HIV SURVEILLANCE REPORT – 2017 UPDATE

Special Preventive Programme
Centre for Health Protection
Department of Health
Hong Kong Special Administrative Region
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This report is produced and published by:

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PREFACE

The number of reported HIV infections remained high in 2017 at 681. Sexual transmission was the major route of HIV transmission in Hong Kong thus far, while transmission from other routes including drug injection had been staying at a relatively low level. Overall, Hong Kong continues to have a low prevalence of HIV infection in the general population.

Similar to many developed countries, Hong Kong is facing the ongoing challenge of a high level of HIV infection in the men who have sex with men (MSM) community in recent years. Besides their prominence in the number of reported cases, MSM was also shown to have the highest HIV prevalence among all at risk populations. And despite a relatively low prevalence among people who inject drugs (PWID, previously known as injecting drug users (IDU)), one should not be complacent as infection could surge quickly in this population given the opportunities.

With the expansion of community-based HIV voluntary testing services, non-governmental organisations have been playing an increasingly important role in the understanding of the local HIV epidemiology especially among the at-risk populations of MSM, PWID and female sex workers. Many non-governmental organisations have participated in HIV prevalence & behavioral surveys in different at-risk populations through their service networks.

This *annual surveillance report i*s an initiative of Special Preventive Programme, Centre for Health Protection, 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 the five main components of our surveillance programme (the HIV/AIDS voluntary reporting system, HIV prevalence surveys, sexually transmitted infections caseload statistics, behavioural studies and HIV-1 genotyping studies) were presented as tables and graphs. Findings of the risk behavioural surveys such as the HIV and AIDS Response Indicator Survey (HARiS) and other studies were also included in this report.

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

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This report is only achievable with the concerted efforts contributed by many different stakeholders. First and foremost, we would like to 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 surveys on a regular basis.

Secondly, special thanks are due to the many agencies that have helped collect and update the relevant statistics included in this report. They included the Hong Kong Red Cross Blood Transfusion Service, the Society for the Aid and Rehabilitation of Drug Abusers, AIDS Concern, the Narcotics Division of the Security Bureau, the Department of Microbiology of the University of Hong Kong, the Jockey Club 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 the Queen Elizabeth Hospital, Prince of Wales Hospital and Princess Margaret Hospital. We also take this opportunity to thank all doctors, other health care professionals and related workers who have contributed to HIV/AIDS reporting and other surveillance components.

Finally, we must thank the usual excellent support from the SPP staff in terms of collecting, collating 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
DH	Department of Health
DRS-M	Drug Rehabilitation Services – Methadone clinics
DRS-S	Drug Rehabilitation Services – Shek Kwu Chau Treatment and Rehabilitation Centre
ELISA	Enzyme-linked Immunosorbent Assay
FSW	Female Sex Worker
HE	Heterosexual
HAART	Highly Active Antiretroviral Therapy
HARiS	HIV and AIDS Response Indicator Survey
HIV	Human Immunodeficiency Virus
ITC	Integrated Treatment Centre
MUT	Methadone Universal HIV Antibody (Urine) Testing
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
PWID	People who inject drugs
SARDA	The Society for the Aid and Rehabilitation of Drug Abusers
SKC	Shek Kwu Chau Treatment and Rehabilitation Centre
STI	Sexually Transmitted Infection
SPP	Special Preventive Programme
SHS	Social Hygiene Service
SAS	Street Addict Survey
TB	Tuberculosis
ul	microliter

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. All data are collected, analysed 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 2017 and before. Please refer to the following pages for details of the programmes.

HIV/AIDS reporting system

3. The Department of Health has implemented a voluntary anonymous case-based HIV/AIDS reporting system since 1984, which receives reports from doctors, AIDS service organisations and laboratories. They report newly diagnosed HIV cases by a standard form (DH2293) which was last revised in January 2015. Before 2006, only cases confirmed HIV antibody positive by Western Blot were counted as HIV infection for cases aged above 18 months. Since the 4th quarter of 2006, cases with PCR positive result and clinical or laboratory indication of recent infection have also been counted as confirmed HIV infection in the reporting system.

HIV Surveillance at a glance (2017)

- 681 HIV reports and 91 AIDS reports
- Sex: 86.9% male
- Ethnicity: 76.5% Chinese
- Age: Median 35
- Risks:
  - 66.7% Homosexual/bisexual contact
  - 17.3% Heterosexual contact
  - 0.9% People who inject drugs
  - 14.5% Undetermined
- CD4 at reporting: Median 286/ul
- HIV-1 subtypes: commonest is CRF01_AE, followed by B
- Commonest primary AIDS defining illness: PJP, followed by TB
- HIV prevalence
  - Blood donors: <0.01%
  - Antenatal women: 0.01%
  - STI clinic attendees: 0.43%
  - Methadone clinic attendees: 0.83%

4. In 2017, DH received 681 HIV and 91 AIDS reports (Box 2.1). The number of reported HIV cases decreased by 2% to 681 in 2017 compared to 692 in 2016 and by 6% compared to the record high of 725 cases recorded in 2015. This brought the cumulative total to 9091 and 1857 for HIV and AIDS reports respectively. Public hospitals / clinics / laboratories were still the commonest source of HIV reports in 2017, which accounted for 38.8% of all. Social Hygiene Clinics and DH AIDS Unit were other common sources of HIV reports, accounting for 16.2% and 15.6% respectively. (Box 2.2)

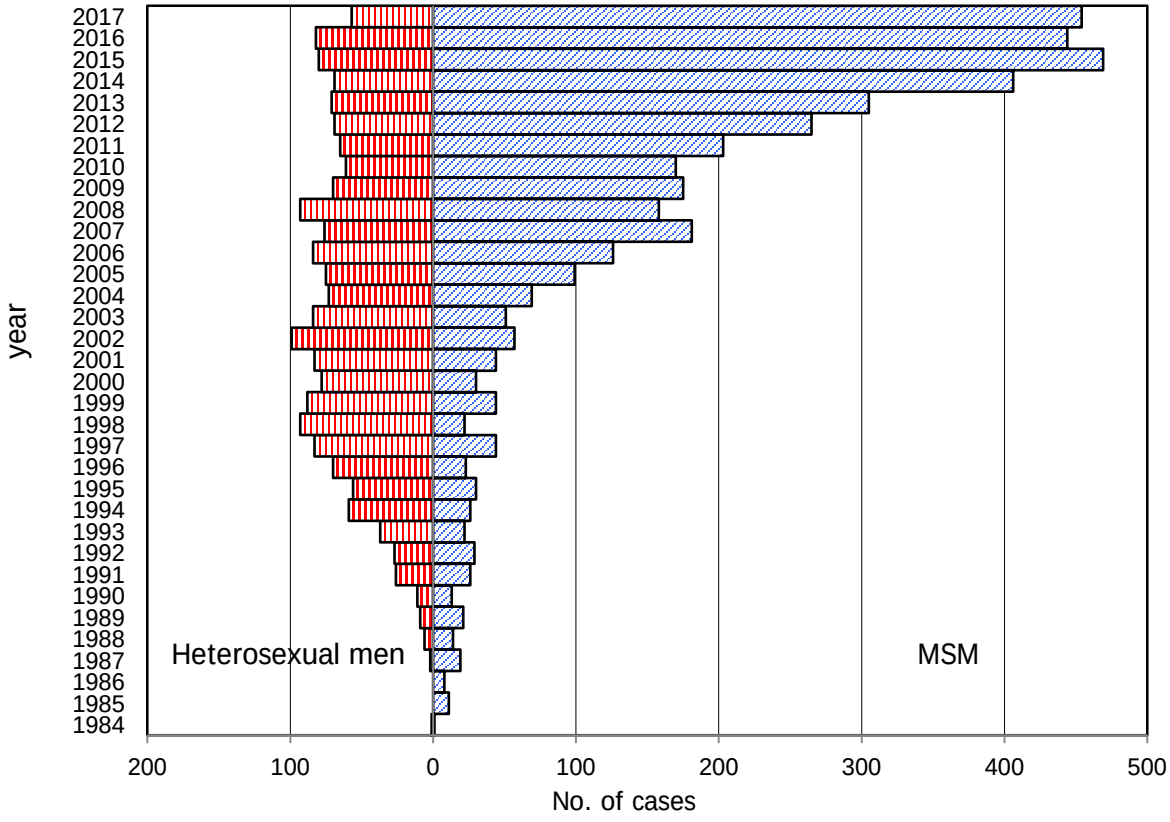
5. In 2017, around 86.9% of reported HIV cases were male. The male-to-female ratio was 6.7:1 in 2017, which had increased as compared to 6.2:1 in 2016. About 76.5% of reported cases were Chinese. Asian non-Chinese accounted for 9.5% of reports. (Box 2.3) The median age of reported HIV cases was 35 (Box 2.4) and 20-29 was the commonest age group in male cases and 30-39 in female cases. Around 84% of reported HIV cases were believed to have acquired the virus through sexual transmission in 2017, including homosexual (56%), heterosexual (17%), and bisexual exposure (11%). People who inject drugs accounted for 1% of reported HIV infections. Other routes of transmission included one via blood transfusion outside Hong Kong and three via perinatal route (of which 2 cases were acquired outside Hong Kong; one had unknown place of transmission). The suspected routes of transmission were undetermined in around 15% of cases. This means that after excluding those with undetermined exposure category, sexual transmission accounted for about 98% among HIV reports with defined risks. (Box 2.5(a))

Concerning was the predominance of infections among men who have sex with men (MSM)

6. Similar to previous few years, sexual contact including both heterosexual and homosexual / bisexual, remained the commonest route of HIV transmission in Hong Kong in 2017, which accounted for 84% of reported HIV cases. In the early years of HIV/AIDS epidemic in Hong Kong around 1980s and early 1990s, more cases from men who have sex with men, who had homosexual or bisexual contacts were reported as compared with heterosexual contact. In 1993, the trend began to reverse, with heterosexual transmission overtaking homosexual / bisexual transmission. Since 2004, a rising trend in MSM has been observed again and the proportion of MSM infections has continued to rise. In 2017, there were 454 MSM cases (78%) identified out of 582 cases with defined risks. (Box 2.5(a))

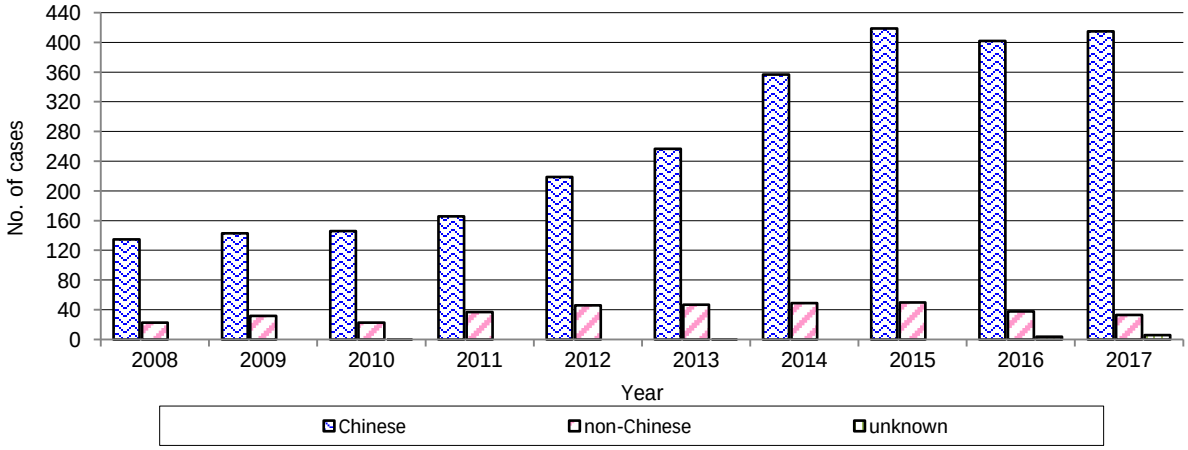
7. The high weighting of MSM among male HIV cases became obvious. 76.7% of all male HIV reports in 2017 contracted the virus through homosexual or bisexual contact. Heterosexual contact in male cases accounted for 9.6%, whereas the routes of transmission were undetermined in another 12.3% of the male cases. The ratio of heterosexual men against MSM gradually dropped from its peak of 4.2:1 in 1998 to 0.8: 1 in 2005 and further to 0.1:1 in 2017. (Box 1.1 and Box 2.7(c)) A similar trend of increasing AIDS cases among MSM was observed, the ratio of heterosexual men against MSM decreased dramatically from 23.5:1 in 2000 to 0.3:1 in 2017.

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

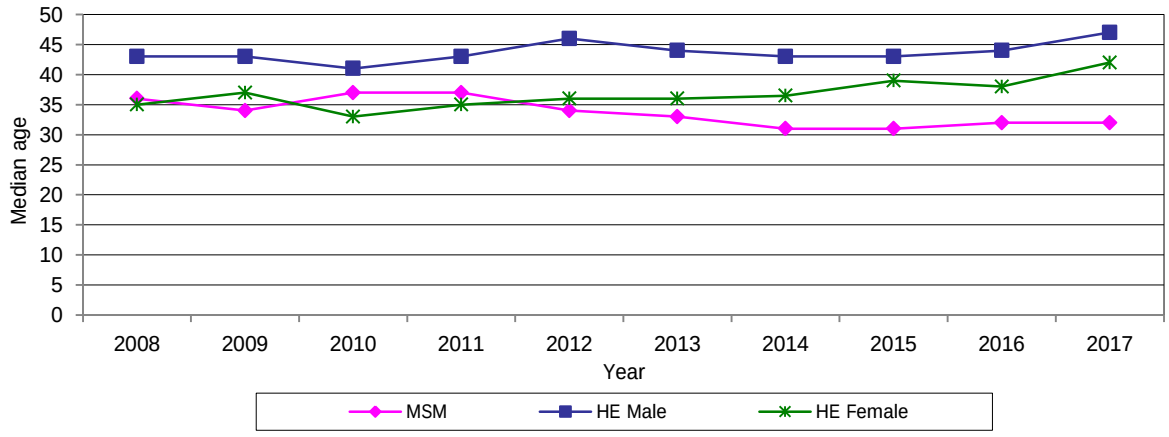


8. In 2017, the majority of the MSM cases were Chinese (91.4%). The number of reported Chinese MSM cases remained high in recent years. (Box 1.2) In 2017, the median age of MSM cases at reporting was 32, which was much lower than that of heterosexual male cases at 47. The median age of HIV infected MSM population has shown a decreasing trend in the past few years from 37 in 2010 to 32 in 2017. (Box 1.3) In 2017, the age group of 20-29 was the largest, accounting for 36.1% of reported MSM cases, followed by that of 30-39 (32.4%) and that of 40-49 (20.0%). (Box 1.4) Reported data since 2008 showed that a relatively high proportion of MSM infections occurred in Hong Kong, as compared to a lower proportion in heterosexual men. In 2017, 77.3% of MSM infection reports cited Hong Kong as the suspected place of infection, while only 56.1% of heterosexual male infection was locally acquired. (Box 1.5)

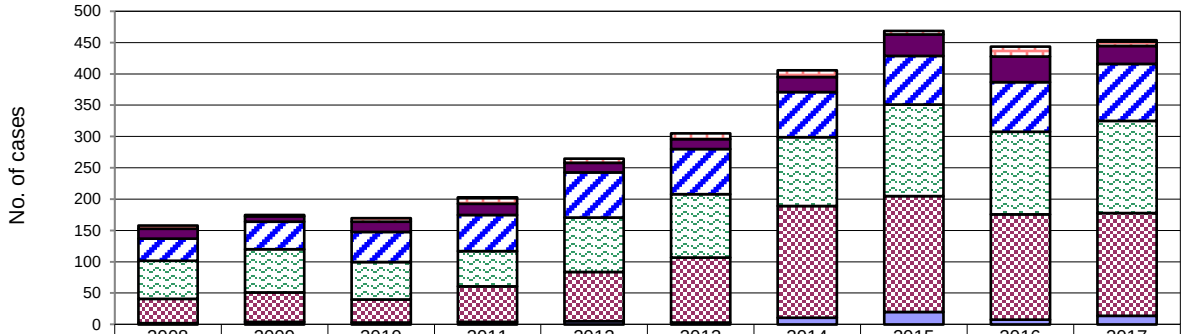
Box 1.2 Ethnicity breakdown of HIV-infected MSM cases (2008-2017)



Box 1.3 Median HIV reporting age of HIV-infected MSM cases, heterosexual men and heterosexual women (2008-2017)



Box 1.4 Age breakdown of HIV-infected MSM cases (2008 - 2017)

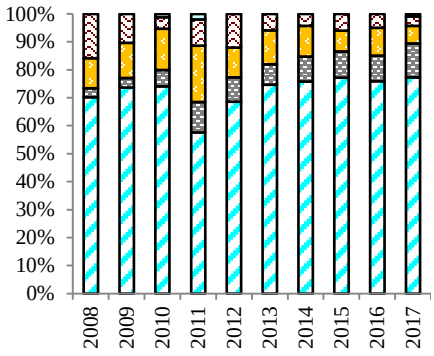


	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Unknown	0	0	0	1	0	0	0	0	0	2
>60	5	2	6	9	7	9	11	6	16	7
50-59	16	9	16	18	15	16	24	34	41	29
40-49	35	44	48	58	72	72	72	78	79	91
30-39	61	69	60	56	87	101	110	146	132	147
20-29	39	47	37	57	79	104	178	185	168	164
< 20	2	4	3	4	5	3	11	20	8	14

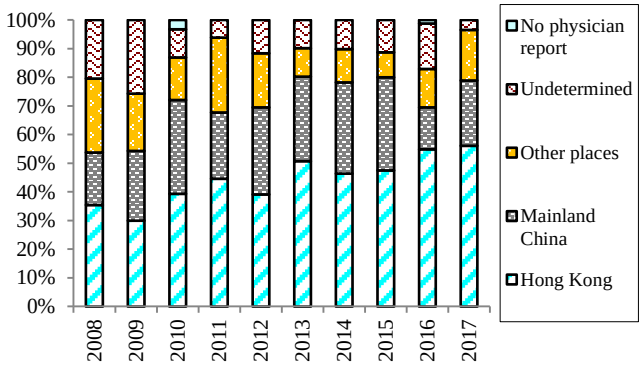
Year

Box 1.5 Suspected location of HIV infection (2008 – 2017)

(a) MSM



(b) Heterosexual men



HIV prevalence among men who have sex with men was persistently higher than other at-risk populations

9. The fourth round of HIV Prevalence and Risk behavioural Survey of Men who have sex with men in Hong Kong (PRiSM) conducted in 2017 showed an HIV prevalence of 6.54% among local sexually active MSM, thus revealing Hong Kong to be an area of concentrated HIV epidemic according to the World Health Organization's definition. This figure was higher than the findings from the second HIV and AIDS Response Indicator Survey (HARiS) conducted in 2014 (5.85%). (Box 1.6 and Box 3.9) However, due to difference in methodology and recruitment strategies between PRiSM (community-based) and HARiS (venue-based), the rates could not be directly compared. Nevertheless, the prevalence among MSM was persistently higher than other at-risk populations such as female sex workers (Box 3.10) and drug users (Box 3.3 and Box 3.4).

10. AIDS Concern's voluntary HIV testing service targeting MSM provides another data source to estimate the HIV prevalence in the local MSM community, despite the fact that sampling bias could not be excluded. It showed a prevalence of 1.84% in 2017, which remained relatively stable in the past few years. (Box 3.8)

Condom use and HIV testing among men who have sex with men showed a decreasing trend

11. In PRiSM 2017, the rate of consistent condom use (defined as always using a condom for anal sex in the preceding 6 months) reported by MSM respondents were 52.1% for receptive sex and 52.2% for insertive sex. The condom use rate in the last anal sex with emotional relationship partner, regular sex partner, non-regular sex partner and commercial male sex worker were 62.3%, 75.6%, 85.5% and 81.6% respectively. HARiS 2016 for MSM showed that the condom use rate in the last anal sex with emotional relationship partner, regular sex partner, non-regular sex partner and commercial male sex partner were 59.9%, 70.5%, 79.9% and 89.1% respectively, all of which were lower than in 2015. (Box 1.6(a)) The MSM community should be encouraged to practise safer sex when having sex with all types of partners, irrespective of the relationship.

12. In PRiSM 2017, 79.4% of the respondents had ever had HIV testing and 52.6% of respondents had their recent tests performed in the previous year. The rates were comparable to those in HARiS 2016 (ever HIV testing rate: 75.8% and HIV testing rate in the previous year: 58.5%). More effort is needed to promote annual HIV testing among MSM.

Box 1.6(a) **Comparison between 2011 and 2017 PRiSM and 2013 - 2016 HARiS results (MSM)**

Results	**PRiSM 2011**		**HARiS 2013**	**HARiS 2014**	**HARiS 2015**	**HARiS 2016**	**PRiSM 2017**
	Venue-based	Internet-based	Venue-based, centre-based and internet-based				Internet-based
Sample Size	816	180	853	564	1091	1989	4133
Adjusted HIV prevalence (PRiSM)/HIV prevalence (HARiS)	4.08% (95% CI 3.44-4.85%)	3.3% (95% CI 1.54-7.08)	/	5.85% (95% CI 4.28- 8.1)	/	/	6.54% (95% CI 5.66-7.42%)
Condom use in last anal sex with:							
ESP*	/	/	63.7%	65%	65.7%	59.9%	62.3%
RSP*	61.9%	60.0%	76.7%	70.3%	73.6%	70.5%	75.6%
NRSP*	82.7% (in HK) 81.2% (outside HK)	81.4% (in HK) 79.2% (outside HK)	79.5%	80.6%	81.1%	79.9%	85.5%
CSP*	/	/	69.9%	89.1%	96.1%	89.1%	81.6% (commercial sex worker)
*ESP: Emotional Relationship Partner *RSP: Regular Sex Partner *NRSP: Non-regular Sex Partner *CSP: Commercial Sex Partner							

	PRiSM 2011		HARiS 2013	HARiS 2014	HARiS 2015	HARiS 2016	PRiSM 2017
HIV testing							
Ever tested for HIV	67%	63%	73.7%	78.5%	77.5%	75.8%	79.4%
HIV test within the past 12 months	40%	41%	57.0%	62.3%	60.8%	58.5%	52.6%

13. According to the survey conducted among the clients attending the DH's AIDS Counselling and Testing Service (ACTS), the median number of casual sex partners in previous year among MSM was consistently higher than heterosexual men, being 4 in 2017. (Box 5.1) The consistent condom use rate among MSM with regular partners and causal partners showed an increase in 2017, which was 44.2% and 52.1% respectively, as compared with the rate of 43.9% and 47.3% in 2016. (Box 5.5(a)) Also, the rate of condom use at last anal sex with regular partners and with causal partners showed an increase (62.8% and 70.3% respectively) in 2017, as compared with 57.7% and 59.8% in 2016 respectively (Box 5.5(b)).

14. Additional behavioural data from MSM attending AIDS Concern's testing service showed that the rate of consistent condom use for boyfriend, regular sex partners and casual sex partners in 2017 was 35.9%, 44% and 55.7% respectively. (Box 5.5(a)). Consistent condom use was persistently lower for sexual partners with closer relationship.

Male-to-female transgender population

15. Male-to-female transgender has been a neglected and hard-to-reach community; yet various overseas studies have shown that their HIV prevalence can be high. To better study the situation in Hong Kong, male-to-female (m-t-f) transgender was included as one of the major at-risk populations in the HARiS for the first time in 2014. In the survey, it was found that the overall HIV prevalence was 18.6% in m-t-f transgender. In PRiSM 2017, of the 104 participants recruited, 56 submitted urine specimens for HIV antibody testing. The overall HIV prevalence for sexually active m-t-f transgender was found to be 5.11%. (Box 1.6(b))

16. M-t-f transgender is a hard-to-reach population. Both the sample size and mix of ethnicity in surveys have varied. In HARiS 2014, of the 59 m-t-f transgender persons recruited, only 69.5% of the participants were Chinese and a considerable proportion were non-Chinese (Filipino 16.9% and Thai 11.9%) while in PRiSM 2017 (N=104), 93.3% were Chinese. Due to the small sample size and different recruitment strategies between surveys,

the rates should be interpreted cautiously. Overall, the condom use rate and HIV testing rate was unsatisfactory. Education on safer sex practices, including persistent and proper use of condom, and promotion of HIV testing should be reinforced.

Box 1.6(b) **Comparison between 2014 to 2016 HARiS and 2017 PRiSM results (TG)**

Results	**HARiS 2014**	**HARiS 2015**	**HARiS 2016**	**PRiSM 2017**
Sample Size	59	66	87	104
HIV prevalence	18.6% (95% CI 9.74-32.62)	/	/	5.11% (0.06%-10.16%)
Condom use in last anal sex with:				
ESP*	75.8%	82.1%	55.6%	55.6%
RSP*	90.0%	85.7%	63.0%	58.5%
NRSP*	76.9%	91.9%	84.4%	68.3%
CSP*	76.3%	93.8%	96.8%	60.0% (commercial sex worker)
*ESP: Emotional Relationship Partner *RSP: Regular Sex Partner *NRSP: Non-regular Sex Partner *CSP: Commercial Sex Partner				
HIV testing				
Ever test for HIV	72.9%	78.8%	65.5%	72.1%
HIV test within past year	50.8%	60.6%	57.5%	41.3%

The proportion of heterosexual cases remained stable

17. In 2017 there was a total of 118 heterosexual cases reported, which accounted for about one-fifth of all reported HIV cases. (Box 2.5(a)) The proportion of heterosexual cases among all reported HIV cases dropped from its peak of 71% in 1998 to 33% in 2008 and further to 17.3% in 2017. In recent years, however, the female heterosexual cases rose slightly faster than the male cases, resulting in a gradual increase of female to male ratio for heterosexual cases from 0.5:1 in 2004 to 1.07:1 in 2017. The median age of heterosexual cases in 2017 was 42 for female and 47 for male respectively. In 2017, heterosexual male

cases were mainly Chinese (70.2%) whereas Chinese accounted for 44.3% only for female heterosexual cases.

18. STI caseload statistics from Social Hygiene Clinics is an important component of the local HIV surveillance programme as the presence of STI is an indicator of high risk sexual behaviors which also increase the risk of acquiring or transmitting HIV. In 2017, 16.2% of reported cases were referred from Social Hygiene Clinics. The consistent condom use rate among heterosexual men attending Social Hygiene Clinics with commercial / casual partners in the past 3 months in 2017 was 52.7%, which slightly increased as compared with 45.7% in 2016. This condom use rate has remained at around 50% in the past years (Box 5.4(a)). Moreover, more than one third of the STI cases were asymptomatic, which may delay the diagnosis and the link to appropriate medical care. (Box 4.5) The HIV prevalence of Social Hygiene Clinic attendees has remained stable in recent few years, being 0.429% in 2017. (Box 3.2) The total number of STI cases in Social Hygiene Clinics also remained relatively stable in the past few years, with an aggregate of 12,933 cases in 2017. (Box 4.1 and Box 4.2)

19. The level of consistent condom use observed among those attending AIDS Counseling and Testing Service (ACTS) decreased from 80.2% in 2016 to 74% in 2017 for commercial partners and from 65.2% in 2016 to 62.3% in 2017 for commercial / causal partners. (Box 5.4(a))

New HIV infection among drug users remained low but significant risk behaviors were reported

20. In 2017, the reporting system recorded 6 cases of HIV transmission in PWID, which accounted for 1% of all reported cases. Past information showed that the number decreased from the peak of 58 cases in 2006 to 6 cases in 2014 and remained at a low level of 6 cases in 2017. (Box 2.5(a)) All cases in 2017 were Chinese male. (Box 2.6(a)) The median age was 39. Four out of the 6 PWID cases were reported from Public hospitals / clinics / laboratories.

21. The Methadone Universal HIV Antibody (Urine) Testing Programme (MUT) has replaced the past unlinked anonymous screening (UAS) in methadone clinics since its launch in 2004. It aims to strengthen HIV surveillance among drug users as well as diagnosis and subsequent care of the HIV infected clinic attendees. Among the 7532 methadone clinic attendees in 2017, 4913 clients have been tested for HIV, giving an overall HIV testing coverage rate of 65%. A total of 41 clients were found to be positive for HIV, giving an overall HIV prevalence of 0.83% among methadone clinic attendees in 2017. (Box 3.3)

22. The proportion of drug users who were currently injecting drugs ranged from 27% to 87% across different surveys in 2017. (Box 5.6) However, various surveys showed that 2.0% to 15.2 % of them were practising needle sharing, which put them at risk of HIV. (Box 5.7) Therefore, the potential risk of HIV outbreak among drug users cannot be neglected, despite the fact that the number of reported cases remained at a low level in 2017.

One case of transmission via blood/blood product transfusion recorded

23. In 2017, there was 1 reported case 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 0.012 % in 2017 (Box 3.1(b)).

Three cases of perinatal transmission recorded

24. In 2017, there were 3 reported cases of HIV infection via perinatal transmission (of which 2 cases were acquired outside Hong Kong; one had unknown place of transmission). Since the launch of the Universal Antenatal HIV Testing in September 2001, around 50,000 pregnant women attending public antenatal services were tested for HIV every year. The coverage of the programme remained at a high level (100% (48500 /48504) in 2017) and the prevalence of HIV infection in pregnant women was found to be stable over the years (0.01% in 2017) (Box 3.7).

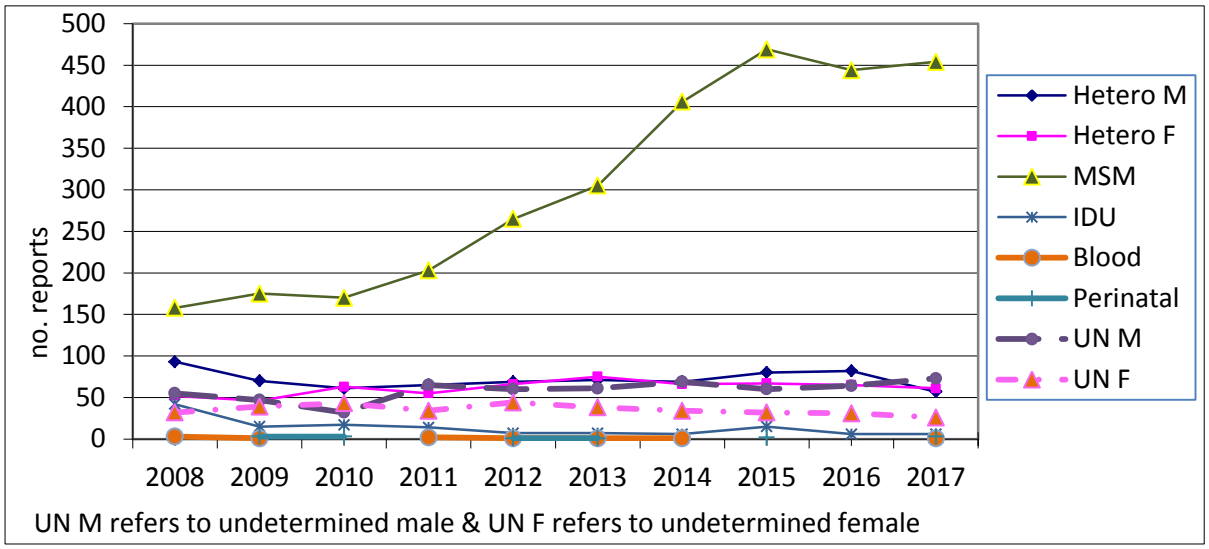
Reconstruction of risk factor for cases without reported route of transmission

25. As the HIV/AIDS case-based reporting system in Hong Kong is voluntary and anonymous, the completeness of the local surveillance database depends heavily on the percentage of cases with the report form DH2293 received from attending doctors / NGOs. Incomplete data without a reported risk factor may skew the local epidemic picture. In 2017, 15% of the infected cases did not have a suspected route of transmission reported, as compared to around 14% in 2016. (Box 2.5(a)) A systematic reconstruction method proposed by Dr. Tim Brown, Senior Fellow of the East-West Centre, Honolulu has been used since 2010 to factor in the weightings of undetermined risk cases, to assess the risk for local transmission and to plan and guide appropriate preventive actions.

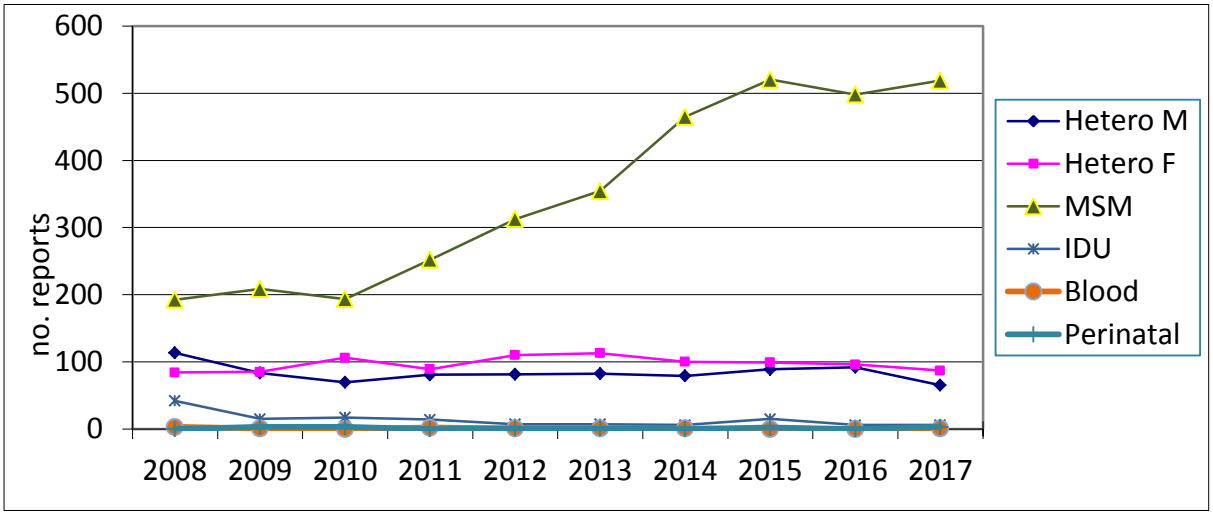
26. Reconstruction was carried out by assigning one suitable route of transmission to the undetermined cases. After the analysis of the features of these cases with undetermined risk factor and the prevailing epidemic, it was assessed that all female infections shall be assumed to be acquired through 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, providing there is no other indication suggesting otherwise.

27. The original 10-year data on risk factors from 2008 to 2017 was used for the reconstruction (Box 1.7(a)). After the reconstruction, the cases of MSM showed a marked increase, while the change in heterosexual male appeared to be relatively modest. (Box 1.7 (b and c)) Although this method might have oversimplified the complex local epidemic, it provides one possible solution to fill the gap in the HIV surveillance system information. Measures to promote the return rate of report forms from doctors regarding each HIV case have also been implemented in the past few years.

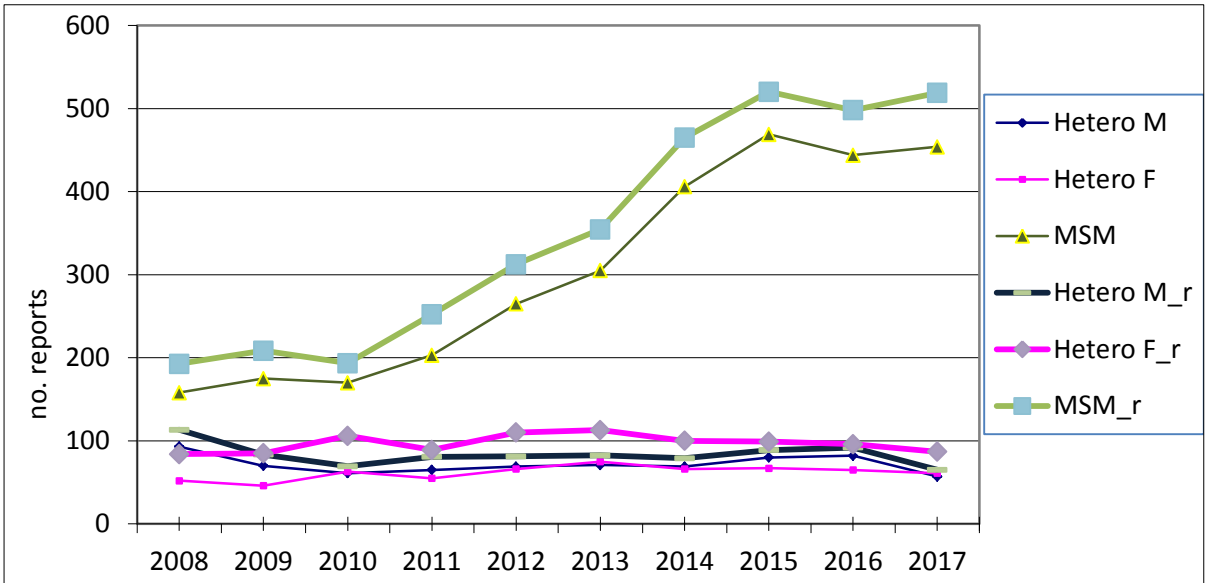
Box 1.7(a) HIV reports before risk factor reconstruction (2008-2017)



Box 1.7(b) HIV reports after risk factor reconstruction (2008-2017)



Box 1.7(c) HIV reports before and after risk factor reconstruction in MSM, heterosexual male and heterosexual female cases (2008-2017)



Hetero M_r refers to heterosexual male after risk factor reconstruction
Hetero F_r refers to heterosexual female after risk factor reconstruction
MSM_r refers to men who have sex with men after risk factor reconstruction

Regular HIV testing before diagnosis was still not a norm in Hong Kong

28. The HIV/AIDS Report Form (DH2293) was revised in 2010 with one data field added to capture the previously negative HIV result among the newly diagnosed cases. The data helps to inform the epidemiology of those cases who were recently infected. Among the 681 cases reported in 2017, data of the HIV/AIDS Report Form was available in 596 cases, of which only 262 cases (44%) had the data on previously negative HIV results, which implied regular testing among HIV patients before their diagnoses was uncommon. Among those 262 cases, 112 (42.7%) had previously negative HIV results within one year of the HIV diagnosis, suggesting recent infection within 1 year of the HIV diagnosis. For those whose last negative HIV results were beyond one year of HIV diagnosis, however, it was not possible to judge whether they were recently HIV seroconverted or not, as the observation was limited by the infrequent testing behaviour.

Pneumocystis Pneumonia and Tuberculosis remained the two commonest primary AIDS Defining Illnesses

29. Since the introduction of highly active antiretroviral therapy (HAART) in Hong Kong around 1997, the annual number of reported AIDS cases has been dropping since then and then remained at a relatively stable level of around 80 to 110 cases per year in the past decade. A total of 91 AIDS cases were reported in 2017 as compared with 111 cases in 2016 (Box 2.5(b)). The vast majority (91.2%) of the AIDS reports in 2017 had their AIDS diagnosis within 3 months of HIV diagnosis, suggesting late presentation of these cases.

30. *Pneumocystis jiroveci* pneumonia (previously known as *Pneumocystis carinii*) was the commonest ADI in Hong Kong in 2017, which accounted for 48.4% (44 cases). This proportion has increased comparing to that in 2016 (43.2%). The second most common primary ADI reported in 2017 was *Mycobacterium tuberculosis* which accounted for 18.7% of the reported AIDS cases (17 cases). They were followed by *Cytomegalovirus* diseases (8.8%), other fungal infections (7.7%), *Penicilliosis* (7.7%) and 'others' (7.7%). (Box 2.8) The universal voluntary testing has replaced unlinked anonymous screening at TB & Chest Clinics since 2009 in informing the HIV prevalence among TB patients. In 2017, the HIV testing coverage in patients attending government TB & Chest Clinic was 93.9% and HIV prevalence was 0.952%, which remained at a low level of around 1% in the past few years. (Box 3.6)

The median CD4 of newly reported HIV cases showed an increasing trend but those of older patients remained at a relatively low level

31. The median CD4 of newly reported HIV cases at the time of diagnosis in 2017 was 286/ul, which was similar to previous few years. The proportion with CD4>=200/ul in 2017 was 65%, which was comparable to those in previous few years. Reporting of CD4 level has become a routine practice among doctors, providing useful information on the timing of diagnosis in the course of HIV infection. In 2017, 82.7% of HIV cases had their CD4 level at diagnosis reported, which was also comparable to those in the past few years. (Box 1.8) The median CD4 for those younger than 55 was 303/ul in 2017, which has increased as compared to 296/ul in 2016. In addition, the median CD4 count among those who are aged 55 or above has increased from 109/ul in 2016 to 176/ul in 2017. It was lower than that in the younger group, suggesting that older patients were diagnosed at a relatively late disease stage. (Box 1.9) As compared to the new cases acquired via homosexual/bisexual route, cases of heterosexual route were generally diagnosed at a later stage as evident by a smaller percentage of having positive laboratory test for specimens at diagnosis (positive BED IgG Capture Enzyme Immunoassay, i.e. BED assay or PCR) or having a negative HIV antibody test within 1 year. (Box 1.10)

Box 1.8 – Reported CD4 levels at HIV diagnosis

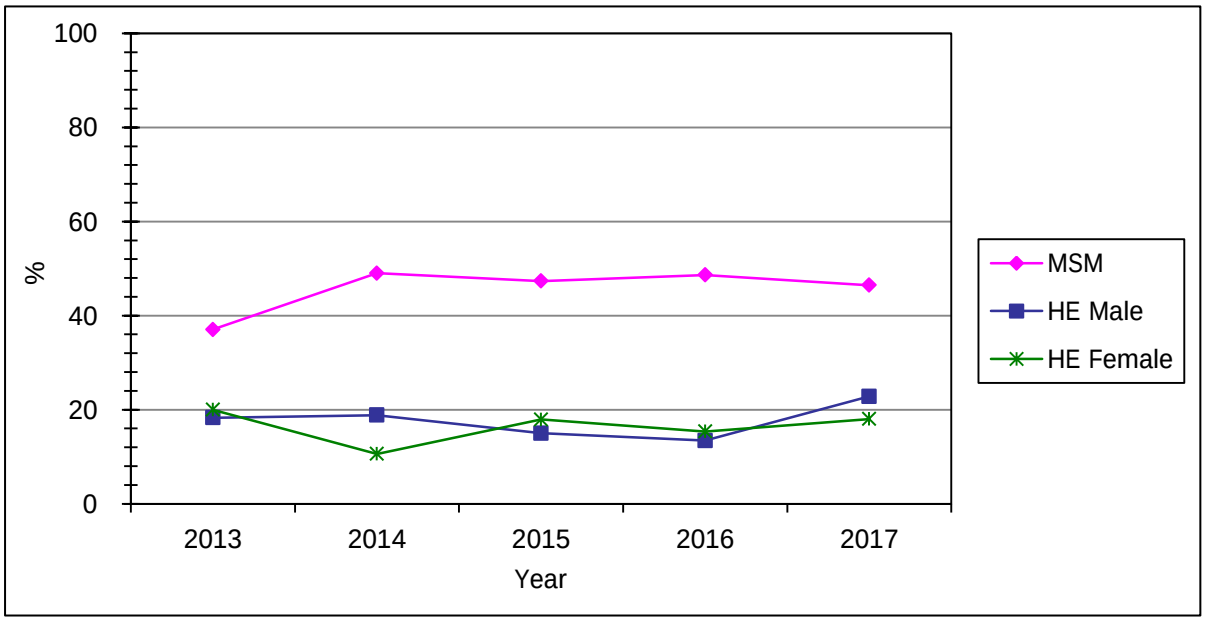
Year	No. of HIV reports	No. of CD4 reports	(%)	Median CD4 (cell/ul)	CD4>=200 (cell/ul)	(%)
2008	435	317	(72.9%)	193	155	(48.9%)
2009	396	290	(73.2%)	278	182	(62.8%)
2010	389	292	(75.1%)	207.5	149	(51.0%)
2011	438	324	(74.0%)	253.5	190	(58.6%)
2012	513	388	(75.6%)	279	251	(64.7%)
2013	559	446	(79.8%)	285	286	(64.1%)
2014	651	519	(79.7%)	319	372	(71.7%)
2015	725	594	(81.9%)	297.5	410	(69.0%)
2016	692	555	(80.2%)	284	369	(66.5%)
2017	681	563	(82.7%)	286	366	(65.0%)

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	2008	380	274	(72.1%)	217	(52.6%)
	2009	357	261	(73.1%)	299	(66.7%)
	2010	353	260	(73.7%)	215.5	(52.3%)
	2011	384	287	(74.7%)	275	(61.3%)
	2012	463	347	(74.9%)	300	(66.6%)
	2013	501	395	(78.8%)	309	(68.4%)
	2014	596	480	(80.5%)	329.5	(74.8%)
	2015	675	552	(81.8%)	306	(71.6%)
	2016	615	505	(82.1%)	296	(69.1%)
	2017	614	514	(83.7%)	303	(67.1%)
>=55	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	37	(69.8%)	126	(37.8%)
	2012	48	41	(85.4%)	193	(48.8%)
	2013	58	51	(87.9%)	104	(31.4%)
	2014	53	39	(73.6%)	61	(33.3%)
	2015	48	42	(87.5%)	127	(35.7%)
	2016	68	50	(73.5%)	109	(40.0%)
	2017	61	49	(80.3%)	176	(42.9%)

*: 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.

Box 1.10 – Recent HIV infections by route of transmission (2013-2017)



The two commonest HIV-1 subtypes were CRF01_AE and B, but genetic diversity continued to increase. The level of drug resistance mutation remained low.

32. In 2017, about 84% of HIV reports had their subtypes documented, at a comparable level as in the past years. (Box 6.1) Subtypes CRF01_AE and B remained the first and second most common subtypes identified among HIV type 1 or PCR positive case in Hong Kong, contributing to 42% and 33% of all cases with identified subtype from 2001 to 2017 respectively. In 2017, they together accounted for 65% of all HIV cases with subtype documented. (Box 6.2) Over the past decade, CRF_01AE was found to be common in female, Asian non-Chinese, MSM and heterosexuals. (Box 6.4) On the other hand, subtype B was consistently commoner in male, MSM and Chinese. (Box 6.5) Subtype C was commoner in female, Asian non-Chinese and heterosexual (Box 6.6). Over the past few years, the proportion of both subtype CRF01_AE and B showed a decreasing trend. In contrast, a trend of increasing diversity in other subtypes and circulating recombinant forms was noted, in particular since 2009. (Box 6.3) Notably, the proportion of subtype CRF07_BC has increased from 3.4% in 2008 to 9.1% in 2017 while that subtype CRF08_BC increased from 0.8% to 9.1% respectively.

33. According to the HIV resistance threshold survey conducted since 2003, the prevalence of intermediate or high level drug resistance related mutations in 2016 was 5.4%, which was higher than levels recorded in previous years (ranging from 0% in 2006 to 4.3% in 2004) (Box 6.7). Among patients with transmitted resistance, a relatively high level of resistance to non-nucleoside reverse transcriptase inhibitors (NNRTI) is noted.

Discussion

34. After a modest drop in 2009 and 2010, the rising trend of HIV reports has continued since 2011 and since then, the reports remained at a high level. The total number of HIV reports in 2017 was 681, which decreased by 1.6% as compared to the 692 cases in 2016. The decrease in the number of heterosexual transmission cases was the major contributing factor for the decrease in the total number of HIV infection reported in 2017. The number of MSM remained relatively stable and the number of cases among PWID also remained at a relatively low level of 1-15 cases per year in the last decade.

35. The number of HIV reports involving **homosexual/bisexual transmission (MSM)** continued to remain high and accounts for the largest proportion of cases in 2017 (78%). From the data of previous few years, the increasing trend will likely continue in the foreseeable future and play a significant role in the local epidemic. Using the reconstruction methodology described in paragraph 25 above, we can observe a more dramatic increase in the infection cases among MSM. PRiSM 2017 revealed an HIV prevalence of 6.54%, which was higher than the findings from previous rounds of PRiSM (2011) and HARiS (2014). This highlights a continuing a concentrated HIV epidemic among gay and bisexual men in Hong Kong. Possible contribution from methodological difference of the surveys cannot be excluded. Nevertheless, the figure was worrying as it was significantly higher than other at-risk populations including the female sex workers and PWID. Although the majority of the MSM cases (77.3%) were infected locally in 2017, potential risk of HIV contracted from

neighboring cities / countries should not be taken lightly due to the high level of international travel and cross-border sexual activities in the population. A decreasing median age of MSM cases was also noted (32 in 2017; 36 in 2008), signifying the importance of HIV prevention and publicity targeting young population.

36. **Heterosexual transmission** remained relatively stable over the past few years and its proportion among the yearly new HIV infections has shown a downward trend (33% in 2018; 17% in 2017). Of which, the proportion of female rose to 51.7% in 2017 from 44.5% in 2016. Upon reconstruction of undetermined female cases, it showed an even more obvious increase for female heterosexual cases. The HIV prevalence in Social Hygiene Clinic attendees and antenatal women remained at a relatively low level in the past decade and was 0.43% and 0.01% in 2017 respectively. However, consistent condom use rates of commercial / casual sex especially gauged from the surveys of heterosexual male remained far from satisfactory and could pose a threat of rebound in the number of cases infected via the heterosexual route.

37. The number of cases acquiring HIV via **drug injection** has remained stable. Despite that, the proportion of injection and risky needle-sharing behaviour among drug users as gauged from several surveys remained at a high level, which continued to pose a potential risk of cluster outbreak and rapid upsurge of infection in the population. Moreover, the HIV testing coverage in methadone clinics showed a decreasing trend in the past few years, which may miss or delay diagnosis and subsequent care of infected PWID. Remedial strategies to enhance HIV testing are underway, which will be evaluated periodically.

38. In conclusion, the number of newly reported HIV infections in Hong Kong continued to remain high in 2017. Similar to the situation in many developed countries and neighboring areas, MSM infection continued to dominate the HIV epidemic in Hong Kong. The situation of heterosexual population and PWID population was relatively stable thus far. Apart from locally acquired infections, infections contracted outside Hong Kong would also play an important factor influencing the local HIV epidemiology. In 2017, the HIV prevalence among the general population in Hong Kong was estimated to remain at a low level of less than 0.1%. To combat the HIV epidemic, continuous and collaborative effort in HIV prevention is essential.

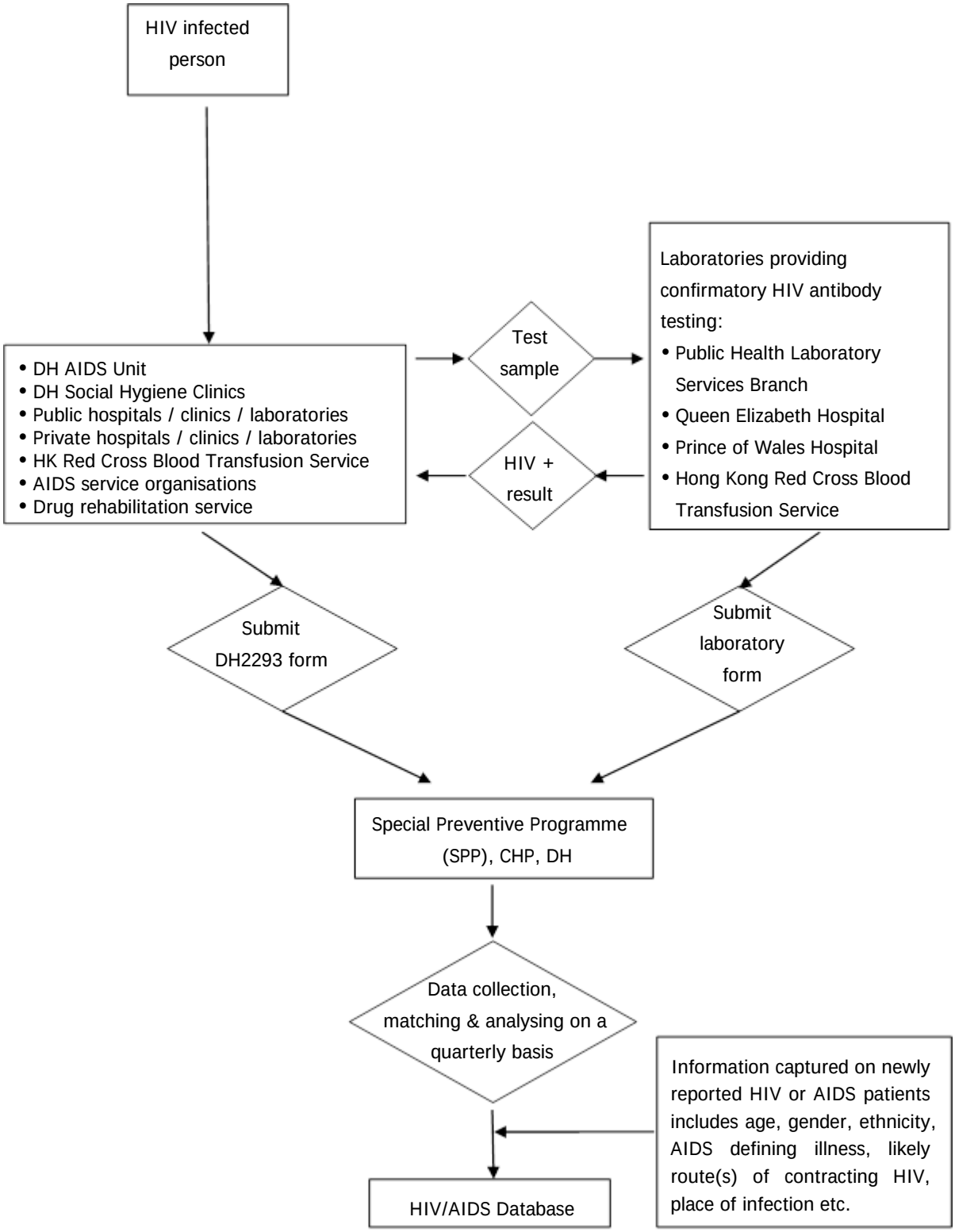
39. In line with the international recommendations, all patients diagnosed HIV positive will receive antiretroviral treatment irrespective of the stage of disease, with the ultimate goal to achieve a sustained undetectable viral load. According to the latest HIV treatment cascade for Hong Kong (2016), 86.2% of cases diagnosed HIV positive were on sustained antiretroviral treatment (HAART) while 94.3% of them having their viral load suppressed to an undetectable level (defined as less than 200 copies per mL in the latest blood test).

2. TABULATED RESULTS OF HIV/AIDS REPORTING

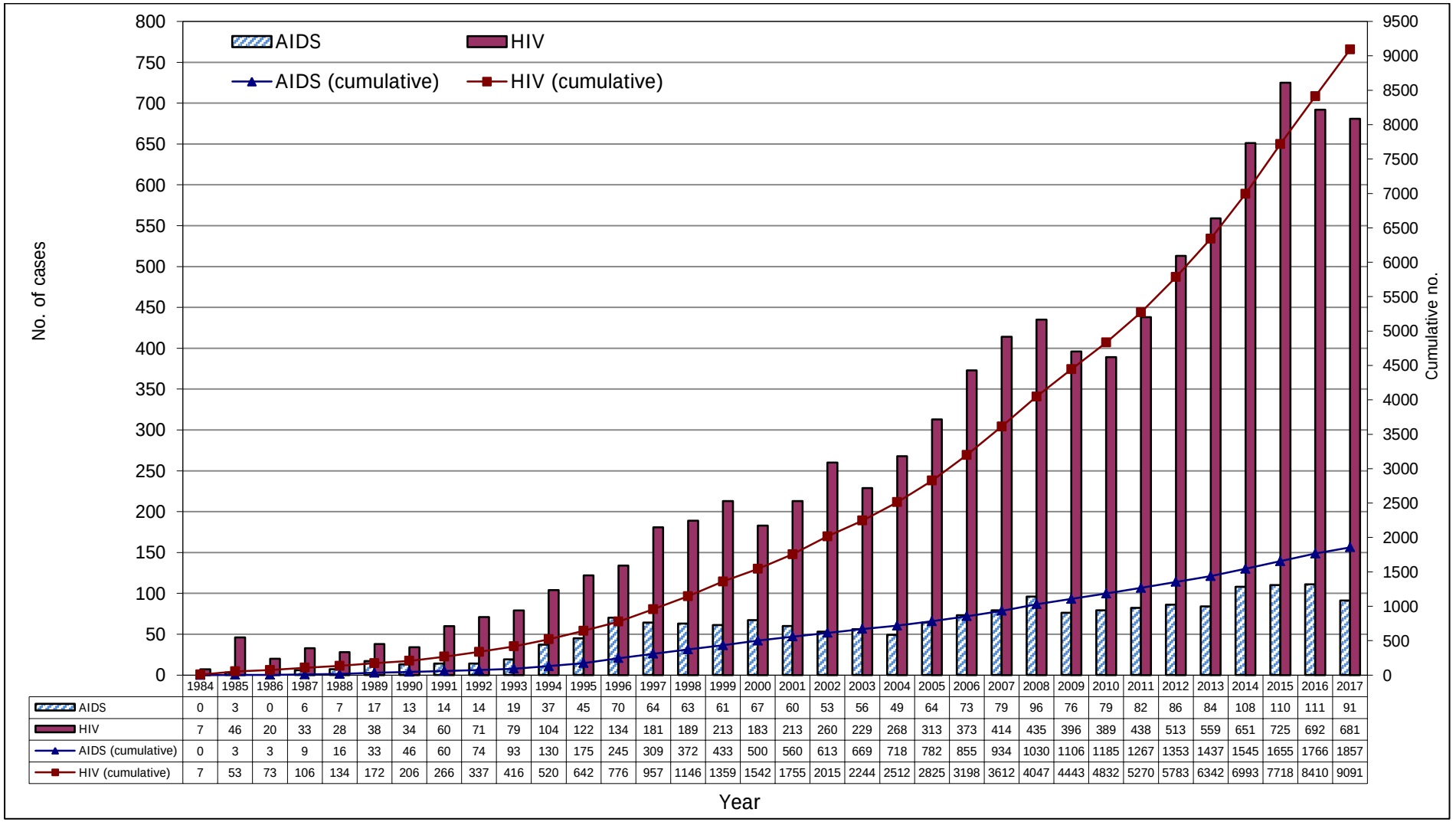
System description

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

System layout



Box 2.1 Annual and cumulative reports of HIV/AIDS cases

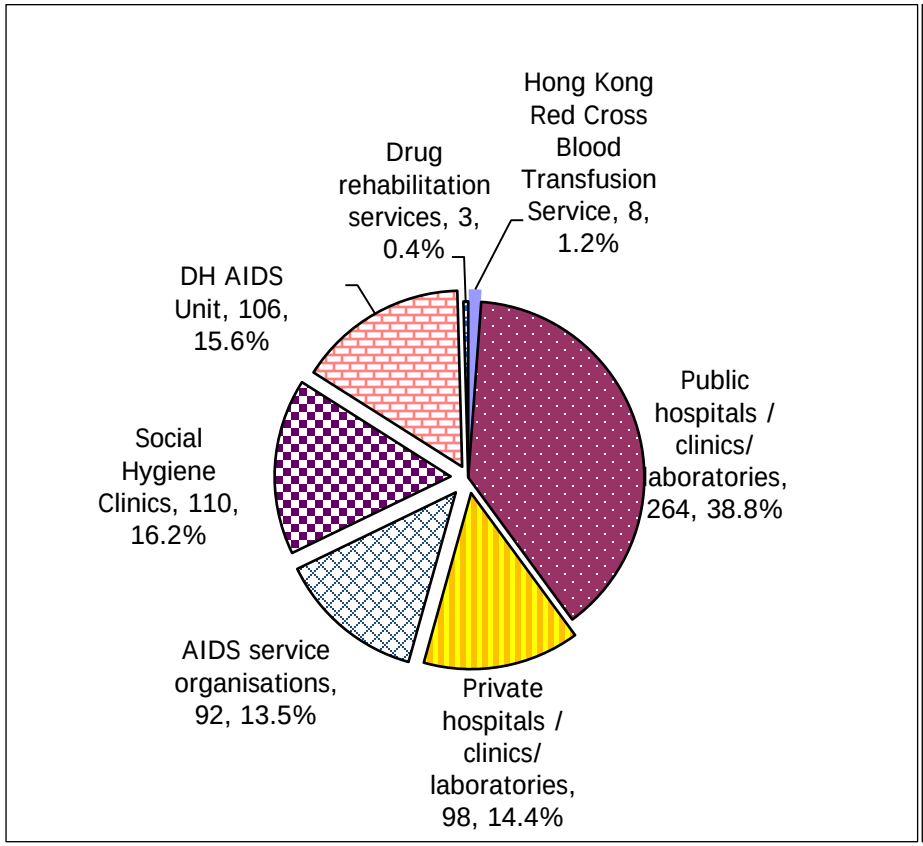


	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
AIDS	0	3	0	6	7	17	13	14	14	19	37	45	70	64	63	61	67	60	53	56	49	64	73	79	96	76	79	82	86	84	108	110	111	91
HIV	7	46	20	33	28	38	34	60	71	79	104	122	134	181	189	213	183	213	260	229	268	313	373	414	435	396	389	438	513	559	651	725	692	681
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	1353	1437	1545	1655	1766	1857
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	5783	6342	6993	7718	8410	9091

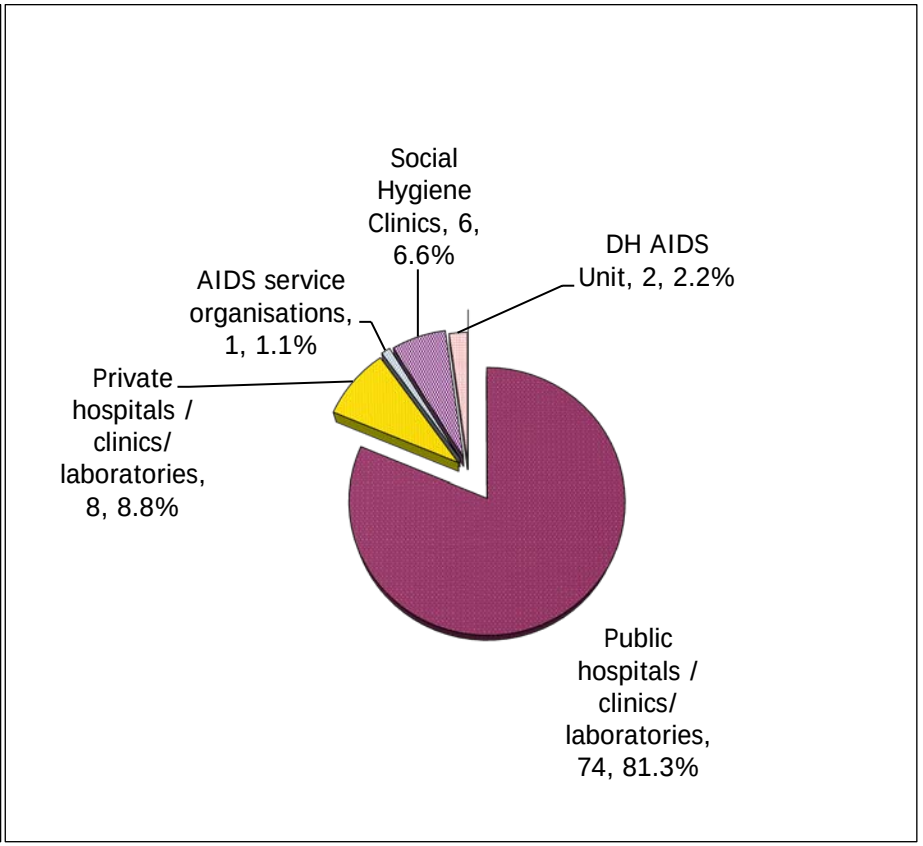
Box 2.2 Source of reporting of HIV/AIDS cases

(a) Year 2017

(i) HIV

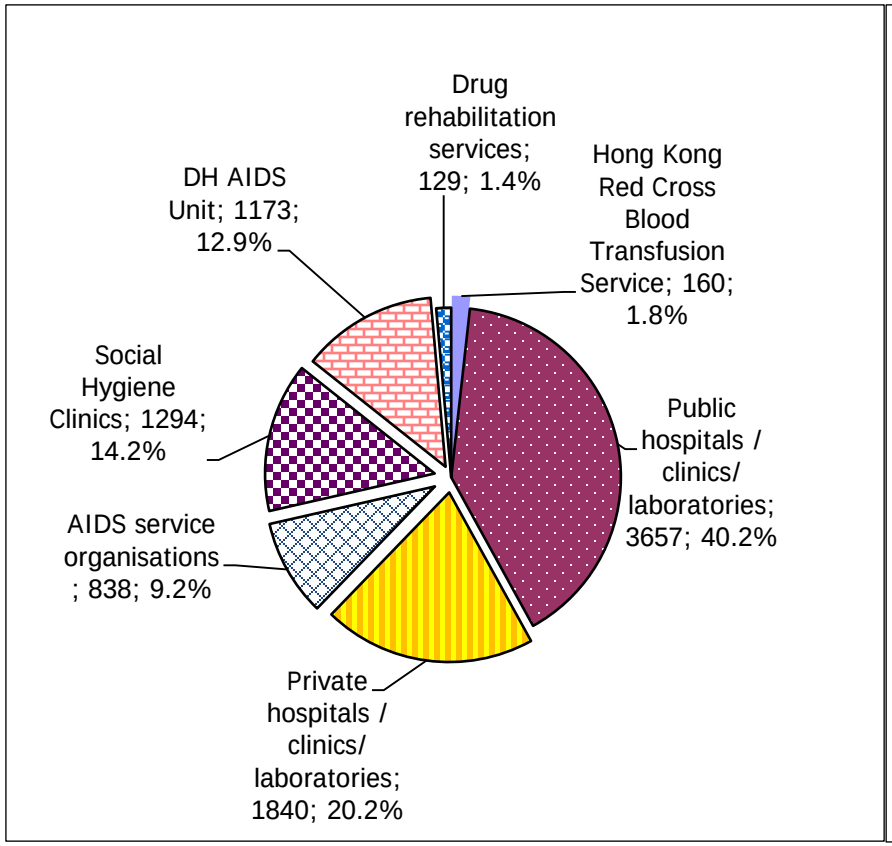


(ii) AIDS

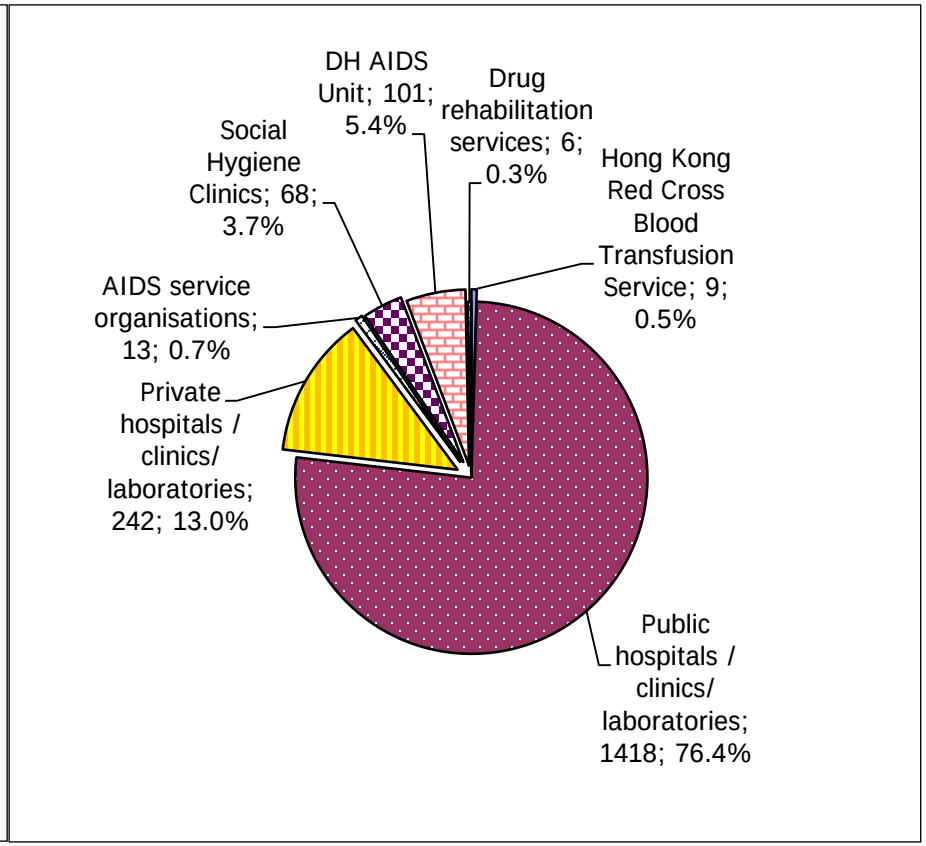


(b) Cumulative (1984 - 2017)

(i) HIV



(ii) AIDS



Box 2.3 Ethnicity & gender of reported HIV/AIDS cases

(a) Year 2017

Ethnicity	HIV						AIDS					
	Male		Female		Total		Male		Female		Total	
Chinese	488	(82.4%)	33	(37.1%)	521	(76.5%)	64	(83.1%)	8	(57.1%)	72	(79.1%)
Non-Chinese	64	(10.8%)	42	(47.2%)	106	(15.6%)	13	(16.9%)	6	(42.9%)	19	(20.9%)
Asian	36	(6.1%)	29	(32.6%)	65	(9.5%)	10	(13.0%)	4	(28.6%)	14	(15.4%)
White	15	(2.5%)	1	(1.1%)	16	(2.3%)	1	(1.3%)	0	(0.0%)	1	(1.1%)
Black	8	(1.4%)	8	(9.0%)	16	(2.3%)	0	(0.0%)	1	(7.1%)	1	(1.1%)
Others	5	(0.8%)	4	(4.5%)	9	(1.3%)	2	(2.6%)	1	(7.1%)	3	(3.3%)
Unknown	40	(6.8%)	14	(15.7%)	54	(7.9%)	0	(0.0%)	0	(0.0%)	0	(0.0%)
Total	592	(100.0%)	89	(100.0%)	681	(100.0%)	77	(100.0%)	14	(100.0%)	91	(100.0%)

(b) Cumulative (1984 - 2017)

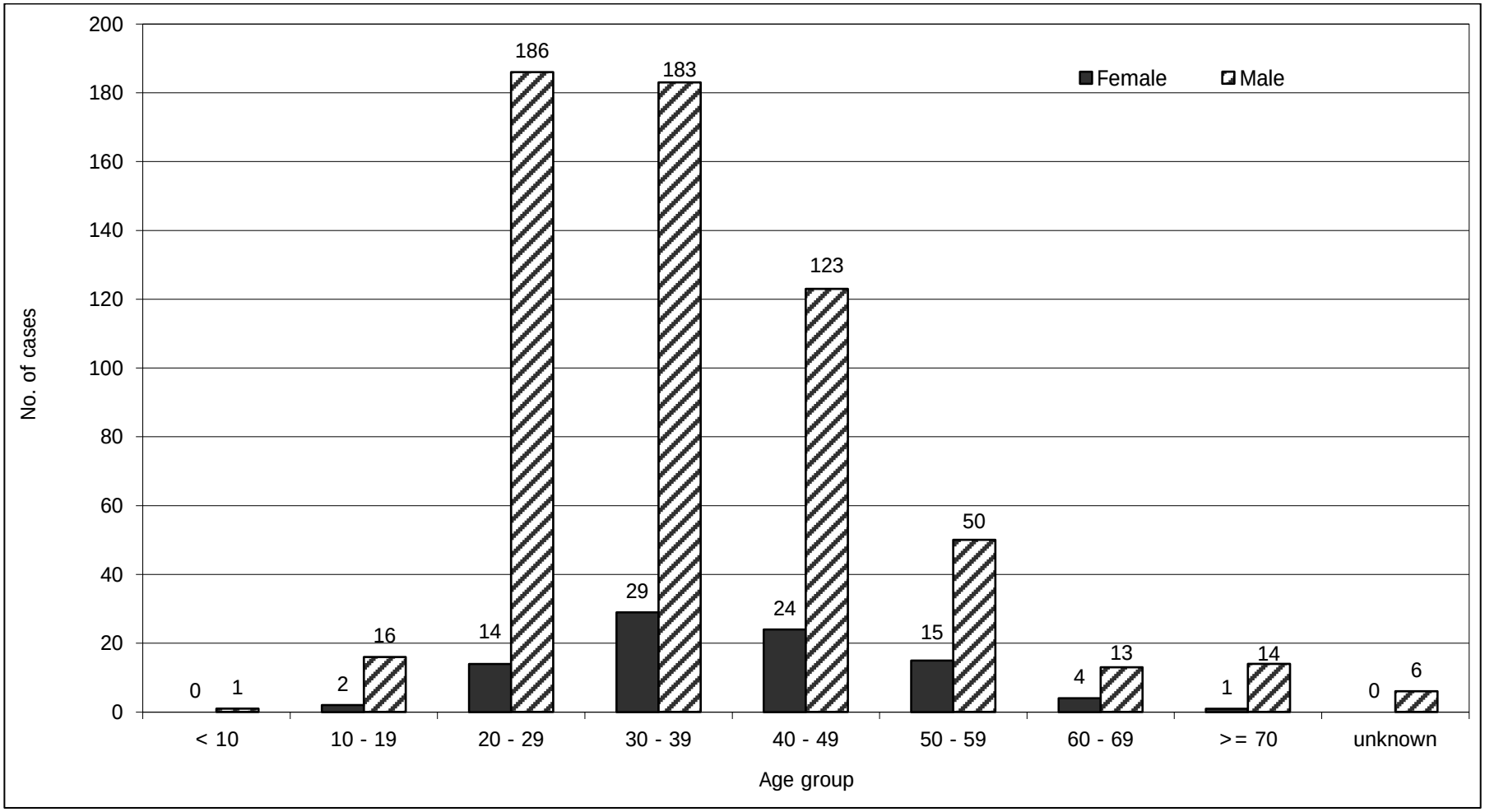
Ethnicity	HIV						AIDS					
	Male		Female		Total		Male		Female		Total	
Chinese	5645	(76.2%)	636	(37.7%)	6281	(69.1%)	1280	(82.7%)	147	(47.4%)	1427	(76.8%)
Non-Chinese	1579	(21.3%)	1014	(60.2%)	2593	(28.5%)	267	(17.3%)	163	(52.6%)	430	(23.2%)
Asian	730	(9.9%)	570	(33.8%)	1300	(14.3%)	144	(9.3%)	143	(46.1%)	287	(15.5%)
White	527	(7.1%)	25	(1.5%)	552	(6.1%)	93	(6.0%)	3	(1.0%)	96	(5.2%)
Black	114	(1.5%)	110	(6.5%)	224	(2.5%)	25	(1.6%)	15	(4.8%)	40	(2.2%)
Others	208	(2.8%)	309	(18.3%)	517	(5.7%)	5	(0.3%)	2	(0.6%)	7	(0.4%)
Unknown	182	(2.5%)	35	(2.1%)	217	(2.4%)	0	(0.0%)	0	(0.0%)	0	(0.0%)
Total	7406	(100.0%)	1685	(100.0%)	9091	(100.0%)	1547	(100.0%)	310	(100.0%)	1857	(100.0%)

Box 2.4 Age distribution of reported HIV/AIDS cases

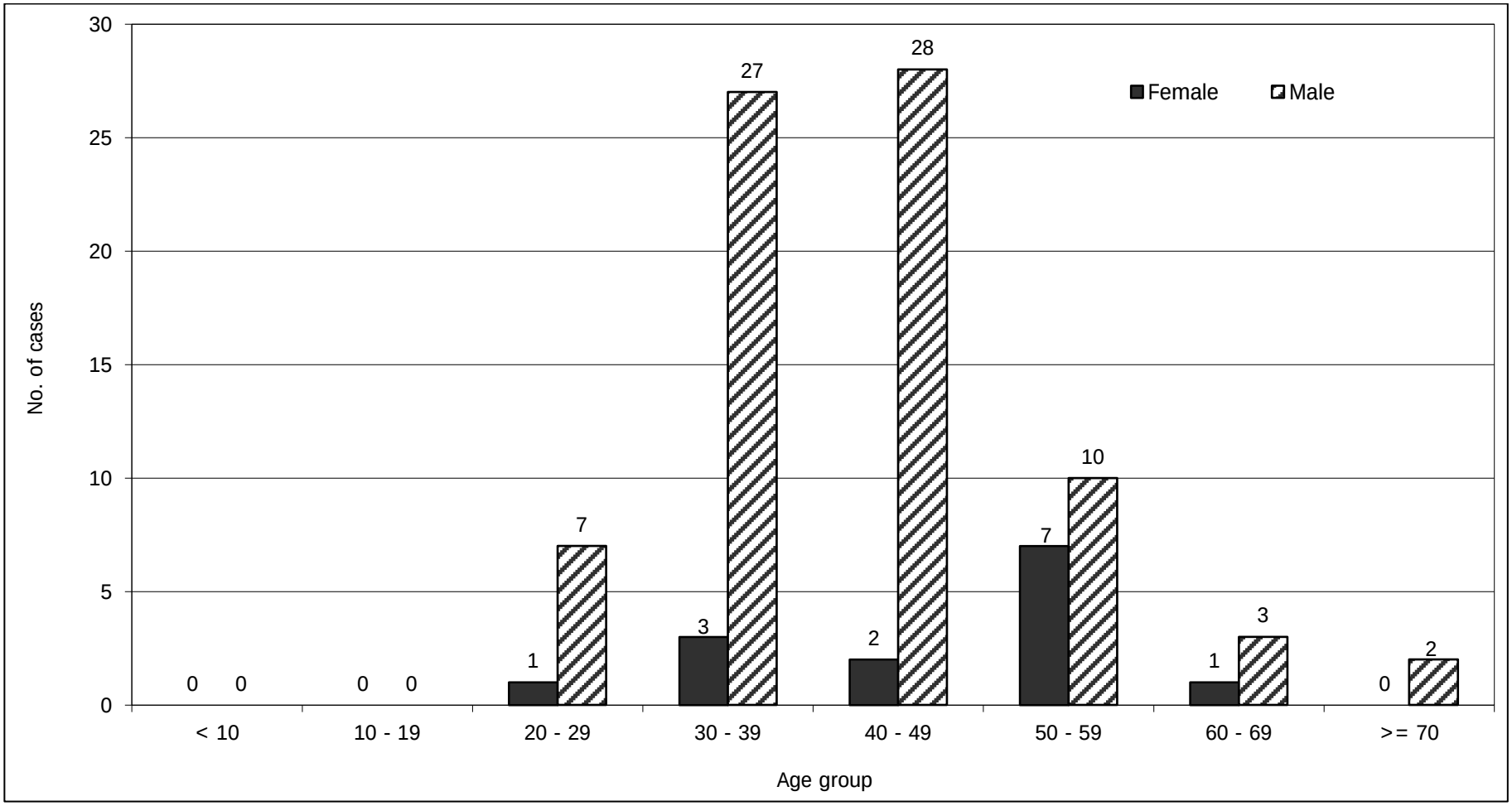
(a) Median age of reported HIV/AIDS cases

Year	HIV			AIDS		
	Median age	Inter quartile range		Median age	Inter quartile range	
		25%	75%		25%	75%
1996	34	30	41	38	32.25	42.75
1997	35	29	42	37	32	48
1998	34	29	40	39	32	47.5
1999	35	29	43	40	34	51
2000	35	29	43	40	33.5	49.5
2001	34.5	29	42	38	30.75	46.25
2002	36	30	44	41	34	48
2003	36	31	45	39	35	49.25
2004	36	30	44	42	35	51
2005	36	30	44	40	33.75	47.25
2006	34	28	42	38	31	47
2007	34	29	41	41	34	50.5
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	48.75
2012	36	29	44	42	36	49
2013	36	29	44	43.5	36	49.25
2014	34	26	43	47	38	54.5
2015	34	27	43	41.5	33	52
2016	35	28	46	44	35	52
2017	35	27	44	41	35	49.5
Cumulative (1984 – 2017)	35	28	44	41	34	50

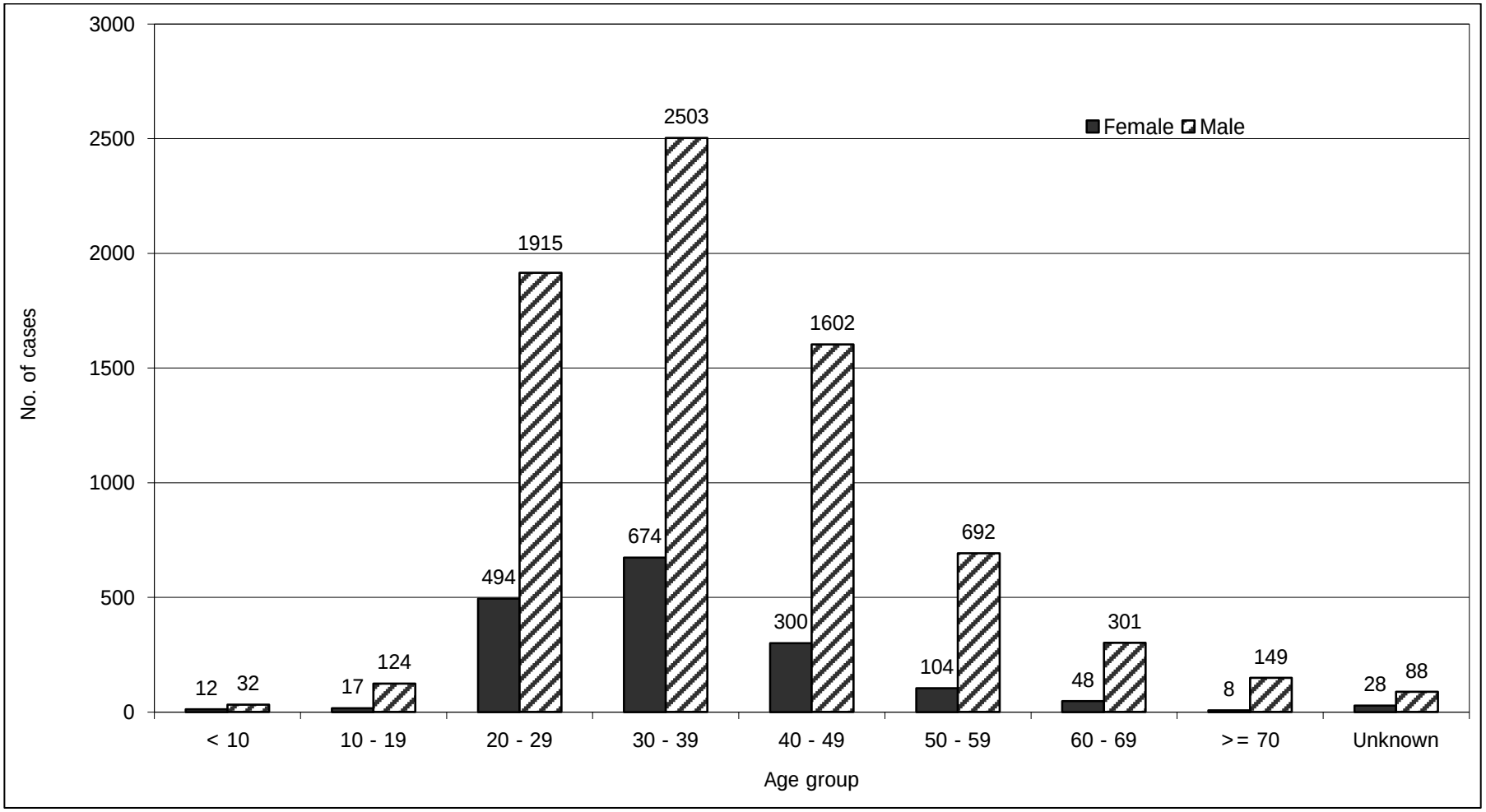
(b) Age & gender of reported HIV cases (Year 2017)



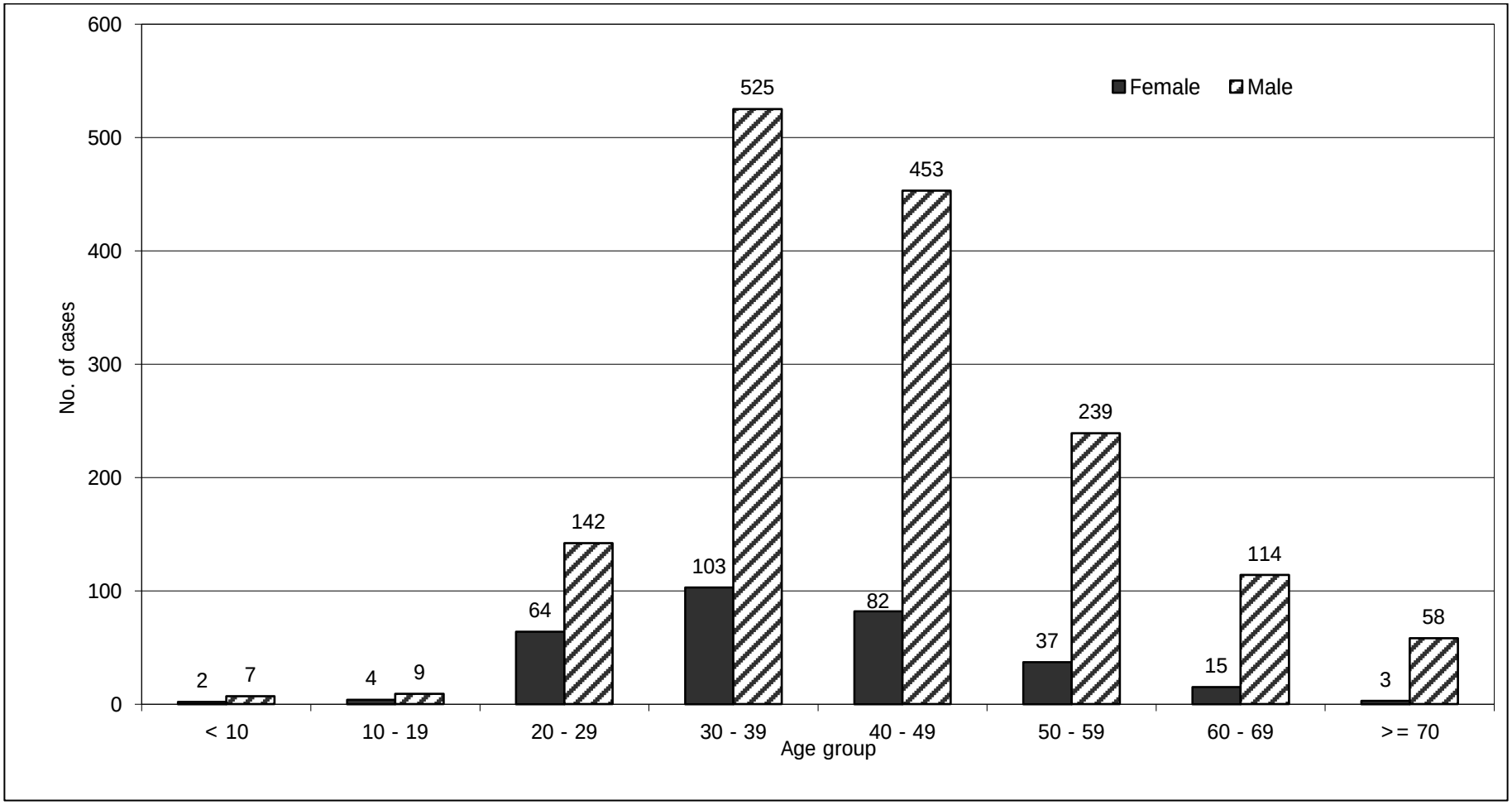
(c) Age & gender of reported AIDS cases (Year 2017)



(d) Age & gender of reported HIV cases (cumulative, 1984 - 2017)



(e) Age & gender of reported AIDS cases (cumulative, 1985 - 2017)



(f) Adults & children with reported HIV/AIDS in 2017

Age	HIV			AIDS		
	Male	Female	Total	Male	Female	Total
Adult	591	88	679	77	14	91
Children (age <=13)	1	1	2	0	0	0
Total	592	89	681	77	14	91

Box 2.5 Exposure category of reported HIV/AIDS case

(a) Distribution of reported HIV cases by exposure category (1998 - 2017)

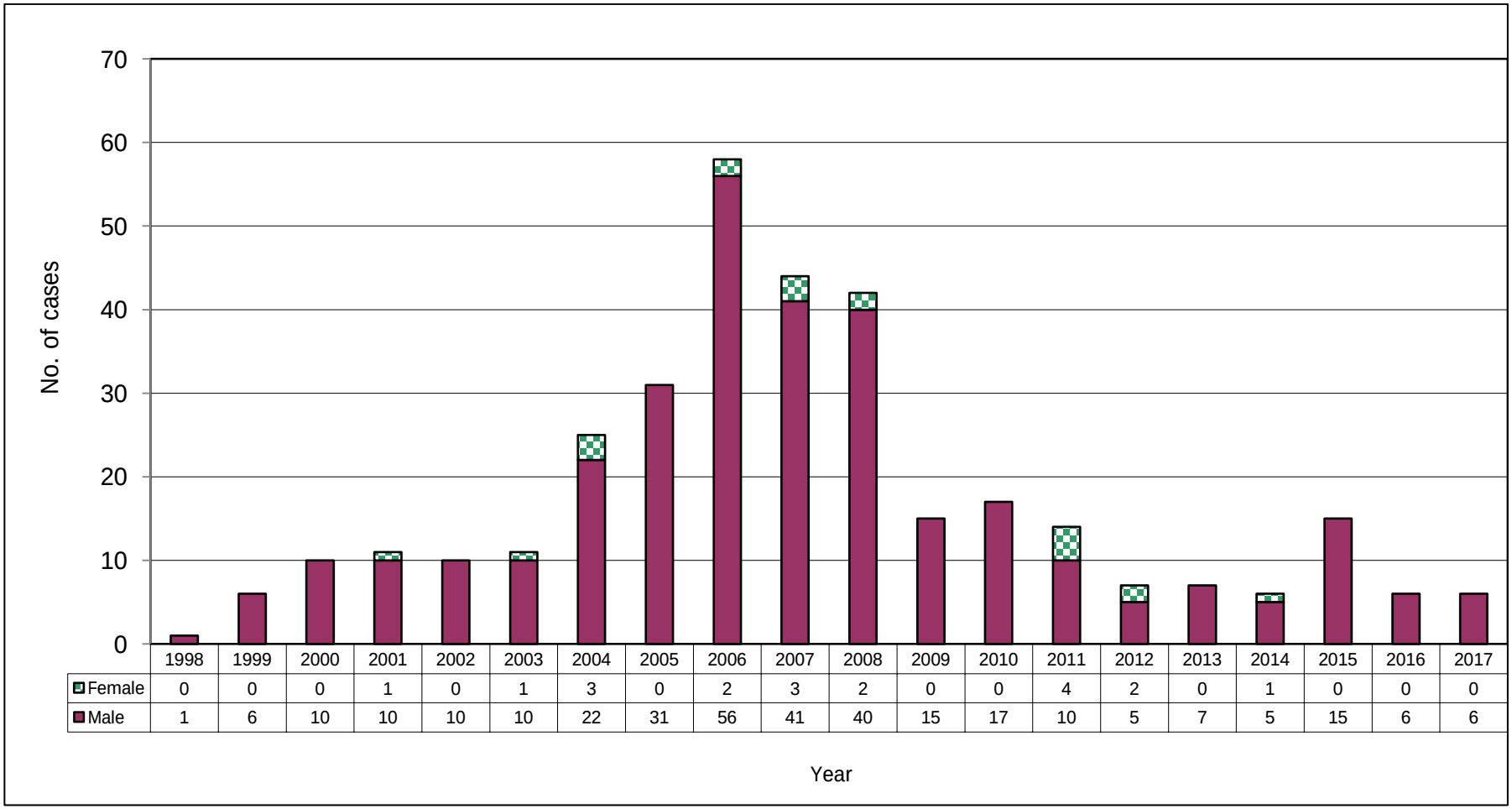
Year / Exposure Category (%)	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Cumulative (1984 - 2017)
Heterosexual	135 (71%)	127 (60%)	115 (63%)	127 (60%)	146 (56%)	117 (51%)	112 (42%)	117 (37%)	130 (35%)	111 (27%)	145 (33%)	116 (29%)	124 (32%)	120 (27%)	135 (26%)	146 (26%)	135 (21%)	147 (20%)	147 (21%)	118 (17%)	3075 (34%)
Homosexual	16 (8%)	34 (16%)	23 (13%)	37 (17%)	48 (18%)	46 (20%)	63 (24%)	87 (28%)	111 (30%)	162 (39%)	140 (32%)	166 (42%)	146 (38%)	185 (42%)	248 (48%)	283 (51%)	382 (59%)	413 (57%)	394 (57%)	380 (56%)	3595 (40%)
Bisexual	6 (3%)	10 (5%)	7 (4%)	7 (3%)	9 (3%)	5 (2%)	6 (2%)	12 (4%)	15 (4%)	19 (5%)	18 (4%)	9 (2%)	24 (6%)	18 (4%)	17 (3%)	22 (4%)	24 (4%)	56 (8%)	50 (7%)	74 (11%)	464 (5%)
People who inject drugs	1 (1%)	6 (3%)	10 (5%)	11 (5%)	10 (4%)	11 (5%)	25 (9%)	31 (10%)	58 (16%)	44 (11%)	42 (10%)	15 (4%)	17 (4%)	14 (3%)	7 (1%)	7 (1%)	6 (1%)	15 (2%)	6 (1%)	6 (1%)	358 (4%)
Blood contact	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%)	1 (0%)	1 (0%)	1 (0%)	0 (0%)	0 (0%)	1 (0%)	85 (1%)
Perinatal	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%)	1 (0%)	1 (0%)	0 (0%)	2 (0%)	0 (0%)	3 (0%)	33 (0%)
Undetermined	29 (15%)	30 (14%)	26 (14%)	29 (14%)	46 (18%)	50 (22%)	62 (23%)	60 (19%)	57 (15%)	75 (18%)	87 (20%)	86 (22%)	75 (19%)	99 (23%)	104 (20%)	99 (18%)	103 (16%)	92 (13%)	95 (14%)	99 (15%)	1481 (16%)
Total	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%)	513 (100%)	559 (100%)	651 (100%)	725 (100%)	692 (100%)	681 (100%)	9091 (100%)

(b) Distribution of reported AIDS cases by exposure category (1998 - 2017)

Year / Exposure Category (%)	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Cumulative (1985 - 2017)
Heterosexual	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%)	31 (38%)	39 (45%)	31 (37%)	53 (49%)	46 (42%)	49 (44%)	27 (30%)	996 (54%)
Homosexual	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%)	34 (40%)	36 (43%)	39 (36%)	50 (45%)	41 (37%)	45 (49%)	531 (29%)
Bisexual	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%)	4 (5%)	5 (6%)	6 (6%)	7 (6%)	14 (13%)	11 (12%)	99 (5%)
People who inject drugs	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%)	2 (2%)	4 (5%)	2 (2%)	2 (2%)	1 (1%)	2 (2%)	66 (4%)
Blood contact	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%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (1%)	25 (1%)
Perinatal	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%)	0 (0%)	1 (1%)	0 (0%)	1 (1%)	0 (0%)	0 (0%)	10 (1%)
Undetermined	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%)	10 (12%)	7 (8%)	7 (8%)	8 (7%)	4 (4%)	6 (5%)	5 (5%)	130 (7%)
Total	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%)	86 (100%)	84 (100%)	108 (100%)	110 (100%)	111 (100%)	91 (100%)	1857 (100%)

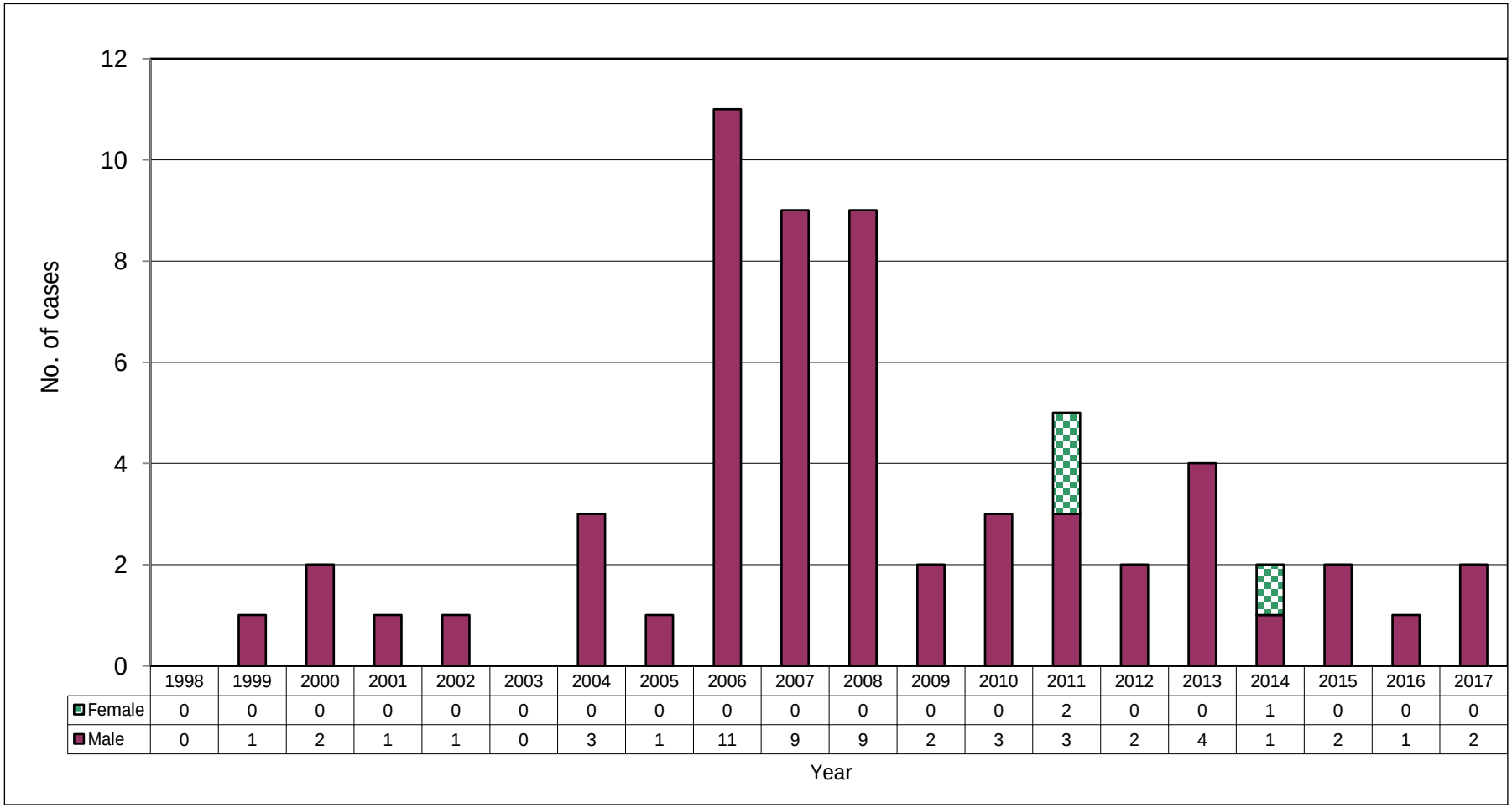
Box 2.6 Reported HIV/AIDS cases in people who inject drugs (1998– 2017)

(a) Reported HIV-infected people who inject drugs - by gender



	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Female	0	0	0	1	0	1	3	0	2	3	2	0	0	4	2	0	1	0	0	0
Male	1	6	10	10	10	10	22	31	56	41	40	15	17	10	5	7	5	15	6	6

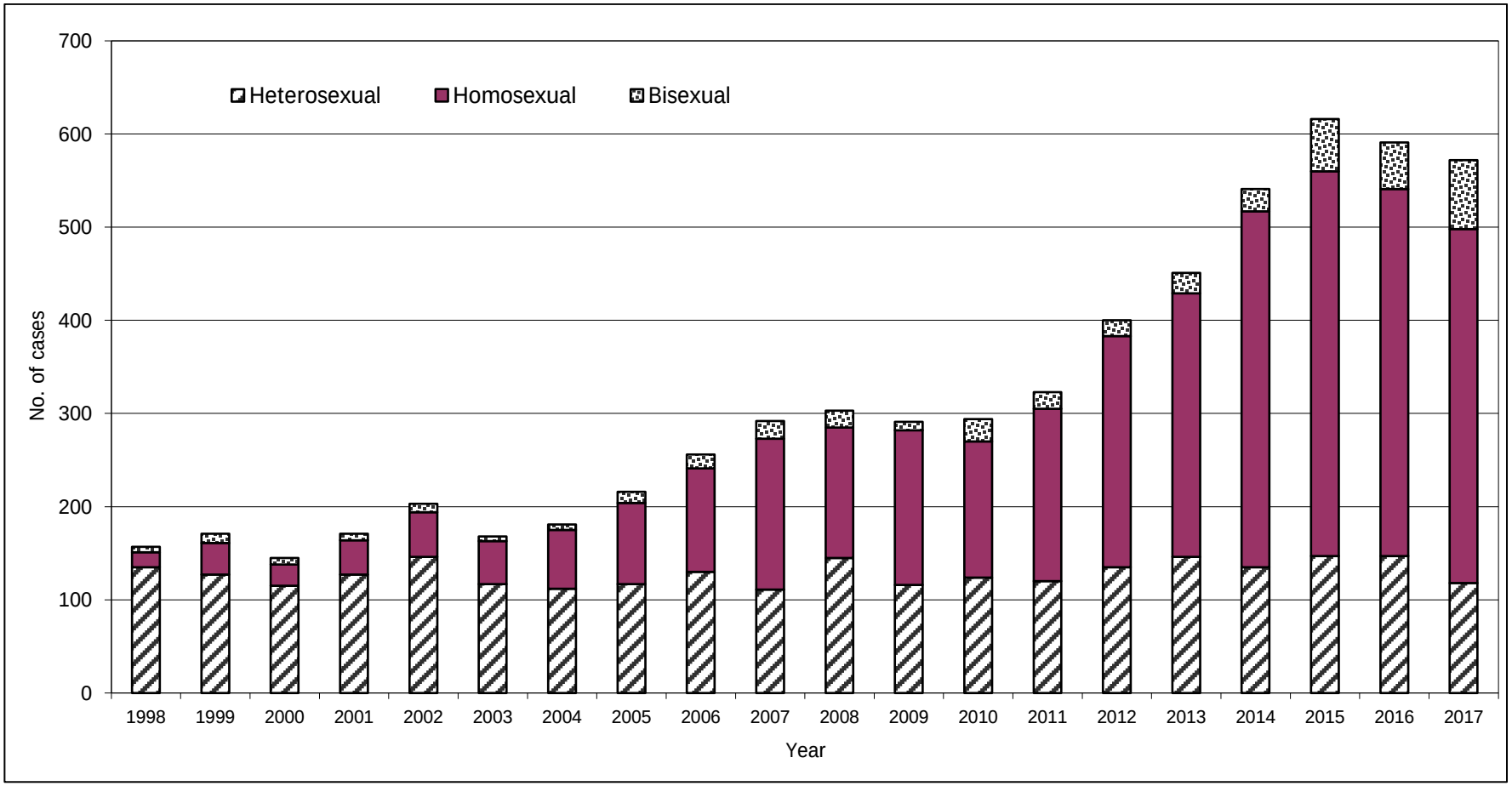
(b) Reported AIDS case in people who inject drugs - by gender



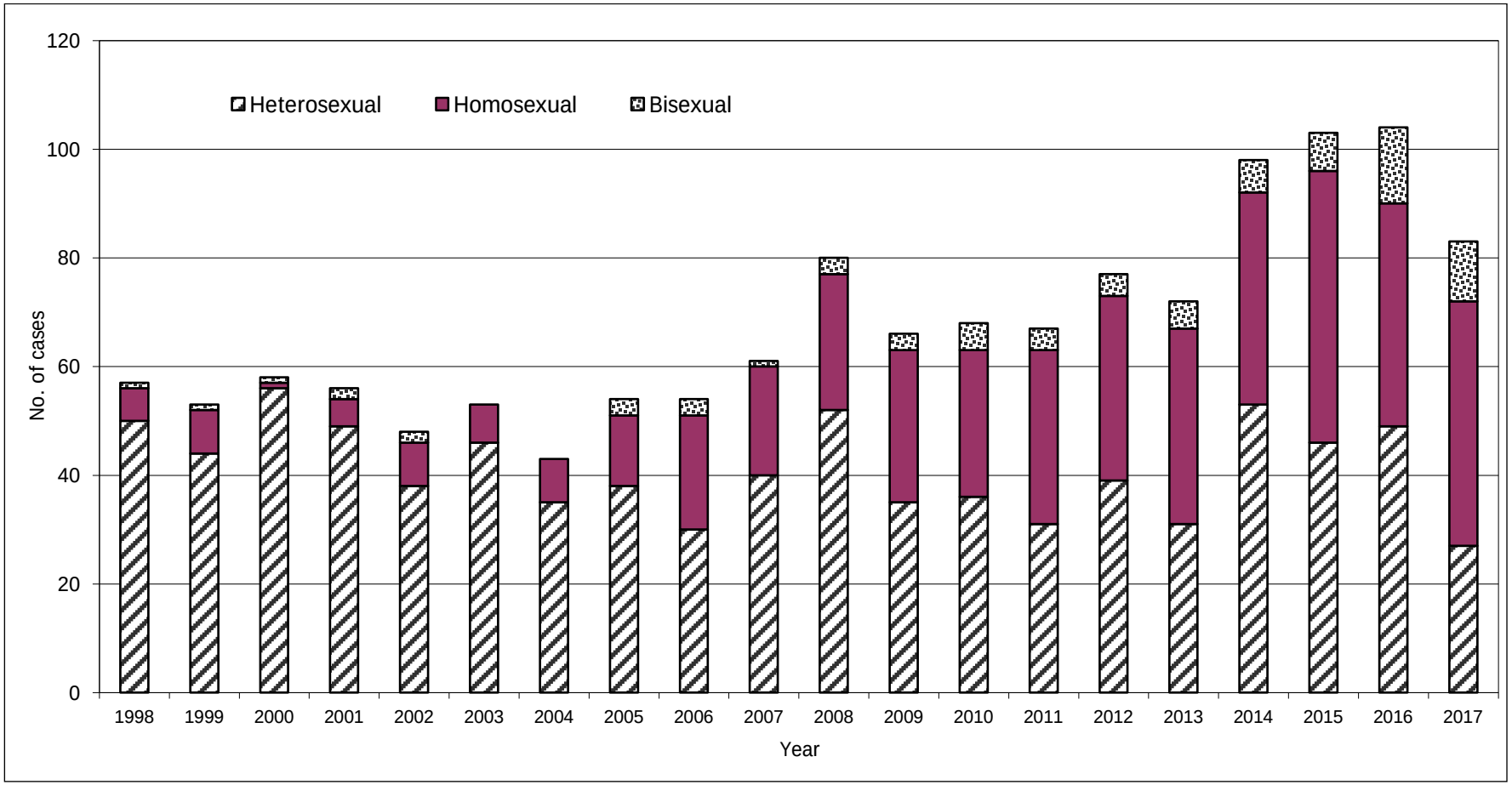
	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Female	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0	0	0
Male	0	1	2	1	1	0	3	1	11	9	9	2	3	3	2	4	1	2	1	2

Box 2.7 Reported sexually acquired HIV/AIDS cases (1998– 2017)

(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
1998	4.2 : 1	5.9 : 1
1999	2.0 : 1	4.2 : 1
2000	2.6 : 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
2012	0.3 : 1	0.6 : 1
2013	0.2 : 1	0.4 : 1
2014	0.2 : 1	0.7 : 1
2015	0.2 : 1	0.5 : 1
2016	0.2 : 1	0.5 : 1
2017	0.1 : 1	0.3 : 1
Cumulative (1984 – 2017)	**0.5 : 1**	**1.1 : 1**

Box 2.8 Profile of primary AIDS defining illnesses (ADI) (1998 - 2017)

Year / ADI (%)	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Cumulative (1985 - 2017)
Pneumocystic Pneumonia (PCP)	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%)	39 (45%)	37 (44%)	46 (43%)	55 (50%)	48 (43%)	44 (48%)	771 (42%)
Mycobacterium Tuberculosis	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%)	15 (17%)	17 (20%)	27 (25%)	17 (15%)	17 (15%)	17 (19%)	454 (24%)
Other fungal infections	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%)	10 (12%)	10 (12%)	12 (11%)	9 (8%)	11 (10%)	7 (8%)	171 (9%)
Penicilliosis	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%)	6 (7%)	3 (4%)	2 (2%)	6 (5%)	9 (8%)	7 (8%)	129 (7%)
Cytomegalovirus diseases	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%)	4 (5%)	4 (5%)	4 (4%)	7 (6%)	5 (5%)	8 (9%)	90 (5%)
Non-TB mycobacterial infections	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%)	2 (2%)	0 (0%)	3 (3%)	2 (2%)	3 (3%)	0 (0%)	38 (2%)
Kaposi's sarcoma	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%)	1 (1%)	7 (8%)	0 (0%)	1 (1%)	3 (3%)	1 (1%)	42 (2%)
Others	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%)	9 (10%)	6 (7%)	14 (13%)	13 (12%)	15 (14%)	7 (8%)	162 (9%)
Total	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%)	86 (100%)	84 (100%)	108 (100%)	110 (100%)	111 (100%)	91 (100%)	1857 (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 2017
(a) Community with predisposing risk factors					
STI patients	Social Hygiene Clinics	Voluntary testing offered to clients	1985	Around 25000 – 40000/year	Yes
Drug users (1)	Methadone Clinics	Universal HIV Antibody (Urine samples) Testing Programme	2003	Around 6000 – 9000/year	Yes
Drug users (2)	Inpatient drug treatmet centres / institution	Unlinked anonymous screening (Urine samples)	1998	Around 150 – 700/year	Yes
Men who have Sex with Men (MSM)	AIDS Concern	Voluntary testing offered to MSM (rapid tests)	2000	Around 200 - 1500/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, 2008, 2011, 2017 rounds	Around 800/study (2006, 2008, 2011) and around 2400 in 2017	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	Around 900/study	No
	HIV and AIDS Response Indicator Survey (HARiS)	Voluntary testing (urine samples)	2013	Around 600/study for MSM	No
(b) Community without known risk factors					
Blood donors	Hong Kong Red Cross Blood Transfusion Service	A requirement for all potential donors	1985	Around 180000 – 240000/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
(c) Community with undefined risk					
TB patients	TB and Chest Clinics of the Department of Health	Voluntary testing (blood samples)	1993	Around 2000 – 4500/year	Yes
Prisoners	Penal institutions	Unlinked anonymous screening (blood / urine samples)	1992	Around 1500 – 2500/year	Yes

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 (2008 - 2017)

Year	Units of blood donated	No. of units anti-HIV+	Positive detection rate of donated units (%)	95% C.I. for prevalence (%)
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)
2012	241,804	8	0.003	(0.0014 - 0.0065)
2013	244,198	7	0.003	(0.0012 - 0.0059)
2014	250,959	11	0.004	(0.0022 - 0.0078)
2015	257,859	16	0.006	(0.0035 - 0.0101)
2016	254,850	7	0.003	(0.0011 - 0.0057)
2017	241,607	9	0.004	(0.0017 - 0.0071)

(b) HIV prevalence in new and repeat blood donors (2008 - 2017)

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. (%))
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)
2012	42,083	3	0.007 (0.0015 – 0.0208)	199,721	5	0.003 (0.0008 – 0.0058)
2013	40,315	1	0.002 (0.0001 – 0.0138)	203,883	6	0.003 (0.0011 – 0.0064)
2014	38,175	5	0.013 (0.0043 – 0.0306)	212,784	6	0.003 (0.0010 – 0.0061)
2015	36,183	6	0.017 (0.0061 – 0.0361)	221,676	10	0.005 (0.0022 – 0.0083)
2016	35,851	3	0.008 (0.0017 – 0.0245)	218,999	4	0.002 (0.0005 – 0.0047)
2017	32,919	4	0.012 (0.0033 – 0.0311)	208,688	5	0.002 (0.0008 – 0.0056)

Box 3.2 HIV prevalence in clients attending Social Hygiene Services, from voluntary blood testing (2008 – 2017)

Year	No. of blood samples	No. of samples tested anti-HIV+	Prevalence (%)	95% C.I. for prevalence (%)
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)
2012	26,679	55	0.206	(0.155 - 0.268)
2013	26,470	90	0.340	(0.273 - 0.418)
2014	25,960	105	0.404	(0.331 - 0.490)
2015	26,117	119	0.456	(0.377 - 0.545)
2016	25,685	124	0.483	(0.402 - 0.576)
2017	27,476	118	0.429	(0.355 - 0.514)

Box 3.3 HIV prevalence in drug users attending methadone clinics

Year	No. of urine samples	No. of samples tested anti-HIV+	Prevalence (%)	95% C.I. for prevalence (%)
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)
2012*	6,742	42	0.62	(0.449 - 0.842)
Year	Total no. of methadone clinic attendees tested for HIV	Total no. of methadone clinic attendees tested positive for HIV	Prevalence (%)	95% C.I. for prevalence (%)
2013**	6,925	47	0.68	(0.499 - 0.903)
2014**	6,527	53	0.81	(0.608 - 1.062)
2015**	6,056	61	1.01	(0.770 - 1.294)
2016**	5,066	57	1.13	(0.852 - 1.458)
2017**	4,913	41	0.83	(0.599 - 1.132)

*From the Universal HIV Antibody (Urine) Testing Programme in Methadone clinics.

**Overall figures from all methadone clinic attendees.

Box 3.4 HIV prevalence in drug users attending inpatient drug treatment centres / institutions, from unlinked anonymous screening (2008 - 2017)

Year	No. of urine samples	No. of samples tested anti-HIV+	Prevalence (%)	95% C.I. for prevalence (%)
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)
2012	205	2	0.976	(0.118 - 3.524)
2013	188	0	0	(--- - ---)
2014	365	1	0.274	(0.007 - 1.526)
2015	335	3	0.896	(0.185 - 2.617)
2016	321	2	0.623	(0.075 - 2.251)
2017	295	5	1.695	(0.550 - 3.955)

* Unlinked anonymous screening was not performed in 2004.

Box 3.5 HIV prevalence in newly admitted prisoners from unlinked anonymous screening (2008 - 2017)

Year	No. of Samples	No. of samples tested anti-HIV+	Prevalence (%)	95% C.I. for prevalence (%)
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)
2012	1,493	11	0.737	(0.368 - 1.318)
2013	1,460	14	0.959	(0.524 - 1.609)
2014	1,344	14	1.042	(0.569 - 1.748)
2015	1,453	18	1.239	(0.734 - 1.958)
2016	1,384	13	0.939	(0.500 - 1.606)
2017	1,229	9	0.732	(0.335 - 1.390)

Box 3.6 HIV prevalence in patients attending government TB & Chest Clinics, from voluntary blood testing (2008 - 2017)

Year	No. of blood samples	Coverage*		No. of anti-HIV+	Prevalence (%)	95% C.I. for prevalence (%)
		A	B			
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%	76.3%	33	0.903	(0.621 - 1.268)
2012	3,707	91.2%	76.3%	22	0.593	(0.372 - 0.899)
2013	3,536	88.2%	75.8%	24	0.679	(0.435 - 1.010)
2014	3,345	88.1%	71.1%	23	0.688	(0.436 - 1.032)
2015	3,291	91.1%	74.5%	24	0.729	(0.467 - 1.085)
2016	3,272	92.0%	75.3%	28	0.856	(0.569 - 1.237)
2017	3,256	93.9%	75.6%**	31	0.952	(0.647 - 1.351)

* coverage A is the proportion of attendees of the government TB & Chest Clinics who have been tested for HIV in TB & Chest Clinics;
B is the proportion of total TB notifications from all sources, and the notified cases have been tested for HIV at government TB & Chest Clinics.

** provisional figure

Box 3.7 HIV prevalence among antenatal women from Universal Antenatal HIV Antibody Testing Programme (2008 - 2017)

Year	Number of blood samples	Coverage*	Number ofpositive tests	Prevalence (%)	95% C.I. for prevalence (%)
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)
2012	53,117	98.6%	9	0.02	(0.0077 - 0.0322)
2013	48,871	98.5%	7	0.01	(0.0058 - 0.0295)
2014	51,263	98.3%	2	0.004	(0.0005 - 0.0141)
2015	51,338	98.5%	5	0.01	(0.0032 - 0.0227)
2016	51,519	100.0%	9	0.02	(0.0080 - 0.0332)
2017	48,500	100.0%	7	0.01	(0.0058 - 0.0297)

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

Box 3.8 HIV prevalence among MSM tested by AIDS Concern (2008 - 2017)

Year	Number of test*	Number of positive tests	Prevalence (%)	95% C.I. for prevalence (%)
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)
2012	1,492	30	2.01	(1.357 - 2.871)
2013	1,438	26	1.81	(1.181 - 2.649)
2014	2,054	42	2.04	(1.474 - 2.764)
2015	2,561	66	2.58	(1.993 - 3.279)
2016	3,481	78	2.24	(1.771 - 2.796)
2017	4,081	75	1.84	(1.446 - 2.304)

* HIV rapid test

Box 3.9 HIV prevalence among MSM – PRiSM* (2006, 2008, 2011 and 2017) , HARiS **(2014)

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)
2017	2427	86	3.54	6.54^	(5.66 - 7.42)
Year	Number of urine specimen collected	Number of positive tests	Prevalence (%)	95% C.I. for prevalence (%)	
2014	564	33	5.85	(4.2 - 8.1)	

*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 also added in 2011 round.

^ PRiSM 2017: The HIV prevalence was estimated by addition of the self-reported HIV-positive (n=136) and projected positive cases among non-HIV-positive (by the positive test rate for HIV among non-HIV-positive) divided by the total number of sexually active MSM

**HARiS: HIV and AIDS Response Indicator Survey for Men who have sex with men, a combined venue-based, non-governmental organisations centre-based and internet-based survey.

Box 3.10 HIV prevalence among Female Sex Workers – CRiSP* (2006 and 2009), HARiS **(2013)

Year	Number of urine specimen collected	Number of positive tests	Adjusted Prevalence (%)
2006	996	5	0.19
2009	986	2	0.05
2013	605	0	0.00

*CRiSP: Community Based Risk Behavioural and Seroprevalence Survey for Female Sex Workers in Hong Kong, a venue based survey including one woman brothels, bars, night clubs, sauna, karaokes etc in 2006 and 2009 round.

**HARiS: HIV and AIDS Response Indicator Survey for Female Sex Workers, a combined venue-based, non-governmental organisations centre-based and internet-based survey.

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.

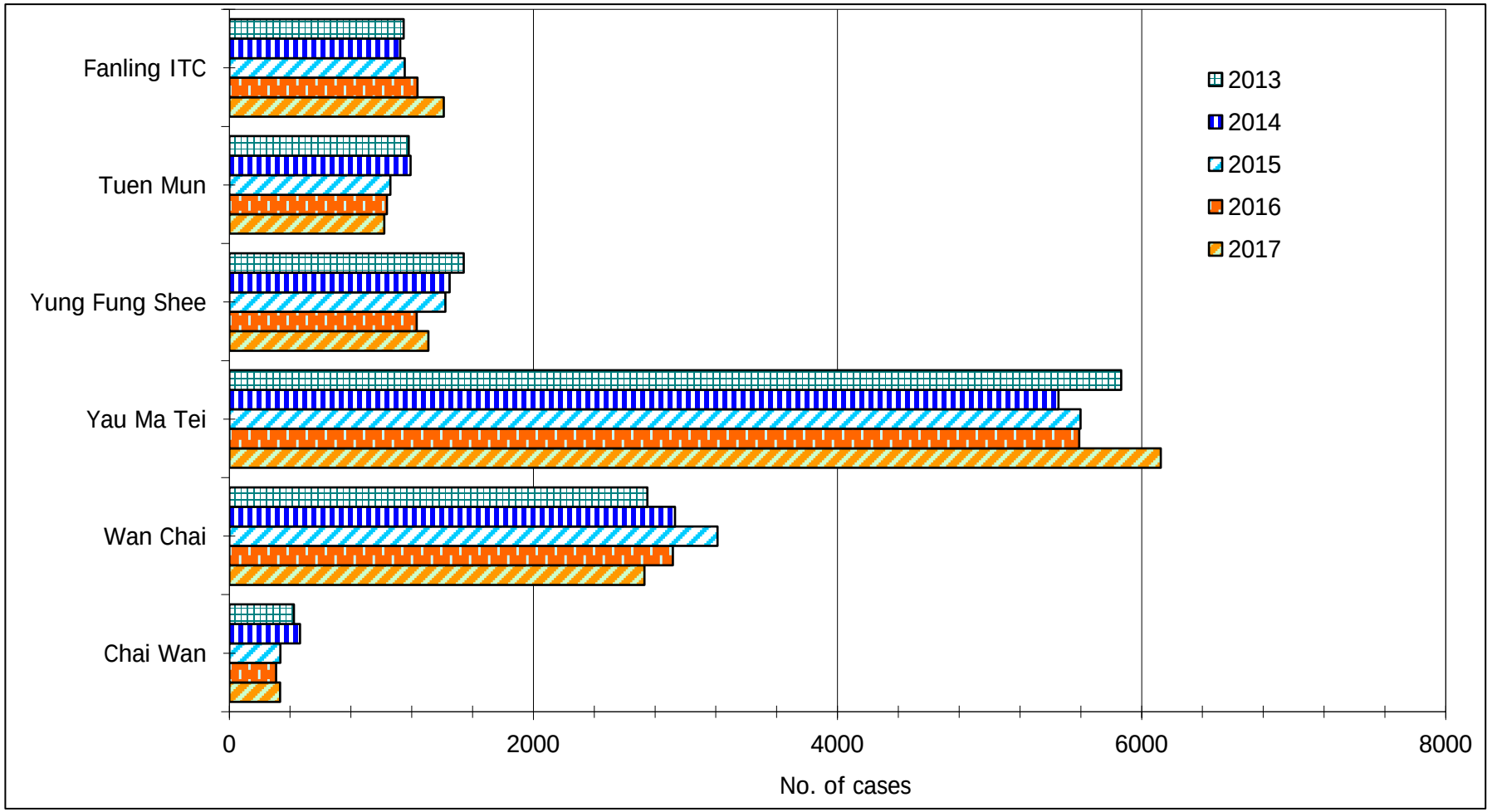
Box 4.1 Total number of STI newly reported by individual Social Hygiene Clinic

(a) Year 2017

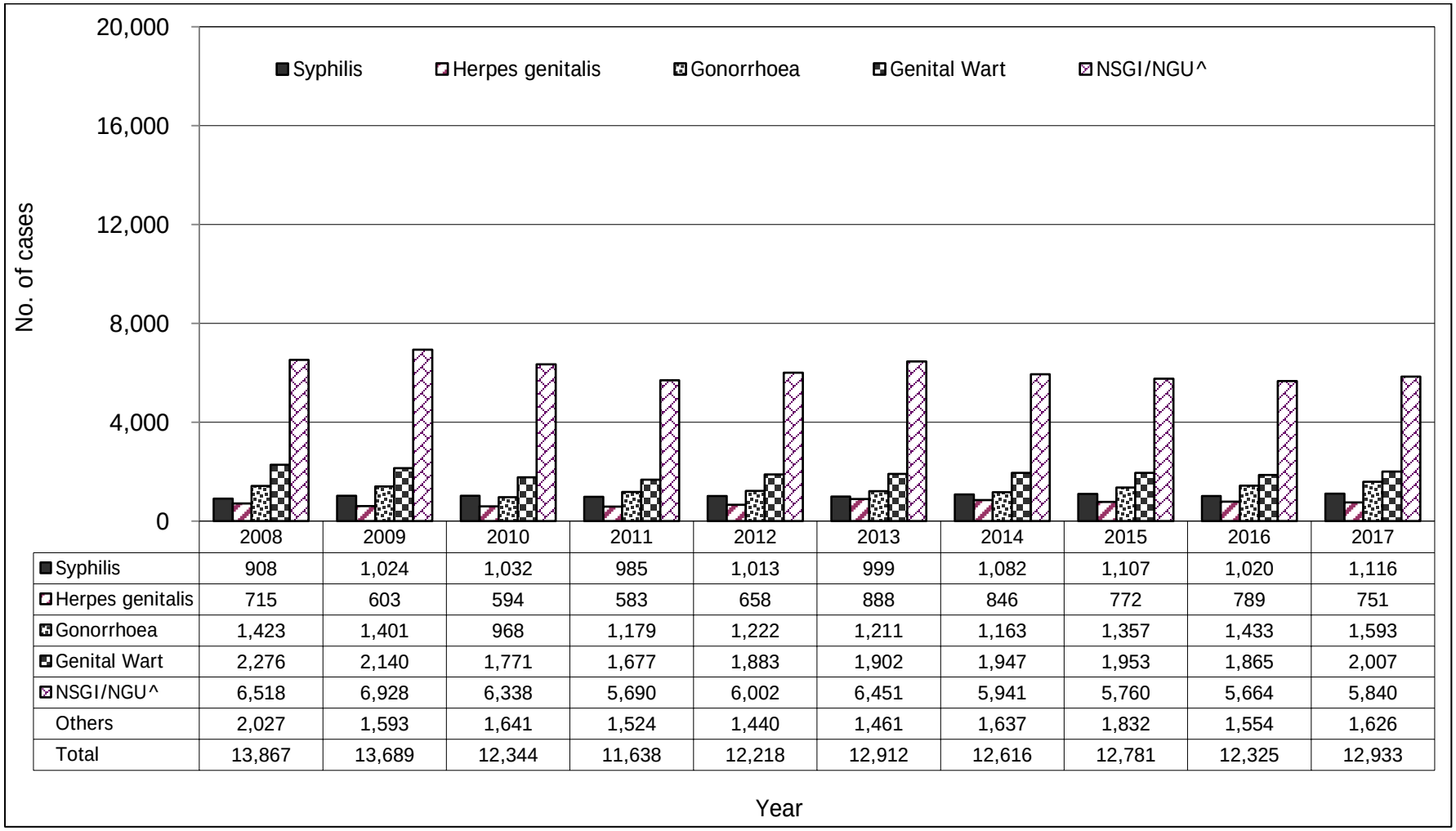
	Chai Wan	Wan Chai	Yau Ma Tei	Yung Fung Shee	Tuen Mun	Fanling ITC[#]	Total
Male	209	1,754	3,659	922	632	868	8,044
Female	125	976	2,468	388	388	544	4,889
Total	334	2,730	6,127	1,310	1,020	1,412	12,933

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

(b) 2013 - 2017


Fanling ITC
Tuen Mun
Yung Fung Shee
Yau Ma Tei
Wan Chai
Chai Wan
2013
2014
2015
2016
2017
0
2000
4000
6000
8000
No. of cases

Box 4.2 Annual newly reported STIs in Social Hygiene Clinics



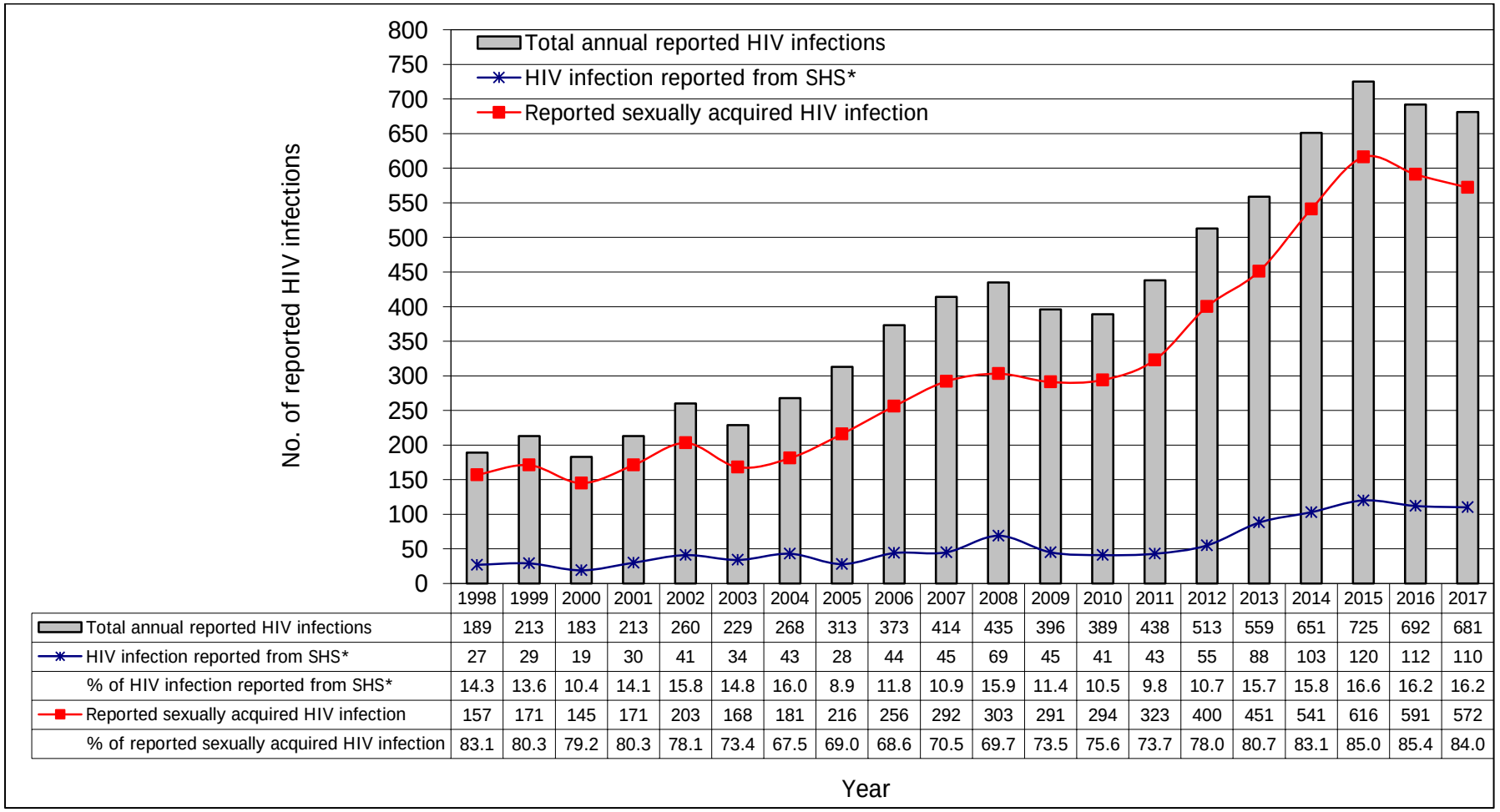
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Syphilis	908	1,024	1,032	985	1,013	999	1,082	1,107	1,020	1,116
Herpes genitalis	715	603	594	583	658	888	846	772	789	751
Gonorrhoea	1,423	1,401	968	1,179	1,222	1,211	1,163	1,357	1,433	1,593
Genital Wart	2,276	2,140	1,771	1,677	1,883	1,902	1,947	1,953	1,865	2,007
NSGI/NGU^	6,518	6,928	6,338	5,690	6,002	6,451	5,941	5,760	5,664	5,840
Others	2,027	1,593	1,641	1,524	1,440	1,461	1,637	1,832	1,554	1,626
Total	13,867	13,689	12,344	11,638	12,218	12,912	12,616	12,781	12,325	12,933

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

Box 4.3 Syphilis newly reported by Social Hygiene Clinics (2013 - 2017)

Year / Syphilis	2013	2014	2015	2016	2017
Primary	42	41	53	40	69
Secondary	89	173	179	147	170
Early latent	72	108	130	170	178
Late latent	780	749	738	652	690
Late (cardiovascular / neuro)	10	7	4	7	6
Congenital (early)	0	0	0	0	0
Congenital (late)	6	4	3	4	3
Total	999	1,082	1,107	1,020	1,116

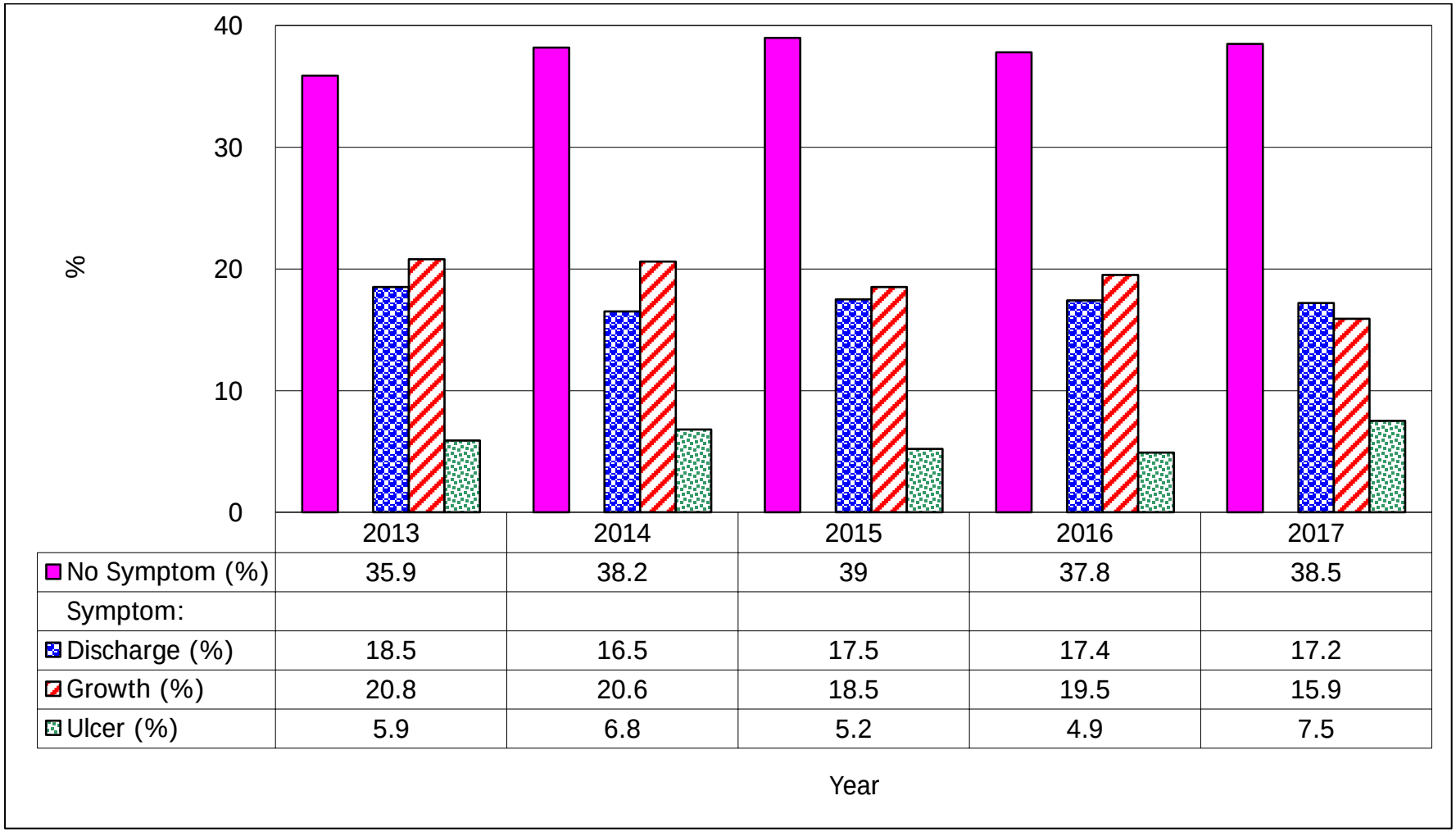
Box 4.4 Sexually acquired HIV infection in Hong Kong (1998-2017)



	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Total annual reported HIV infections	189	213	183	213	260	229	268	313	373	414	435	396	389	438	513	559	651	725	692	681
HIV infection reported from SHS*	27	29	19	30	41	34	43	28	44	45	69	45	41	43	55	88	103	120	112	110
% of HIV infection reported from SHS*	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	10.7	15.7	15.8	16.6	16.2	16.2
Reported sexually acquired HIV infection	157	171	145	171	203	168	181	216	256	292	303	291	294	323	400	451	541	616	591	572
% of reported sexually acquired HIV infection	83.1	80.3	79.2	80.3	78.1	73.4	67.5	69.0	68.6	70.5	69.7	73.5	75.6	73.7	78.0	80.7	83.1	85.0	85.4	84.0

* SHS: Social Hygiene Service

Box 4.5 Syndromic presentations of STI from Behavioural Survey of Social Hygiene Service (2013-2017)



	2013	2014	2015	2016	2017
No Symptom (%)	35.9	38.2	39	37.8	38.5
Symptom:					
Discharge (%)	18.5	16.5	17.5	17.4	17.2
Growth (%)	20.8	20.6	18.5	19.5	15.9
Ulcer (%)	5.9	6.8	5.2	4.9	7.5

5. TABULATED RESULTS ON BEHAVIOURAL MONITORING

System description

- This is a tabulation of HIV risky behavioural data collected from different sources in Hong Kong.

System layout

Source	Sexual behaviour	Drug-taking behaviour	Data available in 2017
AIDS Counselling and Testing Service (ACTS), Special Preventive Programme, CHP, DH	- Median no. of sexpartners in heterosexual men/MSM - Recent history of commercial sex in heterosexual men - Condom use in heterosexual men/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
HIV Prevalence and Risk behavioural Survey of Men who have sex with men in Hong Kong (PRiSM)	- Condom use in MSM		Yes
HIV and AIDS Response Indicator Survey (HARiS)	- 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) (2008-2017)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Heterosexual men - Regular sex partners*	1	1	1	1	1	1	1	1	1	1
Heterosexual men - Commercial sex partners**	2	3	3	2	3	2	3	2	2	2
Heterosexual men - Casual sex partners***	1	1	1	1	1	1	1	1	1	1
MSM - Regular sex partners*	1	1	1	1	1	1	1	1	1	1
MSM - Commercial sex partners**	2	3	1.5	1	2	4.5	5	2	1	2
MSM - Casual sex partners***	4	4	3.5	3	3	3	4	4	3	4

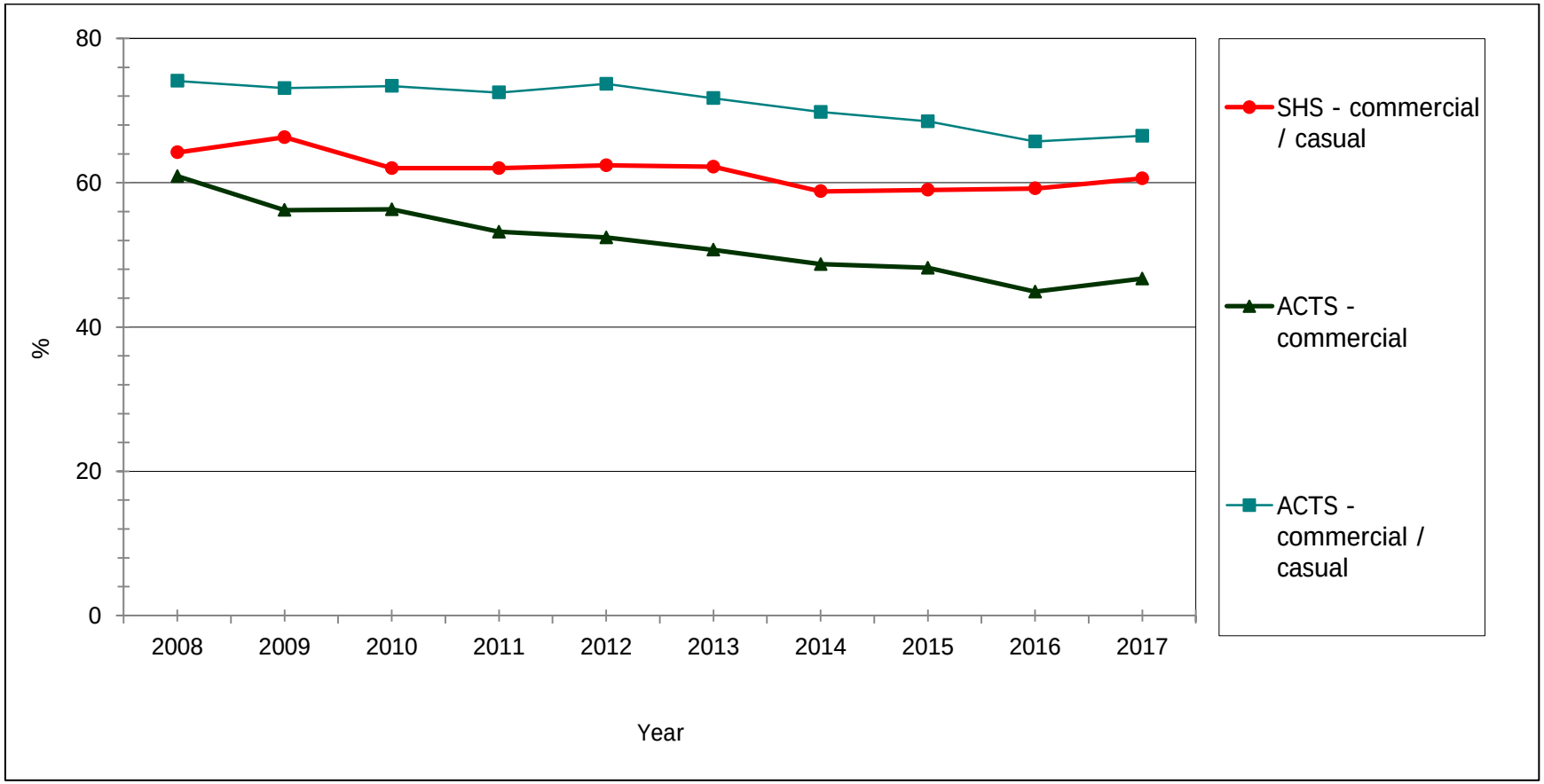
^ Adult: aged 18 or above.

* 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 (2008-2017)



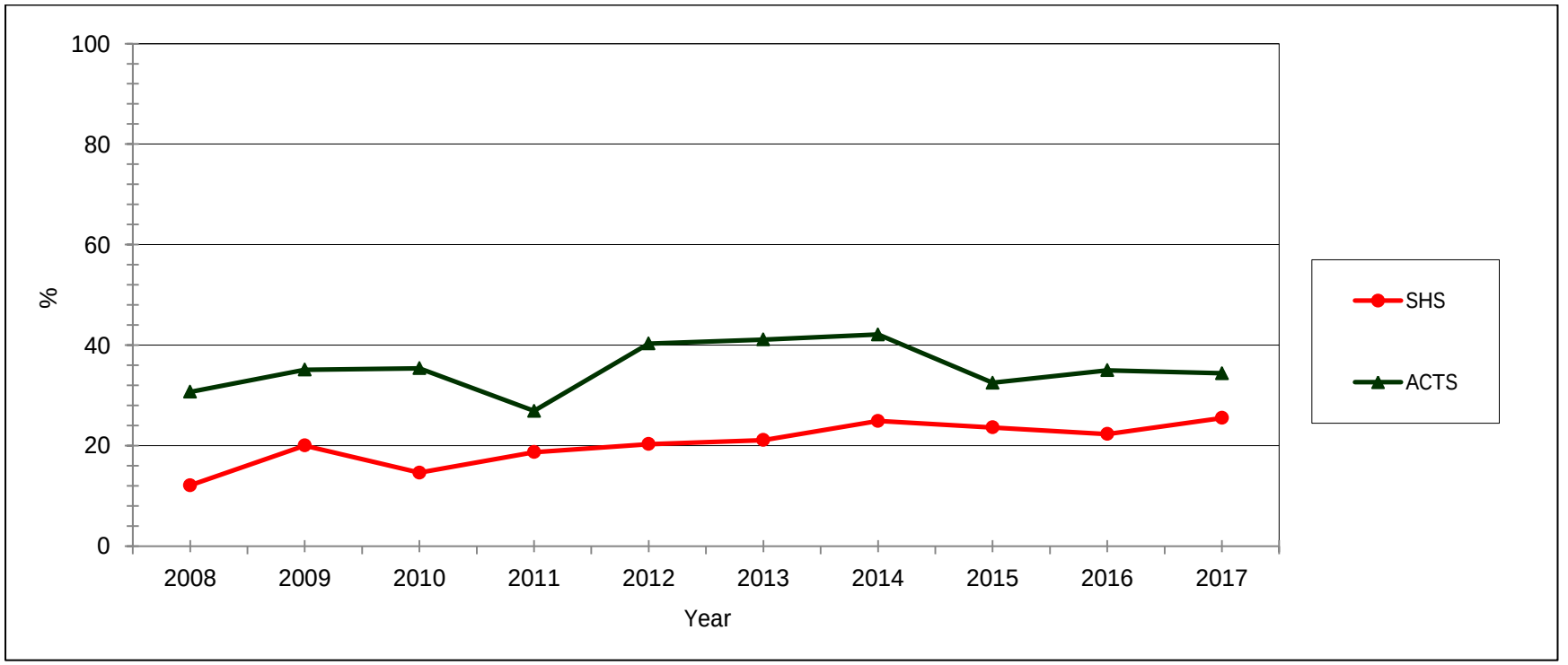
* Commercial sex partners are defined as those who have sexual intercourse in exchange for money, goods or services. Examples are female sex workers and their clients. Casual sex partners are defined as those who are non-regular and non-commercial. Examples are those on one-night stand. SHS & ACTS refers 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 (2008-2017)**



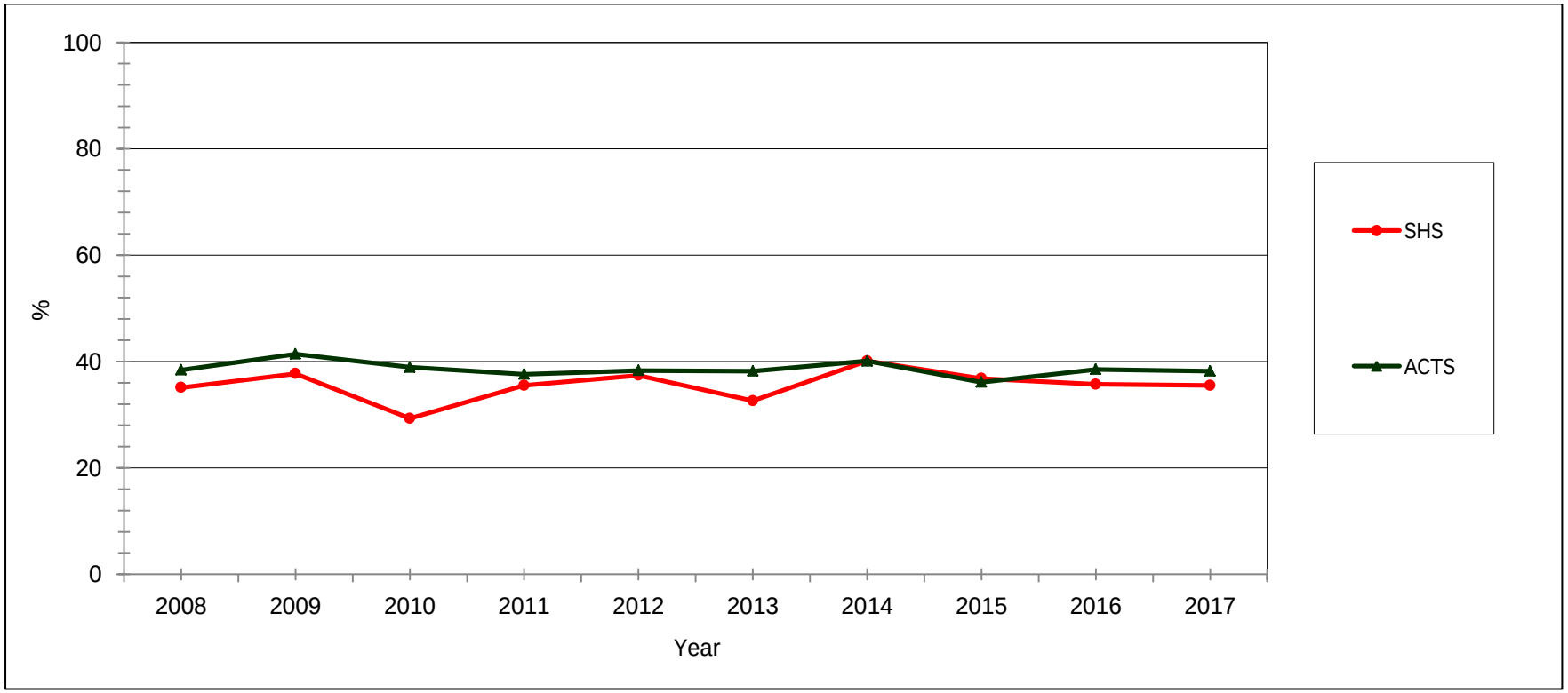
* Consistent condom use is defined as always or 100% of the time using a condom.
ACTS captures such condom usage in past one year while SHS captures such usage in past 3 months.

** 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 (2008-2017)



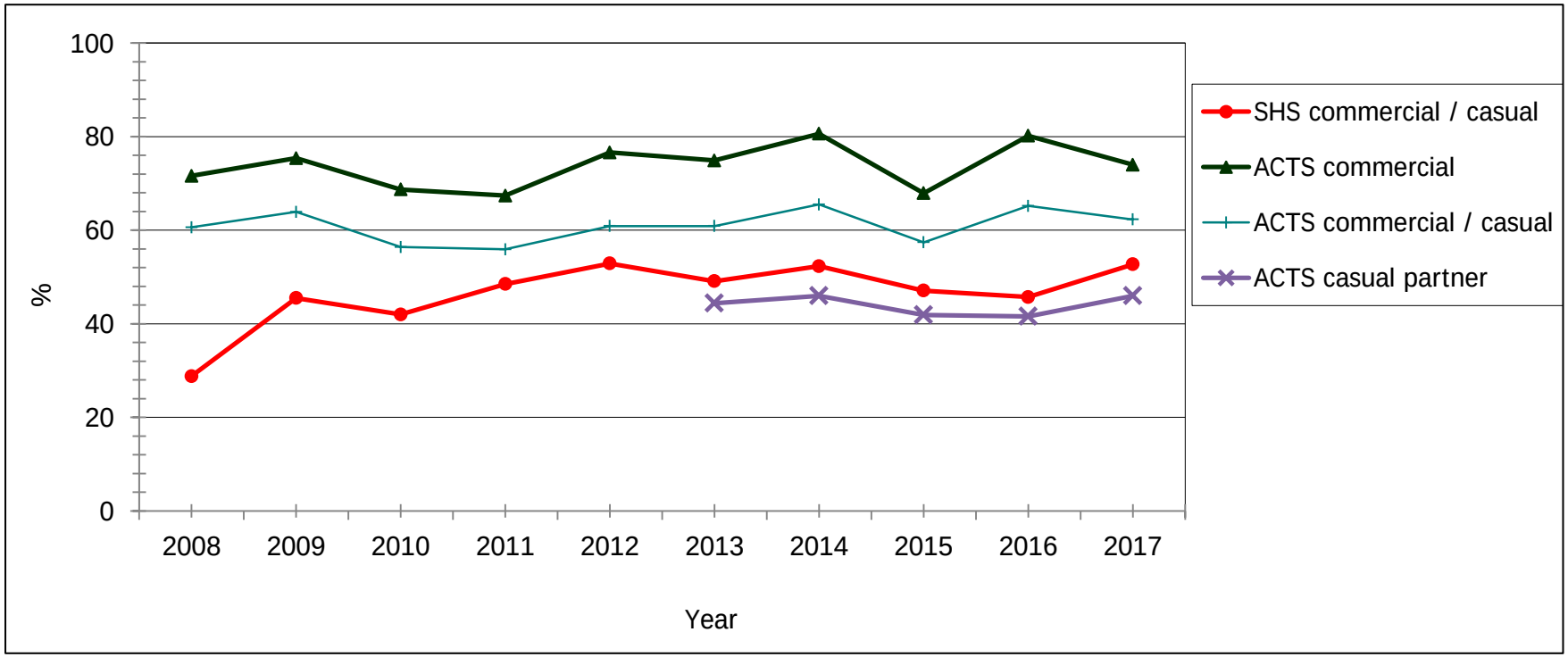
* Regular sex partners used to refer to long-term sex partners including spouse, mistress, and steady girl friends for at least one year, or if less than one year, one with whom is expected to continue sexual relationship. This definition of regular sex partners in 2008 has been futher refined to include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

^ 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 (2008-2017)**



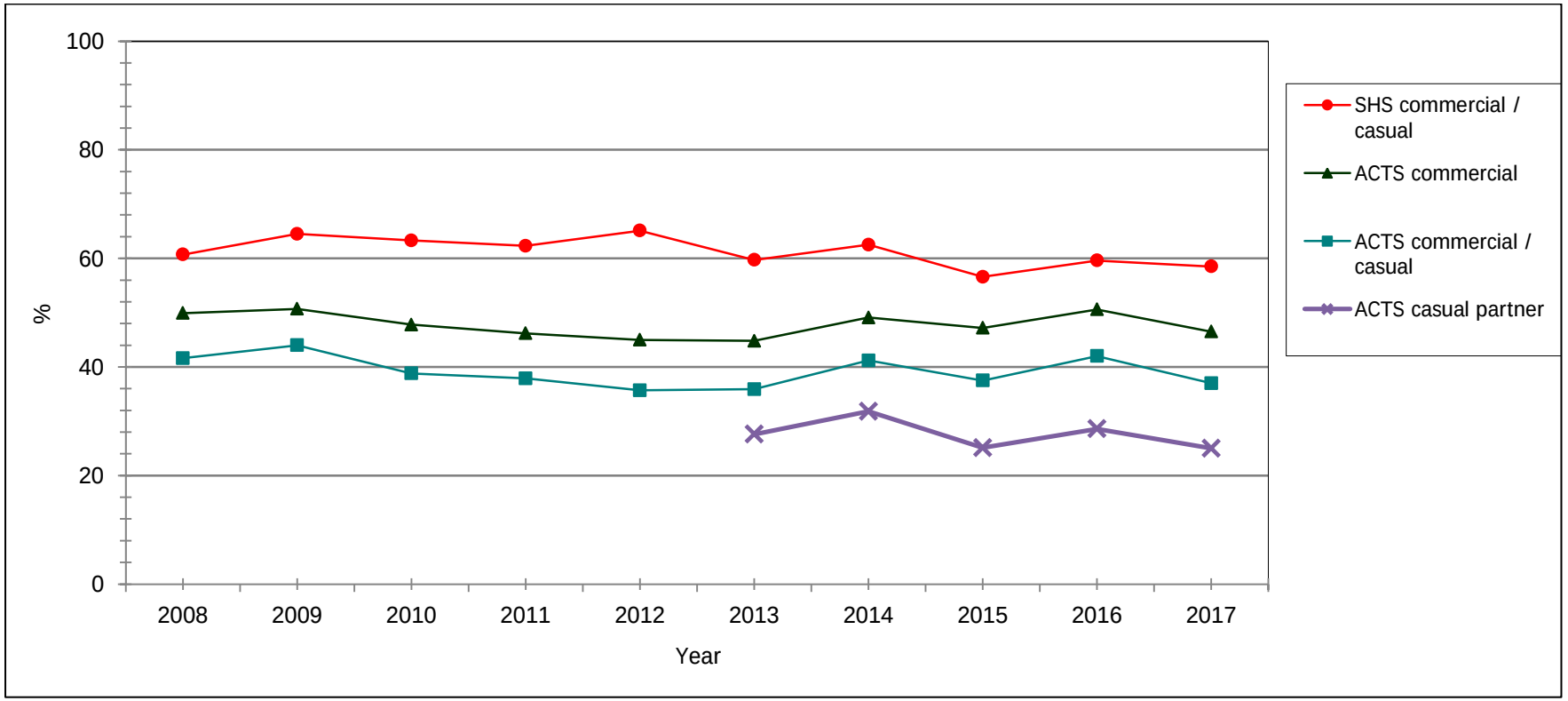
* Consistent condom use is defined as always or 100% of the time using a condom for vaginal or anal sex in past 1 year. ACTS captures such condom usage in past one year while SHS captures such usage in past 3 months.

** 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 (2008-2017)**



* ACTS defined "condom use for last sex" as using a condom for the last (vaginal and/or anal and/or oral-genital) sex within the past 1 year.

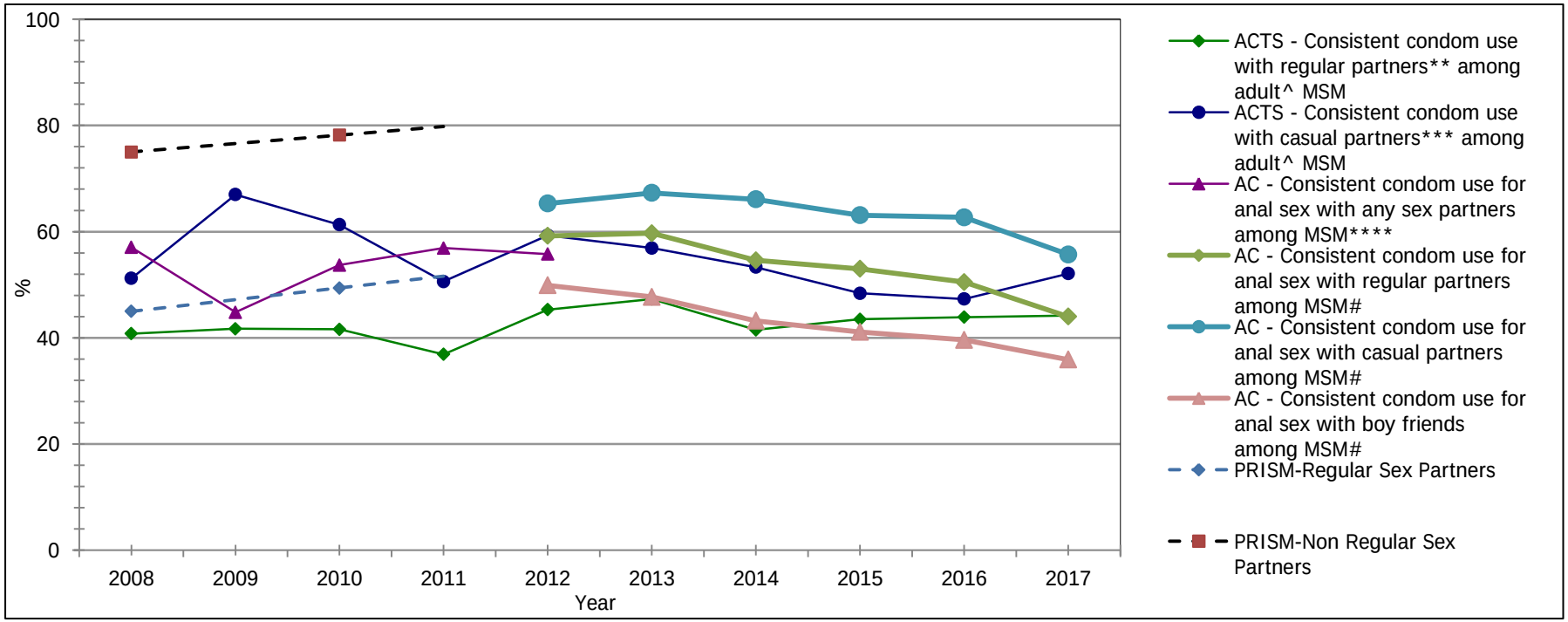
** Commercial sex partners are defined as those who have sexual intercourse in exchange for money, goods or services. Examples are female sex workers and their clients. Casual sex partners are defined as those who are non-regular and non-commercial. Examples are those on one-night stand.

^ 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 (2008-2017)



* 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.

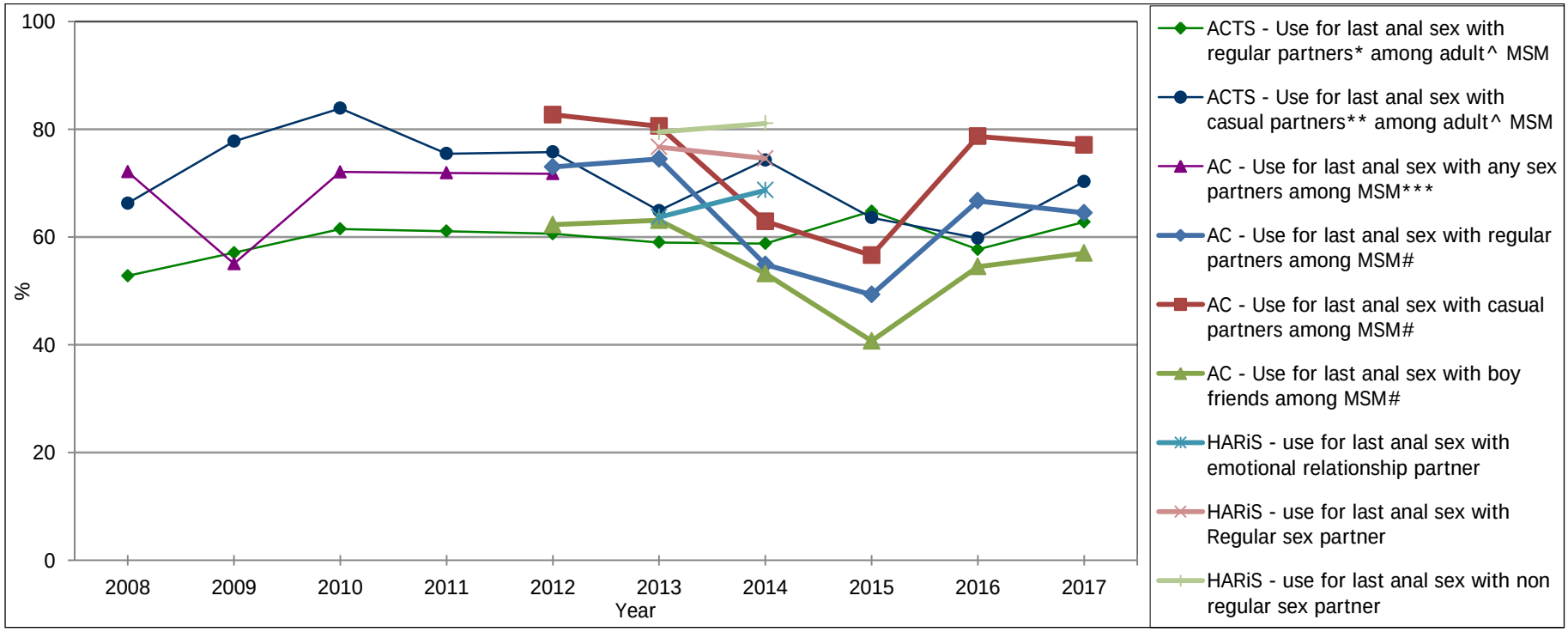
**** The data in 2012 only from January to March.

\# Since April 2012, the sex partner types from AC survey further breakdown into regular sex partner, causal sex partner and boyfriend.

^ Adult: aged 18 or above.

Remarks: ACTS - AIDS Counselling and Testing Service, AC - AIDS Concern,PRiSM- HIV Prevalence and Risk Behavioural Survey of MSM in Hong Kong

(b) Condom use for last anal sex among MSM (2008-2017)



* 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.

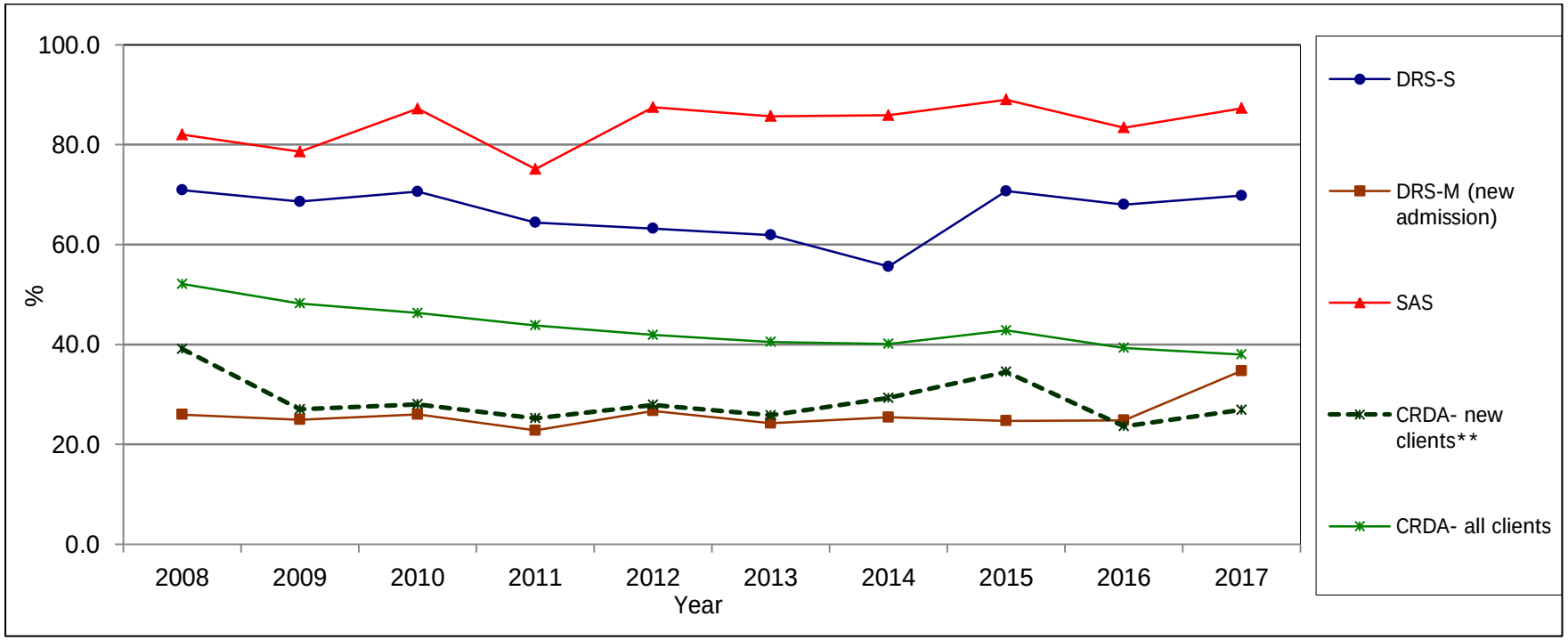
*** The data in 2012 only from January to March.

^ Adult: aged 18 or above.

Since April 2012, the sex partner types from AC survey further breakdown into regular sex partner, causal sex partner and boyfriend.

Remarks : ACTS - AIDS Counselling and Testing Service
AC - AIDS Concern, HARiS - HIV and AIDS Response Indicator Survey

Box 5.6 Proportion of current injectors* (2008-2017)

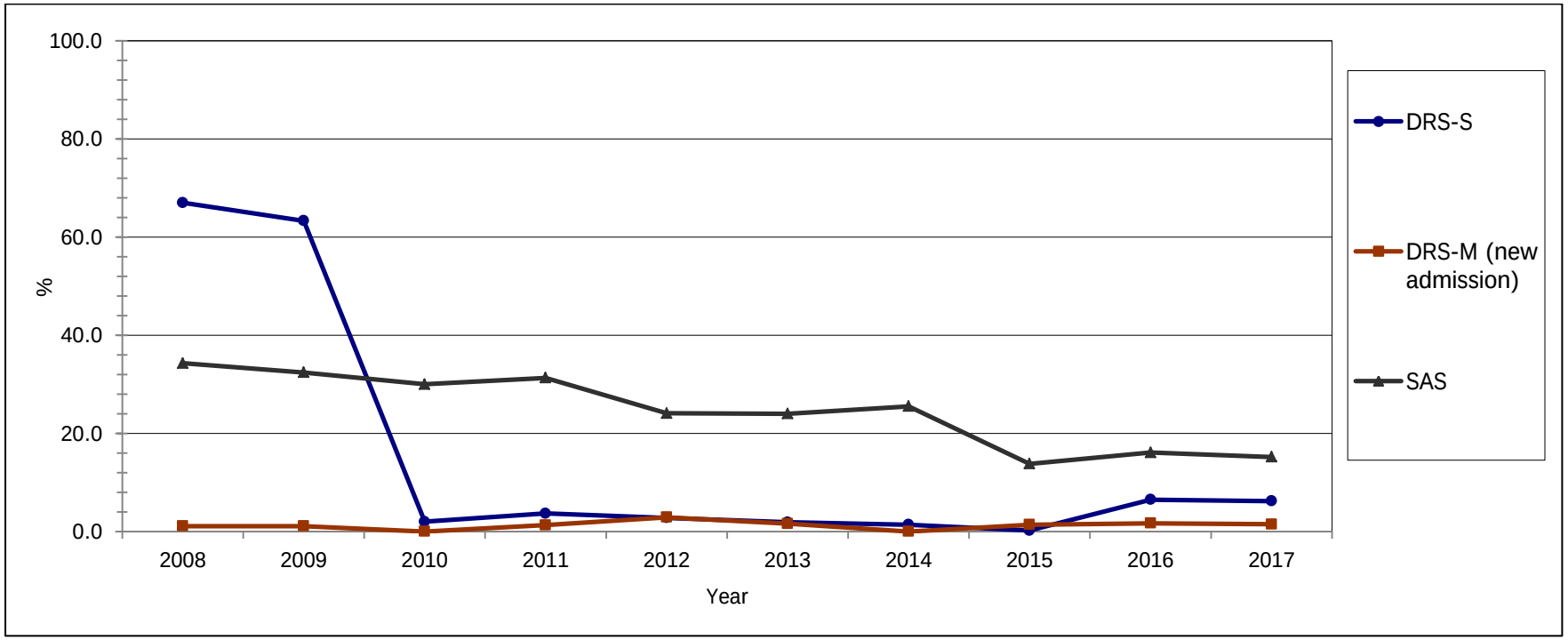


* Definitions differ for different data sources. DRS-S refers to drug injecting behaviour in past 6 months (before 2006, it referred to drug injecting at the time of programme admission); DRS-M refers to drug injecting at the time of programme admission; SAS refers to drug injecting behaviour in past 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 (SARDA))
CRDA - Central Registry of Drug Abuse

Box 5.7 Proportion of current needle-sharers* (2008-2017)



* 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.

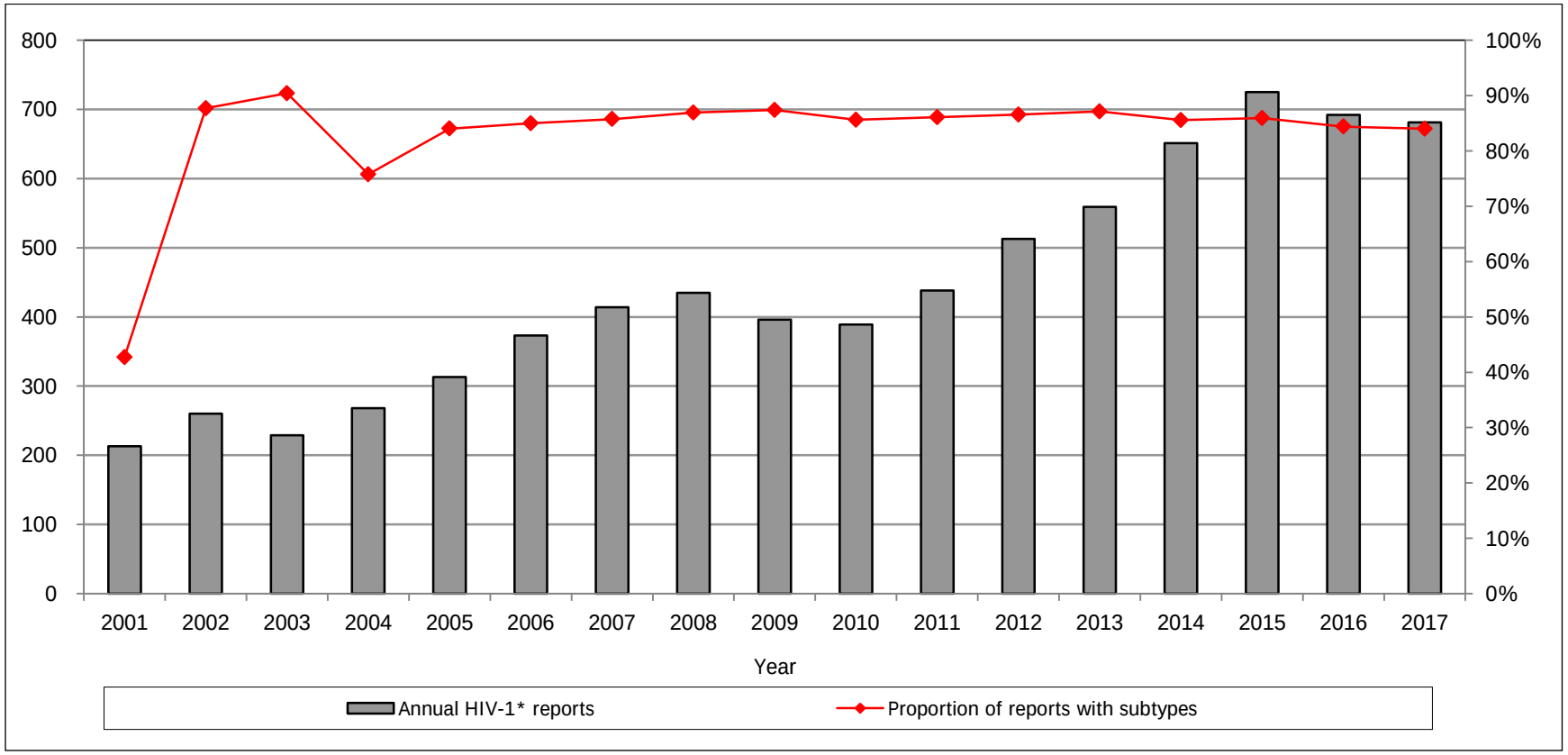
Remarks: DRS-S - Shek Kwu Chau Treatment and Rehabilitation Centre (Newly / Re-admitted cases)
DRS-M - Methadone clinics (Newly admitted case only)
SAS - Street Addict Survey (From the Society for the Aid and Rehabilitation of Drug Abusers (SARDA))

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: DH Public Health Laboratory Service Branch, Microbiology laboratories of Queen Elizabeth Hospital, Prince of Wales Hospital, Hong Kong Red Cross Blood Transfusion Service. Subtype analysis was commenced since 2001.

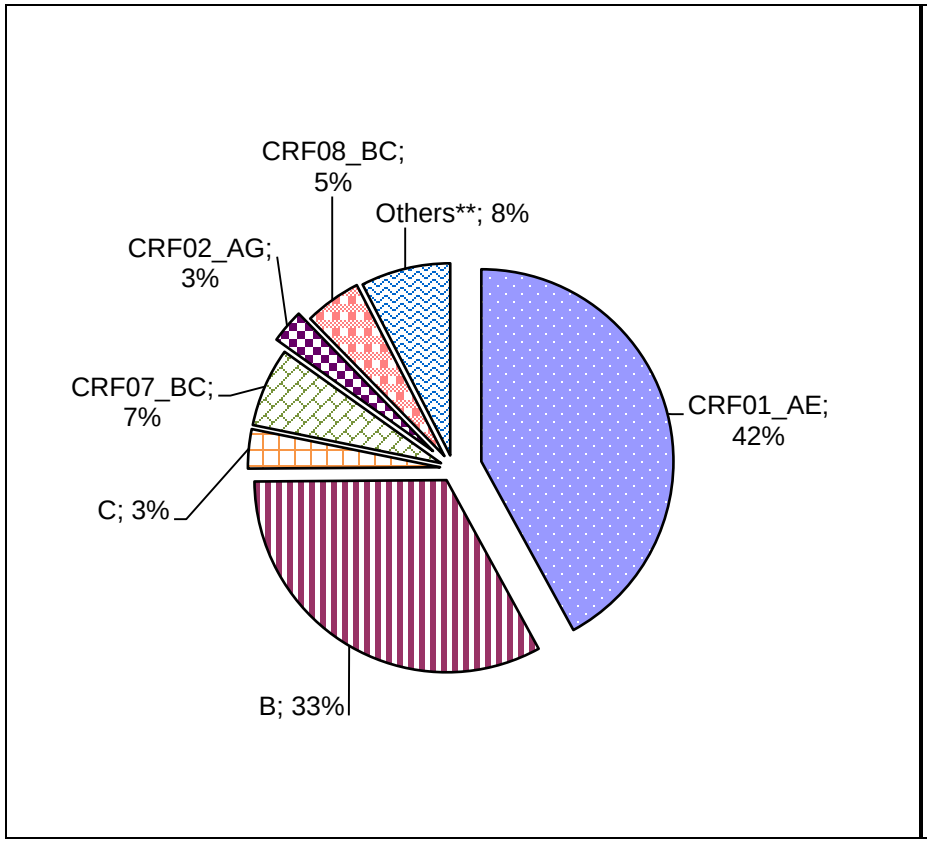
Box 6.1 Proportion of reports* with subtypes by year in Hong Kong, 2001 - 2017



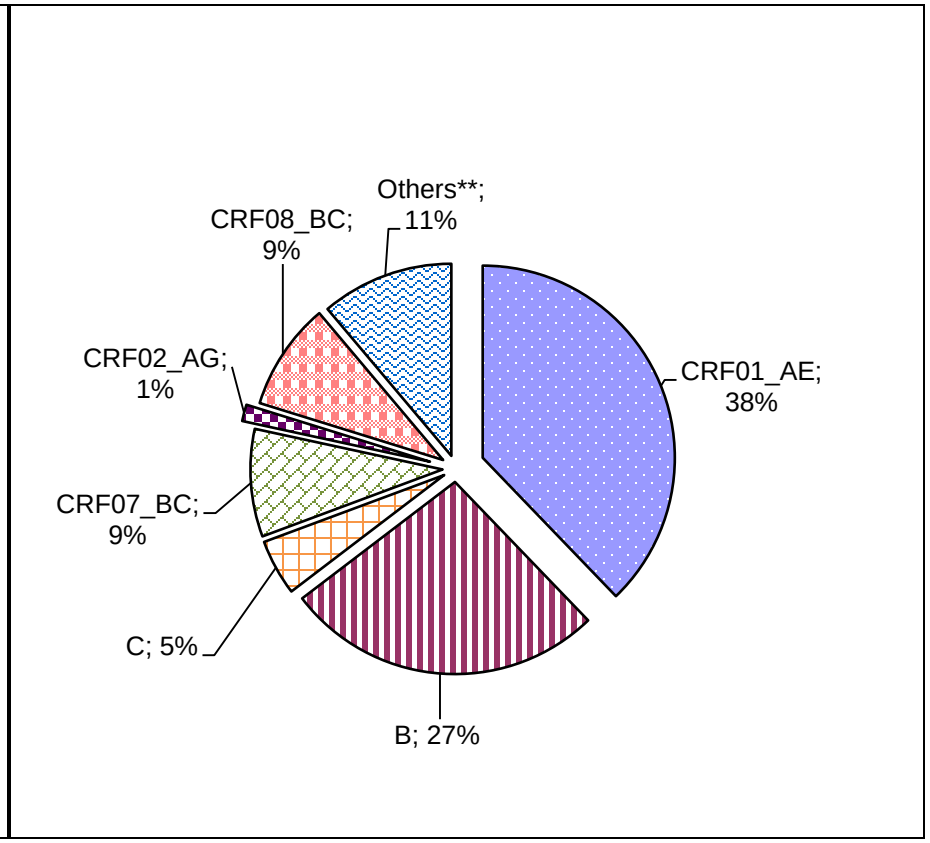
*: including cases with HIV type 1 or PCR positive result.

Box 6.2 Distribution of HIV-1* subtypes

(i) Cumulative (2001-2017)



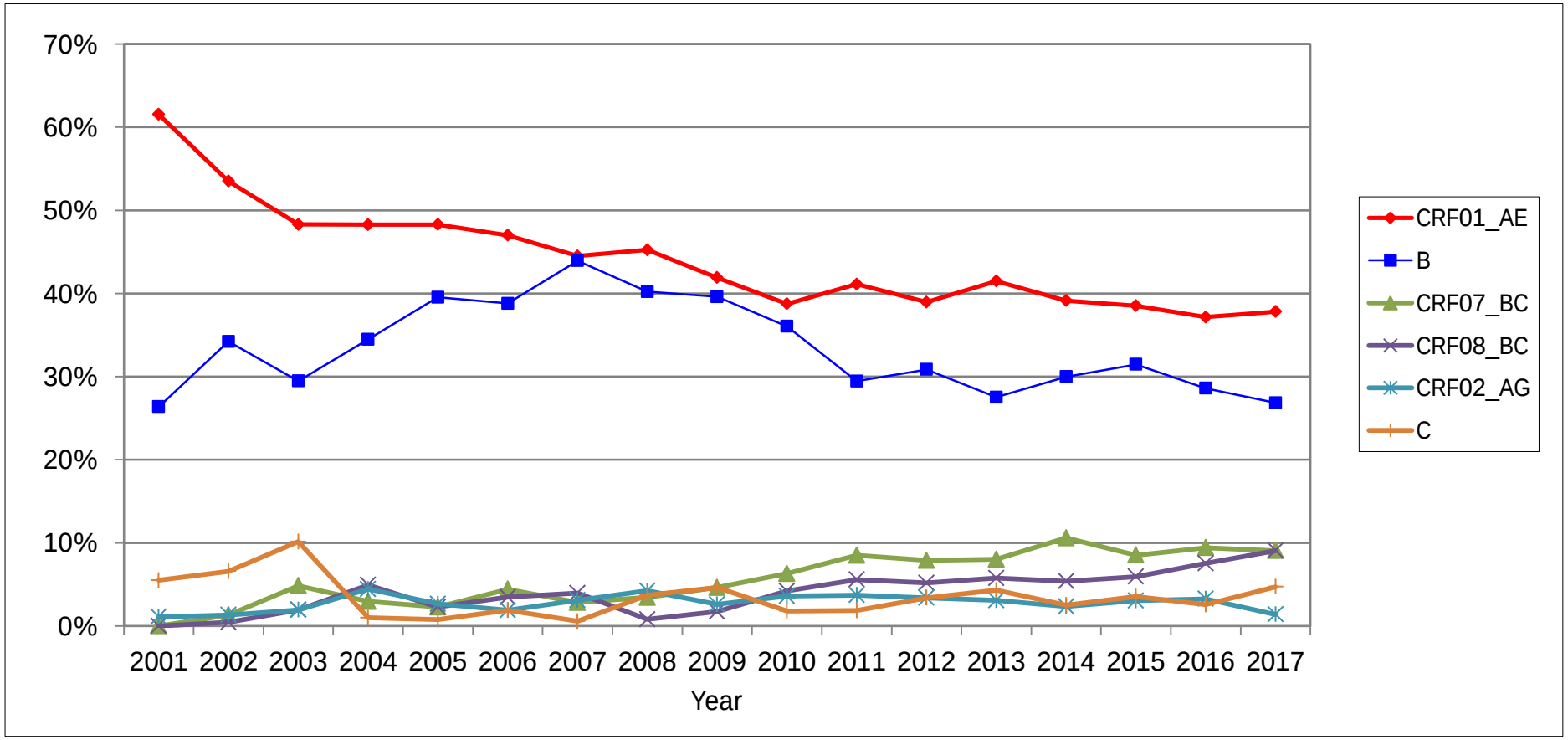
(ii) Year 2017



*: 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, CRF15_01B, CRF55_01B.

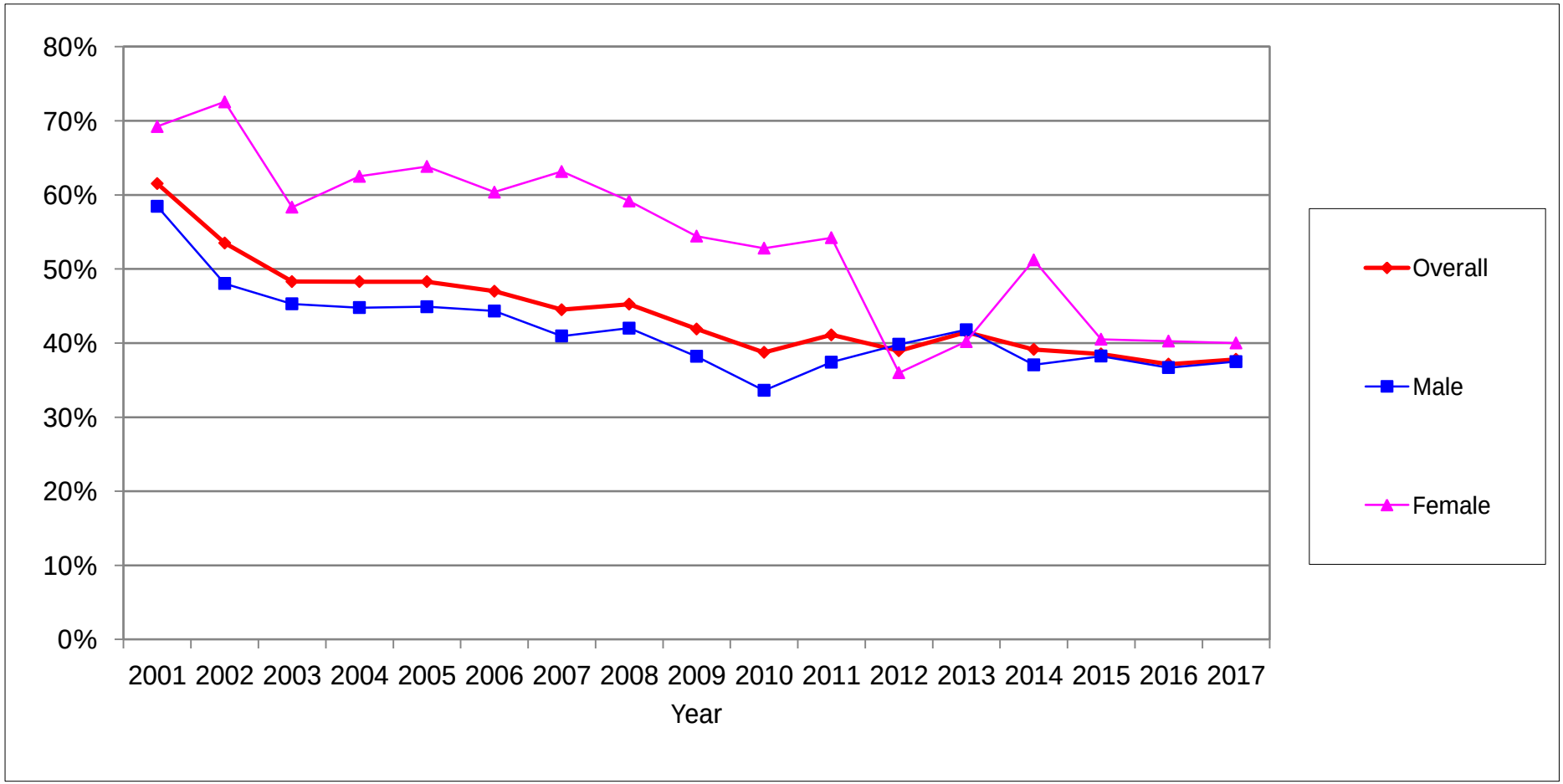
Box 6.3 Trend in the common HIV-1* subtypes in Hong Kong, 2001 – 2017



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

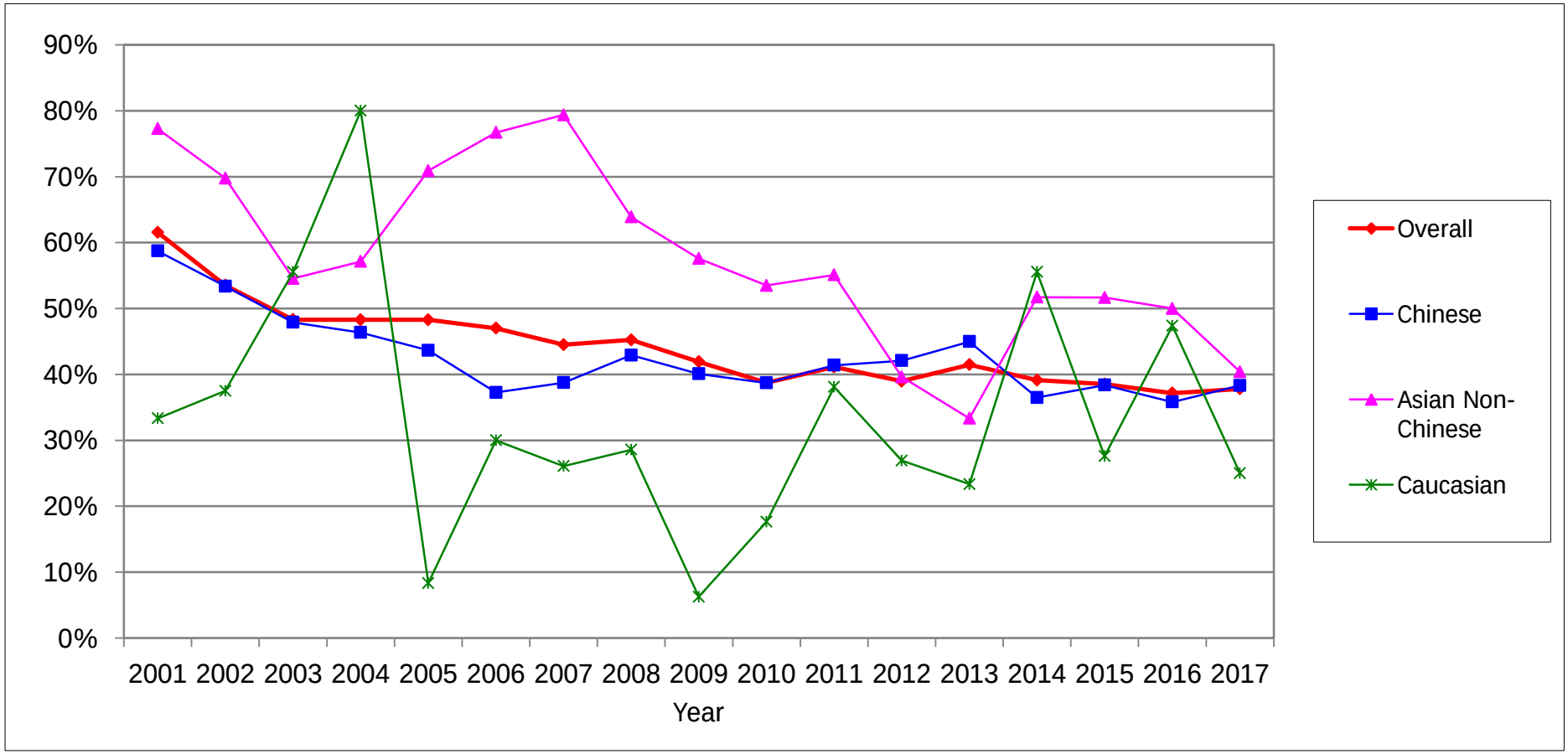
Box 6.4 Trend in HIV-1* subtype CRF01_AE in Hong Kong, 2001 – 2017

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

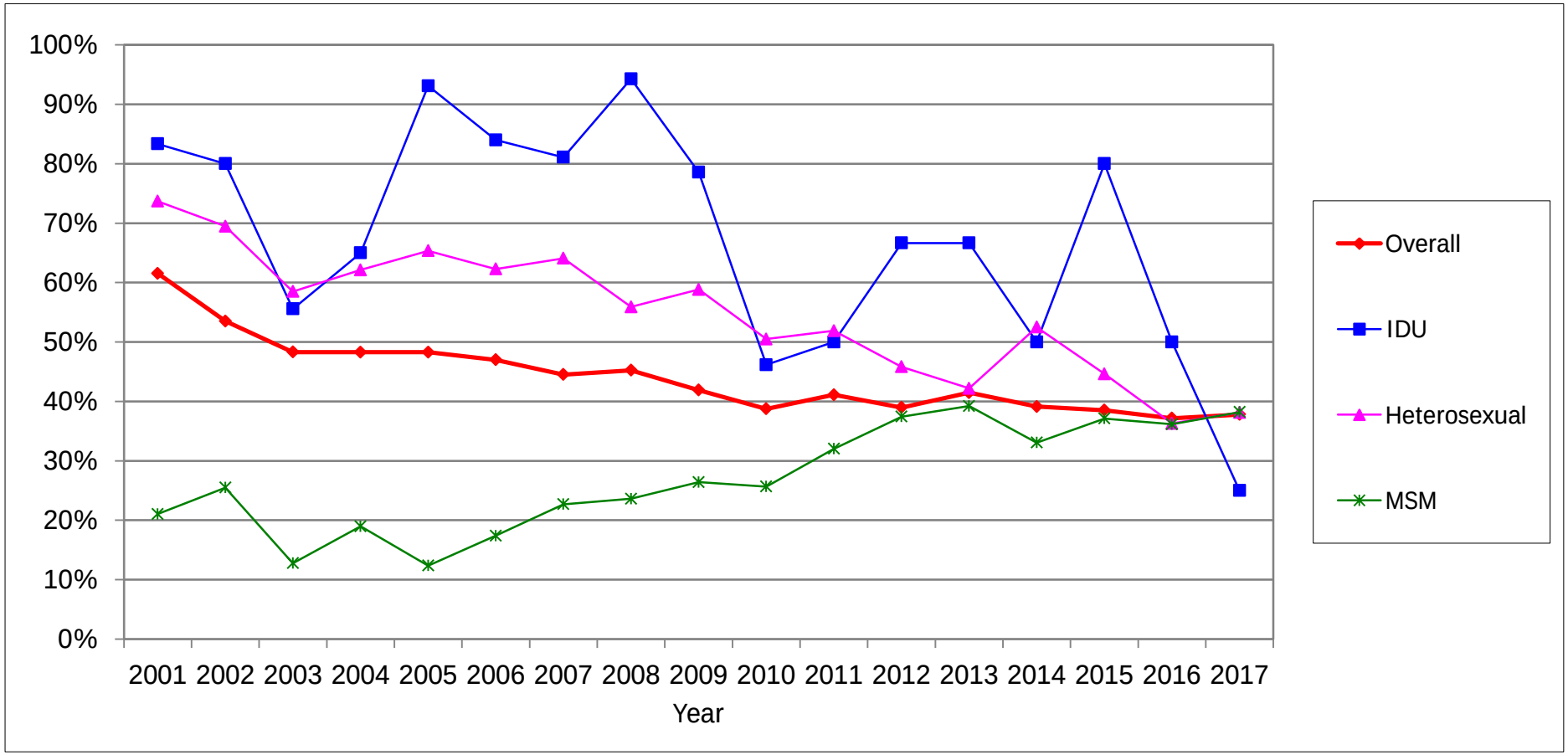


*: including cases with HIV type 1 or PCR positive result.

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

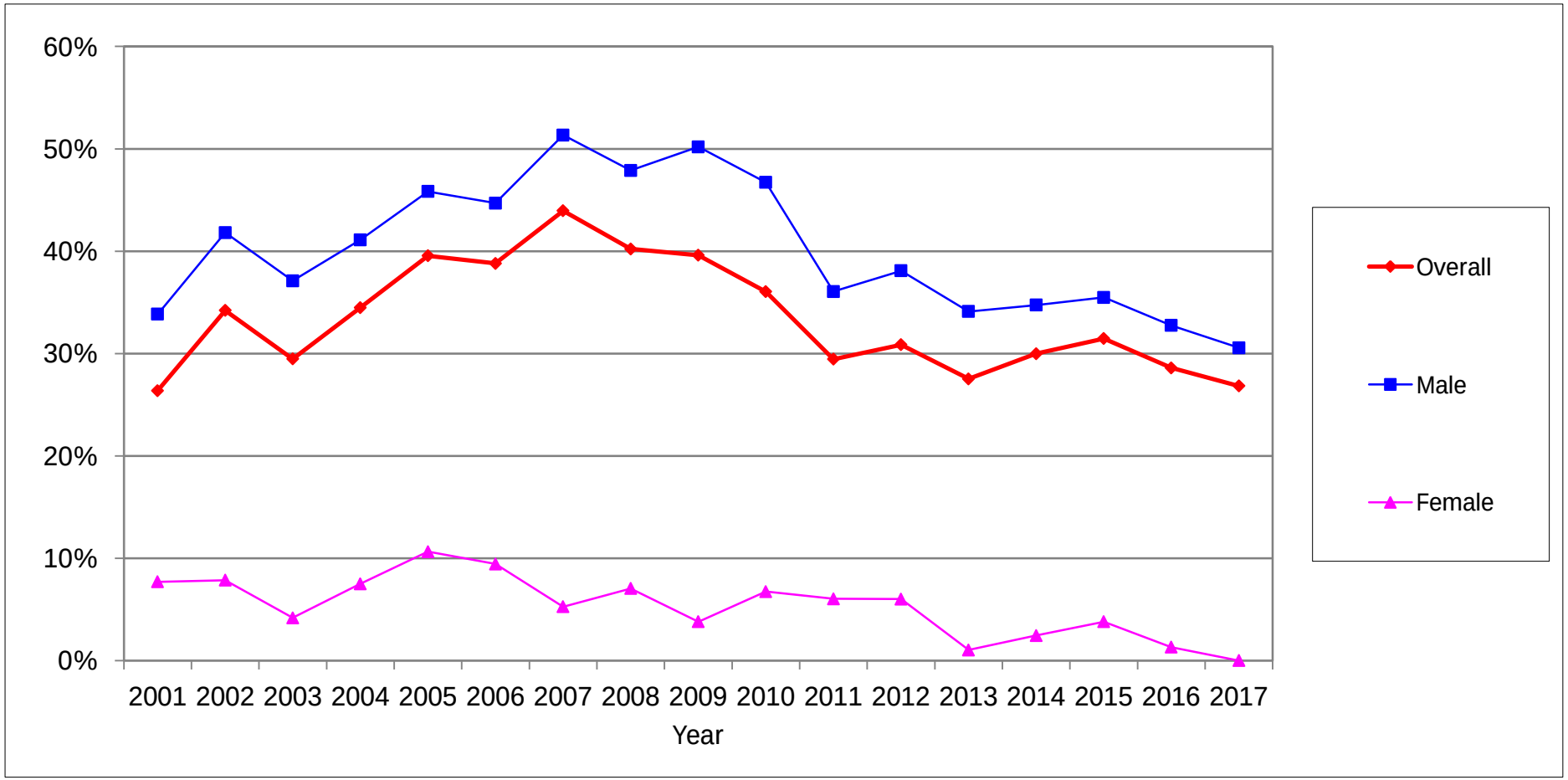


(c) By route of transmission (proportion of cases with subtype CRF01_AE)



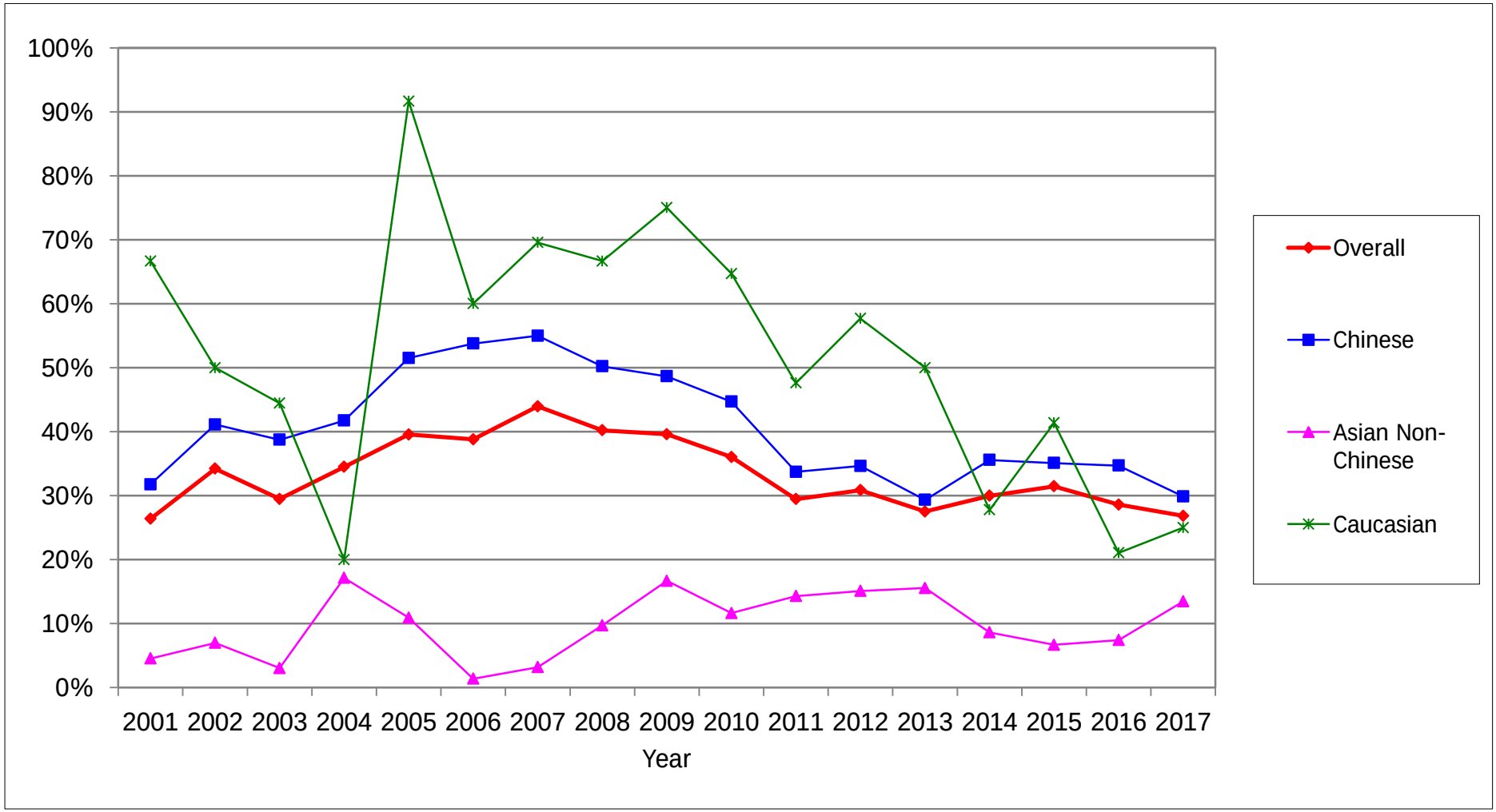
Box 6.5 Trend in HIV-1* subtype B in Hong Kong, 2001 – 2017

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

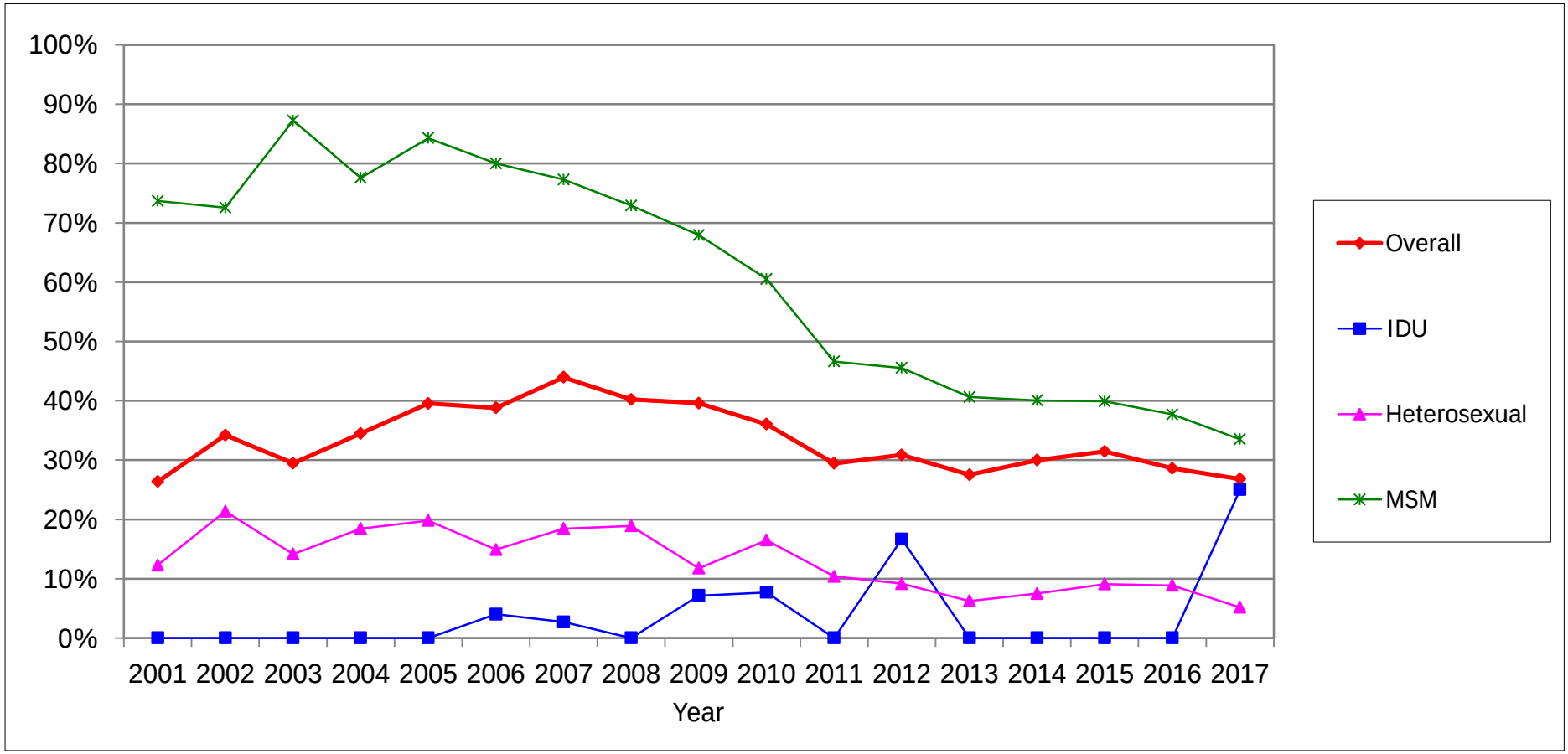


*: including cases with HIV type 1 or PCR positive result.

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

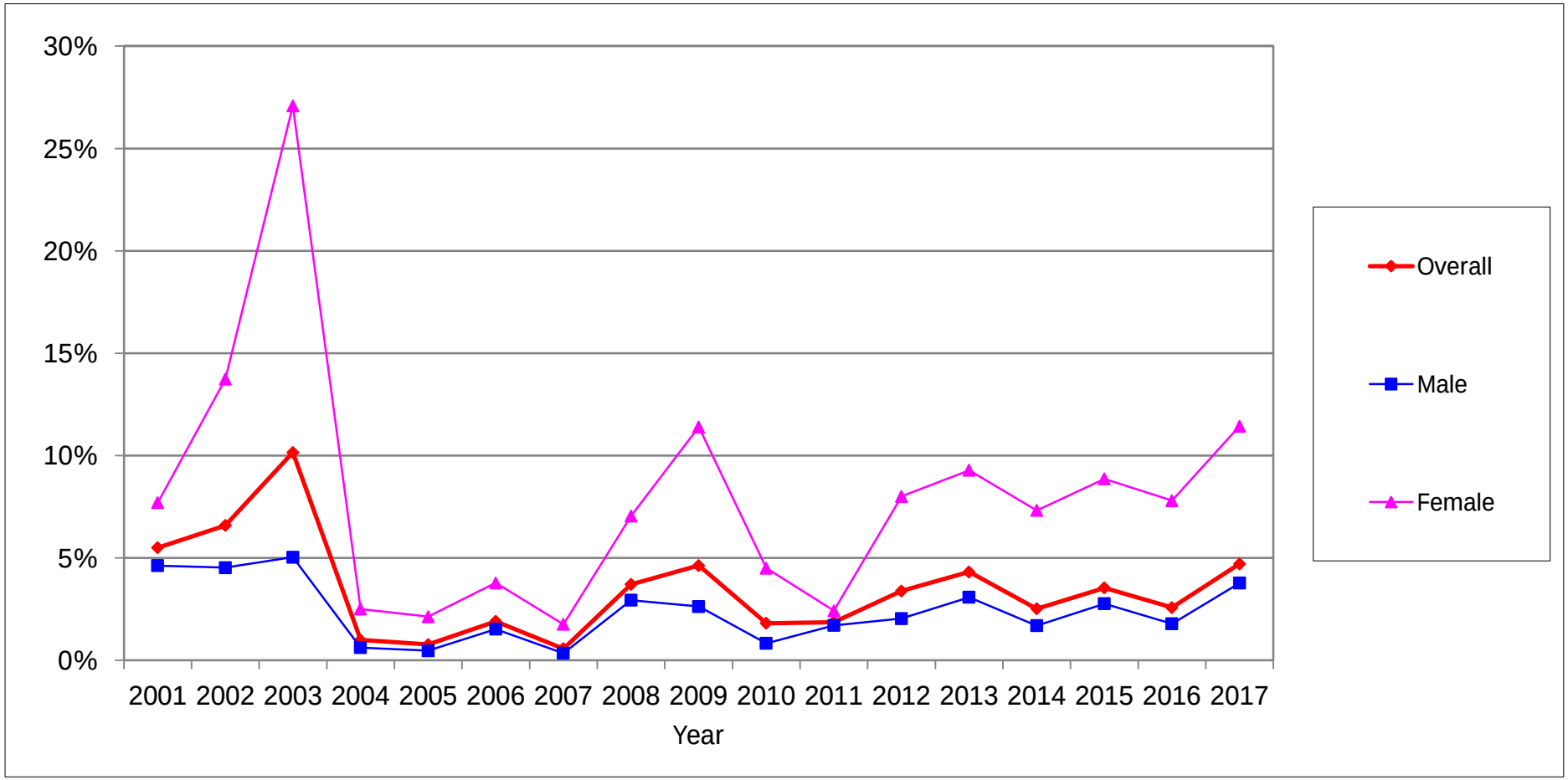


(c) By route of transmission (proportion of cases with subtype B)



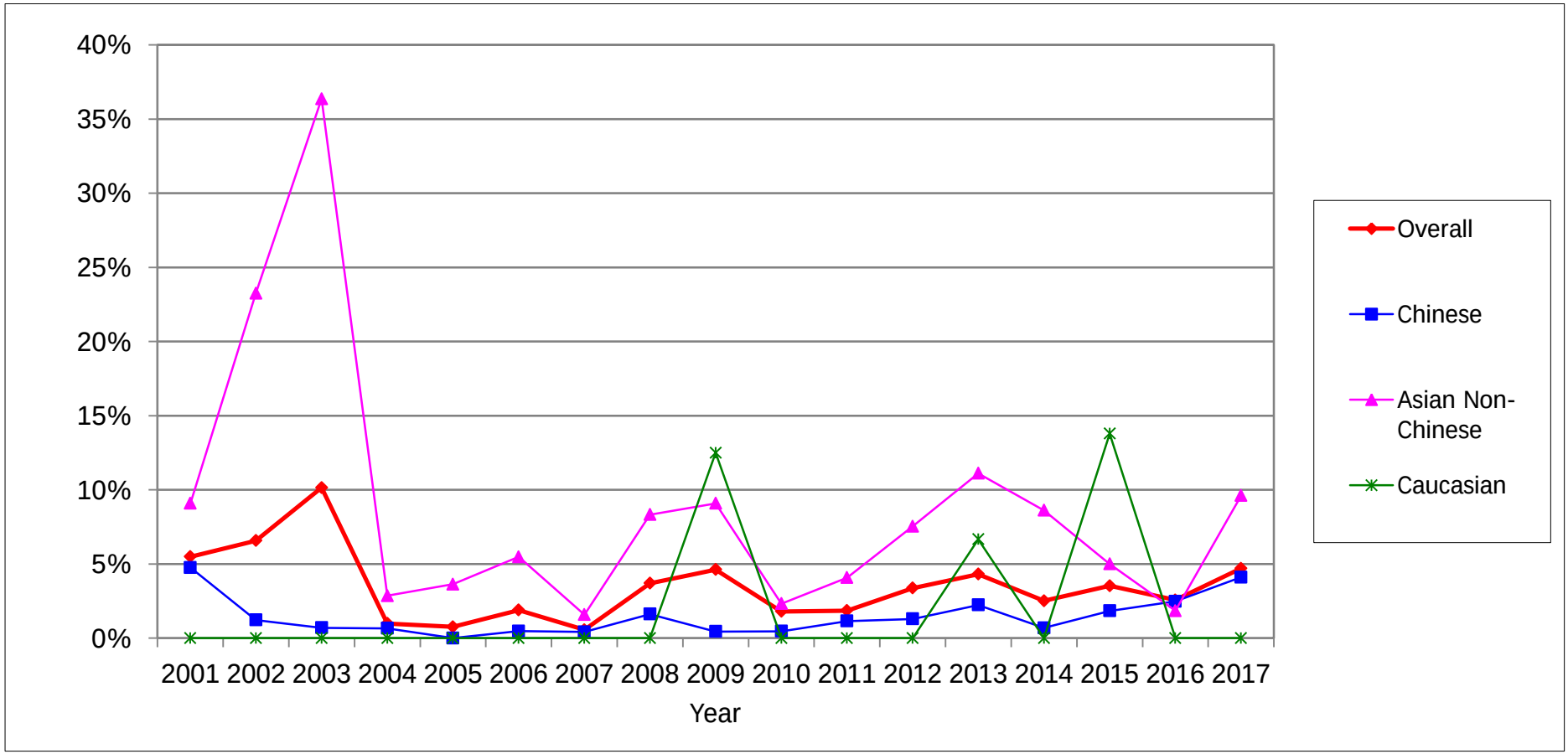
Box 6.6 Trend in HIV-1* subtype C in Hong Kong, 2001 – 2017

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

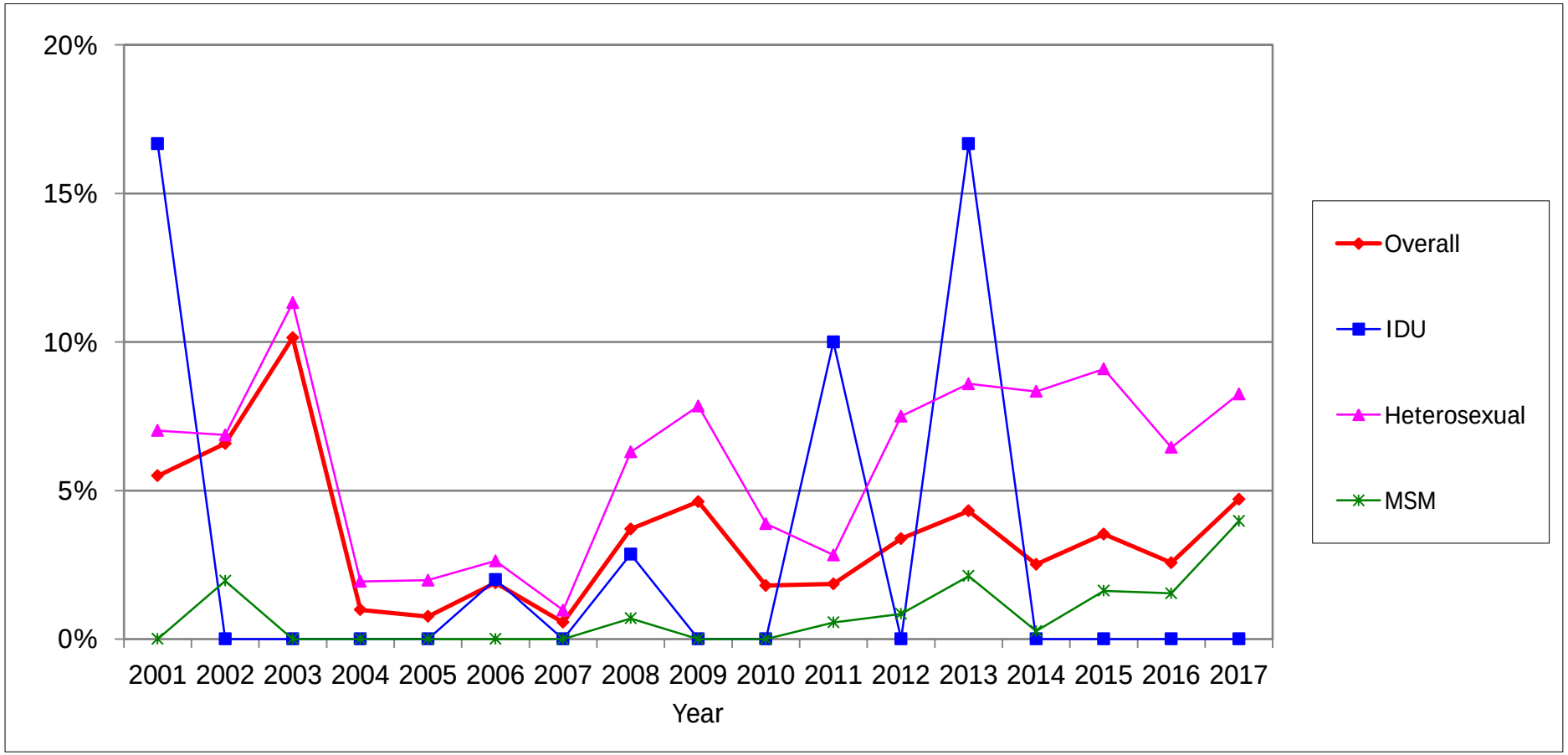


*: including cases with HIV type 1 or PCR positive result.

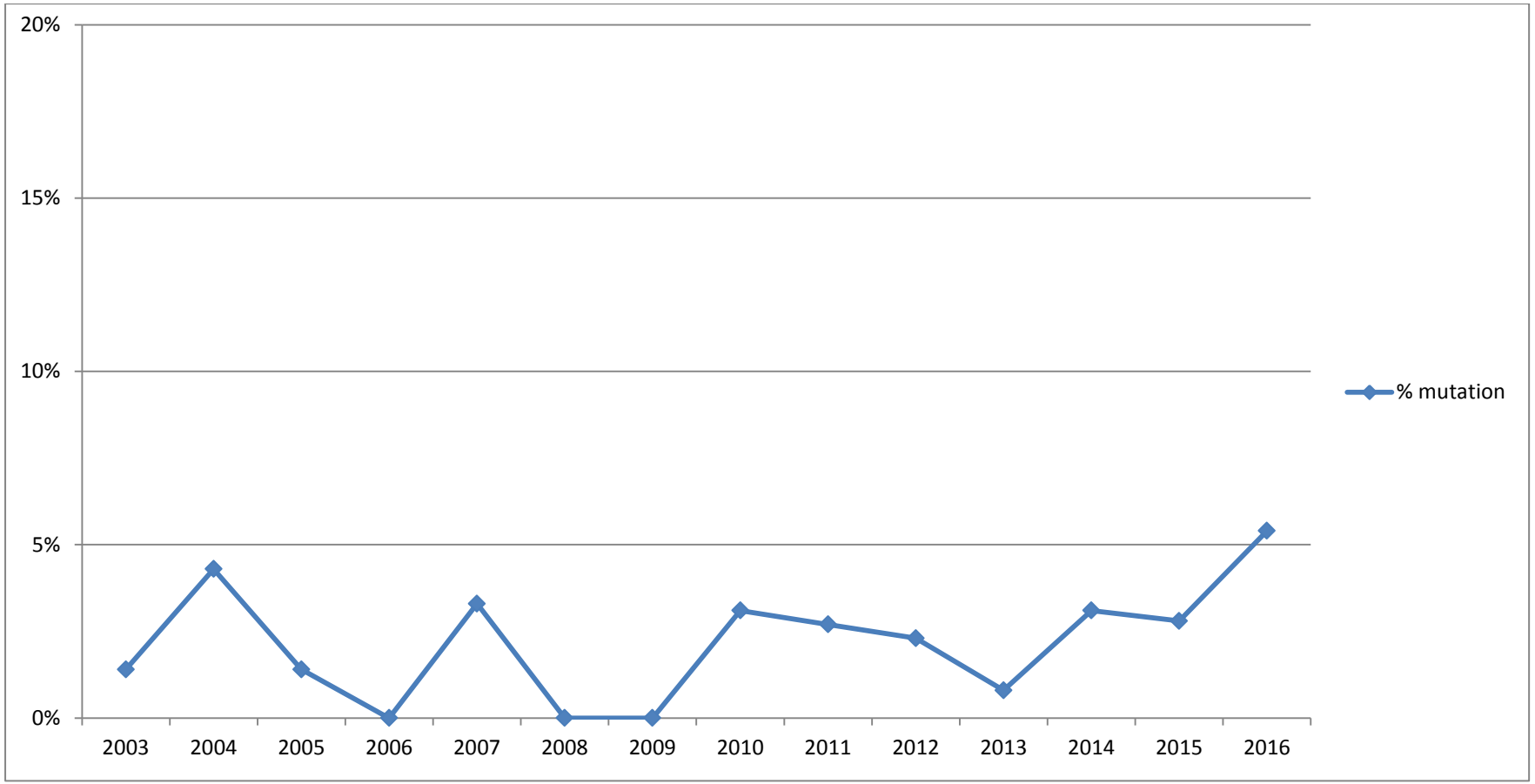
(b) By ethnicity (proportion of cases with subtype C)



(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, 2003-2016



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 www.aids.gov.hk. For any query, please call 3143 7225 or email us at aids@dh.gov.hk. Completed form can be faxed to 2297 3239 or mailed to Special Preventive Programme, Centre for Health Protection, Department of Health.

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[1]: _____ [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 1

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

[6] Ethnicity: ☐Chinese ☐Asian, specify: _____ ☐Caucasian ☐Black ☐Others: _____ ☐Unknown

[7] Suspected risk(s) for HIV infection[2]

☐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 1
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] Confirmation test: ☐Yes ☐No If Yes, by ☐Western Blot ☐PCR ☐others _____

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

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

[14] Any previous negative HIV test: ☐No ☐Yes If yes, 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 ☐No spouse/regular partner

Section (B) – Report of AIDS

[17] Has the patient developed AIDS[3]: ☐ 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 Outcome

[20] Has the patient referred to/seen at public HIV clinic ☐Yes ☐No If yes, referred on/seen at: / / (ddmmyyyy)

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

[22] Is the patient under private HIV medical care ☐Yes ☐No

[23] Has the patient left HK? ☐Yes ☐No If yes, last seen on: / / (ddmmyyyy)

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

Section (D) – Correspondence

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

Correspondence Address: _____

Tel: _____ Fax: _____

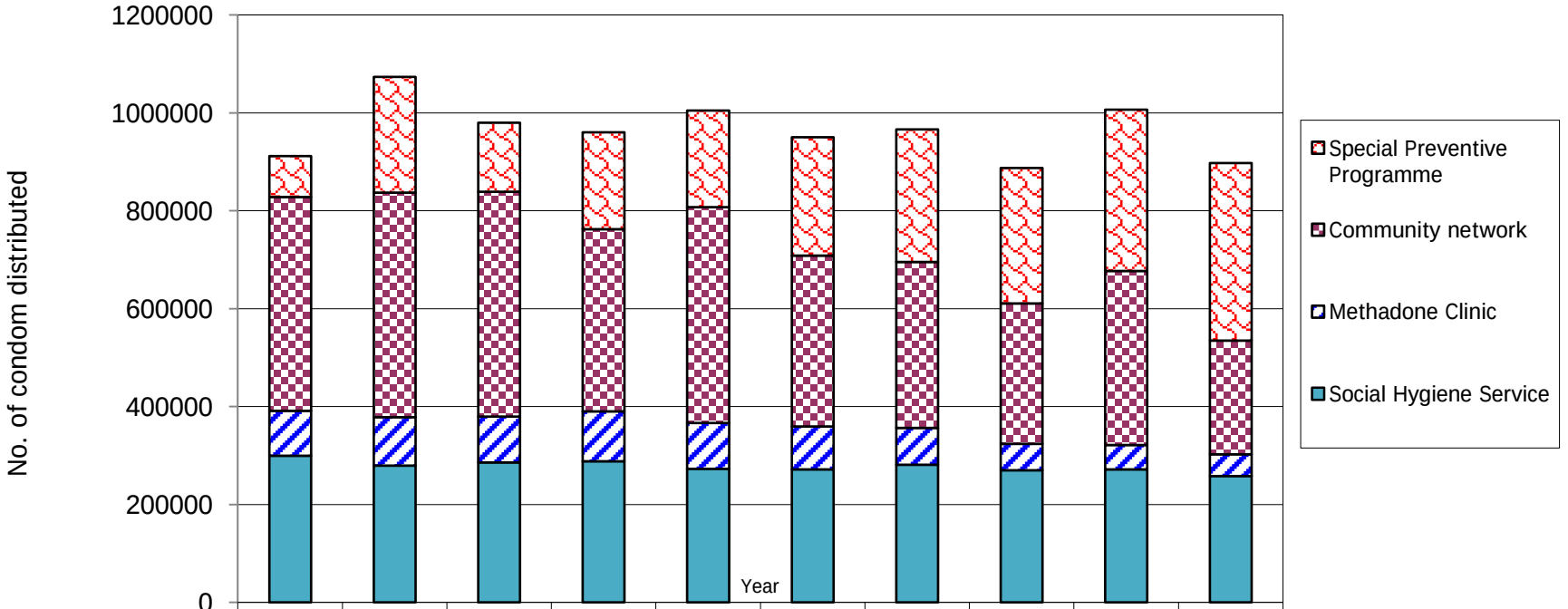
Email: _____ Date: / / (ddmmyyyy)

[1] Please put down any code of your choice (e.g. case number) for matching purpose only.
[2] Please tick the most likely risk for contracting HIV infection. If there is more than 1 suspected risk, please put down 1 & 2 in descending order of the two most likely risks.
[3] 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 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



	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Special Preventive Programme	83794	236690	141220	198068	197494	241429	271095	276996	329513	362320
Community network	436332	458595	458979	372073	440963	349424	338522	286409	355269	232195
Methadone Clinic	91958	98795	93911	101848	93640	87190	75724	54218	49531	44588
Social Hygiene Service	299385	279360	285638	288054	272698	271800	280892	269660	271787	257934

Note:

1. Community network includes collaborative projects with Action for REACH OUT, AIDS Concern, CHOICE, Phoenix Project of SARDA, Gay Harmony and Midnight Blue.
2. SPP and others condom distribution points, including Travel Health Centres, Correctional Services Department, Tuberculosis and Chest Clinics, Elderly Health Centre, Professional Development and Quality Assurance Service.