HIV surveillance & epidemiology in Hong Kong

(adopted from HIV/AIDS surveillance report 2011 Update, Hong Kong Department of Health)

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HIV Surveillance at a glance (2011)

- 438 HIV reports and 82 AIDS reports
- Gender: 78.5% male
- Ethnicity:67.1% Chinese
- Age: Median 37
- Risks:
  - 44.3% Homo/bisexual contact
  - 26.7% Heterosexual contact
  - 3.2% Injecting drug use
  - 0.5% Blood transfusion
  - 0% Perinatal
  - 25.3% Undetermined
- CD4 at reporting: Median 259/ul
- HIV-1 subtypes: commonest areCRF01_AE and B
- Primary AIDS defining illness: Commonest are PCP and TB
- HIV prevalence
  - Blood donors: <0.01%
  - Antenatal women: 0.01%
  - STI clinic attendees: 0.17%
  - Methadone clinic attendees: 0.53%
  - MSM: 4.08%

1. The Hong Kong Department of Health has implemented a voluntary anonymous HIV/AIDS reporting system since 1984. The system receives reports from doctors and laboratories. Doctors report newly diagnosed positive cases by a standard form (DH2293) which was last revised in March 2010. In 2011, DH received 438 HIV and 82 AIDS reports. The number of HIV cases in 2011 reached a record yearly high after the slight decrease in 2009 and 2010. This brought the cumulative total to 5270 and 1267 for HIV and AIDS reports respectively. Nineteen PCR positive cases with clinical and/or laboratory indication of very recent infections were included as HIV infection in 2011. Public hospitals/clinics/laboratories were still the commonest source of HIV reports in 2011, which accounted for 39.7% of all. Private hospitals/clinics/laboratories were another common source of HIV reports (23.7%). The number of reports from other sources has largely remained stable.

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

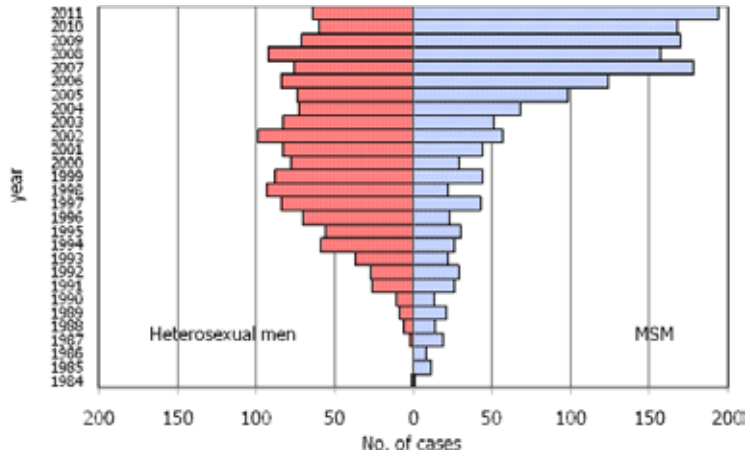
Persistent rising trend in men who have sex with men cases

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

has been observed and the situation remained consistent in 2011 with 194 MSM cases (59.3%) identified out of 327 cases with defined risks.

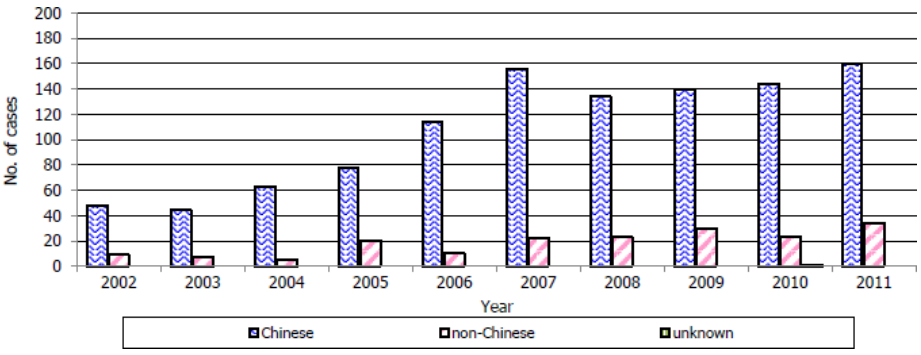
4. Similar to the previous few years, a high weighting of MSM in HIV reports continued in 2011, overall and in male. 56.4% of male HIV reports in 2011 contracted the virus through sex with men. Heterosexual contact in male cases accounted for about 19%, whereas the routes of transmission were undetermined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

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

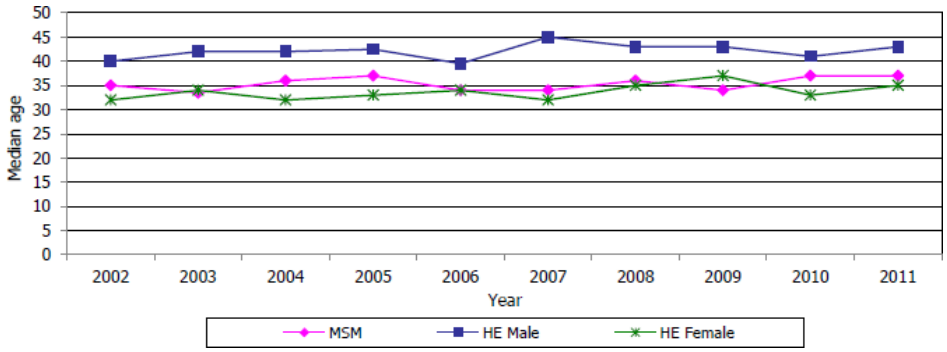


5. The major attributes of the rise in MSM were Chinese and of age group 20-49. About 82.5% of MSM cases in 2011 were Chinese. A rising trend in the number of reported Chinese MSM cases was observed in recent years despite a modest drop between 2007 and 2008. (Box 1.2) In 2011, the median age of MSM cases at report was 37, which was lower as compared to 43 of heterosexual male cases. The median age of HIV infected MSM population, similar to that of heterosexual men, has been relatively stable in the last decade. (Box 1.3) Age group 40-49 was the commonest age group of reporting in MSM in 2011, which accounted for 28.9%, closely followed by 28.4% in the age group 20-29 and 27.3% in the age group 30-39. (Box 1.4) Reported data since 2006 suggested that a relatively higher proportion of MSM infections (60-70%) occurred in Hong Kong, as compared to a much lower proportion of around 40% in heterosexual men. Despite that, there was a decreasing trend of MSM infection occurred locally from 74.4% in 2010 to 56.2% in 2011. (Box 1.5) On the other hand, the proportion infected in Mainland China increased from 6% in 2010 to 11.3% in 2011.

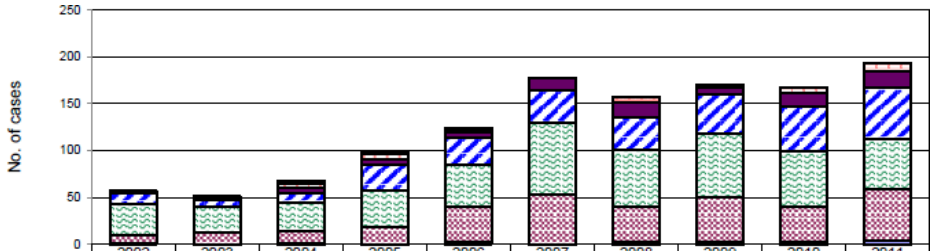
Box 1.2 Ethnicity Breakdown of HIV-infected MSM cases (2002-2011)



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

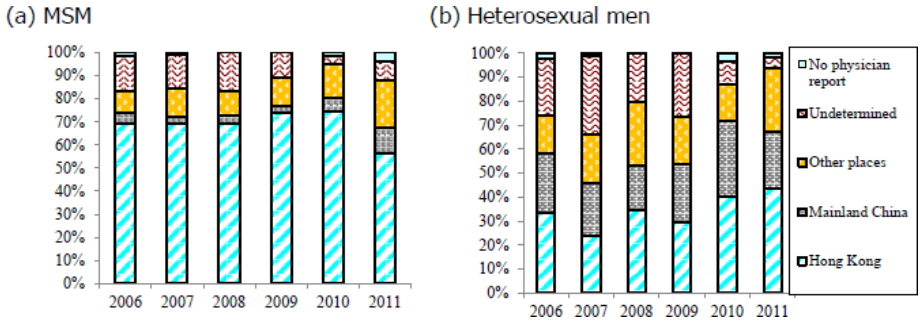


Box 1.4 Age breakdown of HIV-infected MSM cases (2002 - 2011)



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

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



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

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

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

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

Box 1.6 Comparison between 2006, 2008 and 2011PRiSM results

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

9. The median number of casual sex partners among MSM attending the AIDS Counseling and Testing Service (ACTS) were consistently higher than those heterosexual men. Moreover, the consistent condom use rate among MSM attending ACTS with regular partners and causal partners gradually decreased in the past few years after a peak in 2009. The rate were around 37% and 52% respectively in 2011, which was similar to the figures in the on-line AIMSS conducted in 2010 but was lower than the findings of the PRiSM in 2011. Besides, the condom use rate from ACTS for last anal sex with both regular partners and causal partners also decreased in 2011.In contrast, the trends derived from MSM attending AIDS Concern's testing service increased in 2011 for consistent condom use with any sex partners and remain stable for condom use for last anal sex.

The proportion of heterosexual cases continue to decrease

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

11. Sexually transmitted infection (STI) caseload statistics is an important component of the local HIV surveillance programme as the presence of STI is by itself an indicator of unsafe sexual behaviors

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

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

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

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

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

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

Two cases of transmission via blood/blood product transfusion recorded

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

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

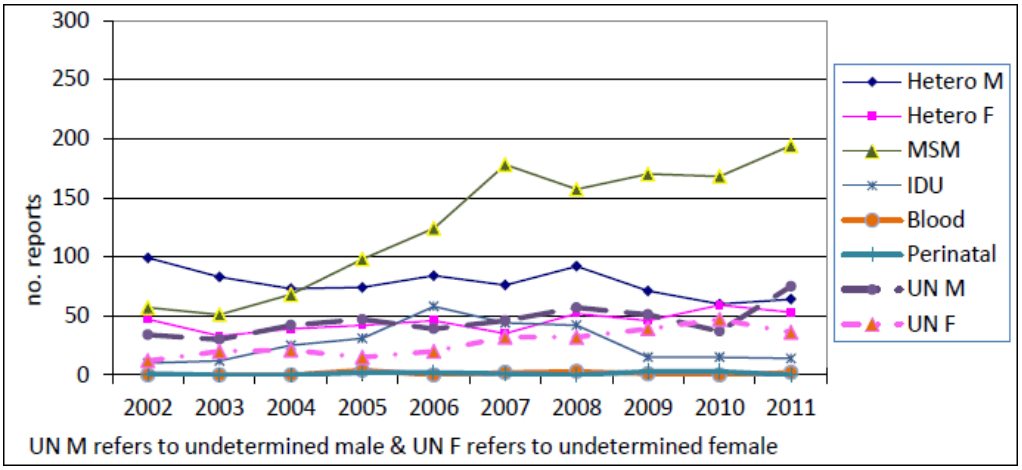
Reconstruction of cases with undetermined risk factor

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

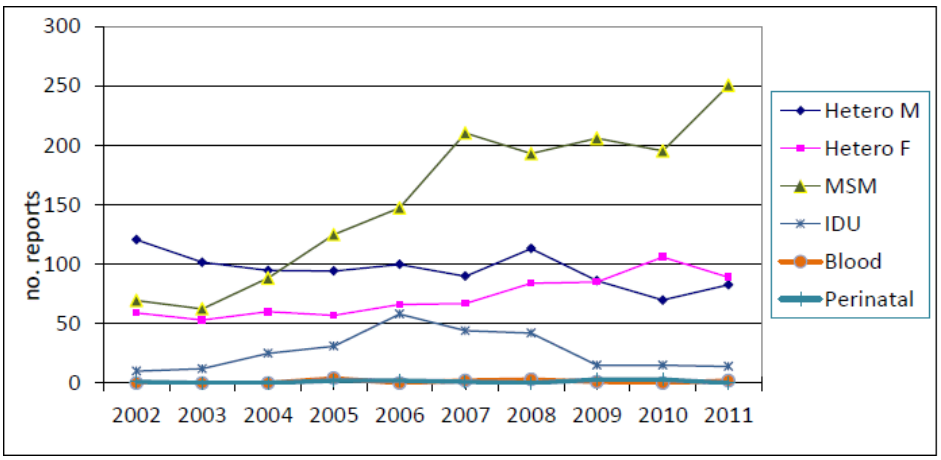
19. Reconstruction was carried out by assigning one suitable transmission to the undetermined cases. After the analysis of the features of these cases with undetermined risk factor and the prevailing epidemic, it was assessed that all female infections shall be assumed to be heterosexual transmission,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

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

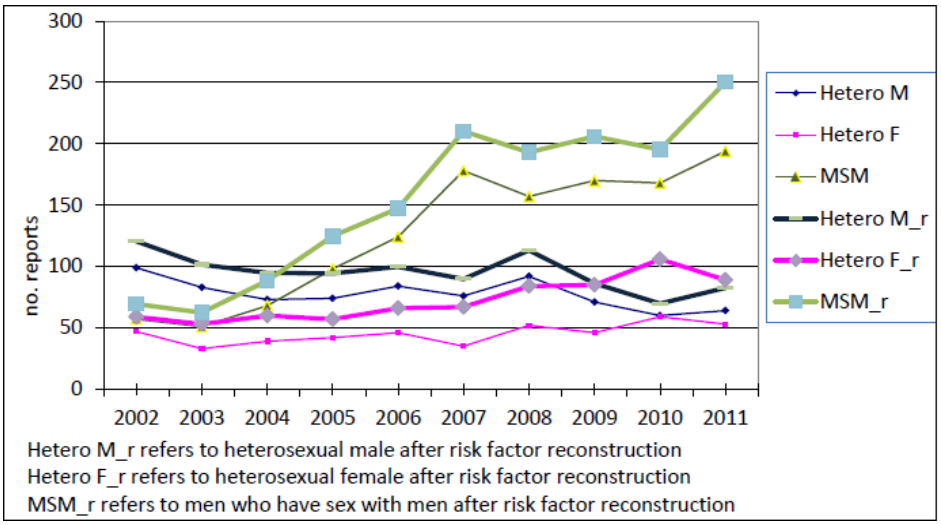
Box 1.7(a) HIV reports before risk factor reconstruction (2002-2011)



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



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



Regular HIV testing before diagnosis was a rarity

21. The HIV/AIDS Report Form (DH2293) was revised in March 2010 and become available for reporting use since July 2010, where one data field was added to capture the previously negative HIV result among the newly diagnosed, which could better inform the epidemiology of those recently HIV-seroconverted. Among 438 cases reported in 2011, data of the HIV/AIDS Report Form was available in 328 cases and among them, only 120 cases (37%) had previously negative HIV results, which implied regular testing among HIV patients before their diagnoses was uncommon. Forty cases (33.3%) had previously negative HIV results within one year of the HIV diagnosis, i.e. recently HIV seroconverted and this suggested that at least one-third of the cases were recently infected. However, it was not possible to judge whether the cases with previously negative HIV results beyond one year of HIV diagnosis were recently HIV seroconvert or not, as the observation was limited by the infrequent testing behaviour.

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

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

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

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

Box 1.8 - Reported CD4 levels at HIV diagnosis

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

Box 1.9 - CD4 Reports by age group*

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

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

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

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

26. According to the HIV resistance threshold survey conducted since 2003, the prevalence of intermediate or high level Drug Resistance related mutations maintained at below 5% over the years (from 0% to 4.3%).

Discussion

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

28. The increasing number of HIV reports among MSM continued to play a significant role in 2011 and accounted for the largest proportion of cases every year since 2007. This increasing trend will likely to continue in the near future and pose the major challenge in the HIV prevention work. By using the reconstruction methodology described above, we can see a more dramatic increase in infection cases among MSM. The third PRISM conducted in 2011 revealed a HIV prevalence of 4.08% which was similar to the previous studies in 2006 and 2008. The consistent condom use rate with both regular and non-regular sex partners improved over the past years. Moreover, the HIV testing rate has also increased which may reflect a growing norm of regular HIV testing among MSM community. Although the prevalence data and behavioral data suggested a stable situation, the number of infections continued to rise. The increasing HIV testing rate among MSM might explain partly but not entirely of the picture. Moreover, the situation should not be taken lightly given the decreasing trend of the proportion of locally acquired cases among MSM in the past 2 years coupled with increasing trends of MSM HIV infections in the neighboring cities/countries.

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

30. Although the number of HIV-infected injecting drug user reports remained at a relatively low level since 2009, the prevalence of injection and risky needle-sharing behavior among the drug users remained at a significant level which continues to pose a potential threat of cluster outbreak and rapid upsurge of infection among the population. The drop in HIV testing coverage in methadone clinics was also a concern that the diagnosis and subsequent care of infected drug users may not be timely made.

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

Test paper - HIV surveillance & epidemiology in Hong Kong

Expiration Date: 16 April 2014
CME point: 1 / CNE point: 1 / PEM point: 1 (Healthcare related which contributes to the enhancement of professionalism of midwives/nurses)

- Please indicate one answer to each question.

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1. Which of the following is not true regarding sexual transmission of HIV in Hong Kong?
   (a) There were more men who have sex with men infections during the earliest epidemic in 1980s
   (b) It accounted for over 90% of infections in 2011 with known risk factor
   (c) Men who have sex with men infections surpassed heterosexual male infections in 2005 and the gap continued to widen
   (d) Chinese was more common than non-Chinese for female infections
   (e) None of the above

2. Which of the following is not true about newly reported HIV infections in 2011?
   (a) A record high of 438 cases were reported
   (b) Injecting drug use accounted for 20 cases
   (c) A majority of the cases were male, Chinese
   (d) There was no perinatal case
   (e) A rise of about 13% was observed as compared to 2010

3. Which of the following is not true about CD4 scenario of the reported cases?
   (a) The median CD4 was about 260/ul for 2011 cases
   (b) CD4 level at reporting tended to be higher in older (age >=55) than younger cases
   (c) A low CD4 generally suggested not early diagnosis and reporting of the case
   (d) About 70% of cases had CD4 reporting
   (e) All of the above

4. Which of the following is not true regarding testing leading to HIV diagnosis?
   (a) Regular testing can help early diagnosis of infected patient
   (b) The timing of infection can be more certain if there is information on previous and even regular testing
   (c) In 2011, <30% has a previous negative HIV test result
   (d) In 2011, at least one third among those who had previous HIV testing were recent infection within one year of diagnosis
   (e) HIV screening is offered to every TB patient

5. Which of the following is not true regarding local reconstruction of HIV risk factor to alleviate the inadequacy of incomplete data?
   (a) Female infections were allocated to heterosexual transmission unless data existed to suggest otherwise
   (b) Male infections were allocated according to the ratio of MSM vs heterosexual per known cases
   (c) There was a more prominent earlier rise in male heterosexual infections after reconstruction
   (d) About 25% of reported infections in 2011 were with HIV risk missing
   (e) None of the above

6. Which of the following is not true concerning AIDS situation in Hong Kong?
   (a) Reported AIDS cases has stabilised after the advent of highly active antiretroviral therapy
   (b) Tuberculosis has surpassed Pneumocystis jirovechi pneumonia to become the commonest primary AIDS-defining illness
   (c) Penicilliosis is the most common fungal ADI
   (d) Late presentation of AIDS patients is still prevailing
   (e) None of the above

7. Which of the following is not true about HIV-genotyping and resistance findings?
   (a) Subtype B is the commonest found in 2011
   (b) CRF01_AE is more common in drug users and female cases
   (c) Increasing genetic diversity continued to be observed, signifying more subtypes were reported
   (d) Yearly HIV resistance was at below 5% level
   (e) Patients with subtypes CRF07_BC and CRF08_BC have increased in recent years

8. Which of the following is not true regarding the characteristics of reported MSM infections?
   (a) MSM cases were of younger age than heterosexual male cases
   (b) A majority of them were believed to be infected in Hong Kong rather than overseas
   (c) A record high 194 cases were reported in 2011, which accounted for almost 60% of male infections with known risk factor
   (d) Non-Chinese were more than Chinese cases
   (e) None of the above

9. Which of the following is not true of the community-based MSM survey (PRiSM) conducted in 2011?
   (a) An HIV prevalence of 4.1% was found in gay venues, similar to previous surveys
   (b) Internet participants has a lower prevalence found
   (c) Unsafe sexual behaviours outside Hong Kong were assessed
   (d) Condom use appeared to have generally improved compared to previous surveys
   (e) Recent HIV testing rate has increased to 50% compared with previous surveys

10. Which of the following is not true regarding HIV situation in drug users?
   (a) HIV reports has remained stable or even showed a slight decrease in recent years
   (b) There was no risk of HIV upsurge in drug using community as needle sharing behaviours was insignificant
   (c) Most of the reported cases in 2011 were male Chinese
   (d) HIV prevalence at methadone clinic attendees stayed at <1%
   (e) There has been a falling coverage of universal HIV testing at methadone clinics