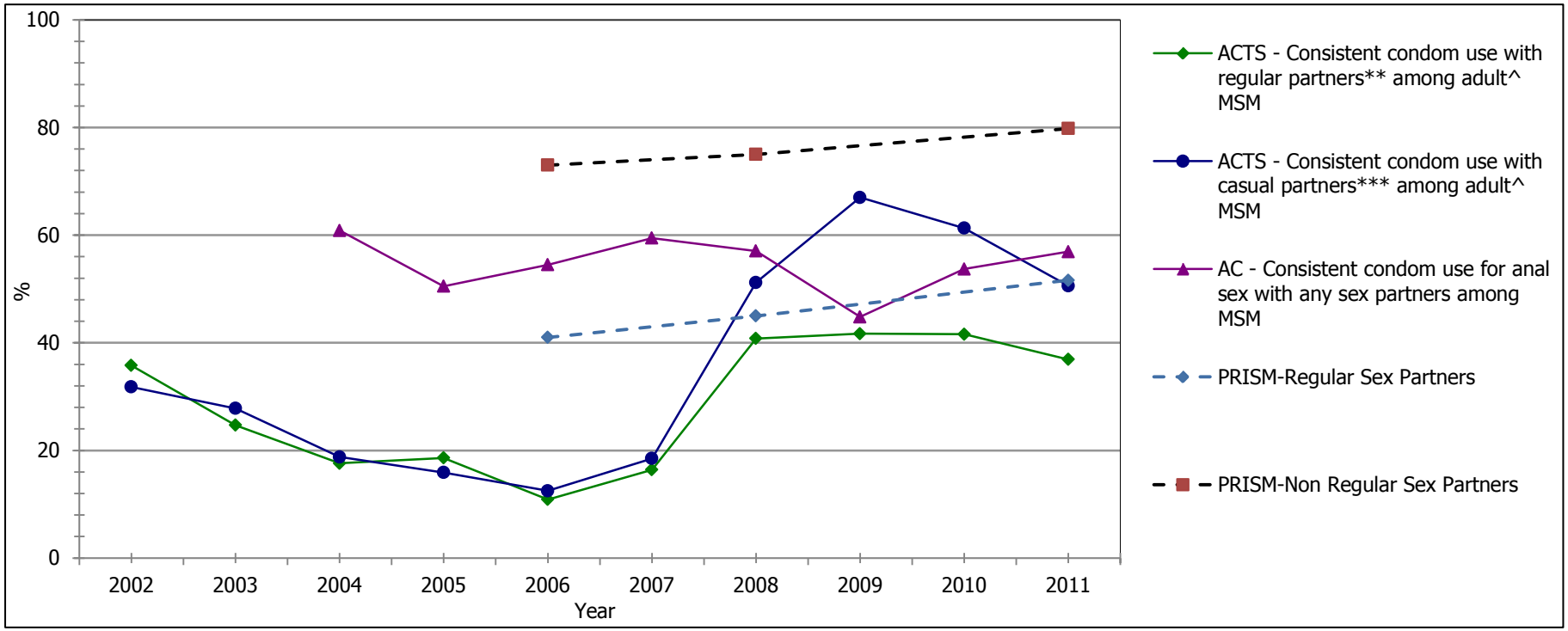
* Commercial sex partners are defined as those who have sexual intercourse in exchange for money, goods or services. Examples are female sex workers and their clients. Casual sex partners are defined as those who are non-regular and non-commercial. Examples are those on one-night stand. .

^ Adult: aged 18 or above

Remarks : SHS – Social Hygiene Services
ACTS - AIDS Counselling and Testing Service

Box 5.5 Condom use among Men have Sex with Men (MSM)

(a) Consistent condom use* among MSM



* Consistent condom use is defined as always or 100% of the time using a condom. ACTS captures such condom usage in past one year while AC captures such usage in past 3 months

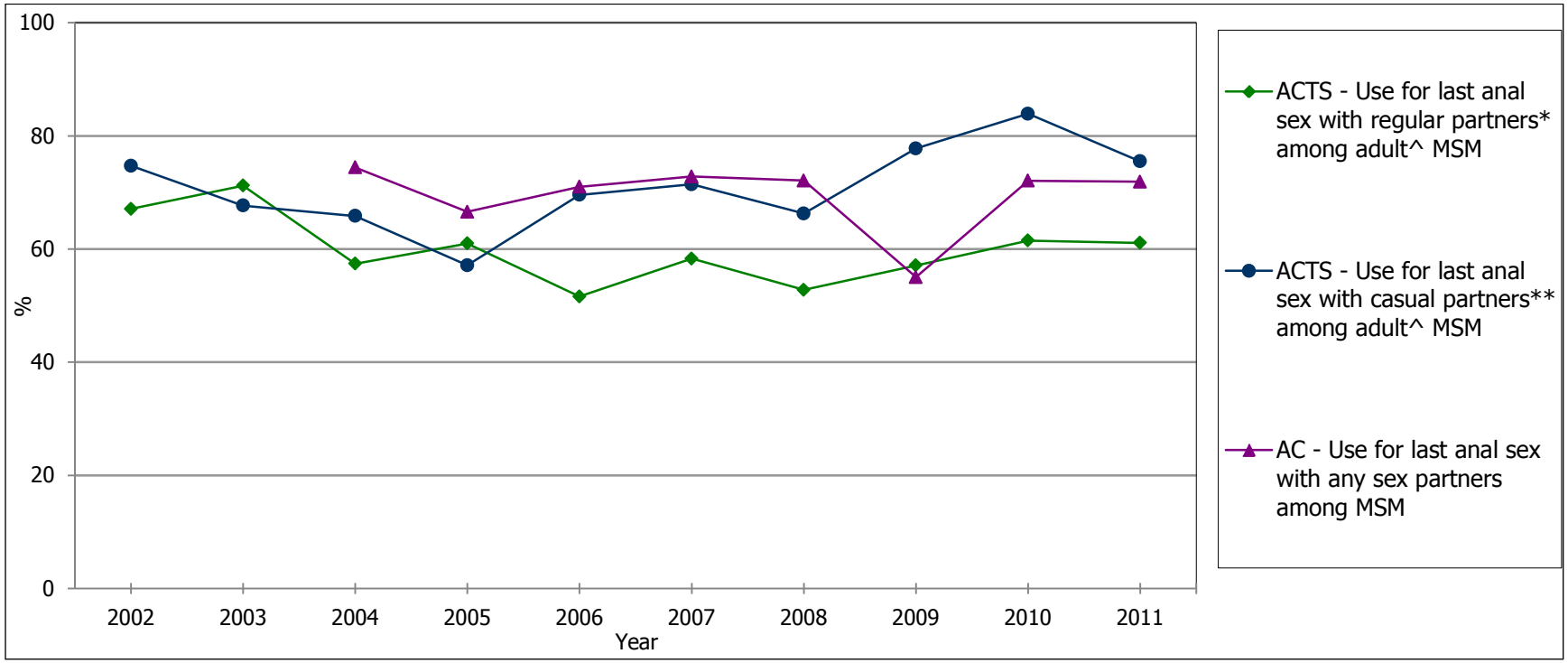
** Regular sex partners used to refer to long-term sex partners including spouse, mistress, and steady boy/girl friends for at least one year, or if less than one year, one with whom is expected to continue sexual relationship. This definition of regular sex partners in 2008 has been futher refined to include (other than the long-term sex partners) sex buddy that refers to regular sex only partner for at least 6 months, or if less than 6 months, one with whom is expected to continue sexual relationship

*** Casual sex partners, the two do not have steady relationship.

^ Adult: aged 18 or above

Remarks: ACTS - AIDS Counselling and Testing Service
AC - AIDS Concern
PRISM- HIV Prevalence and Risk Behavioural Survey of Men who have wex with Men in Hong Kong

(b) Condom use for last anal sex among MSM



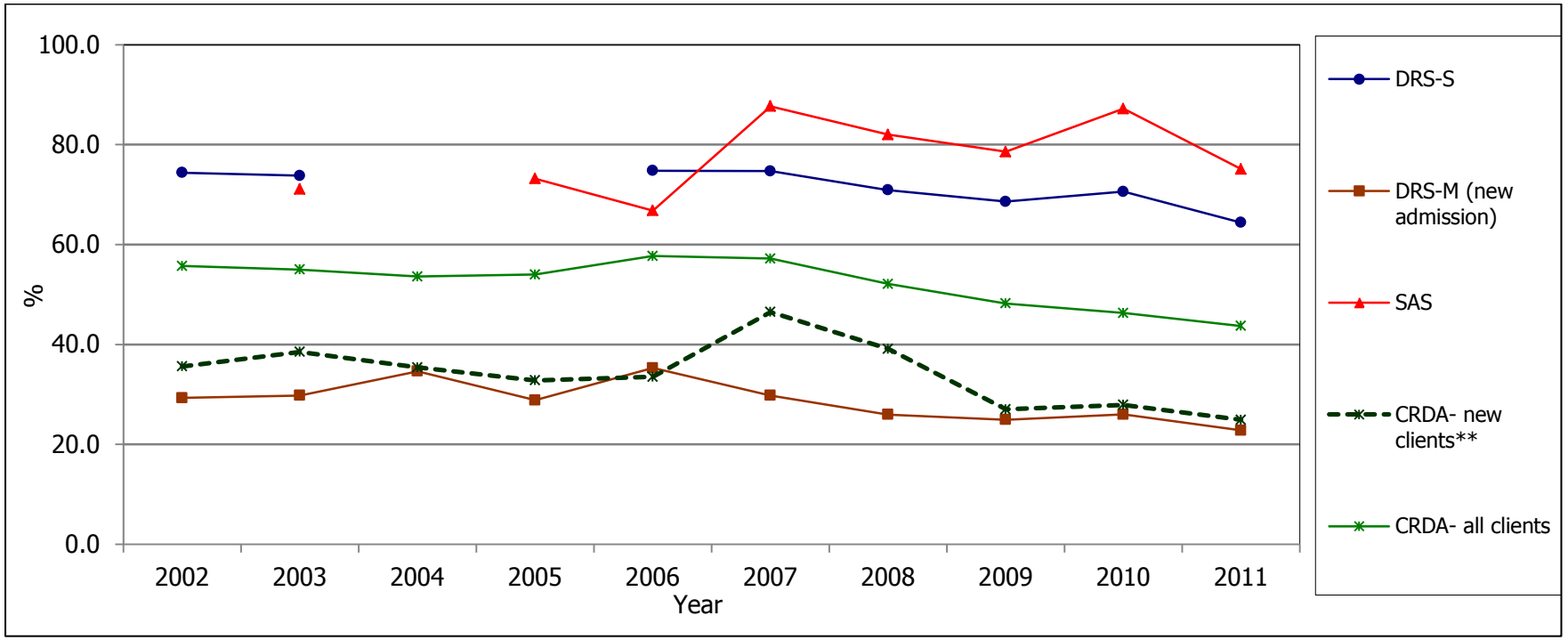
* Regular sex partners used to refer to long-term sex partners including spouse, and steady boy friends for at least one year, or if less than one year, one with whom is expected to continue sexual relationship. This definition of regular sex partners in 2008 has been futher refined to include (other than the long-term sex partners) sex buddy that refers to regular sex only partner for at least 6 months, or if less than 6 months, one with whom is expected to continue sexual relationship

** Casual sex partners, the two do not have steady relationship.

^ Adult: aged 18 or above

Remarks : ACTS - AIDS Counselling and Testing Service
AC - AIDS Concern

Box 5.6 Proportion of current injectors*

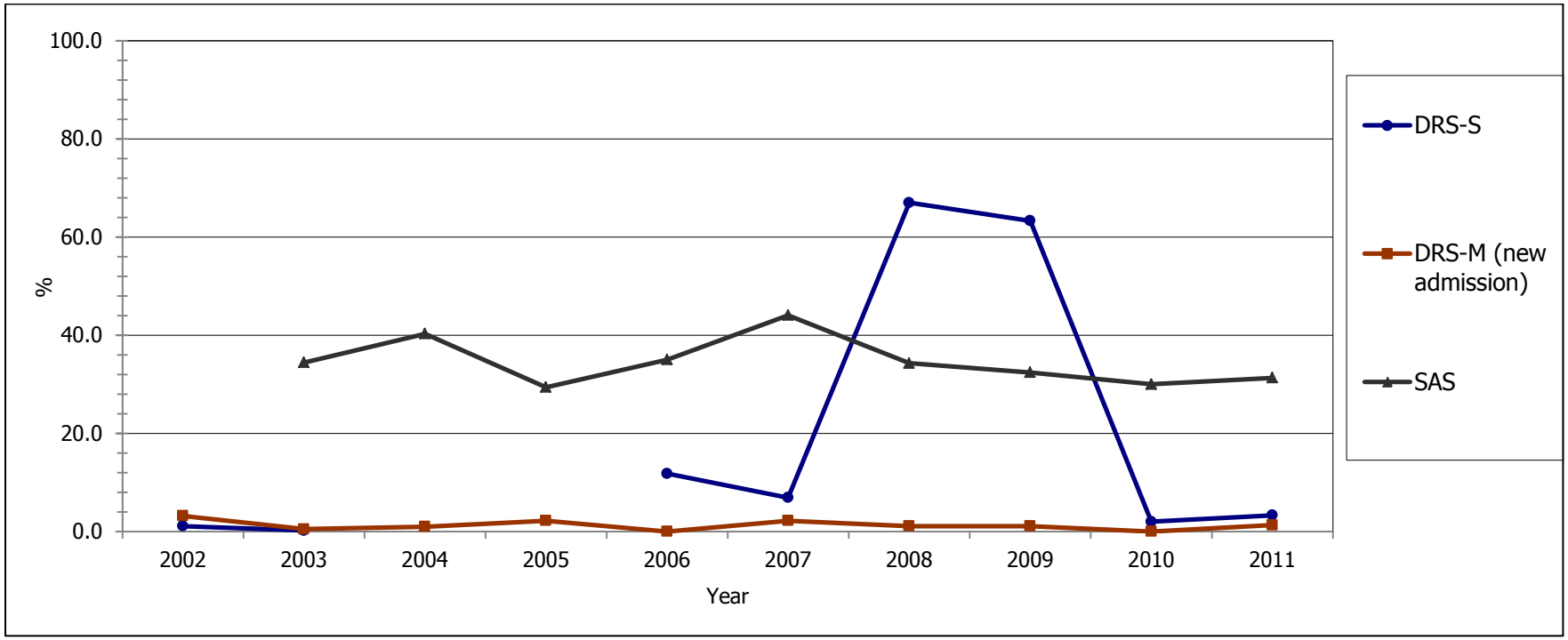


* Definitions differ for different data sources. DRS-S refers to drug injecting behaviour in past 6 months (before 2006, it referred to drug injecting at the time of programme admission); DRS-M refers to drug injecting at the time of programme admission; SAS refers to drug injecting behaviour in past 1 month (before 2007, it referred to drug injecting in past 3 months); CRDA refers to drug injecting behaviour in past 4 weeks;

** New clients refer to people who are known to the CRDA for the first time in a period. For a particular period, a person will be regarded as a newly reported person if and only if the person does not have any report before the specified period.

Remarks: DRS-S - Shek Kwu Chau Treatment and Rehabilitation Centre (Newly / Re-admitted case)
DRS-M - Methadone clinics (Newly admitted case only)
SAS - Street Addict Survey (From the society for the Aid and Rehabilitation of Drug Abusers)
CRDA - Central Registry of Drug Abuse

Box 5.7 Proportion of current needle-sharers*



* This figure referred to the proportion of current syringe sharing behaviour among current injectors. Definitions differ for different data sources. DRS-S refers to such sharing behaviour among those who injected drug in past 6 months (before 2006, it referred to such sharing behaviour in past 6 months among those who injected drug at the time of programme admission); SAS refers to such sharing behaviour among those who injected drug in past 1 month (before 2007, it referred to such sharing behaviour in past 3 months); DRS-M refers to such sharing behaviour in past 4 weeks among those who injected drug at the time of programme admission;

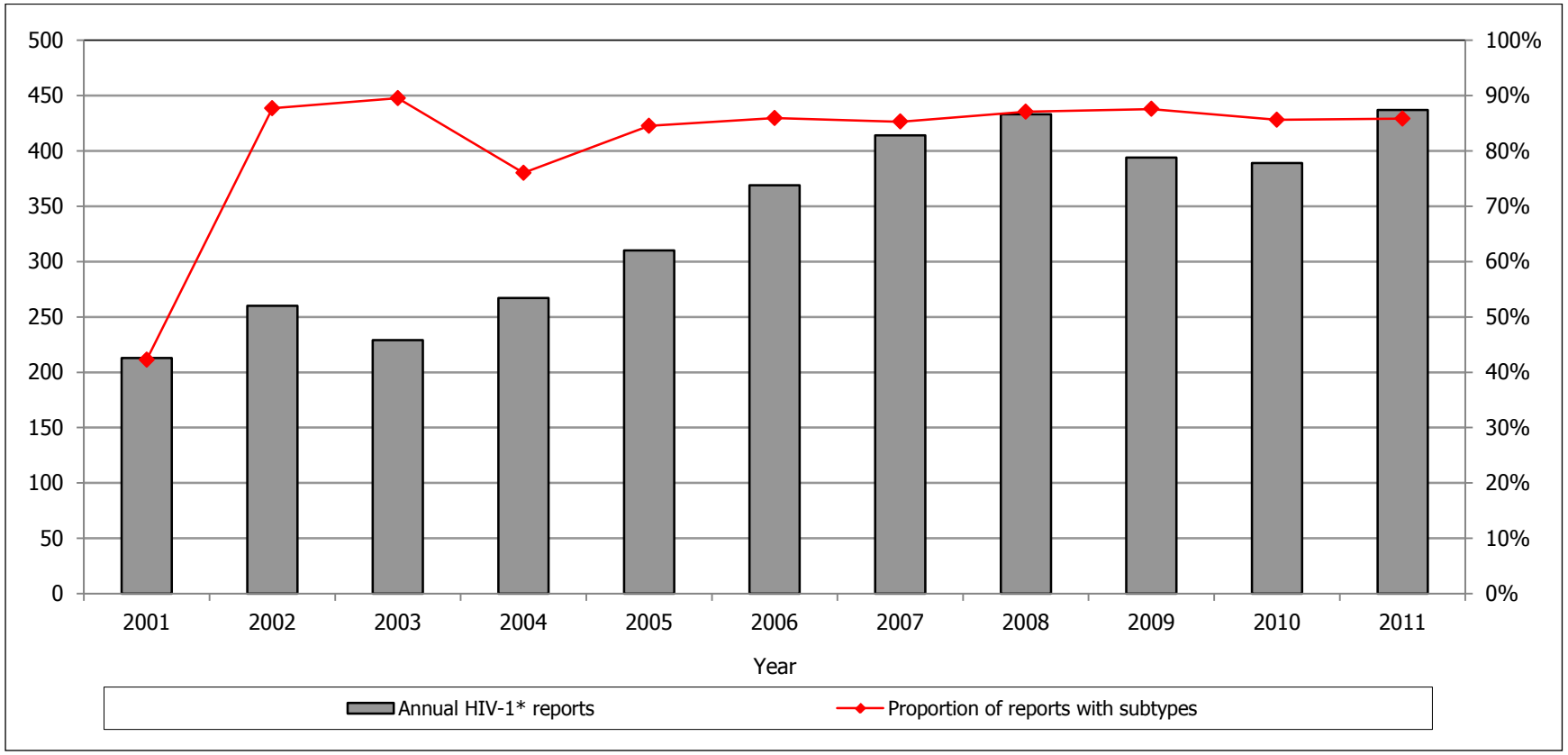
Remarks: DRS-S - Shek Kwu Chau Treatment and Rehabilitation Centre (Newly / Re-admitted cases)
DRS-M - Methadone clinics (Newly admitted case only)
SAS - Street Addict Survey (From the society for the Aid and Rehabilitation of Drug Abusers)
Data of DRS-S suspended since 2004, and resumed in Jul 2006.

6. TABULATED RESULTS OF HIV-1 GENOTYPING STUDIES

System description:

- This is a laboratory based reporting system contributed by Virology Division of Public Health Laboratory Services Branch, Centre for Health Protection, Department of Health. HIV viral isolates are collected from the confirmatory laboratories for subtype analysis which are collated with epidemiological information when available. Subtype results are submitted monthly by Virology Division. The confirmatory laboratories included in this surveillance system are: Public Health Laboratory, Microbiology laboratories of Queen Elizabeth Hospital and Prince of Wales Hospital. Subtype analysis was commenced since 2001

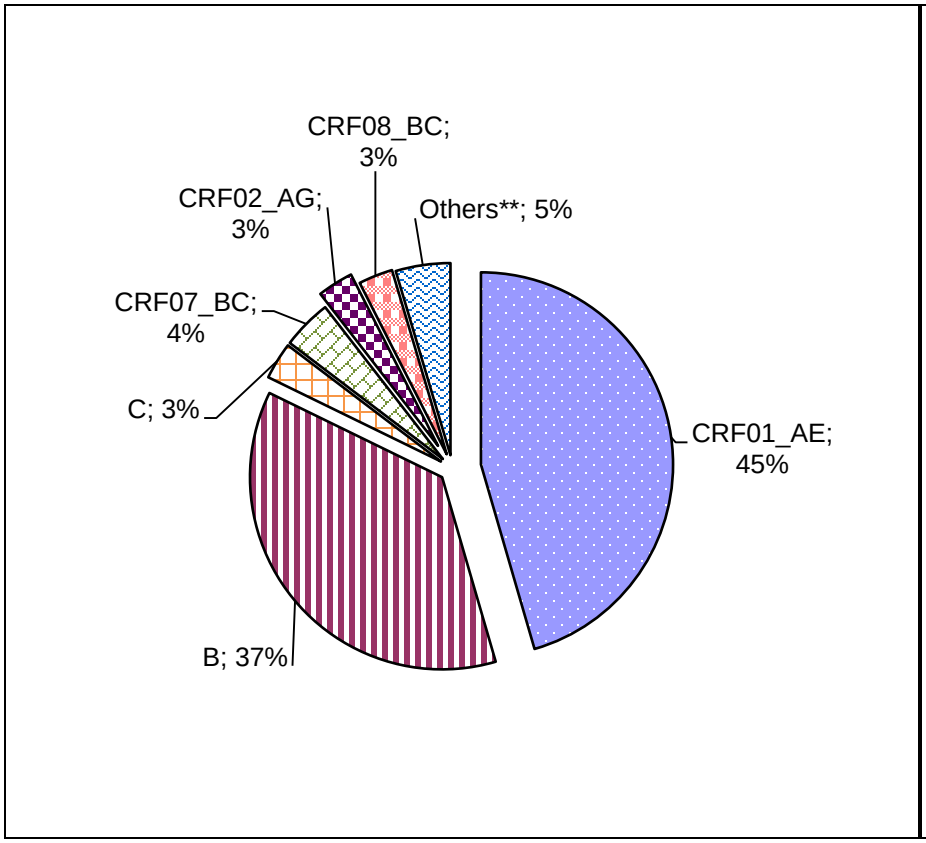
Box 6.1 Proportion of reports* with subtypes by year in Hong Kong, 2002 - 2011



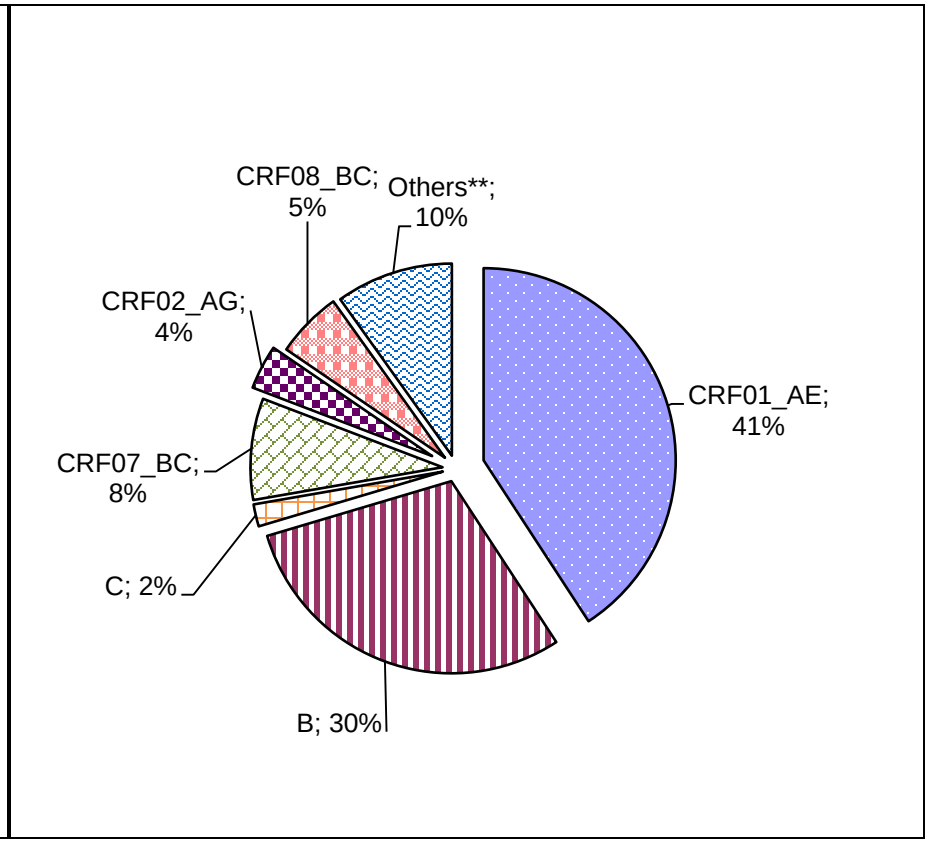
*: including cases with HIV type 1 or PCR positive result.

Box 6.2 Distribution of HIV-1* subtypes

(i) Cumulative (2001-2011)



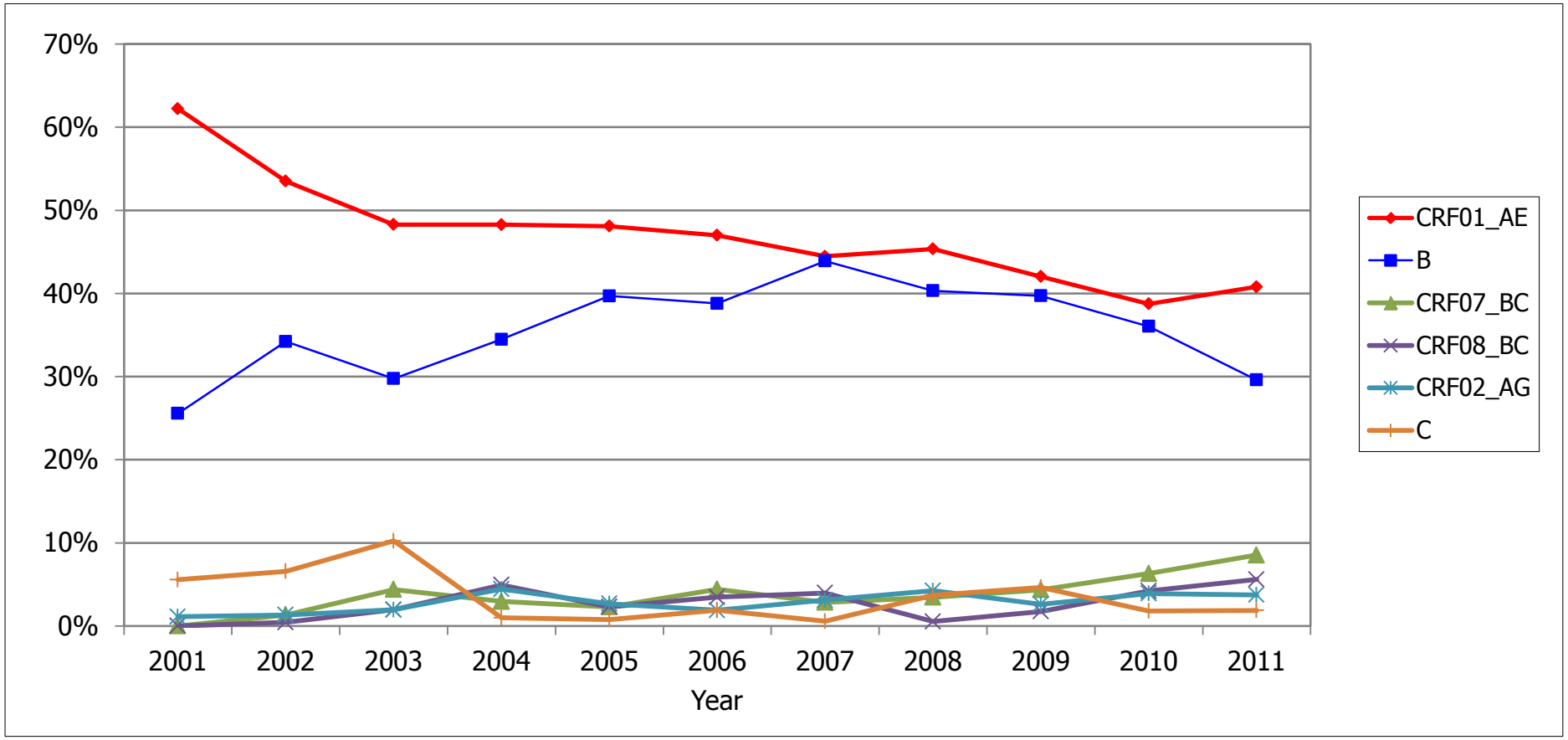
(ii) Year 2011



*: including cases with HIV type 1 or PCR positive result.

**: including subtype A, A1, A2, B', D, F, F1, G, CRF03_AB, CRF05_DF, CRF06_CPX, CRF10_CD, CRF11_CPX, CRF12_BF, CRF13_cpx, CRF14_BG and CRF15_01B.

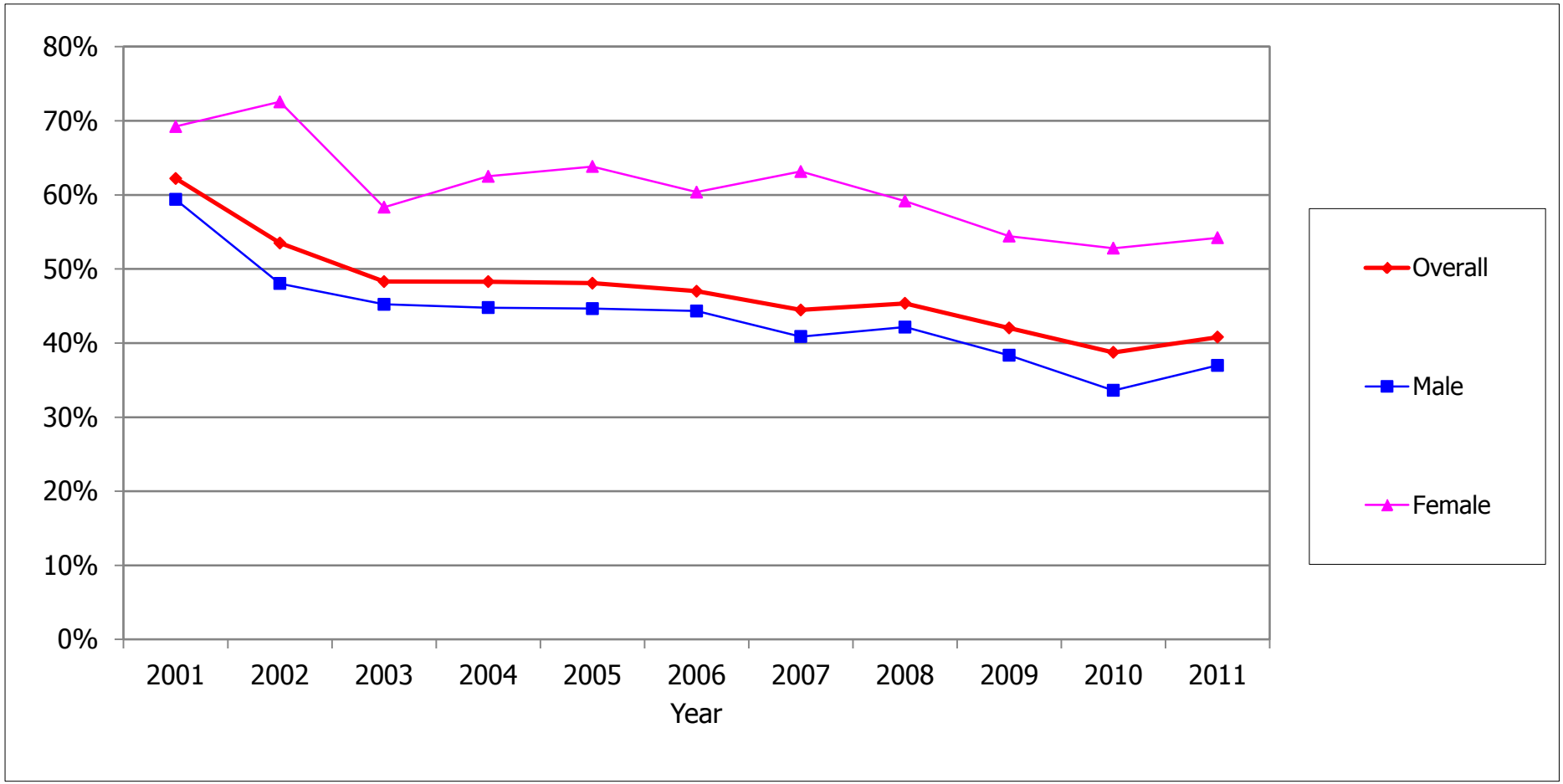
Box 6.3 Trend in the common HIV-1* subtypes in Hong Kong, 2001 – 2011



*: including cases with HIV type 1 or PCR positive result.

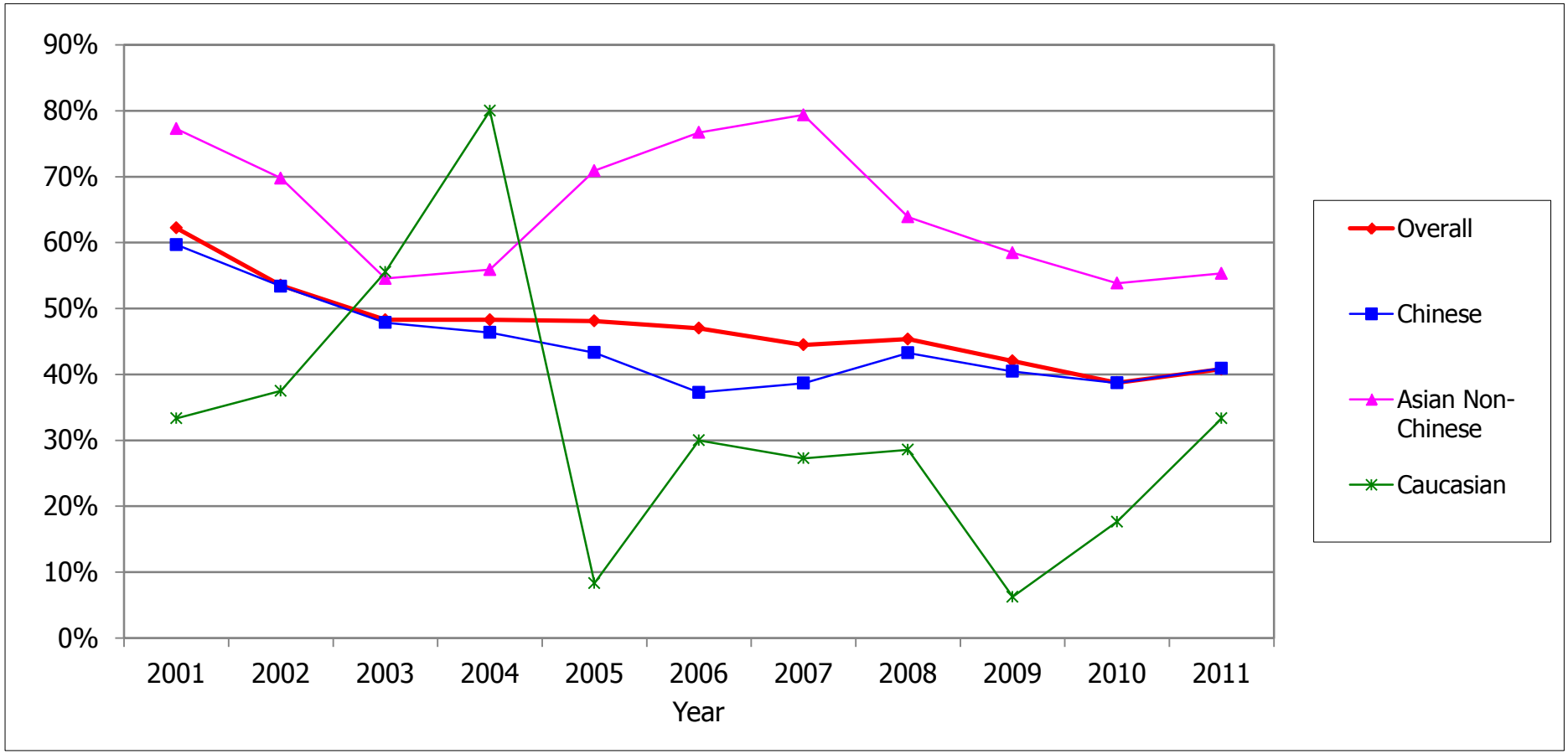
Box 6.4 Trend in HIV-1* subtype CRF01_AE in Hong Kong, 2001 – 2011

(a) By gender (proportion of cases with subtype CRF01_AE)

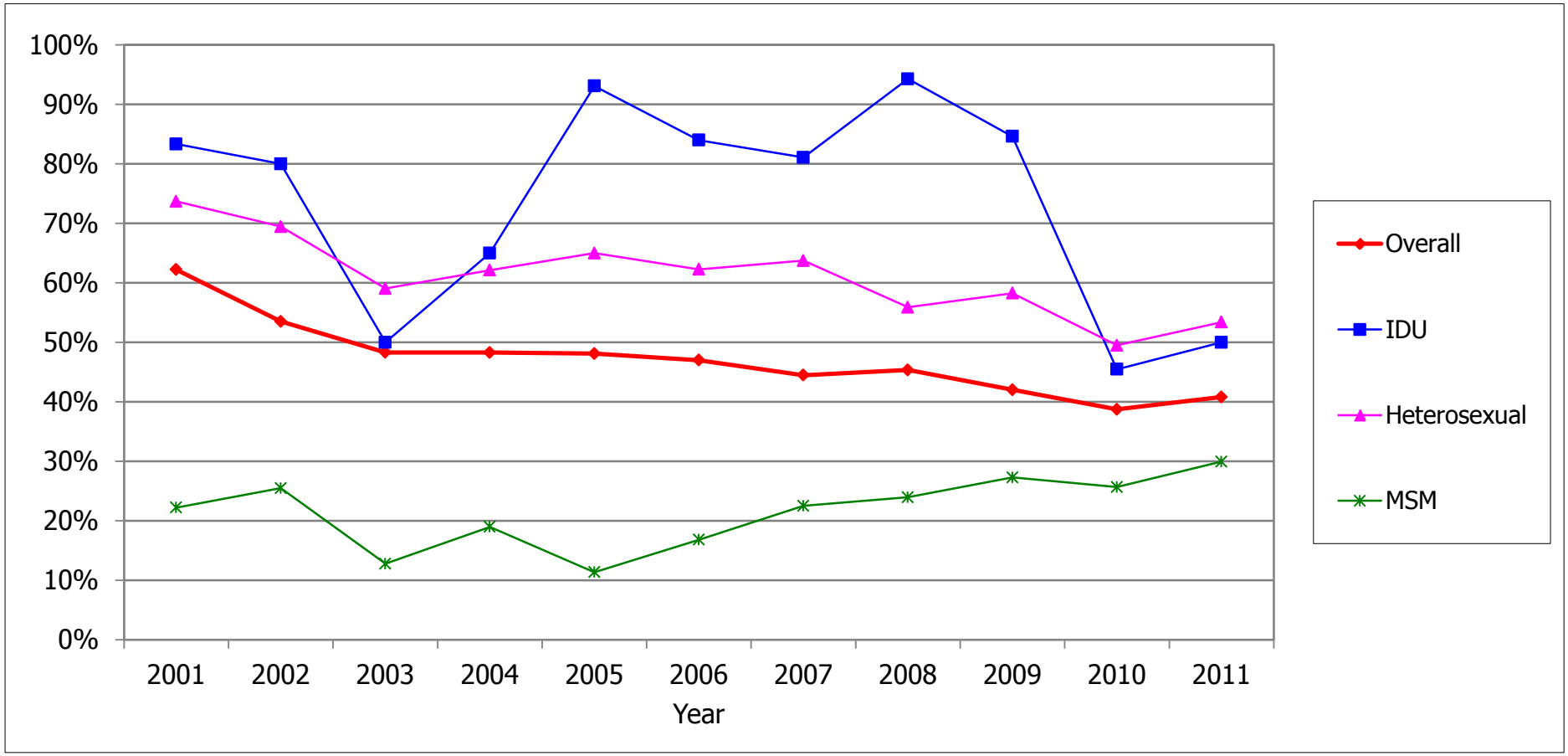


*: including cases with HIV type 1 or PCR positive result.

(b) By ethnicity (proportion of cases with subtype CRF01_AE)

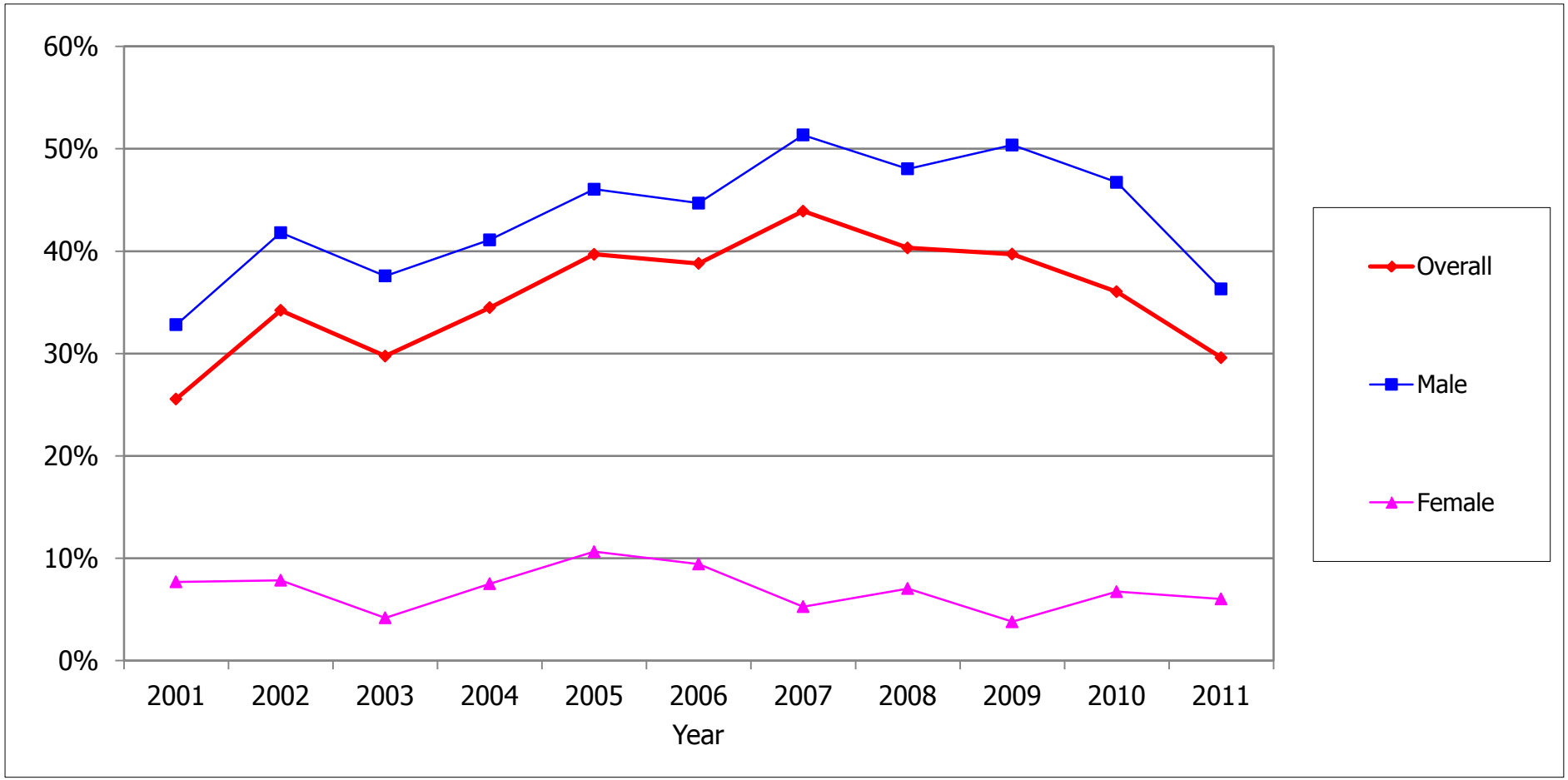


(c) By route of transmission (proportion of cases with subtype CRF01_AE)



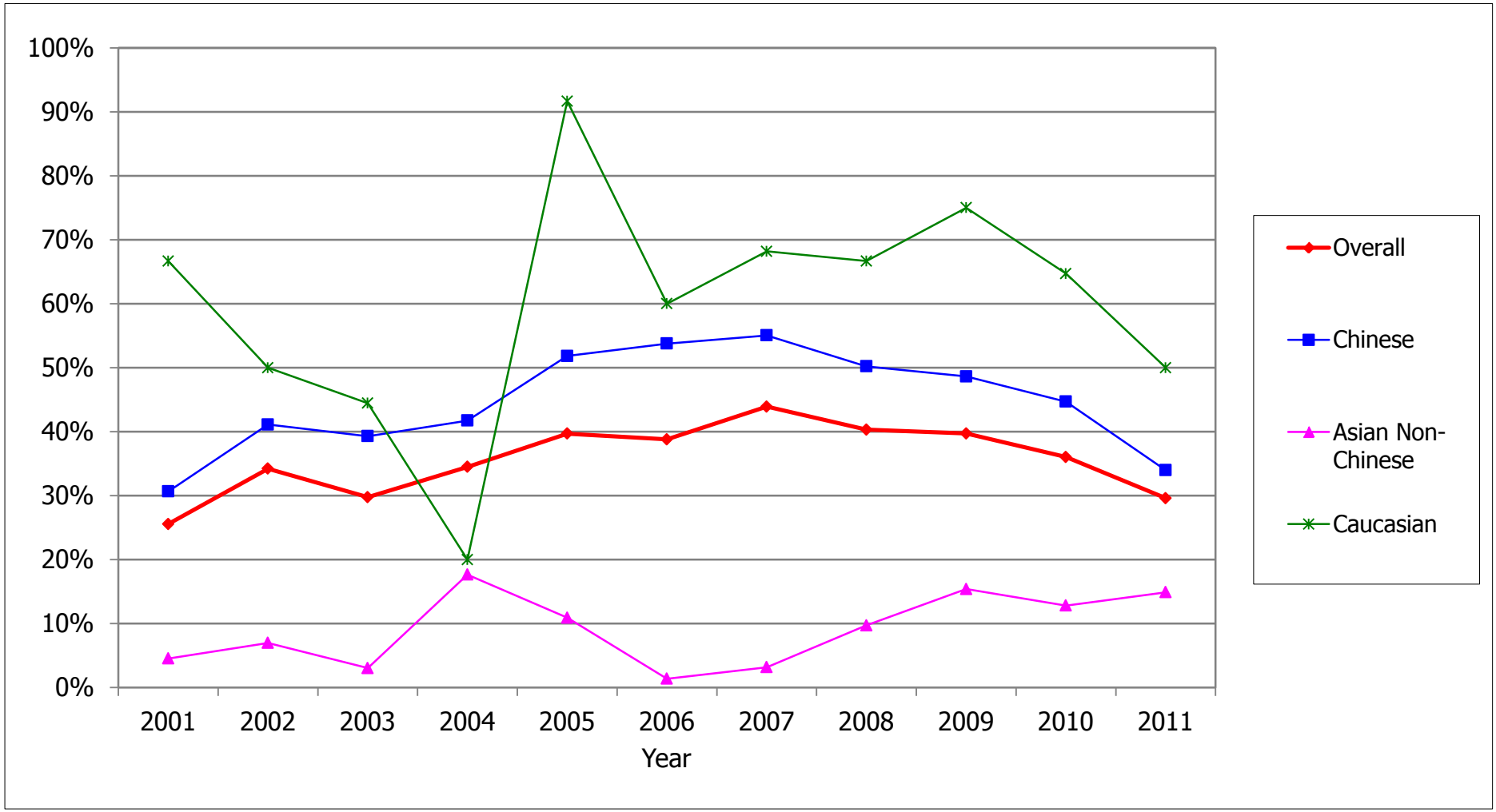
Box 6.5 Trend in HIV-1* subtype B in Hong Kong, 2001 – 2011

(a) By gender (proportion of cases with subtype B)

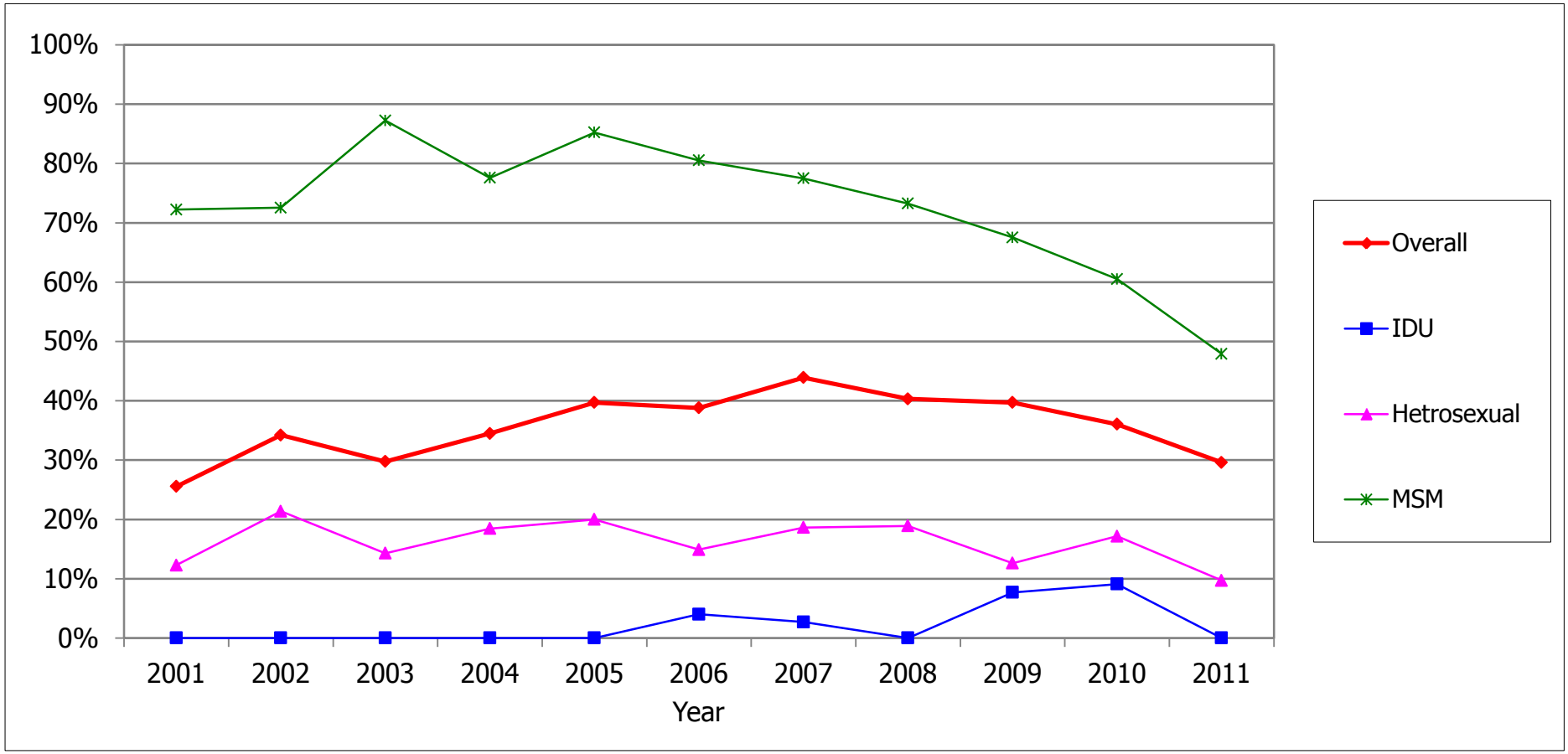


*: including cases with HIV type 1 or PCR positive result.

(b) By ethnicity (proportion of cases with subtype B)

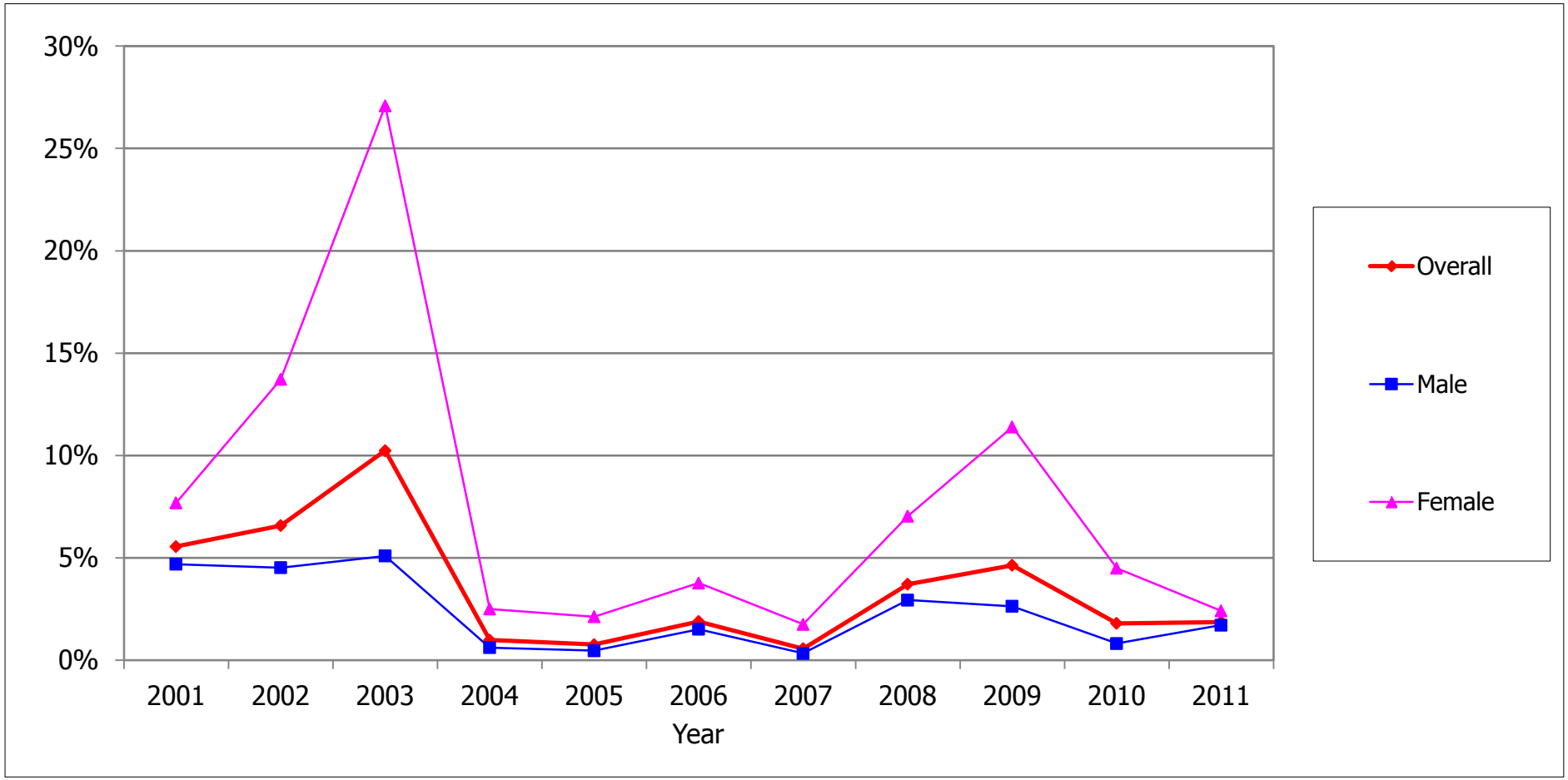


(c) By route of transmission (proportion of cases with subtype B)



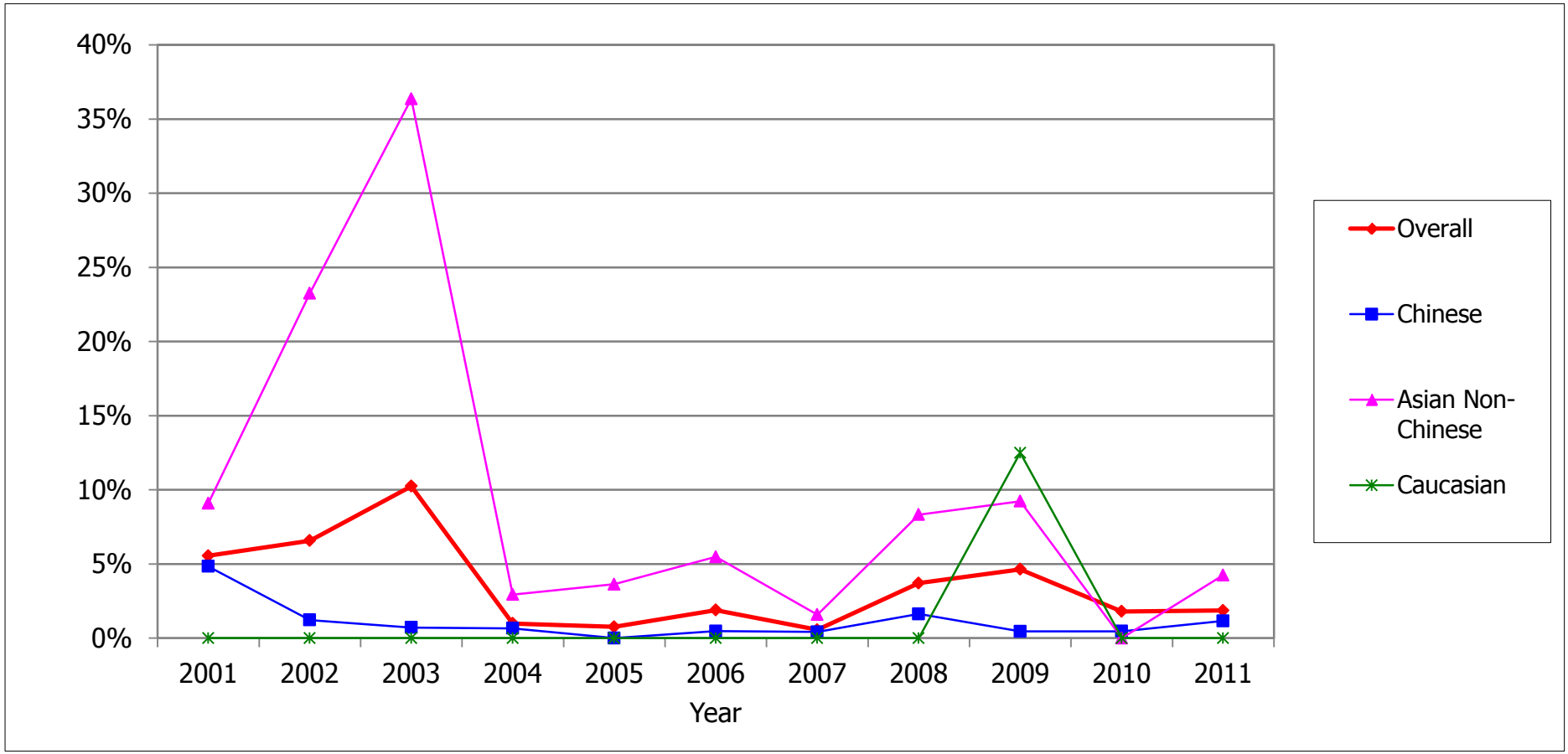
Box 6.6 Trend in HIV-1* subtype C in Hong Kong, 2001 – 2011

(a) By gender (proportion of cases with subtype C)

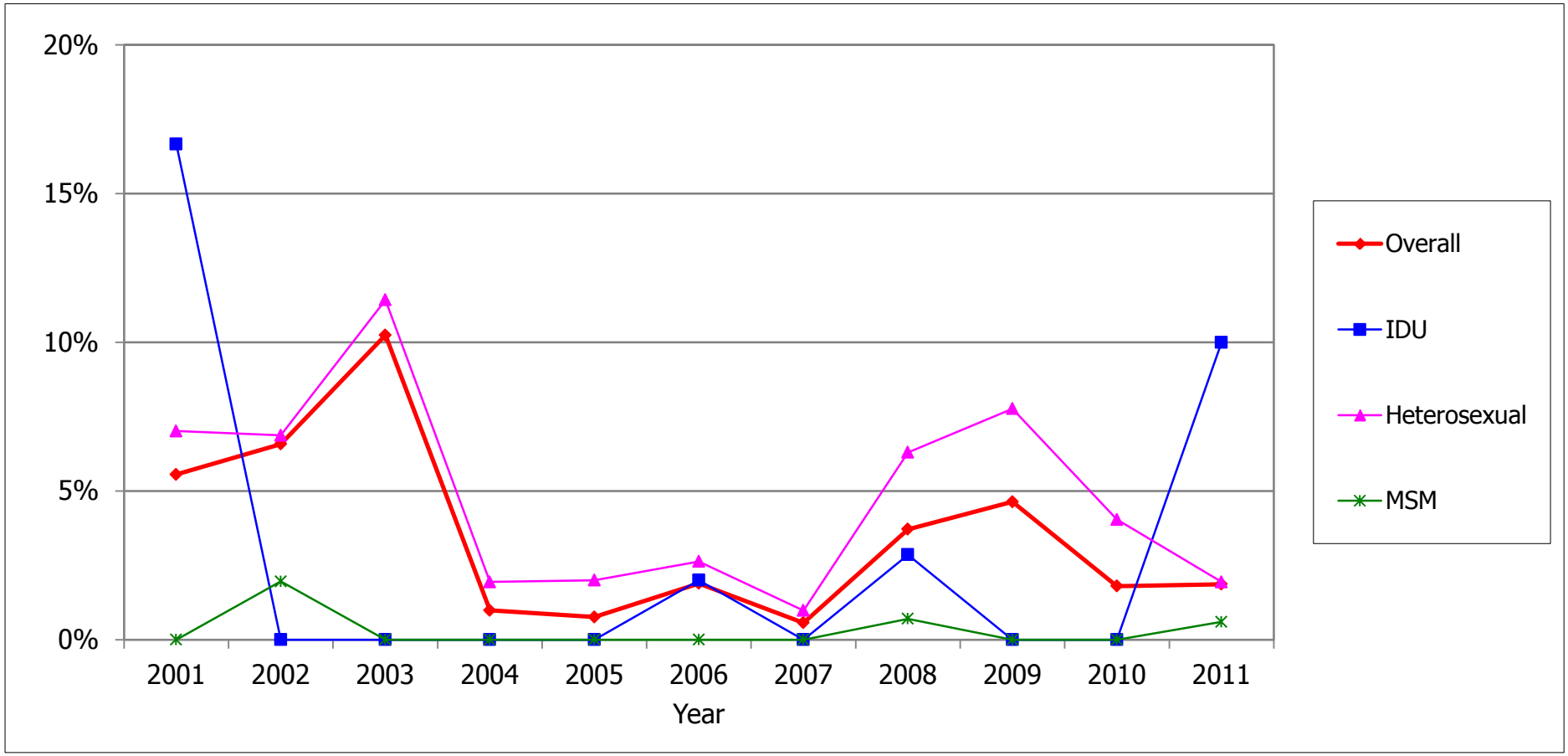


*: including cases with HIV type 1 or PCR positive result.

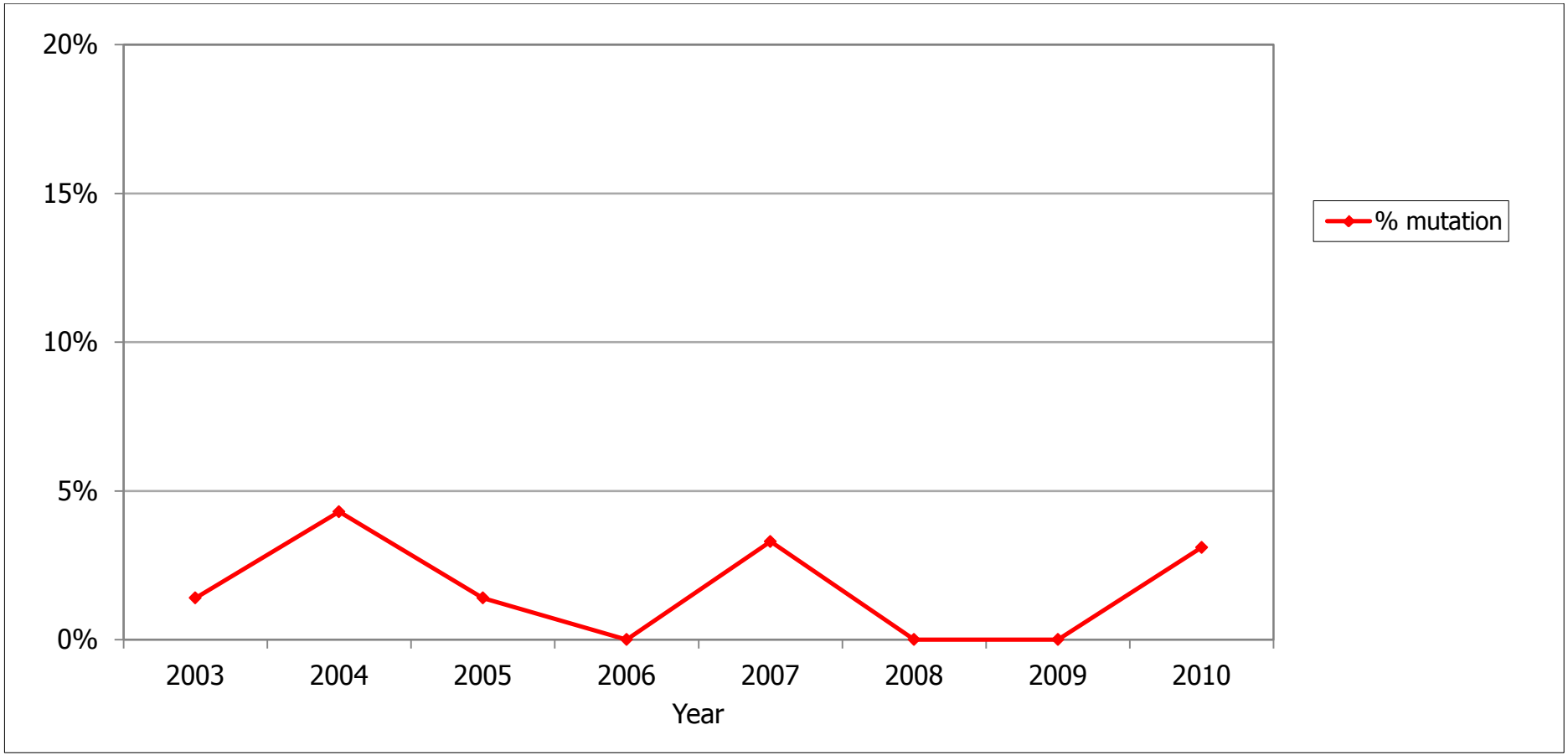
(b) By ethnicity (proportion of cases with subtype C)



(c) By route of transmission (proportion of cases with subtype C)



Box 6.7 Prevalence of intermediate or high level drug resistance related mutation among newly diagnosed HIV patients, 2003-2010



Appendix I: HIV/AIDS report form (DH2293)

DEPARTMENT OF HEALTH

HIV/AIDS Report Form

The HIV/AIDS voluntary reporting system has been in place since 1984. All doctors are encouraged to report patients with HIV/AIDS and to update status of the previously reported cases where appropriate. This is an anonymous and confidential system. Data collected is crucial for understanding the HIV epidemiology in Hong Kong and is used in global analysis only. Aggregate statistics are released quarterly and can be obtained at http://www.aids.gov.hk. For any query, please call 3143 7225 or email us at aids@dh.gov.hk

Please complete ALL sections and '✓' in the appropriate box.

Section (A) – Report of HIV

[1] THIS is a ☐NEW report or ☐UPDATE of previous reported case

[2] Your reference code number[i]: ..... [3] Does the patient have a HK identity card? ☐Yes ☐No

[4] Sex : ☐M ☐F For female, is she pregnant? ☐No ☐Yes If yes, go to **Box I**

[5] Date of birth: ../../..(ddmmyyyy) OR Age at last birthday:.....

[6] Ethnicity: ☐Chinese ☐Asian ☐Caucasian ☐Black ☐Others: ..... ☐Unknown

[7] Suspected risk(s) for HIV infection[ii]

☐Heterosexual ☐Homosexual ☐Bisexual

☐Injecting drug use

☐Transfusion of blood/blood products (Haemophilia: ☐Yes ☐No)

☐Perinatal

☐Others, please specify: .....

☐Asked, but risk undetermined

☐Not asked

Box I

Gravida.....Para.....LMP: ../../..(ddmmyyyy)

Obstetric follow up clinic/ hospital : .....

Plan: ☐TOP ☐Continue pregnancy

Expected hospital/place of delivery: .....

[8] Suspected place of infection: ☐Hong Kong ☐Mainland China, specify: ..... ☐Others, specify: .....
☐Asked, but undetermined ☐Not asked

[9] Date of laboratory diagnosis in HK: ../../..(ddmmyyyy) [10] Western blot confirmation: ☐Yes ☐No

[11] Name of Laboratory: ..... 12] Laboratory Number, if a/v: .....

[13] Previous HIV diagnosis outside HK: ☐No ☐Yes If yes, date: ../../..(ddmmyyyy) place: .....

[14] Date of last negative HIV test: ../../..(ddmmyyyy)

[15] CD4 (cells/µl): ..... Date: ../../..(ddmmyyyy)

[16] HIV status of spouse/regular partner: ☐HIV positive ☐HIV negative ☐Unknown

Section (B) – Report of AIDS

[17] Has the patient developed AIDS[iii]: ☐ Yes ☐ No (Go to Section C)

[18] If yes, the AIDS defining illness(es) is (are):

(i) ..... Date of diagnosis: ../../..(ddmmyyyy)

(ii) ..... Date of diagnosis: ../../..(ddmmyyyy)

(iii) ..... Date of diagnosis: ../../..(ddmmyyyy)

[19] CD4 (cells/µl) at AIDS: ..... Date: ../../..(ddmmyyyy)

Section (C) – Report of deaths and defaults

[20] Has the patient died? ☐Yes ☐No If yes, date of death: ../../..(ddmmyyyy) Cause: .....

[21] Has the patient left HK/defaulted follow up? ☐Yes ☐No If yes, last seen on: ../../..(ddmmyyyy)

Section (D) – Correspondence

Name of medical practitioner: ..... ☐in private practice ☐in public service

Correspondence Address: .....

Tel: ..... Fax: .....

Email: ..... Date: ../../..(ddmmyyyy)

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[i] Please put down any code of your choice (e.g., case number) for matching purpose only.

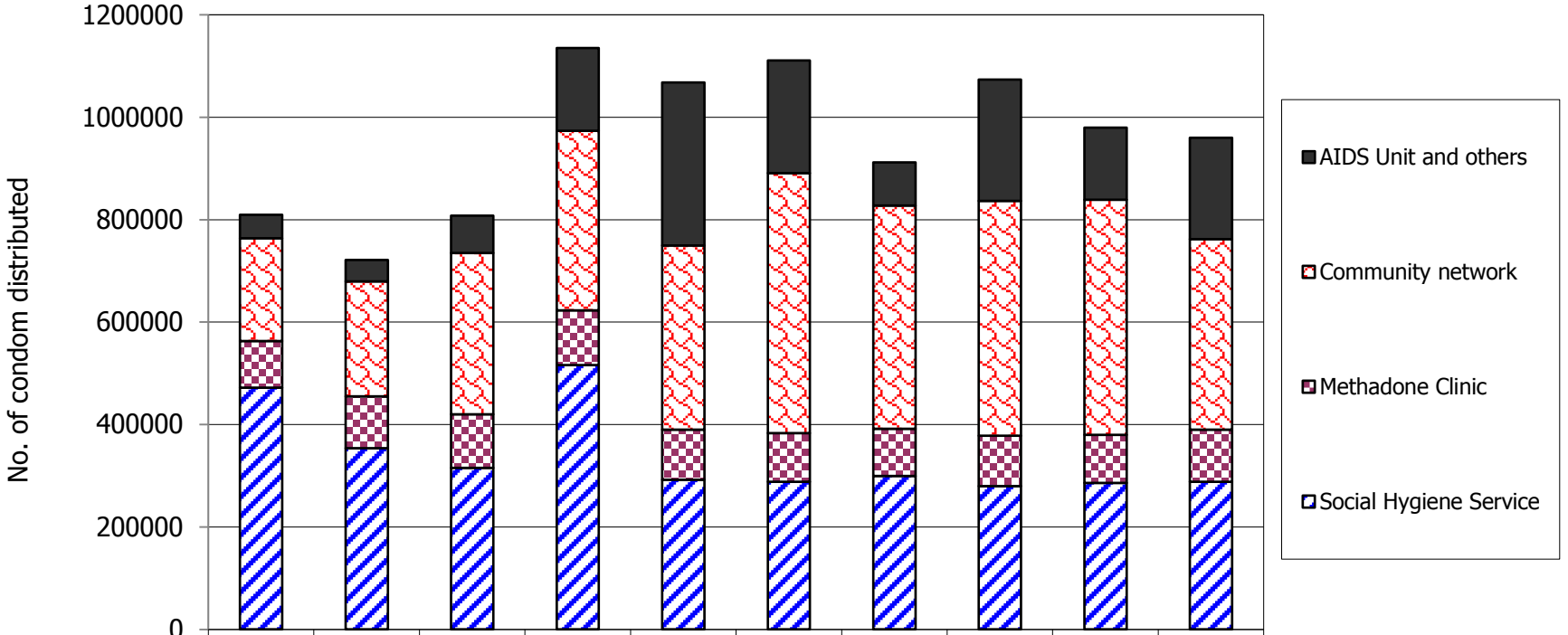
[ii] Please tick the most likely risk for contracting HIV infection. If there is more than 1 suspected risks, please put down 1 & 2 in descending order of the two most likely risks.

[iii] Surveillance definition of AIDS: a definitive laboratory diagnosis of HIV infection AND one or more of the AIDS indicator conditions (*July 1995, Scientific Committee on AIDS. Available at: http://www.aids.gov.hk/report.htm).*

Appendix II: Classification system for HIV infection and surveillance case definition for AIDS in adolescents and adults in Hong Kong.

A definitive laboratory diagnosis of HIV infection normally by a positive screening test for HIV antibody (e.g. ELISA) supplemented by a confirmatory test (e.g. western blot) + one or more of the AIDS indicator conditions	
AIDS indicator conditions	Candidiasis of bronchi, trachea, or lungs Candidiasis, oesophageal Cervical cancer, invasive Coccidiodomycosis, disseminated or extrapulmonary Cryptococcosis, extrapulmonary Cryptosporidiosis, chronic intestinal (>1 month's duration) Cytomegalovirus disease (other than liver, spleen or nodes) Cytomegalovirus retinitis (with loss of vision) Encephalopathy, HIV-related *Herpes simplex*: chronic ulcer(s) (>1 month's duration); or bronchitis, pneumonitis, or oesophagitis Histoplasmosis, disseminated or extrapulmonary Isosporiasis, chronic intestinal (>1 month's duration) Kaposi's sarcoma Lymphoma, Burkitt's (or equivalent term) Lymphoma, primary, of brain *Mycobacterium tuberculosis*; extrapulmonary or pulmonary/cervical lymph node (only if CD4<200/ul) Pneumonia, recurrent Penicilliosis, disseminated Mycobacterium, other species or unidentified species, disseminated or extrapulmonary *Pneumocystis carinii* pneumonia Progressive multifocal leukoencephalopathy Salmonella septicaemia, recurrent Toxoplasmosis of brain Wasting syndrome due to HIV
Hong Kong has adopted the 1993 Centers for Disease Control and Prevention (CDC) AIDS classification with 3 modifications: (1) disseminated penicilliosis is added as one AIDS-defining condition, (2) pulmonary or cervical lymph node tuberculosis included only if CD4 < 200 µl, (3) a CD4 < 200 µl without any AIDS-defining condition is not counted as AIDS.	

Appendix III: Condom distribution for the prevention of HIV and STI by Department of Health



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
AIDS Unit and others	46045	41742	73042	161334	318672	220121	83794	236690	141220	198068
Community network	200609	224147	315110	350517	359359	507663	436332	458595	458979	372073
Methadone Clinic	90901	101355	104609	106750	98004	95293	91958	98795	93911	101848
Social Hygiene Service	471854	353810	315015	516185	291873	287906	299385	279360	285638	288054

Year

Note:
1. Community network includes collaborative projects with Action for REACH OUT, AIDS Concern, CHOICE and Phoenix Project of SARDA
2. AIDS Unit and others condom distribution points, such as Travel Health Centres.