STI/HIV Prevention and Control

2007 ANNUAL REPORT

STI HIV Prevention and Control

BC Centre for Disease Control

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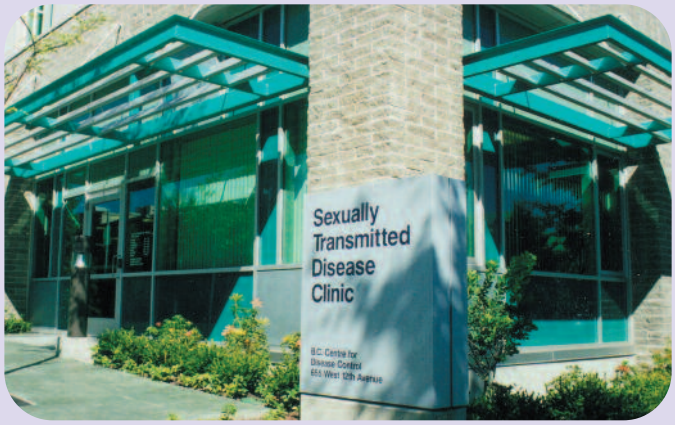
sti/hiv prevention and control



The British Columbia Centre for Disease Control is an organization dedicated to the prevention and control of communicable diseases in British Columbia.

The Division of STI/HIV Prevention and Control is exclusively focused on the prevention and control of sexually transmitted infections (STIs), including HIV and AIDS.

- We coordinate province-wide efforts to reduce the spread and minimize the adverse effects of STIs. We do this through education programs, contact tracing and partner notification. The division works with clients both directly, through clinics and outreach nurses, and indirectly, through local and regional health care providers. The health, dignity and rights of our clients are our foremost concern.
- We provide STI/AIDS-related education and training resources for health care workers throughout the province, including medical residents, interns, public health nurses and other health care providers. We participate in conferences and frequently present on STI-related subjects, both in BC and in other jurisdictions. We provide epidemiologic data analysis and consulting services, acting as the provincial reporting centre for cases of STIs, HIV and AIDS. Provincial law requires most STIs, including HIV, be reported so that trends and patterns can be accurately measured. Our role is to record, track and share this important data for the benefit of provincial health care authorities, as well as organizations and governments in national and international jurisdictions.
- As a university-affiliated organization, we participate in research and teaching related to STI/AIDS in order to remain current in our approach.
- We work with international partners in developing countries to improve their capacity to manage STIs, including HIV.

This annual report describes some of the objectives, activities and achievements that marked the past year at STI/HIV Prevention and Control. It also includes detailed epidemiology statistics. More information on many of the subjects discussed here can be found on our website at www.bccdc.org or through our Education and Surveillance Support at 604-660-2090.

director's letter

Dr. Michael Rekart, Director

A Message from the Director

2007 was a landmark year of positive change and forward progress for STI/HIV Prevention and Control. We welcomed new staff, started exciting new programs, delivered the world's best client services and created valuable new knowledge through research.

On the staff side . . .

- Mark Gilbert joined our staff as Physician Epidemiologist, and he has expertly led our surveillance, epidemiology and information program to new levels of excellence in analysis, monitoring, and evaluation;
- Vicky Bungay assumed the role of STI/HIV Education Leader and she has moved quickly to chart a new and exciting future for our education and training activities;
- Malcolm Steinberg became one of our full-time staff to coordinate and lead our CIHR-supported research on acute HIV infection in gay men, and to be the BCCDC liaison to the Simon Fraser University School of Population and Public Health;
- Melanie Rivers took over as interim program manager for Chee Mamuk and she has brought with her a fresh new energy and outlook.

On the program side . . .

- *Bevel Up: Drugs, Users and Outreach Nursing* – an educational video developed by the Outreach Nursing Program – was finally released and immediately garnered positive cross-country media attention and audience accolades;
- A large contingent from STI/HIV attended the International Society for STD Research (ISSTDR) bi-annual meeting in Seattle where we hosted a popular booth and presented several papers and abstracts;
- Gina Ogilvie expertly assembled and led a PHSA multi-disciplinary and inter-agency team that developed the rationale and the strategy for a province-wide, school-based human papillomavirus (HPV) vaccination program beginning in the fall of 2008;
- Chee Mamuk continued its innovative, front-line project work with Star in Your Own Stories – a creative new program direction which supports Aboriginal youth in creating their own positive messages on healthy sexuality;
- The STI Online Course was completed and offered to BC nurses, replacing and improving on the face-to-face STI training that we have offered for over 2 decades.

On the research and service side . . .

- Our staff led or were substantially involved in 13 research projects; they made 26 oral and poster presentations at seven separate scientific conferences; and they were co-authors on five articles in peer-reviewed journals;
- Our clinic nurses and doctors, supported by our dedicated clerical staff, provided hands-on clinical training and mentoring for over 50 public health nurses, medical and nursing students, and medical residents; and at the same time they delivered expert, client-centred care to almost 20,000 patients!

One would be hard pressed to find a better and more comprehensive STI and HIV prevention and control program in all of North America and I have no doubt that we will continue to improve for years to come.

Congratulations to all!

Michael L. Rekart

Dr. Michael Rekart
Director, STI/HIV Prevention and Control

2007

the year in review

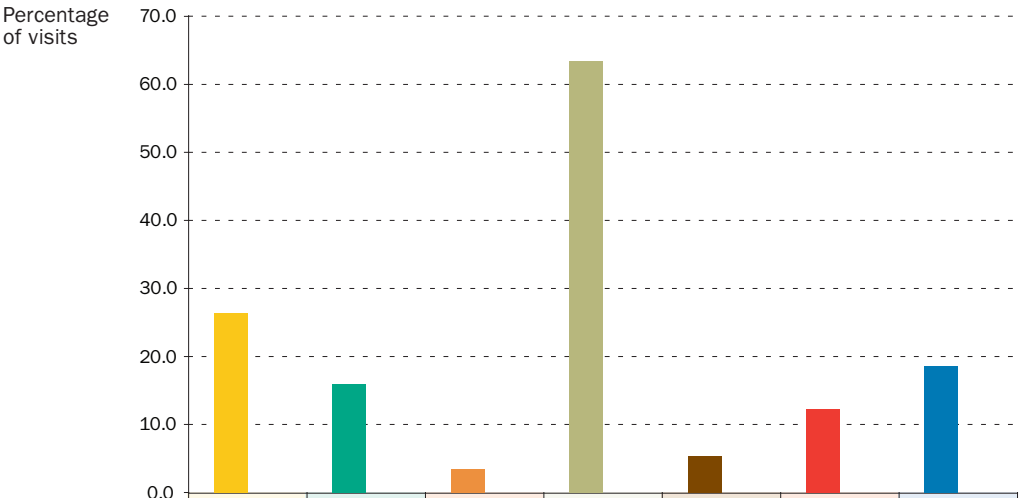
07

clinical activities

STI Clinic and Outreach Nursing Program

The division's patient services are delivered through two principal channels: the STI Clinic, located in the BCCDC building at 655 West 12th Avenue in Vancouver, and the Outreach Nursing Program, which operates from a number of locations throughout the city.

1.1 Reason For Visit • 2007



	STI Screening	STI Symptoms	Contact to STD	HIV Testing	Hepatitis	Treatment	Other*
Percentage	26.4	16.0	3.5	63.5	5.4	12.3	18.6
Number	4,604	2,782	602	11,070	942	2,148	3,237

In 2007, the STI Clinic and Outreach Nursing Program recorded 17,844 visits. The breakdown of clinic visits is consistent from year to year, with 2007 being very similar to previous years. The reason for most visits is screening for STIs and HIV, and management of STIs.

** Other includes: Birth control, counselling, consultation, follow-up, immigration, pregnancy test, results, TB skin testing, treatment and test of cure.*

Note: Percentages do not equal 100% because one client may have several reasons for visit (e.g. HIV testing, symptoms and STI screening).

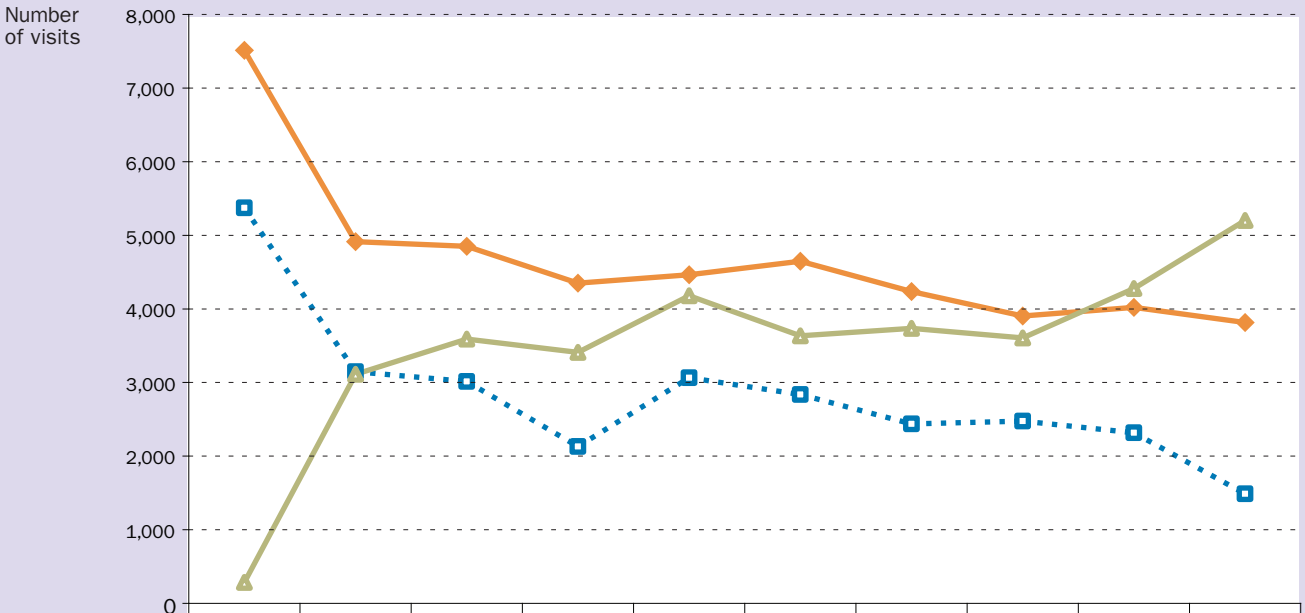
west 12th STI clinic

STI Clinic and Outreach Nursing Program

The STI Clinic on 12th Avenue is centrally located, easily accessible for clients, close to the downtown core and adjacent to Vancouver General Hospital. As the site of our primary clinical facility, it provides STI assessment and management services, including HIV testing, for clients from throughout the Lower Mainland. In addition, it is the centre of our epidemiology, education, research and administration activities. At this location we also:

- Conduct STI/HIV/AIDS surveillance, reporting, data management and related epidemiology services.
- Conduct and co-ordinate ongoing STI/HIV/AIDS research at our own, and affiliated, facilities.
- Provide training in STI clinical management for health care workers from across the province.
- Operate the province-wide STI/AIDS information phone line.
- Perform partner notification services.
- Provide administration of all division operations.

1.2 West 12th STI Clinic Visits • 1998 to 2007



	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
STI	7,514	4,914	4,850	4,351	4,464	4,646	4,237	3,903	4,021	3,814
HIV	5,372	3,146	3,013	2,132	3,064	2,837	2,439	2,476	2,317	1,489
STI & HIV	285	3,112	3,590	3,411	4,178	3,633	3,737	3,607	4,277	5,202
Total	13,181	11,172	11,453	9,894	11,706	11,116	10,413	9,986	10,615	10,505

outreach nursing program

Overview

The focus of the BCCDC Outreach Nursing Program is to reach populations in British Columbia vulnerable to STIs, HIV, and blood-borne pathogens, through initiatives that promote population health, infection prevention, and harm reduction. Key populations include MSMs (men who have sex with men), street-involved and homeless people, people with mental health and addictions issues, sex workers and their customers, adult entertainment industry workers, street youth, refugees, Aboriginal people, incarcerated people, and mobile populations.

The Outreach Nursing Program is a flexible program that continues to anticipate and respond to the changes and trends in the social, environmental, technological, and political landscapes through:

- evolving and developing new and relevant outreach strategies;
- developing and participating in research;
- implementing innovative projects;
- contributing to post-secondary education and professional development;
- expanding capacity through collaboration with community and health authority partners.

Outreach Nursing Programming and Initiatives

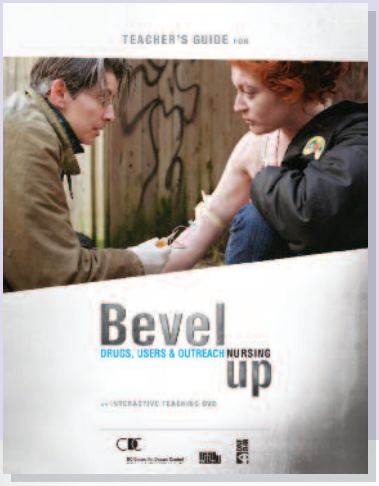
Direct service includes STI/HIV and hepatitis testing, diagnosis, treatment, follow-up, counselling, prevention and harm-reduction activities. Clients are accessed through the Bute Street Clinic, an outreach clinic site located at the "Centre" in Vancouver's West End; and through Outreach Nursing Program visits to hotels, parks, alleys, shelters, drop-in centres for sex workers, massage parlours, and youth centres. Outreach services are also provided to Vancouver and Cordova Detoxification Centres, Allouette Corrections Centre for Women, and to Surrey Pretrial. Special initiatives include events such as *Papalooza*. *Papalooza* is a yearly event that has enhanced access to Pap testing for street-involved women.

Throughout 2007, the Outreach Nursing Program collaborated with Chee Mamuk on educational workshops offered at reserves throughout the province, and on the *Around the Kitchen Table* project.

2007 Highlights

Cyber outreach

Internet Outreach reaches out to specific populations through instant messaging, bulletin boards, and online forums. A nurse provides information and referral services online through selected websites that include sites where people go to seek sexual partners and to network, such as squirt.org, PERB, Manhunt and Nexopia. Topics of discussion include transmission risks, healthy sexuality, safer sex, treatment, drug-use issues, vaccinations, and requests for referrals.



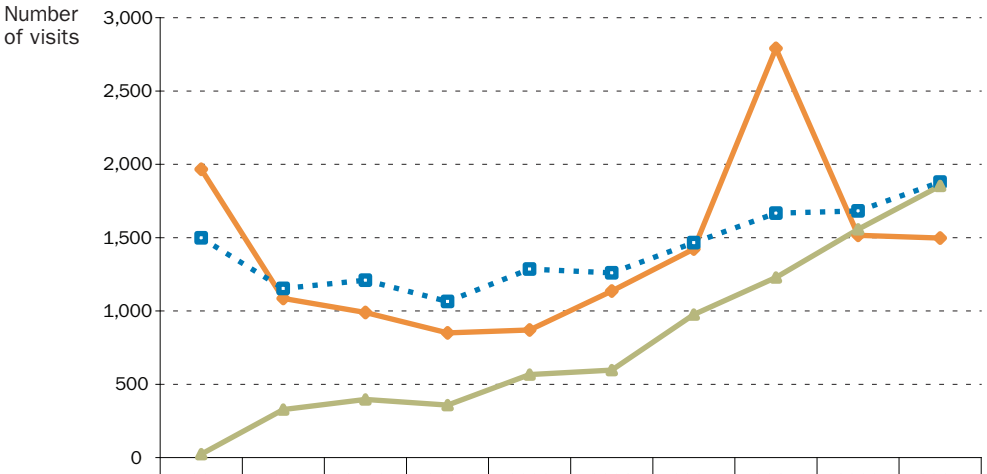
Bevel-Up: Drugs, Users & Outreach Nursing

Bevel-Up, Drugs, Users and Outreach Nursing is an interactive educational DVD and manual designed for nurses, health/outreach workers, and other health professionals who work with drug-using populations. It explores attitudes, behaviours and ethical challenges faced by nurses working in the field and does so in ways that are not currently addressed in professional healthcare education. Bevel-Up, which is available in English and French, includes a documentary, modular educational material, and a facilitator's guide. Bevel-Up was presented at 21 sites, including post-secondary nursing schools and public health facilities, on a cross-Canada tour in September 2007. It has generated much interest and many requests for sessions facilitated by the Outreach Nursing Program. The Outreach team received the Provincial Health Officers 2007 Award for Excellence in Public Health for this work.

Collaboration in Chilliwack

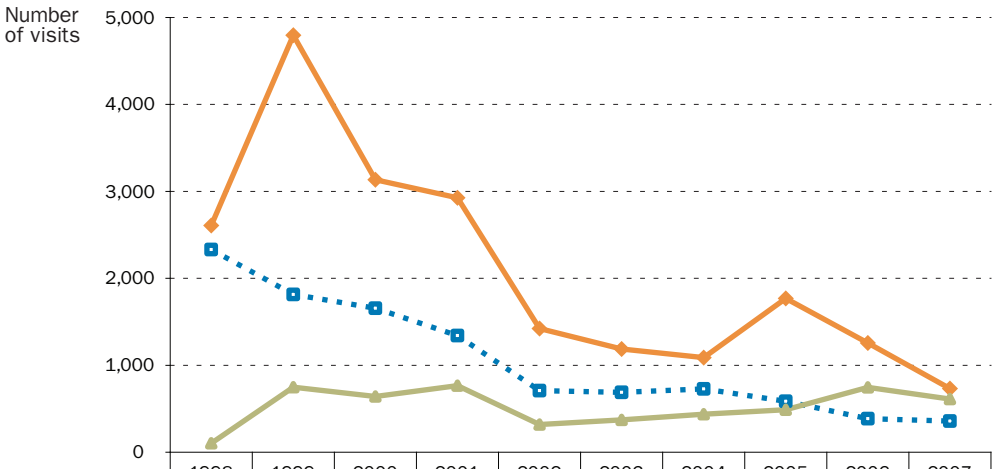
BCCDC Outreach nurses collaborated with public health nurses in Chilliwack in 2007 to improve the access to vulnerable clients in the community. This was a response to an outbreak of syphilis, and the need to access a population that is hard to reach. Nurses from BCCDC continue to work two days a week with nurses from Fraser Health Authority (FHA) to build local outreach capacity.

1.3 Bute Street Clinic Visits • 1998 to 2007



	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
STI	1,966	1,085	989	850	870	1,136	1,422	2,791	1,516	1,497
HIV	1,498	1,153	1,209	1,064	1,285	1,260	1,466	1,667	1,682	1,878
STI & HIV	23	328	396	358	566	597	975	1,228	1,557	1,853
Total	3,487	2,566	2,594	2,272	2,721	2,993	3,863	5,686	4,755	5,228

1.4 Agency/Outreach Visits • 1998 to 2007



	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
STI	2,608	4,797	3,135	2,927	1,422	1,187	1,088	1,769	1,257	733
HIV	2,331	1,814	1,657	1,341	708	688	728	586	386	359
STI & HIV	103	748	642	766	319	371	438	488	745	612
Total	5,042	7,359	5,434	5,034	2,449	2,246	2,254	2,844	2,388	1,704

chee mamuk

The mandate of the Chee Mamuk Aboriginal Program is to provide innovative, culturally appropriate, on-site, community-based HIV/AIDS and Sexually Transmitted Infection education and training to Aboriginal communities, organizations, and professionals within British Columbia

The Chee Mamuk Program was formed in 1989 with funding provided by the Ministry of Health, developing as a result of the climbing rates of HIV/AIDS in the Aboriginal community. With a focus on spiritual, mental, emotional, and physical health, Chee Mamuk provides awareness of HIV/AIDS and sexually transmitted infections using cultural and scientific information, and community involvement to educate Aboriginal communities. The program is continuously developing culturally appropriate and innovative education materials, and also offers referrals and consultations.

In 2007, Chee Mamuk – in collaboration with the STI/HIV Outreach Nursing Program at the BC Centre for Disease Control – worked with Good Company Communications, a new media company, on an innovative and creative project called Star in Your Own Stories. The team worked with twelve Kitamaat youth over two and a half days on HIV/AIDS, Sexually Transmitted Infections (STI) information, healthy sexuality, condom use, how to create engaging and positive messaging, as well as how to use camera equipment. The youth identified the issues they face, and decided to address how rumours hurt and how they can *Stand True* against such rumours and *Stand True* to themselves in their sexual health decisions. They compared how quickly rumours can spread in a community and how STIs can do the same.

Youth put their *Stand True* campaign messages (*Block A Lie*, *Spread The Good Stuff*, *Have The Confidence To Be Safe*, *Number One Reason For Condom Failure Is Not Using One*, *If You Can't Talk About Sex Then You Shouldn't Be Having Sex*, and *Condoms Are Sexy, Use Them*) on pens, mugs, and notebooks, which were handed out at the community launch of the DVD. The community launch was also an opportunity for HIV/AIDS education and awareness in the form of a guest speaker who shared her story about living with HIV. It was a night of celebration and culture with drumming and dancing by the Haisla dancers. The launch was a way to involve and attract more community members than an HIV workshop would alone. The project also attracted media, which, in turn, was an opportunity to raise more awareness.

Star in Your Own Stories rated highly on the UNAIDS (www.unaids.org) benchmarks of "best practice" for HIV education and prevention initiatives. It also made an important impression on the twelve young people who participated, increasing their STI and HIV knowledge and their confidence in their own power to make positive sexual health choices. They created new friendships; learned about team work, respect, and responsibility; became more confident; and felt motivated to share their knowledge with friends. Other positive outcomes reported were greater acceptance by members of the community of those who are HIV positive, and community pride in the young people's accomplishment.

The Stand True DVD won a youth award from the Cowichan Aboriginal Film Festival. It is available from Chee Mamuk and can be viewed at www.youthhavethepower.com.

Other activities in 2007 included Chee Mamuk community awareness workshops, training for frontline staff working in Aboriginal communities, presenting best practice models at conferences and engaging in health fairs at Aboriginal gatherings. Chee Mamuk also continued work on the Around the Kitchen Table project, working with Aboriginal women in cultural and informal settings to educate them about HIV/AIDS. Chee Mamuk completed an HIV policy template this year as well, which Aboriginal communities and organizations can adapt to their own needs. Requests for Chee Mamuk workshops and materials continue to grow.

education programs

Providing STI Nursing Education throughout British Columbia

2007 saw a change in the position of Nursing Education Leader at STI/HIV Prevention and Control with the departure of Jacqueline Barnett after 19 years. The position was filled in September by Vicky Bungay, who is a doctoral candidate within the UBC School of Nursing with extensive training in research ethics and methodology.

STI Online Course

The STI Online Course was opened to provincial public health nurses. In four course offerings, 44 public health nurses and 13 BCCDC nurses successfully completed the course. The online course has more than doubled the number of nurses trained in STI when compared with the previous face-to-face course.

The course includes a three-day preceptorship (practicum) at the BCCDC STI Clinic in Vancouver. In order to facilitate the transition between the online course and the preceptorship, an information package for learners, along with assessment tools, were produced. With the additional demand for preceptors a preceptor self-assessment was developed, together with a package of related reference materials.

In partnership with Simon Fraser University's Learning and Instructional Development Centre (SFU LIDC), we created interactive and "immersive" elements for the STI Online Course. These included reflective practice questions, interactive puzzles and games, video segments, audio scenarios, and vignettes. SFU LIDC began an evaluation of the course and the interactive components, which consisted of surveying participants before the course, between the course and the preceptorship, and after the preceptorship. The evaluation report will be available in 2008.

HIV Point-of-Care Test

A point-of-care HIV test has been approved by Health Canada for use in clinical settings. In collaboration with Dr. Mark Gilbert, the Education Department developed guidelines for using this test. In addition, the department developed pre- and post-test counselling guidelines to complement the HIV point-of-care test.

research program

The primary goal of the research program at STI/HIV Prevention and Control is to engage in significant research activities (design, implementation, analysis and dissemination) that will result in evidenced-based strategies to prevent, control or eliminate sexually transmitted infections and HIV/AIDS in BC. In 2007, STI/HIV Prevention and Control collaborated with external investigators on five studies and took the lead investigator role in the following 13:

Syphilis Re-infection Study: This study, funded by the Research Development Unit at BCCDC, sought to describe the rate of distribution of re-infection cases in BC and investigate the socio-demographic and behavioural differences between those who are re infected and those who have been infected only once. This analysis revealed that the crude incidence of re-infections is 6% in BC, and the individuals who are at higher risk of becoming repeatedly infected with syphilis are HIV positive clients, clients with a history of gonorrhea or chlamydia, clients with Aboriginal ethnicity, and MSM clients.

HIV/Hepatitis C (HCV) Data Linkage Study: This study examined the extent and characteristics of HIV and HCV co-infection in a population-based sample from BC. The results showed that 59% of the sample was co-infected with HCV and HIV and that co-infection was associated with females, Aboriginal ethnicity, and being tested for HIV on Vancouver Island.

Human Papilloma Virus (HPV) in Men Study: This study, conducted in the STI Clinic, was designed to determine the prevalence of high-risk HPV in heterosexual men. Using clinician-collected and client self-collected samples, we estimated a point prevalence of 23% in our STI client population.

Another focus of the research within the division was the development and evaluation of novel prevention interventions for marginalized populations:

Positive Prevention Study: This study received $25,500 from CANFAR. It examined the psychological and behavioural issues that HIV positive MSM face that impact decision-making surrounding their sexual health. The findings were used to develop and evaluate a counselling intervention to address such issues.

Acute HIV Study: A CIHR Emerging Team grant worth $2.5 million was awarded for this study, which is aimed at developing an enhanced intervention for MSM who are acutely infected with HIV, with the intent of halting onward transmission. This 5-year study is in the planning phase; preliminary results will be reported in the next annual report.

HPV Focal Study: The purpose of this CIHR-funded ($6 million) randomized controlled study is to find out if a test for the Human Papilloma Virus (HPV) can provide greater protection and a less frequent need for screening than the Pap test when screening women for cervical cancer. The study is in an early recruitment phase; results will be reported in the next annual report.

APSIRE Study: This international project will examine an outreach-based cervical cancer screening program in Uganda. The program will utilize HPV self-collection and same-day see/treat follow-up methods to decrease the incidence of cervical cancer in that country. It is also hoped it will increase women's empowerment and engagement with their own health. Dr. Gina Ogilvie expects that HPV testing will enable clinicians to characterize the epidemiology of HPV infections in this population, and permit preparation HPV vaccine programs.

ORCHID Phase II: This CIHR-funded project is concerned with the health experiences of women who work as commercial sex workers in indoor sex venues and those of their clients, particularly in relation to STI and HIV. It is a collaborative project with ASIA and is in year two of the three-year grant. The ultimate aim of this project is to develop and test interventions that help reduce the HIV and STI risks for women and their clients.

SCORE: This project is funded by Health Canada Community Drug Strategy Initiatives Fund and is targeted towards understanding better the health-related harms associated with crack cocaine use, and to determining the effectiveness of specific harm reduction initiatives to reduce these harms.

Finally, the research program conducted the following evaluation-based research:

Herpes Simplex Virus (HSV) Nursing Utilization Study: This study revealed that patients presenting to the STI Clinic with a herpes-related concern took up twice the amount of nursing time as clients presenting with other concerns (including HIV). This evidence was used to develop guidelines for counselling HSV clients, to streamline client visits.

Recent HIV Infections Post HIV Reporting: This study was conducted by a Masters student, and received $78,000 from the BC Ministry of Health. The study was designed to objectively evaluate the effect of HIV Reporting on testing for HIV. Using a novel laboratory method we determined that HIV Reporting has not resulted in significant delays in HIV testing, supporting the findings from our previous evaluation of HIV Reporting.

Parental Attitudes Study: This study, which was funded by the Ministry of Health ($45,000) and the Public Health Agency of Canada ($25,000), sought to ascertain parental intentions to vaccinate –or not– their daughters against HPV in Canada, and to determine factors that predict these parental intentions.

Estimating HIV Incidence in BC

STI/HIV Prevention and Control received funding ($10,000) from BCCDC's Research Development Unit to adopt methodology developed by the Public Health Agency of Canada for estimating true incidence of HIV, using laboratory techniques that identify acute and recent infections.

In addition, STI/HIV Prevention and Control has partnered with external researchers in projects such as M-track, and a quality of life study related to ano-genital warts. Gina Ogilvie has also collaborated on a study to re-evaluate the health needs of women in prison ($144,000 CIHR grant) as well as a study looking at fertility issues in HIV Positive Women ($178,000 CANFAR grant).

surveillance team

There have been significant changes to the surveillance activities in the Division in 2007. This year marked the formation of a separate surveillance program, led by Dr. Mark Gilbert, a newly hired physician epidemiologist. Our program continues to carry out routine surveillance activities related to HIV and STI, including the collection and analysis of case report data, validation and maintenance of surveillance databases, responding to data requests, and dissemination of surveillance information through maintenance of online Powerplay cubes and regular reports. However, the scope of STI/HIV surveillance activities in BC expanded in 2007. Three highlights of our expanded activities are summarized below:

HIV Incidence Work Plan: In partnership with the BC Centre for Excellence in HIV/AIDS, the Provincial Health Officer, and the Ministry of Health, the surveillance team has embarked on a plan to estimate HIV incidence in BC. This project will allow for the estimation of rates of new HIV infections per year in BC, which differs from current annual reporting of new positive HIV tests (which do not necessarily reflect new HIV infections). Testing and evaluation of incidence estimation methodologies are currently underway, and we anticipate being able to report HIV incidence estimates in 2009.

HIV/AIDS Information System (HAISYS): We initiated the HAISYS project in 2006 to bring HIV and AIDS data together into a single database, and improve the quality and security of HIV and AIDS surveillance data. The application will support consistent, efficient HIV case management practices, reduce the risk of data entry errors, and improve data analysis and research. We are currently in the final stages of development and implementation is anticipated to commence in the fall of 2008.

Improvements to Syphilis Surveillance: In response to increasing syphilis activity, our team undertook a review of syphilis epidemiology in 2007. This review led to recommendations for improvement of syphilis surveillance in BC, including improvement of case definitions, improved documentation of outcomes of case and contact follow-up, enhanced collection of relevant risk and venue information, and improved reporting of congenital and maternal syphilis.

Reports published by the Surveillance Team in 2007 (available at www.bccdc.org under "Statistics and Reports") include *Trends in HIV Positive Immigrants and Reporting by Citizenship and Immigration Canada (CIC), 2000 – 2007*, by Devon Haag and Mark Gilbert.

the vietnam project

The Vietnam HIV/STI Community Clinics Network (HCCN) project, established in 2004, came into full force during 2007 with a complete network of clinics operational and a full contingent of approximately 200 trained staff in place throughout the Mekong Delta of Vietnam.

The project, funded by the Canadian International Development Agency (CIDA), is a partnership between the Government of Canada, BCCDC, and five Vietnamese partners (Ho Chi Minh City, and the provinces of An Giang, Kien Giang, and Can Tho). The HCCN project is focused on etiologic management of STIs in marginalized populations.

The HCCN project supports the existing health care system in Vietnam by offering STI services, including history taking, patient examination, laboratory testing, diagnosis and treatment. HCCN trained Vietnamese health care providers received training and mentoring in administrative, clinical, laboratory, and outreach management.

In 2007, there were eleven HCCN STI clinics, operating in both rural and urban settings. Some clinics are situated within existing regional health stations, while others are located at more remote outposts. In Ho Chi Minh City, mobile clinics have been established to operate within industrial sites to help migrant factory workers.

Specific project challenges include:

- providing a stable environment in which to collect and store specimens;
- obtaining accurate patient records and keeping them confidential; and
- educating clients who may have differing expectations about the health care system.

Also during 2007, a mobile team was established to reach remote islands in the south of the country, and an outreach team provided communication material and held discussions with seafarers and their families. The province of Kien Giang was so pleased with the interim results of the project's clinic set-up that it will replicate this system elsewhere in its jurisdiction prior to 2009 (the current project completion date).

presentations and publications

Presentations

Canadian Association for HIV/AIDS Research (CAHR), Toronto, April 2007

Posters:

1. *Assessment of Sexual Health Risk Behaviours Among Indoor Sex Workers in Greater Vancouver*. Darlene Taylor, Yasmin Winsor, Elizabeth James, Fiona Gold, Helena Lee, David Phang, Gina Ogilvie
2. *Identifying Epidemic Trends in HIV Transmission Through Cluster Analysis*. James I Brooks, Harriet W Merks, Richard G Pilon, Gayatri Jayaraman, Neil Goedhuis, Michael Rekart, Chris Archibald, Paul A Sandstrom.
3. *An Evaluation of an Online Nurse Outreach and Referral Program*. Darlene Taylor, Derek Kline, Fiona Gold, Elaine Jones, Glenn Doupe, Juanita Maginley, Gina Ogilvie

Oral Presentations:

1. *Regional Variations in the Trends of Transmitted HIV Drug Resistance in Canada*. Ping Yan, Shenghai Zhang, Neil J Goedhuis, James I Brooks, Michael L Rekart, Ameeta E Singh, Magdy Dawood, Erin Laing, Gayatri C Jayaraman.
2. *HIV Subtype Diversity and Determinants of Non-B HIV-1 Infections in Canada*. Gayatri C, Jayaraman, Neil J Goedhuis, James I Brooks, Harriet Merks, Michael Rekart, Ameeta E Singh, Erin Laing, Magdy Dawood, Paul Sandstrom, Chris P Archibald.

Canadian Association of Nurses in AIDS Care, Vancouver 2007

Oral Presentation:

Fiona Gold: *Ethical and Practice Challenges for Nurses Providing Harm Reduction Services.*

International Society for Sexually Transmitted Diseases Research (ISSTDR), Seattle July 2007

Poster Topics:

1. Can self collection for human papillomavirus improve access for cervical cancer screening in at-risk women in developed countries?
2. An online survey of male patrons of female sex workers
3. Assessment of sexual health risk behaviours among indoor sex workers in greater Vancouver
4. A comparison of resource expenditure (nursing time) required by herpes simplex virus (HSV) clients versus non-HSV clients at an STI clinic
5. Psychological influences on sexual risk-taking among HIV positive MSM
6. Self collection of genital HPV-DNA in heterosexual men
7. A randomized controlled evaluation of human papilloma virus (HPV) testing for cervical cancer screening. The HPV FOCAL study
8. Get it out to the field: using information technology to improve timely access to surveillance data
9. Parental attitudes towards HPV vaccination: a national study
10. Linking databases to explore the relationship between HIV and HCV infection at the population level
11. Comparative Evaluation of Syphilis Abbott Architect Chemiluminescent Immuno Assay and RPR for the Detection of Syphilis Infection using TPPA as Gold Standard
12. Clients of Indoor Female Sex Workers (FSW) in British Columbia (BC), Canada: Heterogeneity in Patronage Patterns and Implications for STI Propagation Through Sexual Networks

Oral Presentations:

Gina Ogilvie: *A population based study of syphilis reinfection in British Columbia, Canada, over a decade*

Plenary:

Mike Rekart: *Epidemiology of chlamydia infection: are we losing ground, and if so why?*

Gay Men's Summit, Vancouver November 2007

Oral Presentations:

Malcolm Steinberg: *NAAT: Prospects for Strengthening HIV Programs in the MSM Community*

Mark Gilbert: *Update on HIV infections in gay and bi men in BC*

Malcolm Steinberg: *Positive Prevention: Review of pilot project on positive prevention undertaken*

1st Aboriginal HIV/AIDS Community Based Research Capacity Building Conference

Melanie Rivers: *Walking a Path To Wise Practices: Youth Know It: Youth Don't: A Youth Panel Discussion* (invited presentation on the Gathering Tree and Star in Your Own Stories). February 2007.

Pacific AIDS Network Skills Building

Melanie Rivers: *Never enough resources, yet we're still here: How do long-term AIDS activists stay energized?* (invited presentation). March 2007.

11th Annual BC Aboriginal HIV/AIDS Conference

Honouring the Circle: Our Ways, Our Traditions. Panel on Community Readiness. Workshop on *Star in Your Own Stories, Positive Youth Sexual Health Campaign*. March 2007.

Radio Interviews

Melanie Rivers interviewed on Canadian First Nations Radio, with Lynn Terbasket on *Star in Your Own Stories*. January 2007

Melanie Rivers interviewed on CBC Almanac, with Mark Forsythe on *Star in Your Own Stories*. January 2007

Melanie Rivers interviewed on Daybreak North, CBC, on *Star in Your Own Stories*. March 2007

Publications

Ogilvie GS, Hislop G, **Maginley J, Rekart ML**, Martin R, **Taylor D**, Isaac-Renton J, Krajden M, Sherlock C. *Feasibility of self-sample collection for human papillomavirus testing in hard-to-reach women*. CMAJ 2007;177(5):480-3.

Ogilvie GS, Remple VP, Marra F, McNeil SA, Naus M, Pielak K, et al. *Parental intention to have daughters receive the human papillomavirus vaccine*. CMAJ. 2007; 177(12):1506-1512.

Ogilvie GS, Krajden M, **Maginley J,** Isaac-Renton J, Hislop G, Elwood-Martin R et al. *Feasibility of self-collection of specimens*. CMAJ. 2007; 177[5]:480-483.

Ogilvie GS, Palepu A, Remple VP, Maan E, Heath K, MacDonald G et al. *Fertility intentions of women of reproductive age living with HIV in British Columbia, Canada*. AIDS. 2007; 21:S83-S88.

Wood E, Montaner JS, Li K, **Barney L**, Tyndall MW, Kerr T. *Rate of methadone use among Aboriginal opioid injection drug users*. CMAJ. 2007; 177[1]: 37-40.

highlights of 2007

HPV Vaccine Launch

STI/HIV Prevention and Control at ISSTDR

07

HPV vaccine launch

The HPV vaccine represents an enormous breakthrough in health sciences. This vaccine offers almost 100 per cent protection against the HPV subtypes that cause 70 per cent of cervical cancer cases globally.

Planning Team

Planning for the implementation of this vaccine for British Columbia began in 2005, and was coordinated through the Division of STI/HIV Prevention and Control. An inter-professional team of researchers, clinicians and administrators from agencies of the Provincial Health Services Authority, including BC Centre for Disease Control, BC Cancer Agency, BC Women's Hospital, BC Children's Hospital, along with partners at the University of British Columbia contributed to vaccine planning. Team members, including epidemiologists, nurses, mathematical modellers, pharmacists, laboratory scientists, geneticists, and a variety of physician specialists, worked to design and generate relevant provincial-level data and prepare evidence-based recommendations regarding the attributes of a variety of implementation strategies. This work aimed to help guide the Ministry of Health and Health Authorities in their implementation of this groundbreaking vaccine.

Data Collection

The team worked collaboratively to design and conduct the gathering of cutting-edge, real-time data relevant to BC. Critical elements included exploration of the rates of cervical cancer and cervical dysplasia in the province, sexual behaviour of youth in British Columbia, uptake of school-based vaccines, prevalence of HPV in British Columbian women and men, and parental attitudes to the HPV vaccine.

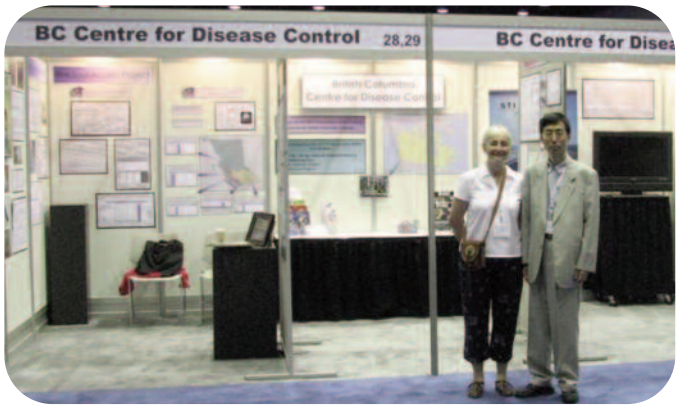
Some data was compiled from existing provincial data and registries, while other data needed to be generated through research studies. In addition, mathematical modelling and cost-effectiveness analyses were identified as crucial to

understanding the potential impact of different HPV vaccine programs on cervical cancer rates in the province. Several vaccine strategies were reviewed with the Health Authorities, which they narrowed down to the feasible school-based vaccine program options, which were then factored into consideration in the mathematical modelling and cost-effectiveness analyses. The results of the modelling provided guidance on which HPV vaccine programs would result in the greatest reduction of HPV-related disease and cervical cancer in the province.

New Collaborative Model

Vaccine planning for a new vaccine is normally conducted by members of the BC Centre for Disease Control, in conjunction with the Health Authorities. However, planning around introduction of the HPV vaccine for British Columbia utilized a different model, with the creation of an inter-agency, multidisciplinary team of physicians, epidemiologists, health economists, pharmacists and nurses to compile and create relevant data to shape and guide recommendations regarding this vaccine. This type of collaboration has not been done elsewhere in the country. As a result, the research findings, data compiled, and recommendations generated by this team not only provided guidance to our province, but became an essential part of the recommendations of the Public Health Agency of Canada for the HPV vaccine programs nationally, and served as important guidance to the Health Authorities for the implementation and delivery of this vaccine program in the field.

STI/HIV Prevention and Control at ISSTDR



The 17th meeting of the International Society for Sexually Transmitted Diseases Research (ISSTDR) conference was held July 29 - August 1, 2007, in Seattle, Washington, USA. This meeting is a scientific forum dedicated to research into all sexually transmitted infections (STIs), including HIV/AIDS, and it attracts many researchers, scientists, trainees and students, public health agencies, nongovernmental organizations, and other institutions and agencies from around the world. The STI/HIV Prevention and Control Division sent 19 staff members to this event.

Exhibit

This year, STI/HIV Prevention and Control was proud to display a booth exhibiting some of the highlights of our work. Chee Mamuk's Gathering Tree book (a First Nations children's book about HIV/AIDS) was presented using placards that described the process of how the book was created, as well as containing excerpts from the book. A digital picture frame was made available which scrolled through the book's wonderful graphics. Lucy Barney from Chee Mamuk was on site to answer questions.

A description of the STI/HIV surveillance cube was displayed and a laptop was available for demonstration purposes for interested passers-by. Surveillance officers (Devon Haag and Paul Hyeong-Jin Kim) were there to assist anyone who wanted to try it.

Visitors were also able to learn about the division's Vietnam Project at the booth. The story of this successful, 5-year, international project was captured on placards with photographs for visitors to enjoy.

Finally, the division's Outreach Nursing Program presented the training DVD Bevel-Up by displaying this documentary DVD on a portable television. People could read about this interactive teaching tool aimed at exploring how a nurse or outreach worker can deliver effective and compassionate health care to people who use drugs.

Presentations

In addition to the 11 scientific posters accepted for presentation at the conference, Dr. Michael Rekart, our Director, was invited to be a plenary speaker. He spoke about the arrested immunity hypothesis and the epidemiology of chlamydia control. During his presentation, Mike eloquently explained the hypothesis (developed by him and Dr. Bob Brunham) that rising case rates of chlamydia can be explained by early treatment interfering with the development of protective immune responses. This important work helps to lay the foundation for the development of a chlamydia vaccine.

Dr. Gina Ogilvie also gave a presentation during a symposium session about her investigations into syphilis re-infection in British Columbia over a decade. She presented the period prevalence of individuals who are repeatedly diagnosed with infectious syphilis and described the characteristics of those most likely to be diagnosed with syphilis more than once.

The division's posters displayed results of our studies related to innovative strategies for providing care to marginalized populations, our prevention intervention studies, and studies using novel STI testing methodologies.

epidemiology

In British Columbia, provincial law requires that certain communicable infections be reported to the Medical Health Officer of the region by health care providers and laboratories. The reportable STIs are gonorrhea, chlamydia, syphilis, HIV and AIDS. HIV infection became reportable on May 1, 2003.

Mandatory reporting:

- Enables health care workers to follow up on reported infections to ensure adequate treatment and care is provided.
- Reduces the spread of infection through partner notification and other measures.
- Allows health care workers to monitor the incidence of the disease while assisting with prevention strategies.

This reporting supplies the data for our epidemiology reports of these diseases.

07

overview of trends

Chlamydia

In 2007, 9,961 cases of genital chlamydia were reported in BC for a rate of 228.2 per 100,000. This is an increase from 212.7 per 100,000 in 2006. The majority of cases are female, and the overall trend in Chlamydia infection rates has been increasing since 1998.

Gonorrhea

The 2007 gonorrhea rate for BC (29.2 per 100,000) increased from 2006 (24.9 per 100,000), reflecting an increase in case reports from 1,072 to 1,275. The majority of cases are male, and the overall trend in gonorrhea infection rates has been increasing since 1998.

Pelvic Inflammatory Disease (PID), ectopic pregnancy (EP) and tubal infertility (TI)

Physician billing and hospital discharge rates for PID and EP have decreased overall since 1997, with trends in 2007 remaining stable or decreasing slightly. The hospital discharge rate for TI has remained stable since 1997. PID, EP, and TI are potential complications of chlamydia and gonorrhea infection in women.

Infectious Syphilis

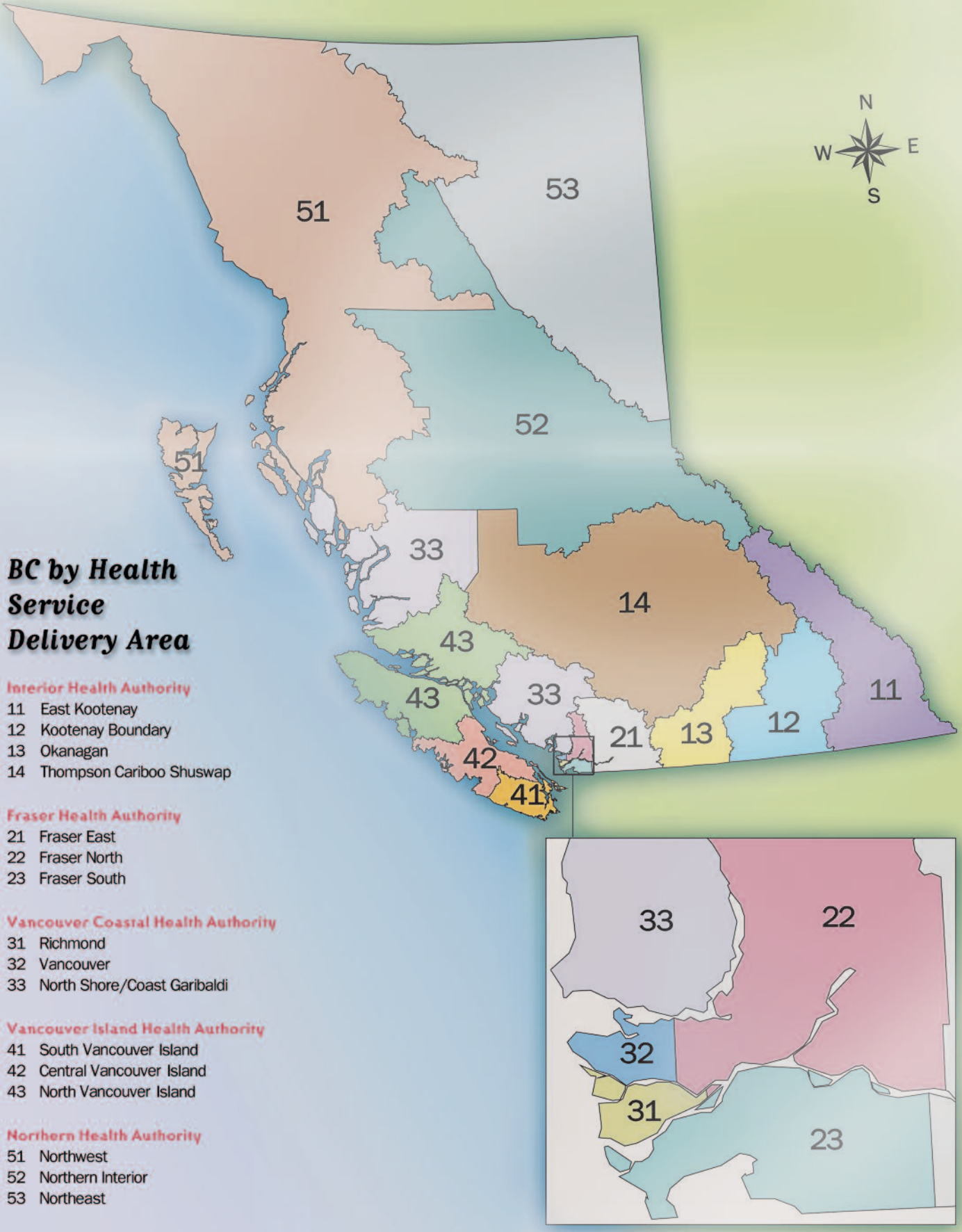
The rate of infectious syphilis decreased from 7.7 per 100,000 population in 2006 to 6.9 per 100,000 population in 2007 (a decrease from 333 to 301 cases). Rates of infectious syphilis have shown an overall increasing trend since 1997. The population groups most affected are MSM (57.5% of 2007 cases), street-involved persons, sex workers and their patrons (21.6%), and heterosexual persons with no other risk factors (15.9%). An increased number of early congenital syphilis cases and cases of infectious syphilis in pregnancy have recently been observed in BC.

HIV

The rate of new positive HIV tests increased in 2007 to 9.1 (395 cases) from 8.3 per 100,000 population in 2006 (357 cases). The population groups most affected are MSM (43.3% of 2007 cases), people who use injection drugs (25.6%), and heterosexual persons with no other risk factors (22.3%). Aboriginal persons are overrepresented in BC's HIV epidemic, particularly Aboriginal females who comprised 35.7% of all new positive HIV tests among females in BC in 2007.

AIDS

In 2006, the AIDS rate in BC decreased to 1.9 per 100,000 (84 cases), compared to 2.6 per 100,000 (109 cases) in 2005.



BC by Health Service Delivery Area

Interior Health Authority
11 East Kootenay
12 Kootenay Boundary
13 Okanagan
14 Thompson Cariboo Shuswap

Fraser Health Authority
21 Fraser East
22 Fraser North
23 Fraser South

Vancouver Coastal Health Authority
31 Richmond
32 Vancouver
33 North Shore/Coast Garibaldi

Vancouver Island Health Authority
41 South Vancouver Island
42 Central Vancouver Island
43 North Vancouver Island

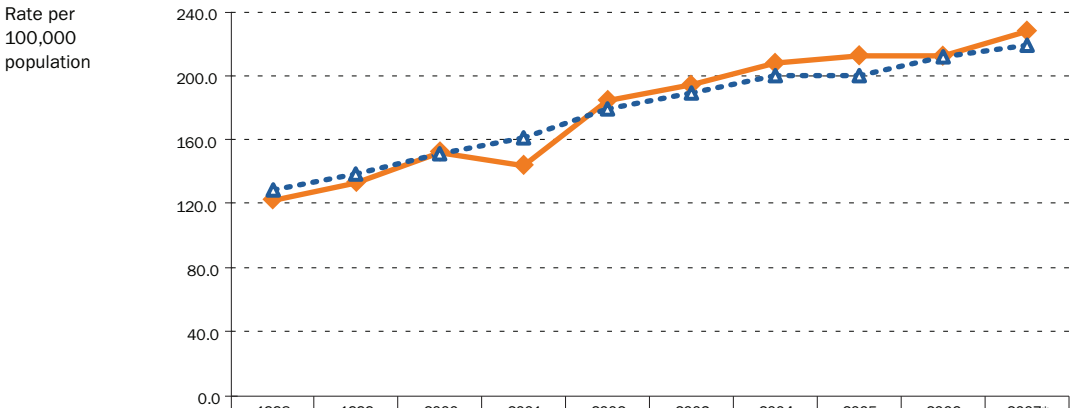
Northern Health Authority
51 Northwest
52 Northern Interior
53 Northeast

chlamydia

The rate of genital chlamydia in 2007 (228.2 per 100,000) increased from 2006 (212.7 per 100,000), in parallel with Canadian rates. This increase was observed for both sexes; however, females continue to have twice the rate of infection compared to males. The majority of chlamydia infections were detected in the under-30 age group, with the highest rates among females aged 15–24 years and males aged 20–24 years.

It is important to note that many genital chlamydia infections are asymptomatic, and diagnosed infections reflect a fraction of the total population burden. The greater number of infections among females is in part related to greater testing in females, due to routine screening at the time of visits for other reasons (e.g., Pap tests, contraception counselling). In females, complications of a chlamydia infection include pelvic inflammatory disease, ectopic pregnancy, and tubal infertility.

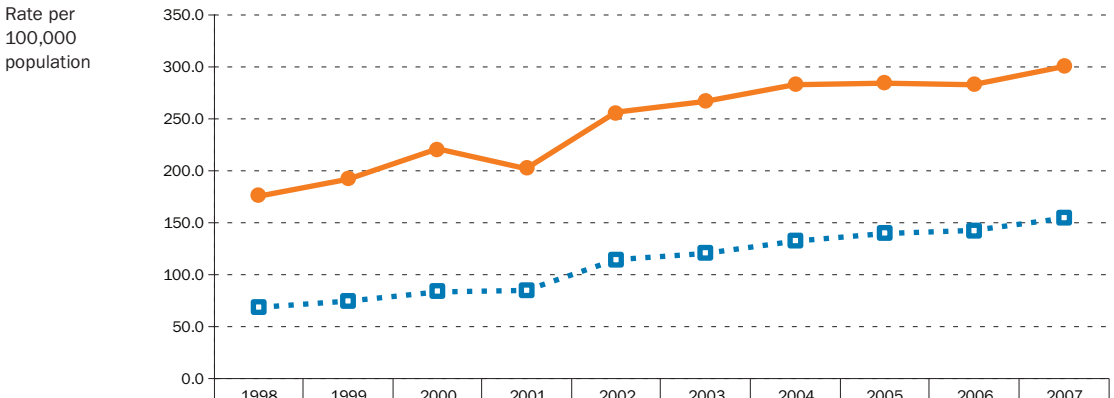
2.1 Chlamydia case reports and rates in BC • 1998 to 2007



	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007*
BC Reports	4,877	5,342	6,148	5,856	7,603	8,068	8,734	9,043	9,169	9,961
BC Rate	122.4	133.2	152.2	143.6	184.7	194.2	207.8	212.4	212.7	228.2
Canadian Rate	129.0	138.2	150.9	161.4	179.4	189.4	200.1	200.4	211.4	219.5

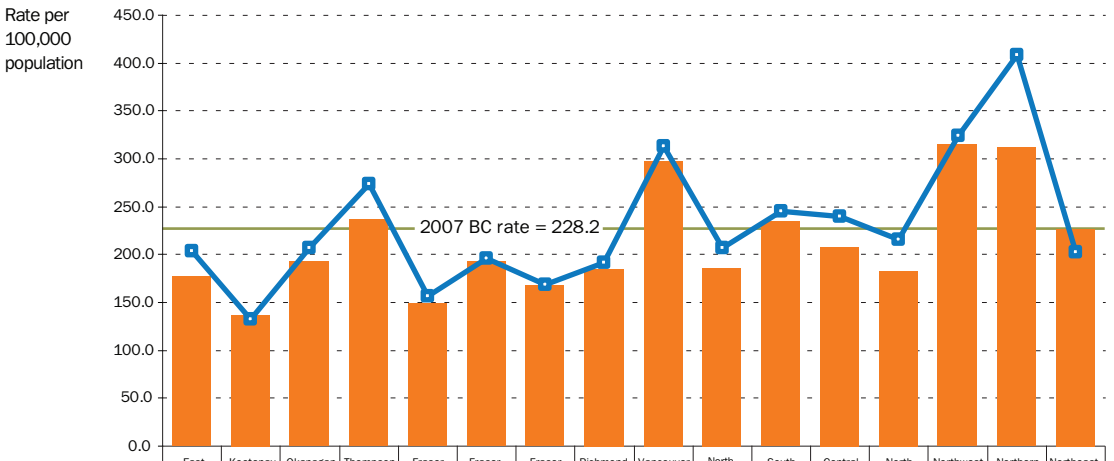
*2007 Canadian rate is projected and is subject to change (Public Health Agency of Canada, 2008).

2.2 Chlamydia case reports and rates in BC by gender • 1998 to 2007



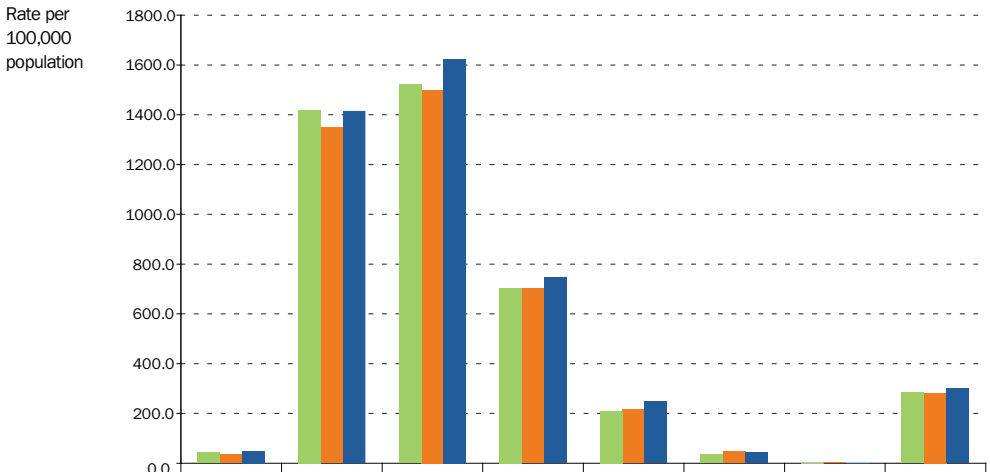
	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Reports - Female	3,517	3,863	4,468	4,143	5,289	5,583	5,984	6,096	6,132	6,616
Reports - Male	1,359	1,478	1,677	1,713	2,313	2,482	2,749	2,946	3,031	3,340
Rate - Female	175.7	191.4	219.8	201.7	255.0	266.5	282.3	284.0	282.1	300.5
Rate - Male	68.6	74.1	83.6	84.6	113.3	120.4	131.9	139.5	141.8	154.4

2.3 Chlamydia case reports and rates in BC by health service delivery area • 2006 to 2007



	East Kootenay	Kootenay Boundary	Okanagan	Thompson Cariboo Shuswap	Fraser East	Fraser North	Fraser South	Richmond	Vancouver	North Shore/Coast Garibaldi	South Vancouver Island	Central Vancouver Island	North Vancouver Island	Northwest	Northern Interior	Northeast
Reports 2007	159	103	701	602	427	1,136	1,134	355	1,969	573	893	623	257	250	588	152
Rate 2006	177.3	135.1	193.2	235.7	148.6	192.9	167.1	185.4	297.0	185.5	233.0	207.1	182.9	315.4	312.5	225.7
Rate 2007	203.3	132.8	206.9	274.2	156.5	195.8	168.7	191.7	313.4	206.9	245.1	238.1	214.8	324.0	409.1	223.0

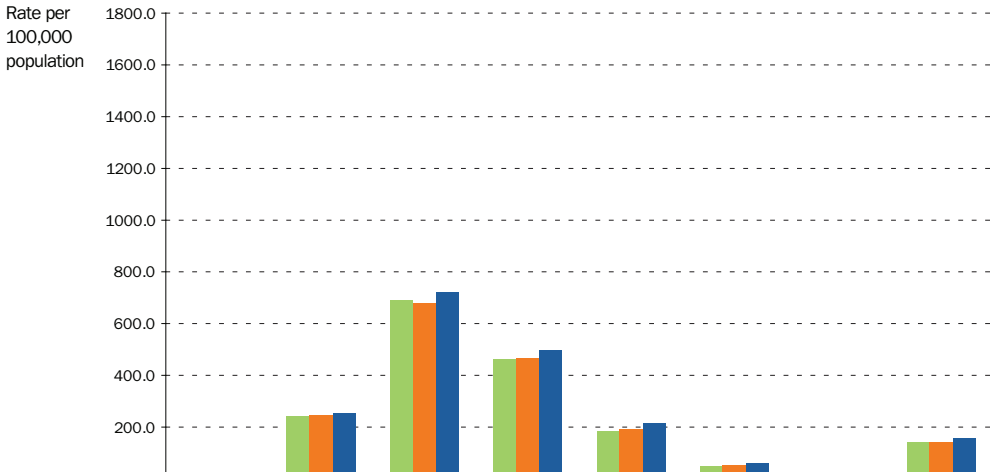
2.4 Female chlamydia rates in BC by age • 2005/2006/2007



	10 - 14	15 - 19	20 - 24	25 - 29	30 - 39	40 - 59	60+	Total*
2005 Rate - Female	43.5	1,415.7	1,520.6	702.9	210.5	34.9	1.2	284.0
2006 Rate - Female	35.8	1,347.6	1,498.2	701.5	215.9	47.4	3.0	282.1
2007 Rate - Female	48.4	1,413.8	1,627.5	747.9	248.8	43.8	1.3	300.5

Total* – Rate includes ALL females (i.e. aged <1 to 60+ years and females with age not specified)

2.5 Male chlamydia rates in BC by age • 2005/2006/2007



	10 - 14	15 - 19	20 - 24	25 - 29	30 - 39	40 - 59	60+	Total*
2005 Rate - Male	–	239.7	688.0	460.9	182.8	48.1	4.9	139.5
2006 Rate - Male	4.5	243.2	677.3	463.8	191.2	52.3	6.3	141.8
2007 Rate - Male	1.5	254.9	722.5	496.1	216.2	61.2	8.8	154.4

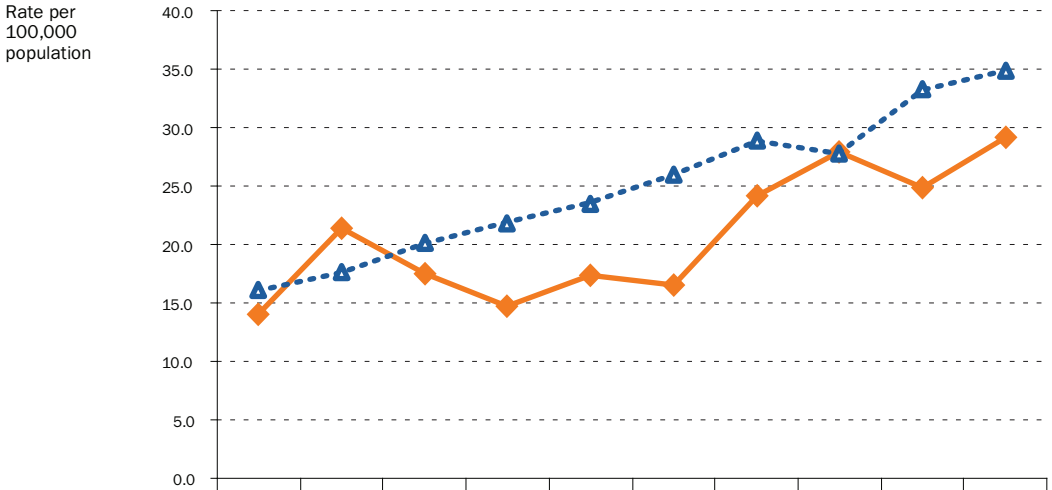
Total* – Rate includes ALL males (i.e. aged <1 to 60+ years and males with age not specified)

gonorrhea

There has been a trend of increasing gonorrhea rates in BC, paralleling Canadian rates. The gonorrhea rate for BC increased in 2007 (29.2 per 100,000) compared with 2006 rates (24.9 per 100,000), reflecting an increase in case reports from 1,072 to 1,275. Increases were observed for both males and females; however, males have approximately twice the rate of infection compared with females. Similar to previous years, the highest rates of gonorrhea were for females between the ages of 15–24 years, and for males between 20–29 years. Increased gonorrhea rates were observed in many Health Service Delivery Areas (HSDA) in 2007, with the highest rates in Vancouver and Northwest HSDA.

Gonorrhea infections may be asymptomatic or symptoms may be mild. Males are more likely to show signs of gonorrheal infection (e.g., urethral discharge) which may lead to seeking medical attention and may contribute to the greater number of gonorrheal infections observed in males in BC. Based on reports from other jurisdictions, transmission of gonorrhea among men who have sex with men (MSM) may also be contributing to the increased number of cases observed in males.

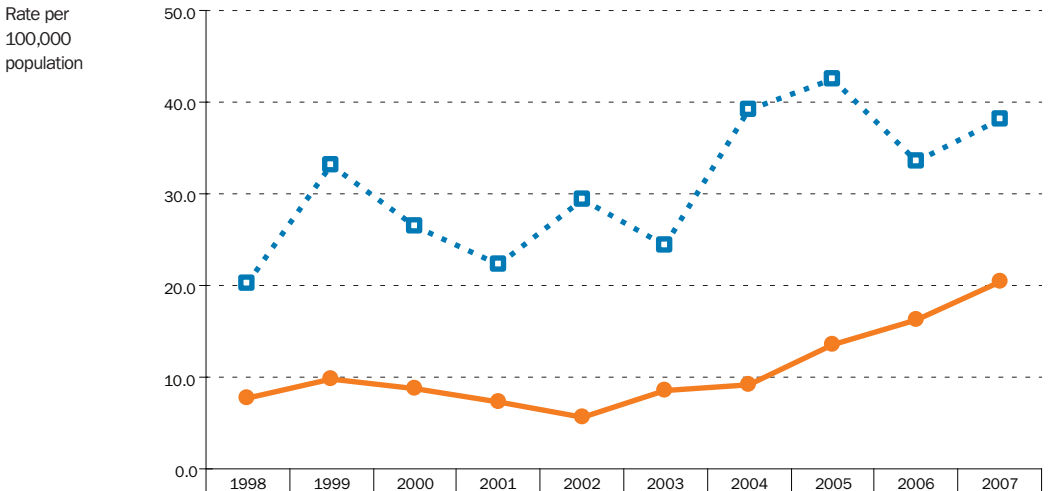
3.1 Gonorrhea case reports and rates in BC • 1998 to 2007



	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007*
BC Reports	558	859	707	600	714	684	1,013	1,188	1,072	1,275
BC Rate	14.0	21.4	17.5	14.7	17.3	16.5	24.1	27.9	24.9	29.2
Canadian Rate	16.1	17.6	20.1	21.8	23.5	26.0	28.9	27.8	34.5	34.9

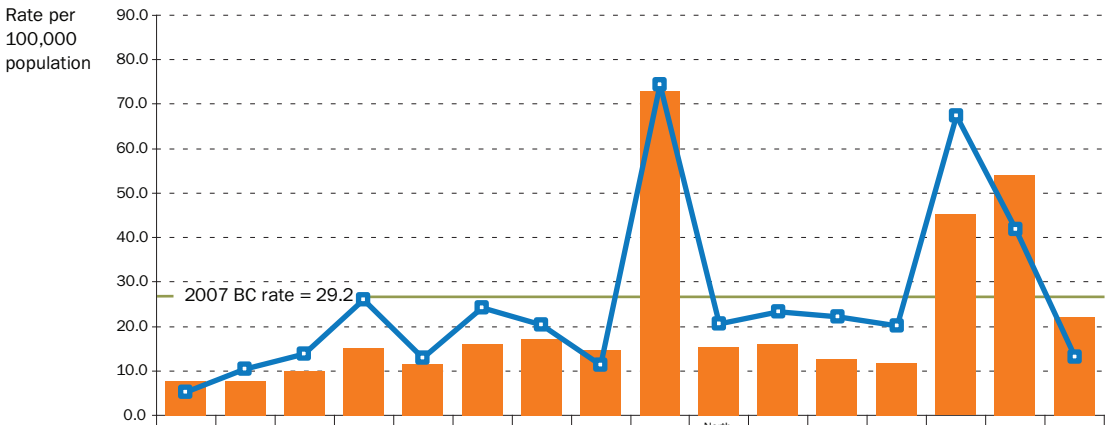
*2007 Canadian rate is projected and is subject to change (Public Health Agency of Canada, 2008).

3.2 Gonorrhea case reports and rates in BC by gender • 1998 to 2007



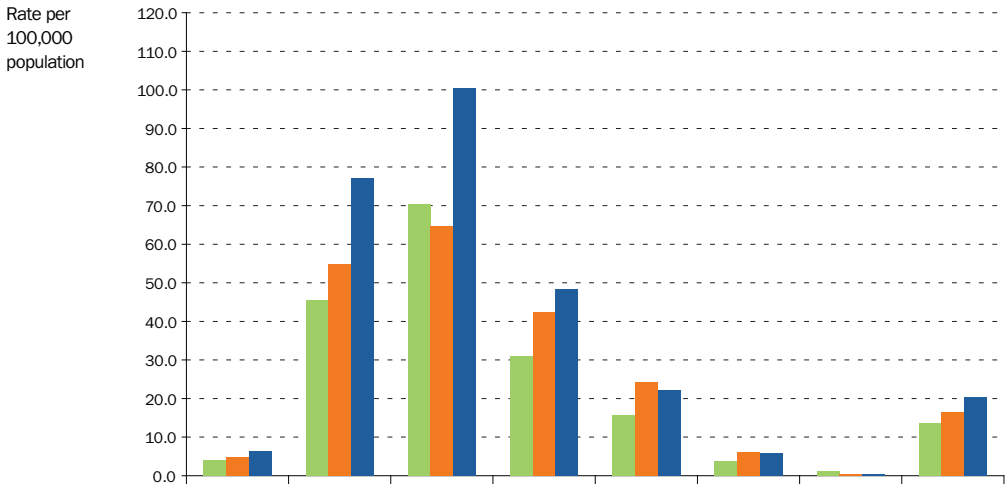
	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Reports - Male	402	661	529	451	599	504	817	896	716	825
Reports - Female	155	197	177	149	115	179	196	292	355	448
Rate - Male	20.3	33.2	26.4	22.3	29.3	24.5	39.2	42.4	33.5	38.1
Rate - Female	7.7	9.8	8.7	7.3	5.5	8.5	9.2	13.6	16.3	20.3

3.3 Gonorrhea case reports and rates in BC by health service delivery area • 2006 to 2007



	East Kootenay	Kootenay Boundary	Okanagan	Thompson Cariboo Shuswap	Fraser East	Fraser North	Fraser South	Richmond	Vancouver	North Shore/Coast Garibaldi	South Vancouver Island	Central Vancouver Island	North Vancouver Island	Northwest	Northern Interior	Northeast
Reports 2007	4	8	47	57	35	141	137	21	467	57	85	58	24	52	60	9
Rate 2006	7.7	7.7	9.9	15.1	11.5	16.0	17.3	14.8	73.1	15.3	16.0	12.8	11.8	45.2	54.0	22.3
Rate 2007	5.1	10.3	13.9	26.0	12.8	24.3	20.4	11.3	74.3	20.6	23.3	22.2	20.1	67.4	41.7	13.2

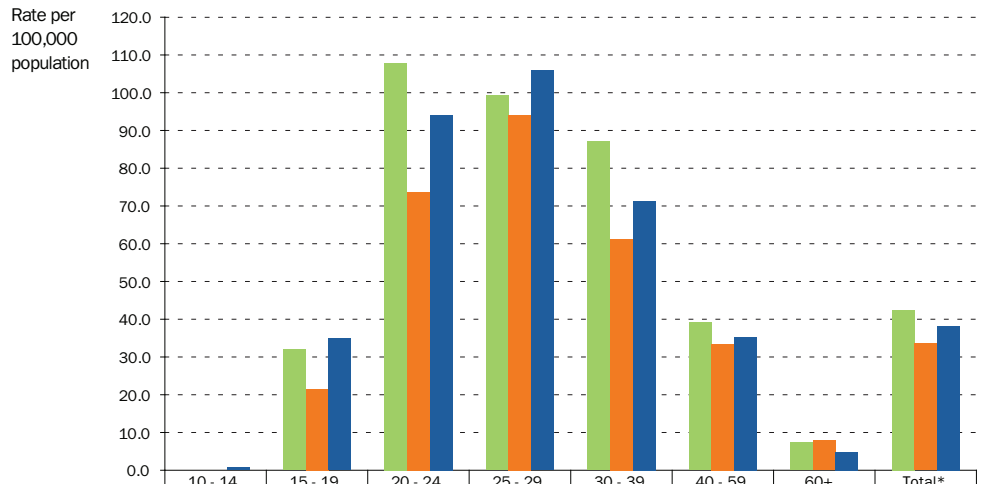
3.4 Female gonorrhea rates in BC by age • 2005/2006/2007



	10 - 14	15 - 19	20 - 24	25 - 29	30 - 39	40 - 59	60+	Total*
2005 Rate - Female	4.0	45.5	70.3	31.0	15.8	3.7	1.2	13.6
2006 Rate - Female	4.8	54.8	64.7	42.4	24.4	6.0	0.5	16.3
2007 Rate - Female	6.5	77.2	100.6	48.4	22.2	5.9	0.4	20.3

Total* – Rate includes ALL females (i.e. aged <1 to 60+ years and females with age not specified)

3.5 Male gonorrhea rates in BC by age • 2005/2006/2007



	10 - 14	15 - 19	20 - 24	25 - 29	30 - 39	40 - 59	60+	Total*
2005 Rate - Male	-	32.0	107.9	99.3	87.1	39.1	7.4	42.4
2006 Rate - Male	-	21.6	73.6	94.2	61.3	33.4	7.9	33.5
2007 Rate - Male	0.8	34.9	94.0	105.9	71.3	35.3	4.8	38.1

Total* – Rate includes ALL males (i.e. aged <1 to 60+ years and males with age not specified)

pelvic inflammatory disease, ectopic pregnancy, and tubal infertility

Pelvic Inflammatory Disease (PID), ectopic pregnancy (EP), and tubal infertility (TI) are conditions in women which can be caused by sexually transmitted infections, particularly chlamydia and gonorrhea. As such, looking at the rates of these conditions provides an indication of the trends in complications of these STIs.

This report includes data from two sources provided by the BC Ministry of Health:[1]

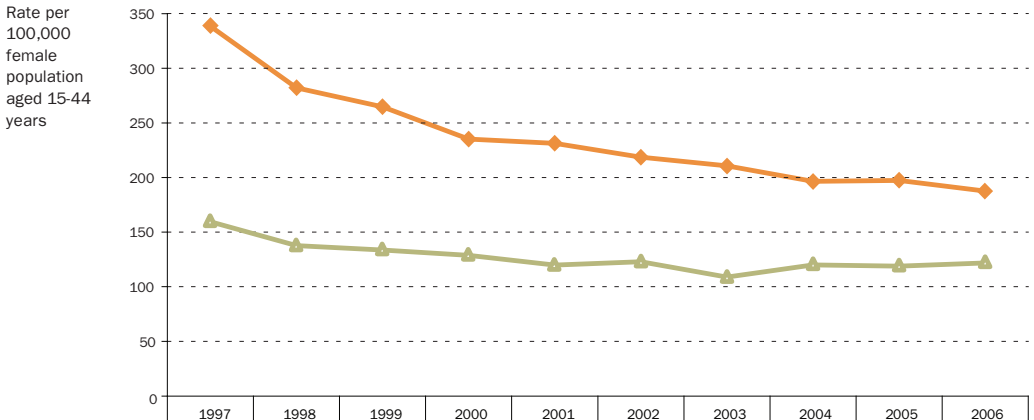
- Physician billing data for BC residents insured under the Medical Services Plan (MSP), for billings with diagnoses codes related to PID and EP.
- Hospital discharge data for individuals discharged from BC hospitals where the primary reason for the hospitalization (i.e., most responsible diagnosis) is related to PID, EP, and TI.

Data is presented through 2006 only, due to delays in reporting, collation, and data transfer. Both hospital discharges and physician billings related to PID have declined over the previous 10 years, with 2006 rates similar to or slightly decreased from 2005 (187.6 physician billings per 100,000 women, and 62.9 hospital discharges per 100,000 women). While hospital discharges related to EP show a similar decreasing trend (to 51.1 per 100,000 in 2006), EP-related physician billings have remained relatively stable (at 121.7 billings per 100,000 in 2006). Only hospital discharge data is available for TI, reflecting a relatively stable trend with 18.8 hospital discharges per 100,000 in 2006.

Taken together, these data indicate that, despite overall increasing rates of chlamydia and gonorrhea infections among females in BC, an increase in potential complications of these infections has not been observed. As these complications are prevented by appropriate antibiotic treatment, this finding likely reflects the success of public health control programs in identifying new cases of STI and ensuring appropriate treatment.

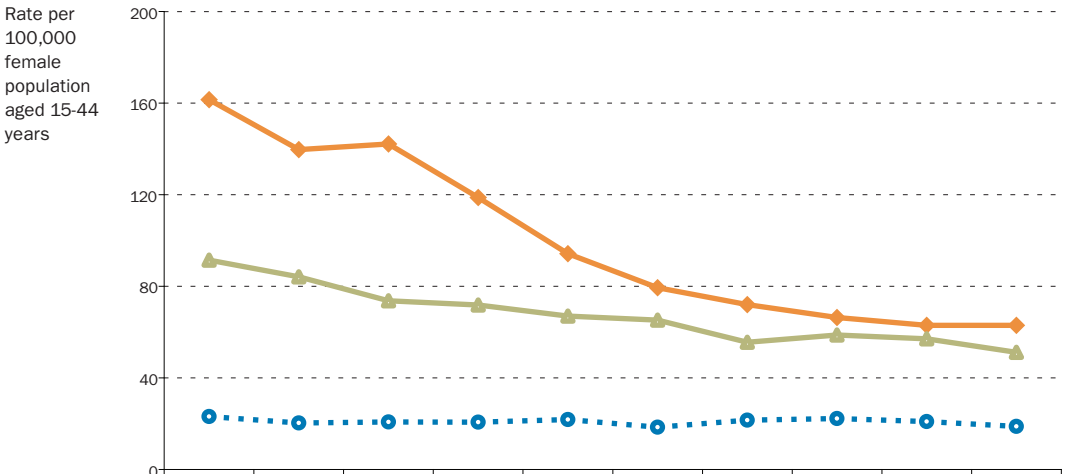
[1]Data reported is for number and rate of women of reproductive age (15–44 years) who have at least one physician billing or hospital discharge per year. ICD-10-CA diagnostic codes used: PID (N70, N73), EP (O00), TI (N97.1). Please note that the enhanced set of ICD codes and data sources used in this report differs from previous STI/HIV Prevention and Control annual reports.

4.1 Number and rates of women aged 15-44 with a physician billing related to PID or EP in BC • 1997 to 2006



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
PID Number	3,054	2,544	2,384	2,114	2,083	1970	1896	1773	1789	1706
EP Number	1,439	1,241	1,203	1,157	1,079	1107	979	1082	1077	1107
PID Rate	338.4	282.1	264.6	235.2	231.3	218.7	210.7	196.5	197.3	187.6
EP Rate	159.5	137.6	133.5	128.7	119.8	122.9	108.8	119.9	118.8	121.7

4.2 Number and rates of women aged 15-44 with a hospital discharge related to PID, EP or TI in BC • 1997 to 2006



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
PID Number	1,457	1,260	1,281	1,068	849	715	648	599	571	572
EP Number	825	759	664	646	603	588	500	530	517	465
TI Number	209	183	187	186	196	166	194	201	190	171
PID Rate	161.5	139.7	142.2	118.8	94.3	79.4	72.0	66.4	63.0	62.9
EP Rate	91.4	84.2	73.7	71.9	67.0	65.3	55.6	58.7	57.0	51.1
TI Rate	23.2	20.3	20.8	20.7	21.8	18.4	21.6	22.3	21.0	18.8

infectious syphilis

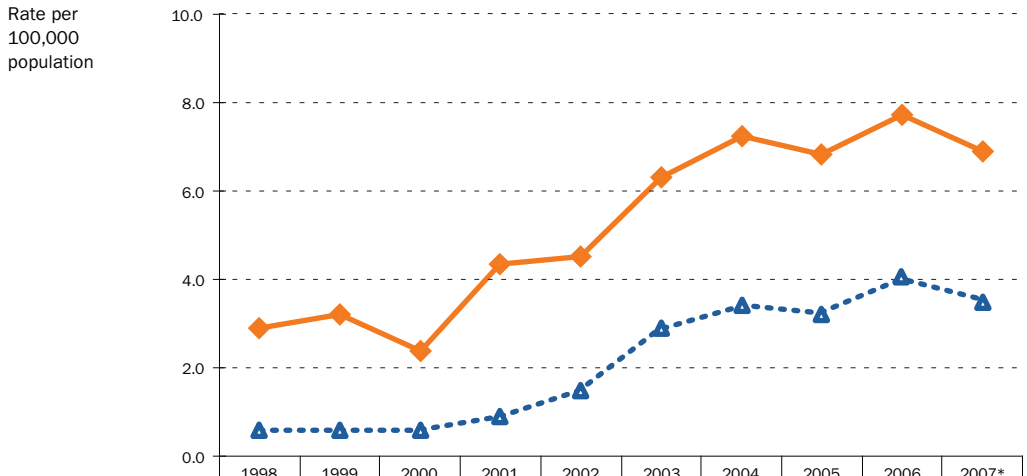
The rate of infectious syphilis decreased from 7.7 per 100,000 population in 2006 to 6.9 per 100,000 population in 2007 reflecting a decrease from 333 to 301 cases. Overall provincial rates of syphilis may be stabilizing following steady increases since 1997. The majority of cases occurred among men, with the greatest concentration in men aged 30–59. Trends are variable by HSDA, with the highest rate observed in Vancouver HSDA (29.1 per 100,000; 183 cases).

In 2007, a detailed analysis of infectious syphilis cases led to the development of a revised categorization for risk of syphilis. The five risk groups are: men who have sex with men (MSM); street-involved persons, sex workers and their patrons; heterosexual persons without other risk factors; syphilis infections acquired outside of Canada; and individuals with other or unknown risk factors.

Syphilis case reports among street-involved persons, sex workers and patrons have stabilized (decreasing to 21.6% of all infectious syphilis cases in 2007). In 2007, 15.9% of all infectious syphilis cases were identified in heterosexual persons without other risk factors. While this represents a slight decrease since 2006, overall the number of infectious syphilis cases in this group has shown an increasing trend since 1998. However, cases among MSM have increased dramatically since 2002 and currently comprise the majority of syphilis cases in BC (57.5% of all BC cases in 2007). HIV positive MSM are disproportionately affected, accounting for 64.0% of all MSM cases in 2007 (i.e., 36.5% of all provincial syphilis cases).

The majority of new cases of infectious syphilis were among persons of Caucasian ethnicity (63.5%); however, cases among Aboriginal persons comprised the second largest group (10.7%). Aboriginal females in particular are disproportionately represented, accounting for 36.4% of all infectious syphilis cases among females.

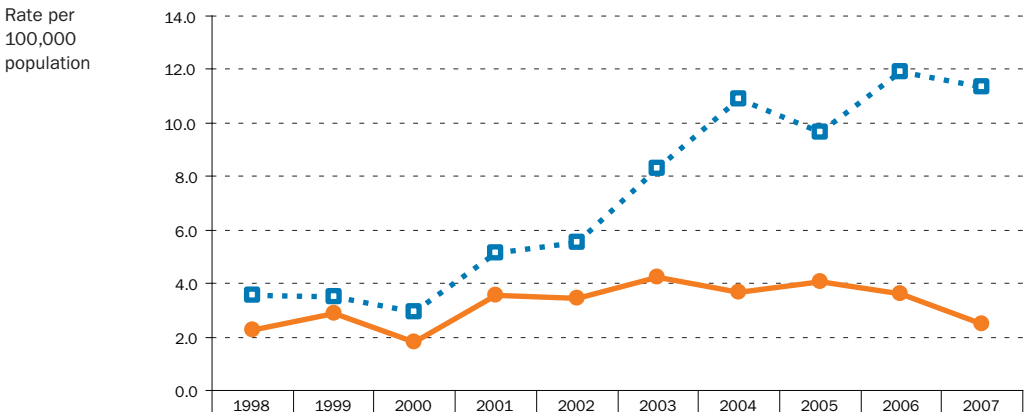
5.1 Infectious syphilis case reports and rates in BC • 1998 to 2007



	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007*
BC Reports	116	128	96	177	186	262	305	291	333	301
BC Rate	2.9	3.2	2.4	4.3	4.5	6.3	7.3	6.8	7.7	6.9
Canadian Rate	0.6	0.6	0.6	0.9	1.5	2.9	3.4	3.2	4.0	3.5

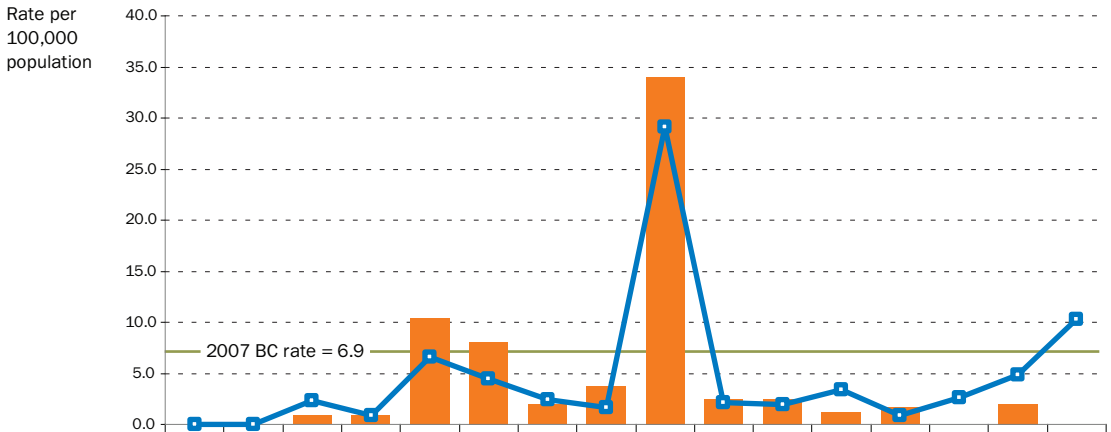
*2007 Canadian rate is projected and is subject to change (Public Health Agency of Canada, 2008).

5.2 Infectious syphilis case reports and rates in BC by gender • 1998 to 2007



	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Reports - Male	71	70	59	104	113	171	227	204	255	245
Reports - Female	45	58	37	73	72	89	78	87	78	55
Rate - Male	3.6	3.5	2.9	5.1	5.5	8.3	10.9	9.7	11.9	11.3
Rate - Female	2.2	2.9	1.8	3.6	3.5	4.2	3.7	4.1	3.6	2.5

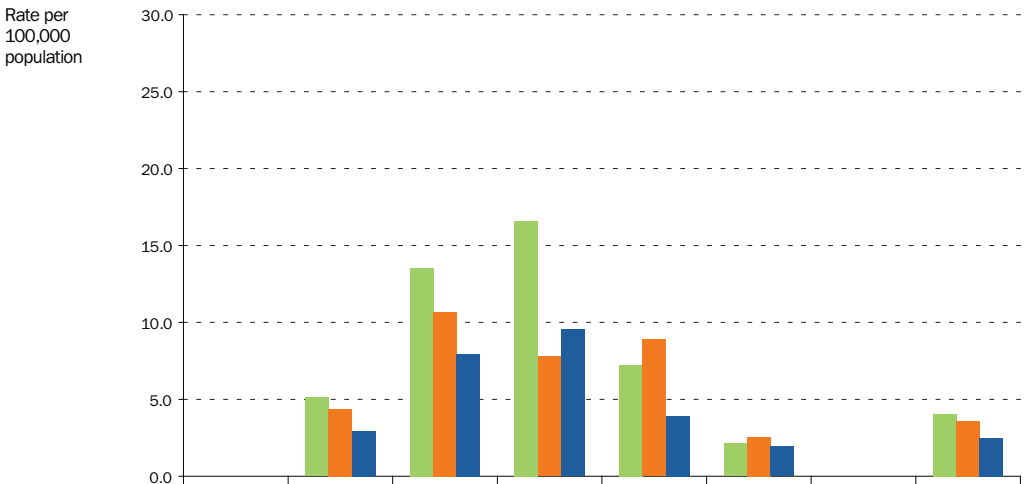
5.3 Infectious syphilis case reports and rates in BC by health service delivery area • 2006 to 2007



	East Kootenay	Kootenay Boundary	Okanagan	Thompson Cariboo Shuswap	Fraser East	Fraser North	Fraser South	Richmond	Vancouver	North Shore/Coast Garibaldi	South Vancouver Island	Central Vancouver Island	North Vancouver Island	Northwest	Northern Interior	Northeast
Reports 2007	0	0	8	2	18	26	16	3	183	6	7	9	1	2	7	7
Rate 2006	0.0	0.0	0.9	0.9	10.4	8.1	2.0	3.8	34.0	2.6	2.5	1.2	1.7	0.0	2.1	0.0
Rate 2007	0.0	0.0	2.4	0.9	6.6	4.5	2.4	1.6	29.1	2.2	1.9	3.4	0.8	2.6	4.9	10.3

health service delivery area

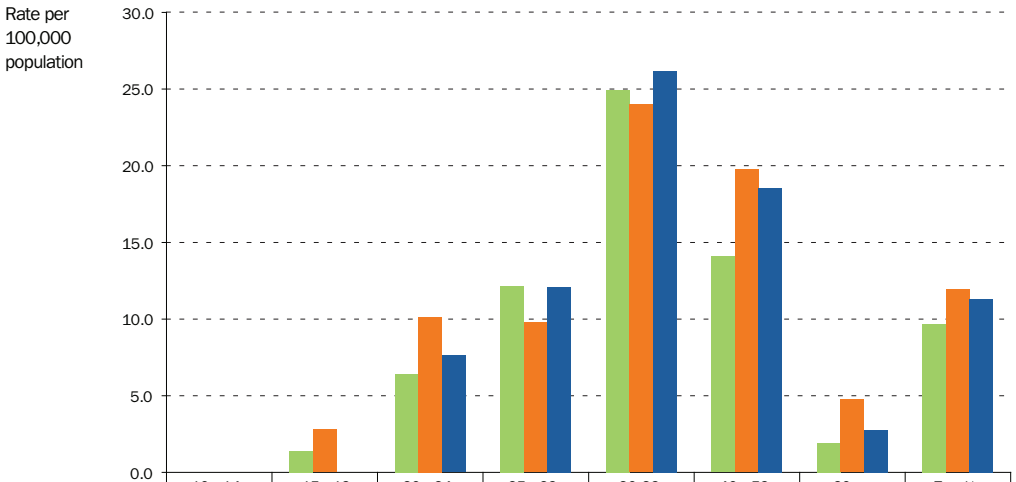
5.4 Female infectious syphilis rates in BC by age • 2005/2006/2007



	10 - 14	15-19	20 - 24	25 - 29	30-39	40 - 59	60+	Total*
2005 Rate - Female	-	5.1	13.5	16.6	7.2	2.1	-	4.1
2006 Rate - Female	-	4.4	10.7	7.8	8.9	2.5	-	3.6
2007 Rate - Female	-	2.9	7.9	9.6	3.9	1.9	-	2.5

Total* – Rate includes ALL females (i.e. aged <1 year to 60+ years)

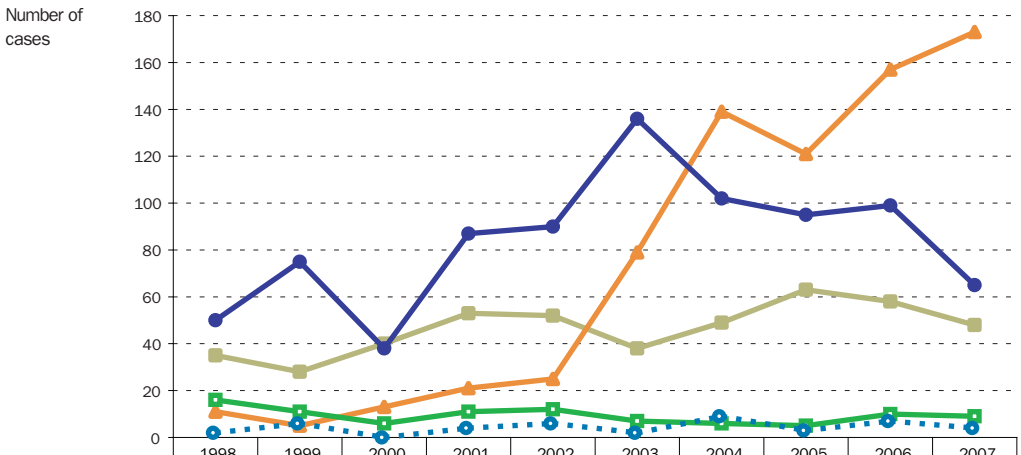
5.5 Male infectious syphilis rates in BC by age, 2005/2006/2007



	10 - 14	15 - 19	20 - 24	25 - 29	30-39	40 - 59	60+	Total*
2005 Rate - Male	-	1.4	6.4	12.1	24.9	14.1	1.9	9.7
2006 Rate - Male	-	2.8	10.2	9.8	24.0	19.8	4.7	11.9
2007 Rate - Male	-	-	7.6	12.1	26.2	18.5	2.8	11.3

Total* – Rate includes ALL males (i.e. aged <1 year to 60+ years)

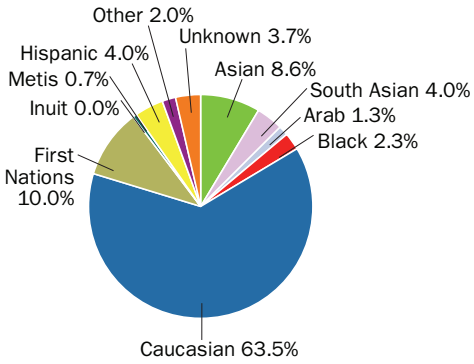
5.6 Infectious syphilis case reports in BC by risk category • 1998 to 2007



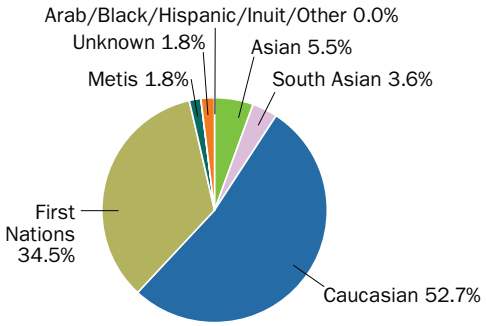
	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
HET	35	28	40	53	52	38	49	63	58	48
MSM	11	5	13	21	25	79	139	121	157	173
Outside	16	11	6	11	12	7	6	5	10	9
Street/STW	50	75	38	87	90	136	102	95	99	65
Other/Unknown	2	6	0	4	6	2	9	3	7	4

HET = Heterosexual
MSM = Men who have Sex with Men
Outside = Acquired Outside of Canada
Street/STW = Street-Involved, Sex Trade Worker and Patron
Other/Unknown = Other or Unknown Risk

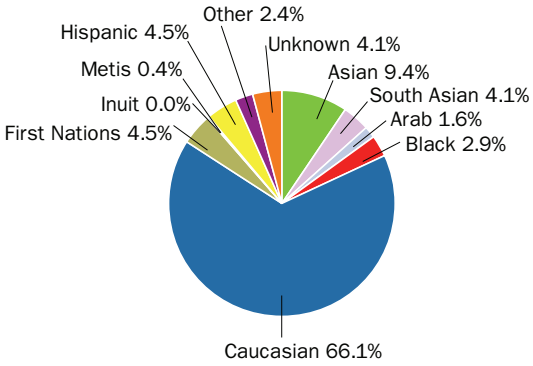
5.7 Total infectious syphilis case reports in BC by ethnicity • 2007



5.8 Female infectious syphilis case reports in BC by ethnicity • 2007



5.9 Male infectious syphilis case reports in BC by ethnicity • 2007



Congenital syphilis

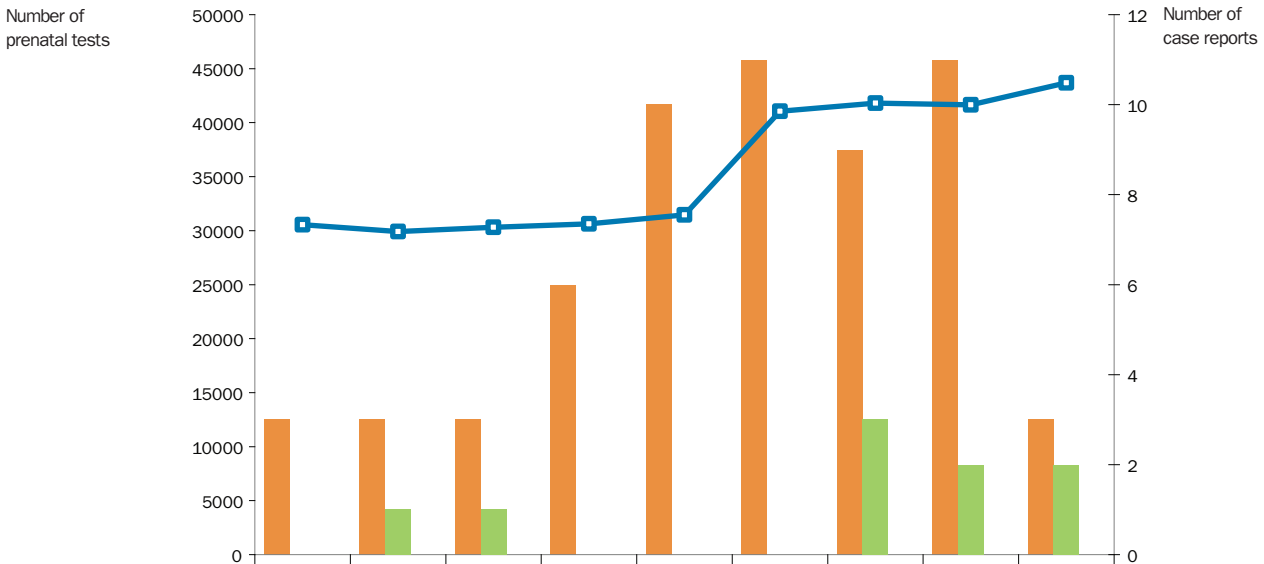
Between 2005 and 2007, seven cases of early congenital syphilis were reported, compared with two cases over the prior six years (rate of 4.8 per 100,000 live births in 2006). The number of infectious syphilis cases among pregnant women (maternal syphilis) has also increased since 2001 (with the exception of 2007, where three maternal syphilis cases were identified). A chart review of these seven early congenital syphilis cases has identified that delayed access to prenatal care, particularly in women with a history of substance use or street involvement, is a contributing factor.

Prenatal syphilis testing

The number of prenatal syphilis tests increased in 2004 due to the revision of a laboratory requisition form which improved the identification of prenatal syphilis testing. This improved identification method indicates that the number of prenatal syphilis tests was likely undercounted prior to 2004.

In 2007, 43,681 prenatal screening tests for syphilis were conducted. While the exact coverage of prenatal syphilis testing is unknown among pregnant women, there is an average of approximately 41,000 live births annually in BC which suggests that coverage of prenatal syphilis testing is high.

5.10 Maternal and early congenital infectious syphilis case reports in BC • 1999 to 2007



	1999	2000	2001	2002	2003	2004	2005	2006	2007
Maternal reports	3	3	3	6	10	11	9	11	3
Early congenital reports	0	1	1	0	0	0	3	2	2
Early congenital rate*	0.0	2.5	2.5	0.0	0.0	0.0	7.4	4.8	n/a
Prenatal tests	30541	29917	30315	30637	31455	41064	41812	41657	43681

* Rate is per 100,000 live births; 2007 live birth data is not yet available.

HIV

The rate of new positive HIV tests increased in 2007 to 9.1 (395 cases) from 8.3 per 100,000 (357 cases) in 2006, with an increased number of HIV cases among both males and females. While the rates of new positive HIV tests have declined overall in BC from a recent peak in 2004, this may in part be attributed to reportability of HIV and enhanced follow-up of all HIV test results starting in 2003.[2] In 2007, a similar distribution of new positive HIV tests was observed around the province. The highest rate of new positive HIV tests was in Vancouver HSDA (30.7 per 100,000; 193 cases), followed by Northern Interior HSDA (16.0 per 100,000; 23 cases) and South Vancouver Island HSDA (9.9 per 100,000; 36 cases). The rate of new positive HIV tests among males is approximately four times the rate in females, due in part to the number of cases among MSM.

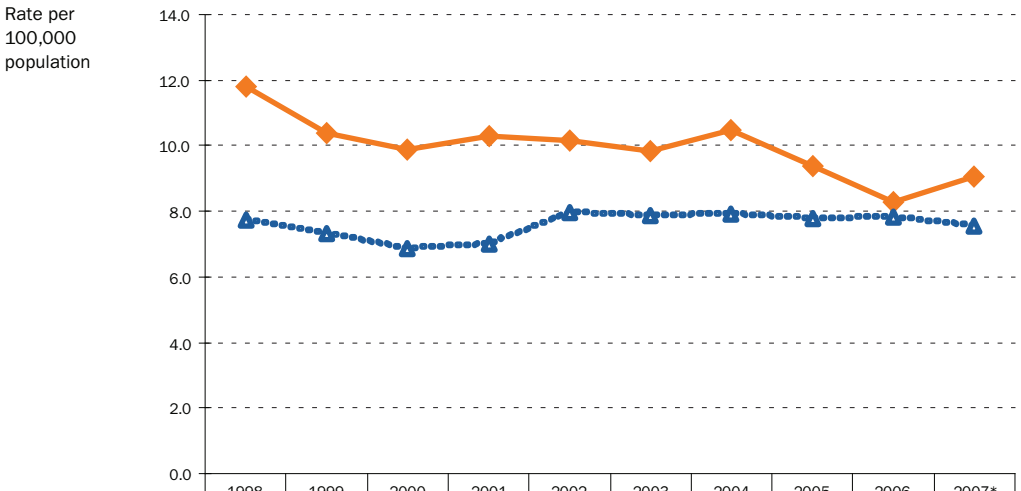
The risk category for 7.3% of cases in 2007 is currently unknown, due to the expected delay in collection of risk data. The majority of new positive HIV tests in BC in 2007 are among MSM (43.3% of all new positive HIV tests), continuing a trend observed since 2000. The second largest group of new positive HIV tests is among people who use injection drugs (25.6% of all new positive HIV tests in 2007), although this trend has been decreasing since 2002. The third largest group of new positive HIV tests in BC is among individuals whose only risk factor is heterosexual sex (22.3% of all new positive HIV tests in 2007). While the number of new positive HIV tests in this group has increased since 2006, the overall trend has been relatively stable in this group.

The majority of new positive HIV cases were among persons of Caucasian ethnicity (59.0%); however, cases among Aboriginal persons comprised the second largest group (13.4%). Aboriginal females in particular are disproportionately represented in BC's HIV epidemic, accounting for 35.7% of all new positive HIV cases among females. Aboriginal males comprised 7.5% of all new positive HIV cases among males.

Please note that the number of new positive HIV tests is not a true reflection of the number of new HIV infections per year (i.e., HIV incidence), as an individual may have a new positive HIV test one or more years after they first tested for, and were confirmed infected with, HIV.

[2] See STI/HIV Prevention and Control 2006 Annual Report (p.22) for further explanation.

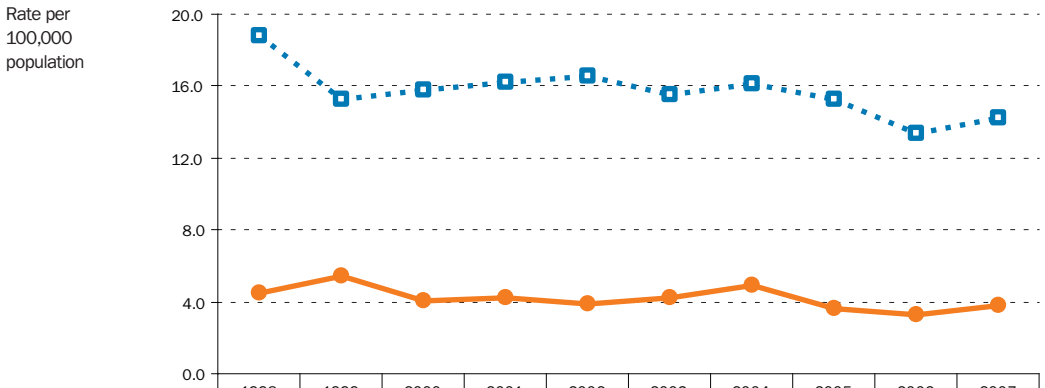
6.1 Persons testing newly positive for HIV in BC • 1998 to 2007



	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007*
BC Reports	471	416	400	420	418	409	441	400	357	395
BC Rate	11.8	10.4	9.9	10.3	10.2	9.8	10.5	9.4	8.3	9.1
Canadian Rate	7.7	7.3	6.9	7.0	8.0	7.9	7.9	7.8	7.8	7.5

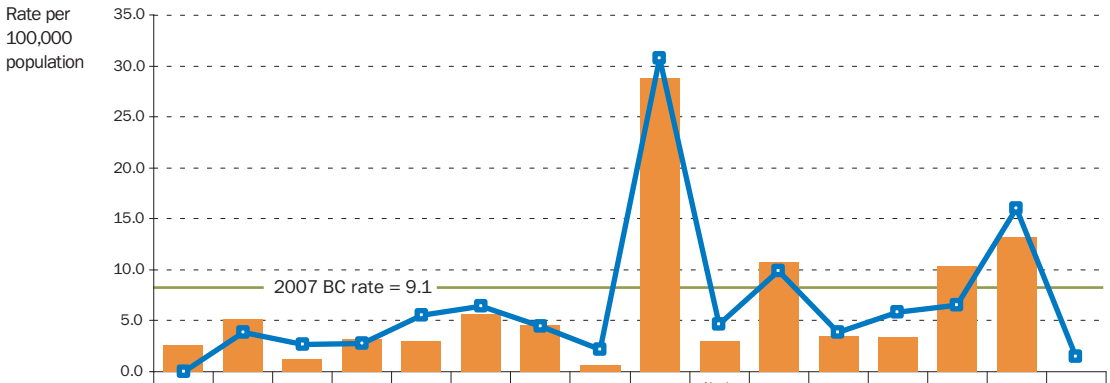
*2007 Canadian rate is projected and is subject to change (Public Health Agency of Canada, 2008).

6.2 Persons testing newly positive for HIV in BC by gender • 1998 to 2007



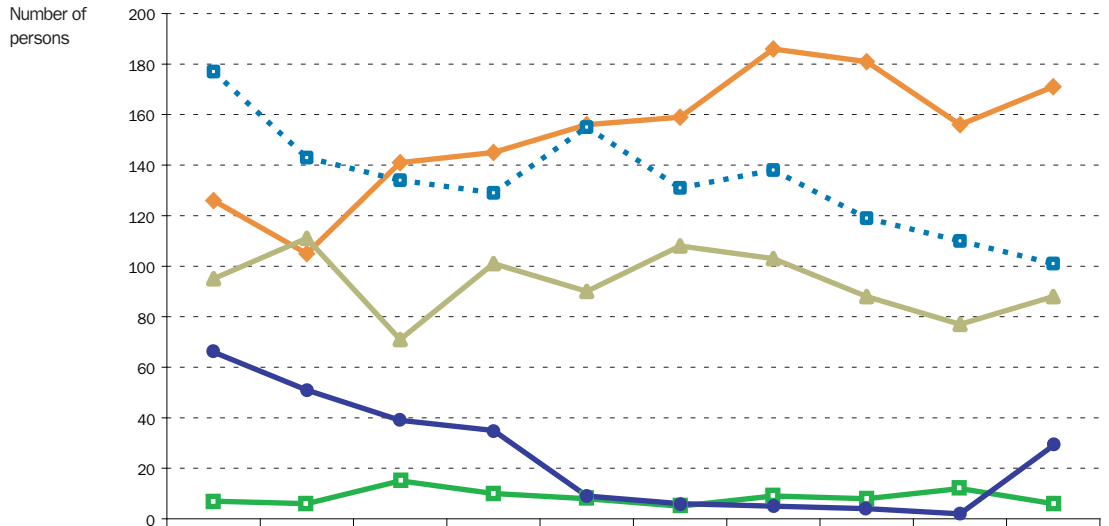
	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Reports - Male	372	305	316	328	338	320	336	322	286	308
Reports - Female	90	110	83	87	80	88	105	77	71	84
Rate - Male	18.8	15.3	15.8	16.2	16.6	15.5	16.1	15.3	13.4	14.2
Rate - Female	4.5	5.5	4.1	4.2	3.9	4.2	5.0	3.6	3.3	3.8

6.3 Persons testing newly positive for HIV in BC by health service delivery area • 2006 to 2007



	East Kootenay	Kootenay Boundary	Okanagan	Thompson Cariboo Shuswap	Fraser East	Fraser North	Fraser South	Richmond	Vancouver	North Shore/Coast Garibaldi	South Vancouver Island	Central Vancouver Island	North Vancouver Island	Northwest	Northern Interior	Northeast
Reports 2007	0	3	9	6	15	37	30	4	193	13	36	10	7	5	23	1
Rate 2006	2.6	5.1	1.2	3.2	3.0	5.6	4.6	0.5	28.8	2.9	10.8	3.5	3.4	10.3	13.2	0.0
Rate 2007	0.0	3.9	2.7	2.7	5.5	6.4	4.5	2.2	30.7	4.7	9.9	3.8	5.9	6.5	16.0	1.5

6.4 Persons testing newly positive for HIV in BC by risk category • 1998 to 2007



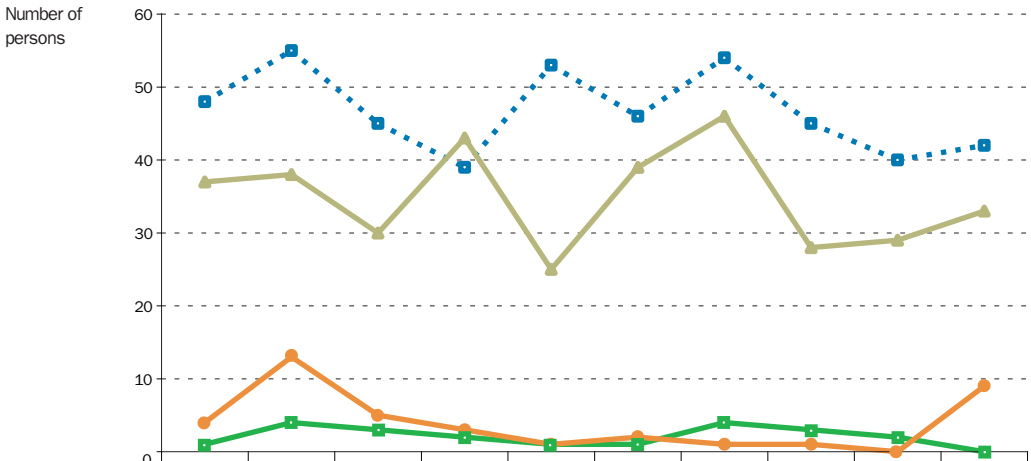
	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007*
MSM	126	105	141	145	156	159	186	181	156	171
IDU	177	143	134	129	155	131	138	119	110	101
HET	95	111	71	101	90	108	103	88	77	88
Other	7	6	15	10	8	5	9	8	12	6
NIR/Unknown	66	51	39	35	9	6	5	4	2	29

*2007 risk values are not final – the number of persons in each risk category may increase as the number of unknowns decreases.

MSM = Men having Sex with Men
IDU = Injection Drug Use

HET = Heterosexual contact
NIR = No Identified Risk

6.5 Females testing newly positive for HIV in BC by risk category • 1998 to 2007

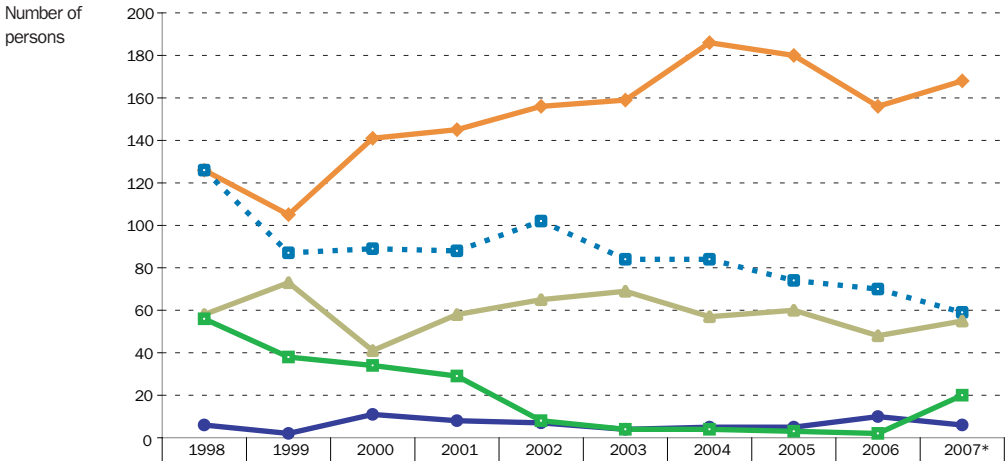


	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007*
IDU	48	55	45	39	53	46	54	45	40	42
HET	37	38	30	43	25	39	46	28	29	33
Other	1	4	3	2	1	1	4	3	2	0
NIR/Unknown	4	13	5	3	1	2	1	1	0	9

*2007 risk values are not yet final - the number of persons in each risk category may increase as the number of unknowns decreases.

IDU = Injection Drug Use
HET = Heterosexual contact
NIR = No Identified Risk

6.6 Males testing newly positive for HIV in BC by risk category • 1998 to 2007



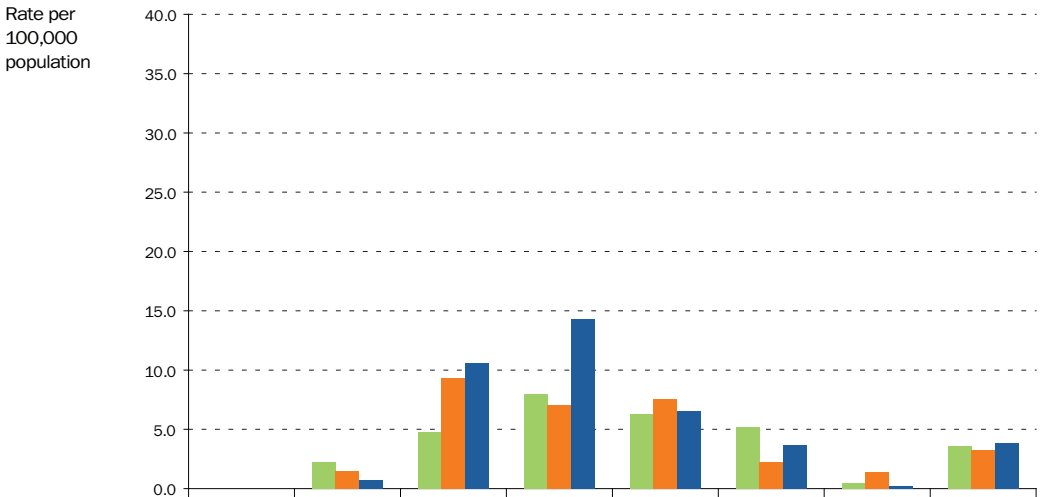
	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007*
MSM	126	105	141	145	156	159	186	180	156	168
IDU	126	87	89	88	102	84	84	74	70	59
HET	58	73	41	58	65	69	57	60	48	55
Other	6	2	11	8	7	4	5	5	10	6
NIR/Unknown	56	38	34	29	8	4	4	3	2	20

*2007 risk values are not yet final - the number of persons in each risk category may increase as the number of unknowns decreases.

MSM = Men having Sex with Men
IDU = Injection Drug Use

HET = Heterosexual contact
NIR = No Identified Risk

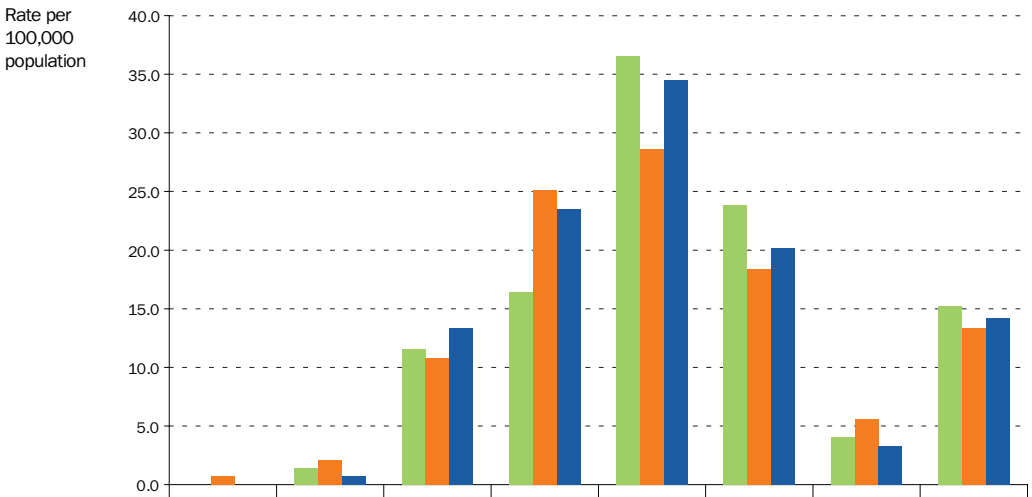
6.7 Females testing newly positive for HIV in BC by age • 2005/2006/2007



	10 - 14 yrs	15 - 19 yrs	20 - 24 yrs	25 - 29 yrs	30 - 39 yrs	40 - 59 yrs	60+ yrs	Total*
2005 Rate - Female	-	2.2	4.7	7.9	6.2	5.2	0.5	3.6
2006 Rate - Female	-	1.5	9.3	7.1	7.6	2.2	1.4	3.3
2007 Rate - Female	-	0.7	10.6	14.3	6.5	3.7	0.2	3.8

Total* – Rate includes ALL females (i.e. aged <1 to 60+ years and females with age not specified)

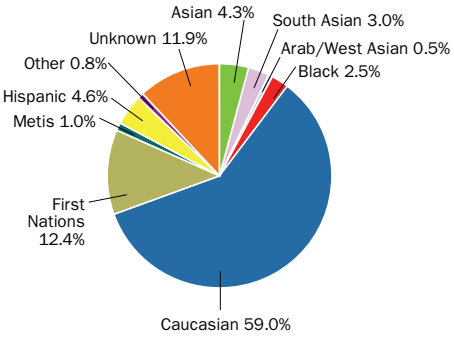
6.8 Males testing newly positive for HIV in BC by age • 2005/2006/2007



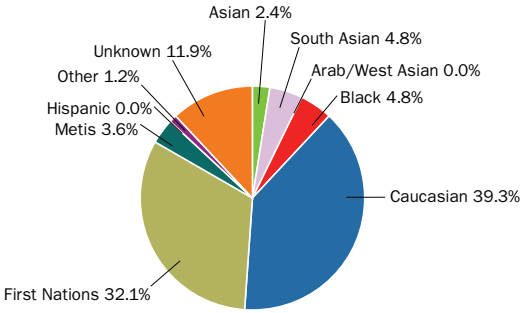
	10 - 14 yrs	15 - 19 yrs	20 - 24 yrs	25 - 29 yrs	30 - 39 yrs	40 - 59 yrs	60+ yrs	Total*
2005 Rate - Male	-	1.4	11.6	16.4	36.6	23.8	4.1	15.3
2006 Rate - Male	0.7	2.1	10.8	25.1	28.7	18.4	5.5	13.4
2007 Rate - Male	-	0.7	13.3	23.5	34.5	20.2	3.3	14.2

Total* – Rate includes ALL males (i.e. aged <1 to 60+ years and males with age not specified)

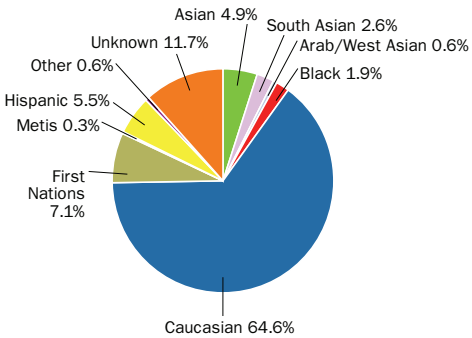
6.9 Persons testing newly positive for HIV in BC by ethnicity • 2007



6.10 Females testing newly positive for HIV in BC by ethnicity • 2007



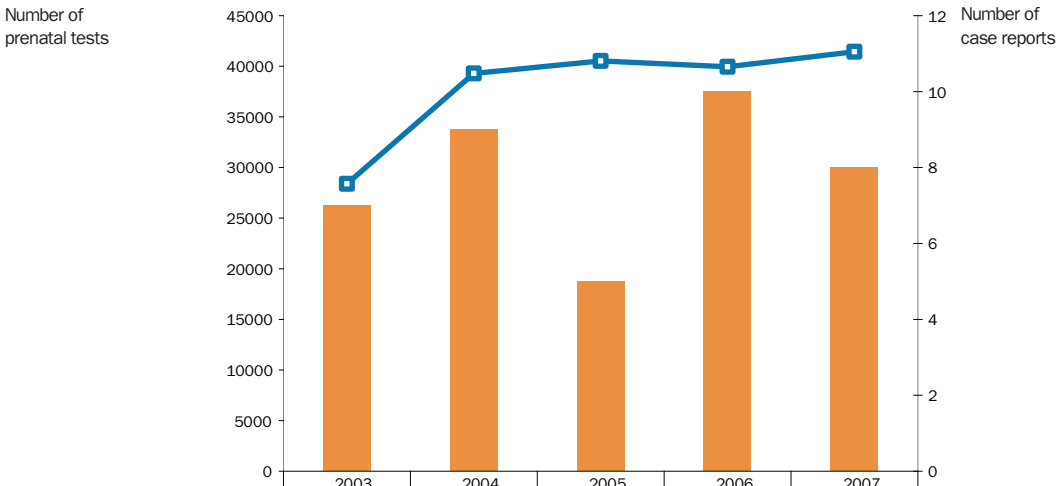
6.11 Males testing newly positive for HIV in BC by ethnicity • 2007



Prenatal HIV testing:

Prenatal HIV testing increased in 2004 and has remained relatively steady for the last four years at approximately 40,000 tests per year. As with prenatal syphilis testing, the 2004 increase was due to improved identification of prenatal HIV tests through a revised laboratory requisition form. In 2005 – the most recent year for which accurate denominator data are available – uptake of HIV testing among pregnant women was an estimated 87%. Between 2003 and 2007, 39 women were newly diagnosed as HIV positive as part of prenatal screening.

6.12 Number of prenatal HIV tests and women newly diagnosed HIV positive as part of a prenatal test panel in BC • 2003 - 2007



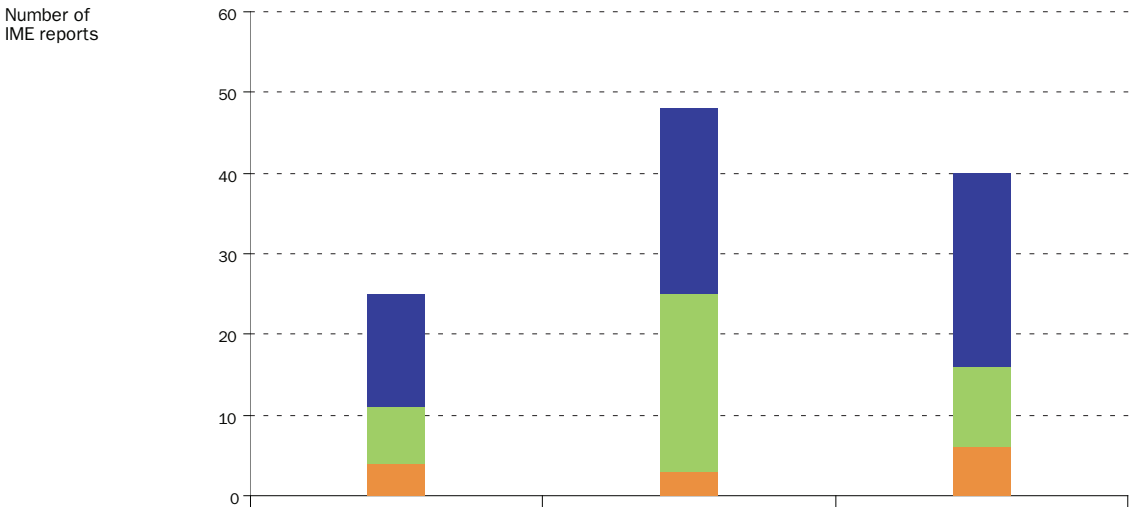
	2003	2004	2005	2006	2007
New positive prenatal reports	7	9	5	10	8
Prenatal tests	28391	39286	40525	39959	41438

Immigration of individuals with HIV

In 2002, Citizenship and Immigration Canada (CIC) included HIV testing as part of the immigration medical examination (IME) required for all immigration applicants, Convention refugees and refugee claimants. As of September 2004, CIC notifies STI/HIV Prevention and Control at BCCDC of individuals who undergo an IME outside Canada, test positive for HIV, and indicate BC as their intended province of residence. Individuals who undertake their IME within BC, and test positive for HIV, are reported to the BCCDC by the provincial laboratory through routine surveillance.

The number of HIV positive individuals immigrating into BC has increased since 2005, though the numbers vary annually and may reflect global migration patterns. A total of 113 HIV positive immigrants have arrived in BC since 2005, 39 (35%) of whom came from countries where HIV is considered by the Public Health Agency of Canada to be endemic. Primary countries of origin include: United States, Mexico, India, and countries in sub-Saharan Africa.

6.13 Number of immigration-related HIV positive reports from endemic and non-endemic countries • 2005 – 2007

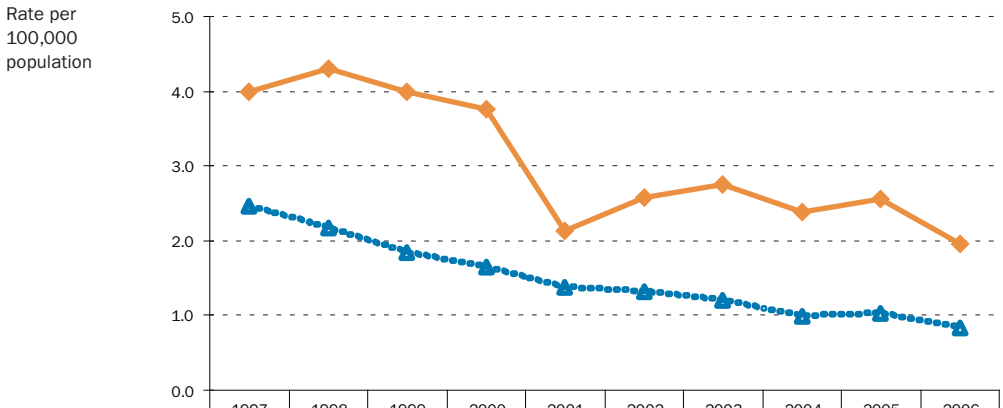


	2005	2006	2007
Non-endemic countries	14	23	24
Endemic countries	7	22	10
Country unspecified	4	3	6

AIDS

Due to delays associated with AIDS case reports, this report includes cases through 2006 only.
The AIDS rate and new case reports decreased from 109 (2.6 per 100,000) in 2005 to 84 (1.9 per 100,000) in 2006. The rate of AIDS cases among males was approximately four times greater than that of females, which likely reflects the distribution of HIV between males and females in BC. The highest rate was recorded in South Vancouver Island HSDA (5.3 per 100,000; 19 cases) followed by Vancouver HSDA (5.0 per 100,000; 31 cases).

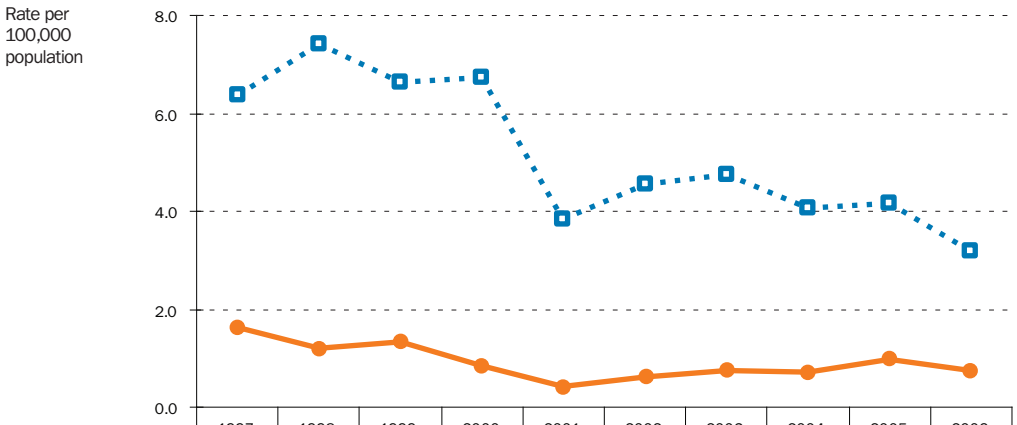
7.1 AIDS case reports and rates in BC • 1997 to 2006*



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
BC Reports	158	171	160	152	87	106	114	100	109	84
BC Rate	4.0	4.3	4.0	3.8	2.1	2.6	2.7	2.4	2.6	1.9
Canadian Rate	2.5	2.2	1.8	1.6	1.4	1.3	1.2	1.0	1.0	0.8

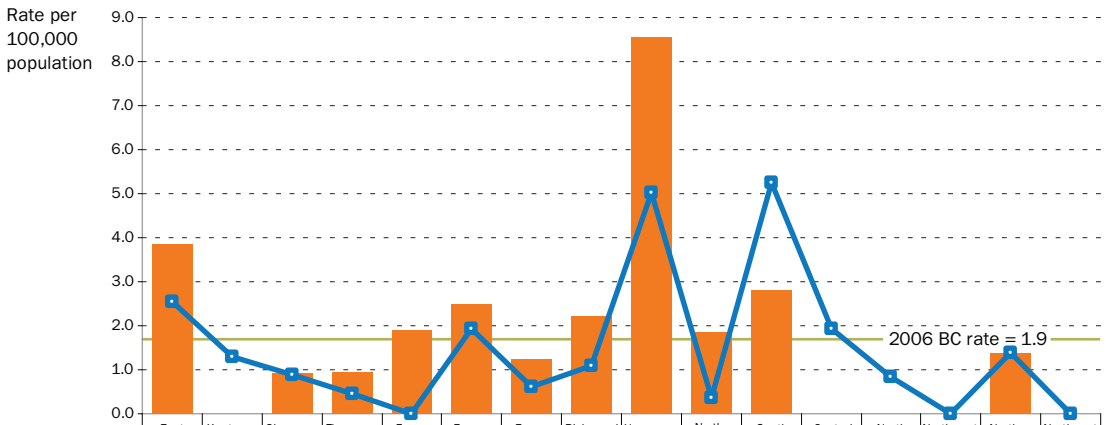
* 2007 AIDS numbers are not yet available due to delayed reporting.

7.2 AIDS case reports and rates in BC by gender • 1997 to 2006



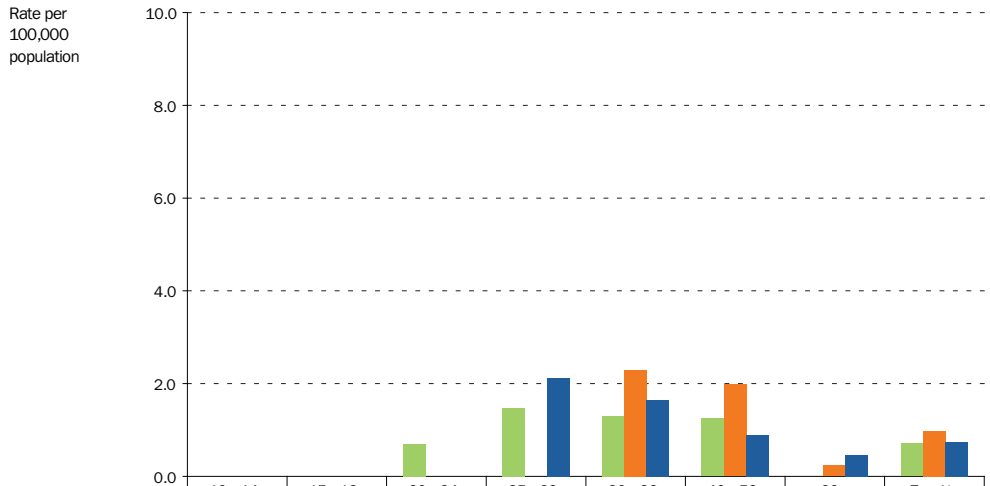
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Reports - Male	125	147	132	135	78	93	98	85	88	68
Reports - Female	32	24	27	17	9	13	16	15	21	16
Rate - Male	6.4	7.4	6.6	6.7	3.9	4.6	4.8	4.1	4.2	3.2
Rate - Female	1.6	1.2	1.3	0.8	0.4	0.6	0.8	0.7	1.0	0.7

7.3 AIDS case reports and rates in BC by health service delivery area • 2005 to 2006



	East Kootenay	Kootenay Boundary	Okanagan	Thompson Cariboo Shuswap	Fraser East	Fraser North	Fraser South	Richmond	Vancouver	North Shore/Coast Garibaldi	South Vancouver Island	Central Vancouver Island	North Vancouver Island	Northwest	Northern Interior	Northeast
2006	2	1	3	1	0	11	4	2	31	1	19	5	1	0	2	0
Rate 2005	3.8	0.0	0.9	0.9	1.9	2.5	1.2	2.2	8.5	1.8	2.8	0.0	0.0	0.0	1.4	0.0
Rate 2006	2.6	1.3	0.9	0.5	0.0	1.9	0.6	1.1	5.0	0.4	5.3	1.9	0.8	0.0	1.4	0.0

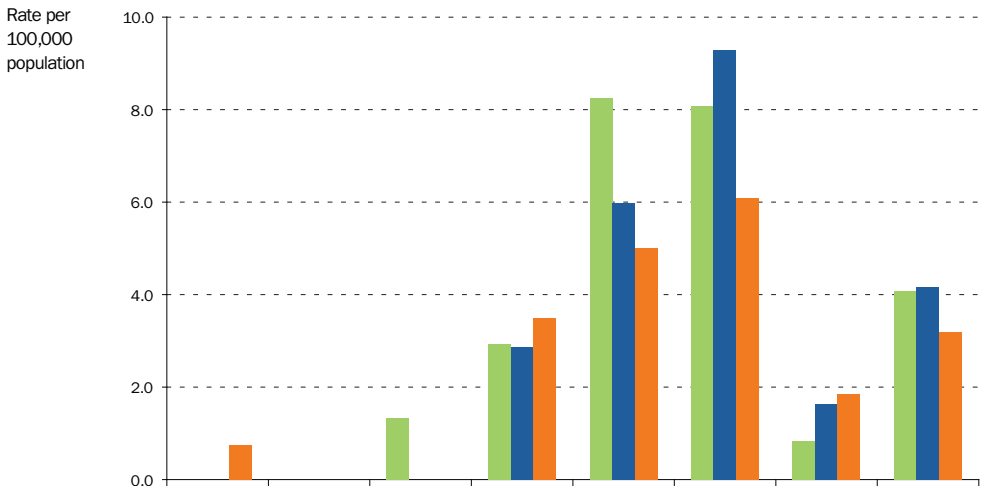
7.4 Female AIDS rates in BC by age • 2004/2005/2006



	10 - 14	15 - 19	20 - 24	25 - 29	30 - 39	40 - 59	60+	Total*
2004 Rate - Female	-	-	0.7	1.5	1.3	1.2	-	0.7
2005 Rate - Female	-	-	-	-	2.3	2.0	0.2	1.0
2006 Rate - Female	-	-	-	2.1	1.6	0.9	0.5	0.7

Total* – Rate includes ALL females (i.e. aged <1 to 60+ years and females with age not specified)

7.5 Male AIDS rates in BC by age • 2004/2005/2006



	10 - 14	15 - 19	20 - 24	25 - 29	30 - 39	40 - 59	60+	Total*
2004 Rate - Male	-	-	1.3	2.9	8.3	8.1	0.8	4.1
2005 Rate - Male	-	-	-	2.9	6.0	9.3	1.6	4.2
2006 Rate - Male	0.7	-	-	3.5	5.0	6.1	1.8	3.2

Total* – Rate includes ALL males (i.e. aged <1 to 60+ years and males with age not specified)

sources

Data for HIV and AIDS are collected through the HIV/AIDS Surveillance System. Data for other STIs are collected through the STI Surveillance System.

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