TORONTO STAFF REPORT

February 9, 2004

To: Board of Health

From: Dr. Sheela V. Basrur, Medical Officer of Health

Subject: Syphilis Outbreak in the City of Toronto

Purpose:

To update the Board of Health on the current status of the Syphilis outbreak in the City of Toronto and the steps Toronto Public Health is taking to address the outbreak.

Financial Implications and Impact Statement:

There are no financial implications resulting from this report.

Recommendations:

It is recommended that:

(1) the Board of Health forward this report to the Ministry of Health and Long Term Care so that consideration may be given to enhance province-wide syphilis prevention and treatment activities to address this outbreak;

(2) the Board of Health forward this report to Health Canada so that consideration may be given to enhance national syphilis prevention and treatment activities to address this outbreak; and

(3) the appropriate City Officials be authorized and directed to take the necessary action to give effect thereto.

Background:

Syphilis is a bacterial infection caused by the organism Treponema pallidum. Syphilis is transmitted through anal, oral and vaginal sex. While sexual transmission is the most common mode of transmission, congenital syphilis also occurs. The primary stage of syphilis occurs, on average, 21 days after infection and is characterized by a small, painless ulcer (chancre) at the

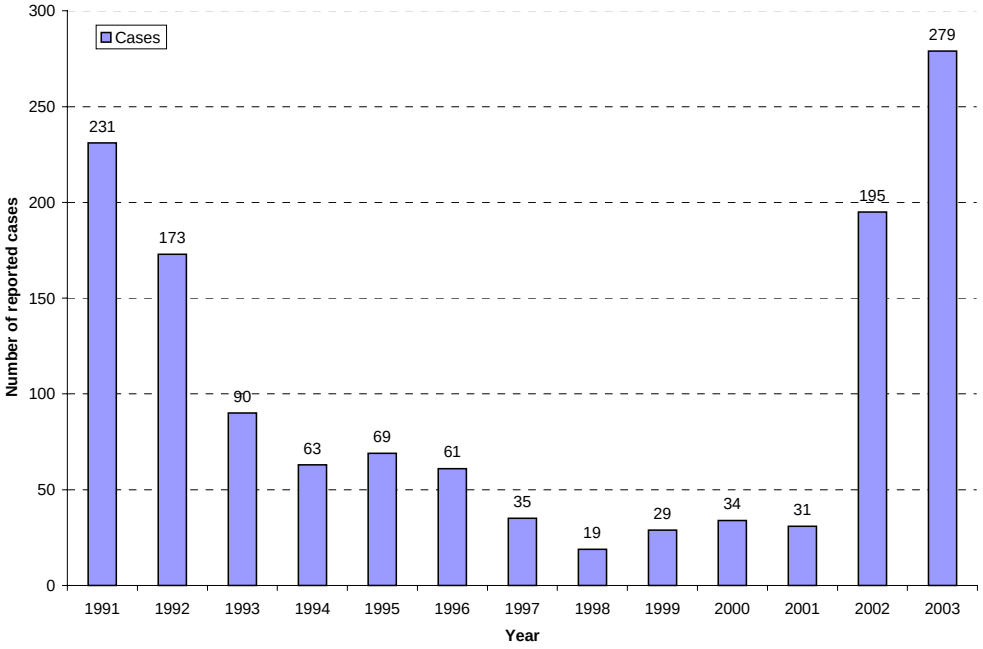
site of infection. Without treatment, the chancre resolves in 3 to 6 weeks. The secondary stage occurs 4 to10 weeks after the appearance of the chancre. Symptoms can include a rash on the palms, soles and trunk, fever, and myalgia. These symptoms also resolve without treatment but can recur. The disease then enters a latent, asymptomatic phase. Tertiary syphilis develops in one-third of infected patients. Its manifestations appear decades after infection and include infiltrative lesions in the skin and bones, cardiovascular complications, and neurological disorders. Transmission of syphilis occurs during the primary, secondary and early latent (within one year of infection) phases through direct contact with a chancre or with the broken skin of an individual with the rash of secondary syphilis (1,2).

Treatment is with penicillin G. Condom use will prevent transmission of syphilis during the primary phase as long as the chancre is completely covered. All sexual contacts must be tested for syphilis. Syphilis is a reportable disease.

Comments:

In 2002, 195 infected persons with infectious syphilis (primary, secondary and early latent) were reported in Toronto (see Figure 1). This is over six times the number of infected persons reported in 2001 (30 infected persons). In fact, not since 1992 have so many infected persons been reported to Toronto Public Health (TPH) in any given year. The number of infected persons continued to increase in 2003; 279 infected persons were reported in 2003. This represents a 43.0% increase from 2002 to 2003 (3).

Figure 1: Annual number reported infectious syphilis-infected persons, Toronto, 1991 to 2003



People with HIV who become infected with syphilis may have a different clinical presentation in that they may be more likely to present with persistent lesions or with brain or eye complications and the progression to neurosyphilis can be rapid. They may have higher rates of treatment failure than HIV negative individuals and the required course of treatment is longer than in HIV negative people. Blood test results for syphilis may be abnormal in HIV infected individuals.

People who are infected with syphilis have an increased risk of becoming infected with HIV because syphilis infection increases HIV infectiveness and susceptibility through a variety of biological mechanisms. The presence of genital ulcers, as in primary syphilis, enhances the transmission and acquisition of HIV.

Based on the most recent data available from TPH's Reportable Disease Information System (RDIS), men comprised 96% of the 195 infected persons in 2002 and 95% of the 279 infected persons in 2003. This is more than nine times the number of male infected persons in 2001. Men who have sex with men (MSM) comprised 65% of infected persons in 2002 and 74% in 2003. Information on MSM caseload is likely underrepresented in RDIS, as there was some inconsistency in recording this information until the spring of 2002. A chart review of 2002 syphilis cases indicated that the percentage of MSM caseload in 2002 could be as high as 91%. In 2003, 19% of MSM with syphilis had a previous episode of syphilis.

Since the outbreak, the percentage of female infected persons increased slightly from 4% (7/195) in 2002 to 5% (14/279) in 2003 and the stage at which they presented has changed. In 2002, all women were documented in the early latent stage, whereas in 2003 3/14 were in primary, 3/14 were in secondary and 8/14 were in the early latent stage indicating an increase in new infections or earlier identification of cases.

The age range of infected persons in 2002 was 17 to 58 years, with an average age of 37 years, and in 2003 the range was 17 to 72 years, with an average age of 38. In 2002, the highest incidence rate with respect to age occurred in the 35 to 39 year old age group in men. A median age of 37 years in 2002 indicates a steady increase from 33 and 30 years from 5 and 10 years ago respectively. No cases of congenital syphilis or syphilis in minors has been reported in the last two years.

The chart review of 2002 syphilis cases indicated that the most common risk behaviours reported were not using a condom (85%) and having multiple sexual partners (41%). Additional risk factors included MSM meeting partners in bathhouses and anonymous sexual partners. Risk factors for women included no condom used, sex trade worker, multiple sex partners and drug use. Of particular concern, 36% of the infected persons were also co-infected with HIV in 2002 and 33% were co-infected in 2003.

Outbreaks of infectious syphilis among MSM have also been reported from Ottawa and Montreal (4) as well as several sites in the United States, including New York City, Los Angeles, Washington and California and in Europe, particularly in the UK and Ireland (5-10). The incidence of other sexually transmitted infections, including HIV, is also increasing among MSM and reflects high risk sexual behaviour in this population. These behaviours include multiple partners, anonymous partners and the use of drugs, such as ecstasy, ketamine and GHB (gamma-

hydroxybutyrate), during sex. Although increasingly common, the phenomenon of "safer-sex fatigue" and how to combat it is not well understood by public health authorities.

The City of Toronto, with a population of 2.5 million (11), has a large MSM community, concentrated mainly in the south region of the city. There are seven bathhouses as well as numerous bars, clubs and theatres. Eighty-one per cent of infected persons in 2002 live in the South region of Toronto. Along with infectious syphilis, new infections with gonorrhea and HIV are also increasing among MSM in the city. Since large numbers of people visit Toronto and many come to downtown Toronto from surrounding regions there is the potential for this outbreak to spread to neighbouring municipalities, other areas in the province and beyond.

(A) Strategies Implemented to Date:

Surveillance and Information Sharing:

Enhanced contact tracing by Toronto Public Health staff started in the fall of 2002. Toronto physicians were notified by letter of the increase in syphilis in July 2002 and Toronto Public Health has also been in close contact with other public health units, the Ministry of Health and Long Term Care (MOHLTC) and Health Canada.

In February 2003, a federal field epidemiologist worked with Toronto Public Health for approximately two weeks to complete a chart review of infectious syphilis-infected persons and enhance the data in RDIS, as well as to make recommendations about additional data that should be collected from infected persons.

Enhanced surveillance on a subset of infected persons was initiated in March 2003. A total of 14 enhanced surveillance questionnaires were completed. Of the 14 infected persons, all were male and the average age was 37.3 years (range 19-49 years). Equal numbers of infected persons were either in the primary or the secondary stage of syphilis, with no infected persons recorded in the early latent or neurosyphilis stages. The majority of the infected persons (69%) never used condoms during oral sex. Seventeen per cent never used condoms during anal sex. With regards to sexual partners within the last three months, 43% had 2-5 partners, 29% had 5-10 partners and over half (57%) of these infected persons had anonymous partners within this time period. In terms of risk factors, 44% and 33% consumed alcohol and drugs respectively during sex. With regards to venues to meet partners, almost half (46%) of the infected persons met partners in bathhouses, 25% in bars/clubs and 17% in Internet chat rooms. Fifty-seven per cent of infected persons in this sample reported to be HIV positive. Thirty-six per cent of those participating in the enhanced surveillance were aware of the syphilis outbreak and risks of transmissions via oral sex.

Education and Outreach:

In 2002, Toronto Public Health, in conjunction with community partners, conducted education and outreach and distributed flyers specific to syphilis through the bathhouses, in addition to the regular outreach that occurs throughout the year. Newspaper articles and advertisements in Extra, Fab and Now magazines ran in the summer and fall of 2002.

Through an existing purchase of service agreement, the AIDS Committee of Toronto (ACT) developed new condom package inserts promoting safer sex to reduce sexually transmitted infections (STIs) among men who have sex with men.

In 2003, Toronto Public Health continued to do outreach in bathhouses and at other venues to reach MSM through Purchase of Service Agreements and AIDS Prevention Grants Projects. The AIDS Prevention Grants Program encourages communities to make the link between STIs and HIV infection in their prevention strategies and provided an STI information forum in December 2003.

TPH has a purchase of service agreement with ACT whereby ACT provides community-based education on HIV prevention, health promotion and risk reduction to diverse groups of gay and bisexual men, and other MSM. ACT is also funded to conduct community-based research initiatives, in partnership with community groups and Toronto Public Health as appropriate, and continues to collaborate with the University of Toronto HIV Social, Behavioural and Epidemiological Studies Unit to disseminate the survey results of the Ontario Men's Survey.

TPH also has a purchase of service agreement with Hassle Free Clinic (HFC) whereby HFC provides comprehensive specified sexual health clinical services, client-based activities and community development/outreach activities. A request has gone forward in the 2004 operating budget process to increase HFC's annual budget allocation to enable them to hire an additional staff member to help them meet the increased community demand for syphilis testing.

In partnership with the AIDS bureau and TPH, ACT initiated the "Look what's back" syphilis awareness campaign that included printed advertisements, brochures and posters. The advertisements appeared in XTRA, Now and Fab magazines between April 11, 2003 and May 22, 2003. Five thousand brochures and 1,000 posters were distributed in bathhouses and bars informing men about syphilis, and the importance of seeking treatment and practising safer sex. The printed materials directed readers to the ACT web site that contained more information and a link to the AIDS & Sexual Health Infoline. This was based on a United Kingdom campaign developed by the Terence Higgins Trust. Staff from HFC noted a great response from their clientele to the campaign, although wished the campaign had been longer. Anecdotally, HFC estimated that 80- 90% of the clients requesting syphilis tests following the campaign were doing so as a result of the campaign. Preliminary figures show that the number of people getting tested for syphilis at HFC was 3,386 in 2003 (to Dec 13, 2003) which is 13 times higher than 2002 (255-although likely under reported). Toronto Public Health has negotiated with the AIDS Committee of Toronto to enter into Phase II of the campaign, which was initiated in December 2003. This follow-up campaign will include internet promotions on web sites frequented by MSM and gay men as well as printing and distributing additional "Look what's back" materials.

A Tri-City project involving Ottawa, Montreal and Toronto has developed a syphilis educational video for use in the bathhouses and Pride TV. Distribution of the videos is planned for February 2004. The project was initiated by Ottawa Public Health and is partially funded through Health Canada and Toronto Public Health.

Research:

Toronto Public Health initiated a literature review and benchmarking project in January 2003 to identify cities that have had similar outbreaks and successful strategies that have been used to reduce the spread of syphilis. The literature review documented syphilis outbreaks in major centres throughout the western world including USA, UK and Europe. There are no large metropolitan cities comparable to Toronto that have resolved their syphilis outbreaks. Many of these cities continue to have upward trends in disease rates, with the exception of San Francisco, where syphilis rates are starting to plateau (12). Some experts believe that the number of infected persons will eventually level off and set a new baseline several times the previous background rate. Based on these experiences, Toronto Public Health needs to prepare to respond to an MSM-based syphilis outbreak that will likely last for a period of years.

The literature review identifies common features of the outbreaks: high proportions of MSM, high rates of partner change, high rates of HIV co-infection, unprotected oral sex, recreational drug use and frequent anonymous sexual contacts. Addressing this outbreak is particularly challenging due to an increase of risk behaviours and STI rates in MSM populations, the growth in traditional and new sexual market places, the possibility of fatigue with safe sex messages and the perception that Highly Active Antiretroviral Therapy (HAART) may make HIV less lethal.

Worldwide public health responses in Canada, the USA, UK and Europe are also identified in the literature review. Common strategies included increased contact tracing, surveillance, outreach and social marketing campaigns. A complete summary of benchmarking regarding public health responses is attached (Appendix B).

Since it is unknown what the disease trends may have been if no interventions had been attempted, it is very difficult to demonstrate what strategies were clearly successful. Programs in San Francisco and London indicated increased awareness and uptake of testing. In particular, San Francisco which is indicating a plateau in the number of syphilis-infected persons, implemented a very successful campaign. Their Healthy Penis Campaign uses a cartoon syphilis sore and penis characters to stress the importance for gay men to be screened for syphilis. Other notable exceptions are programs that were particularly comprehensive, including responses from Washington and Los Angeles. Lastly, the UK's Health Protection Agency has released comprehensive recommendations for addressing outbreaks, which serves as an excellent model.

(B) Planned Strategies for 2004:

TPH will be using a multi-strategy approach, as indicated below, to continue to address the current syphilis outbreak in Toronto. This will involve staff from all components of the TPH Sexual Health Programs as well as community partners and the Ministry of Health and Long Term Care (MOHLTC):

1) The Gay Men's Health Issues committee has been established at TPH and is addressing syphilis as a priority. For the first quarter of 2004 this committee has committed to:

    a) prepare and distribute a letter to family doctors updating them on the syphilis outbreak, counselling, testing and recommended treatment;

b) update downtown walk-in clinics, community health centres, bathhouses and selected web sites frequented by gay men on the outbreak and their role in managing the outbreak;
c) outreach to people in the Church/Wellesley community area about the syphilis outbreak;
d) prepare syphilis information aimed specifically at women;
e) explore the feasibility of AIDS & Sexual Health Infoline counsellors responding to questions via email; and,
f) coordinate internal TPH communication regarding the outbreak and strategies.

2) Participate in a multi-disciplinary team with representatives from the community, MOHLTC and Health Canada. This team will continue to survey the outbreak, share information and develop strategies to mitigate the outbreak.

3) Monitor phase 2 of the "Look what's back" campaign which will include printed materials and Internet advertising.

4) Continue to allocate funds for on-going work with community agencies that target hard-to-reach groups through existing purchase of service agreements and the AIDS Prevention Grants Program.

5) Continue to update and train TPH staff who deal with sexual health issues on health promotion, counselling and referral regarding syphilis.

6) Continue to encourage routine (at least annual) testing for syphilis and other STIs for MSM clients, particularly those who are HIV-positive.

7) Continue to monitor the literature for syphilis rates and effective outbreak strategies.

Conclusions:

Toronto is experiencing an increase in infectious syphilis-infected persons, primarily among men who have sex with men. This increase is consistent with similar outbreaks in other parts of North America and Europe. Toronto Public Health has implemented enhanced surveillance and information sharing, intensified outreach and education initiatives, and conducted research regarding successful strategies in an effort to curb the spread of syphilis. This outbreak is a marker of unsafe sex, particularly among men who have sex with men, and may lead to an increased incidence in HIV infections. Continued efforts by Toronto Public Health, in conjunction with community partners, will be required to reduce the incidence of infection among this high-risk population.

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List of Attachments:

Appendix A: Reference List
Appendix B: Summary of Literature Review: Public Health Responses

Appendix A
Reference List


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# Appendix B: Summary of Benchmarking of Public Health Responses to Syphilis Outbreak

| Location | Outbreak first noted | Population | Risk Factors | Public Health Responses | Impact |
|---|---|---|---|---|---|
| *Canada* | | | | | |
| Vancouver | 1998 | Heterosexual | Sex trade and drug involvement | ▪ Intensive contact tracing, education of at-risk groups and physicians, intensified screening increased diagnostic and treatment services. BC-CDC implemented a mass treatment/prophylaxis program in 2000- almost 6,000 doses were administered, rates declined for several months and then rebounded in 2001- this rebound was attributed to an inability to reach sufficient numbers in the inner network responsible for outbreak<br>▪ Now focusing on targeting social networks and using paid peers[1]<br>▪ For men who have sex with men (MSM) proactively hired a gay, male PHN to work at bath houses part time to provide information and testing referrals<br>▪ A variety of posters and ads in gay medium, however there was a backlash against raising the related risks of oral sex<br>▪ Enhanced surveillance | Over 2 years- no positive impact identified, re: 1st bullet<br><br>2002 rates reached a plateau relative to 2001<br><br>Too early to know impact of new strategies (social networks, paid peers), but they have been effective at identifying a number of infected people |

[1] A paid peer refers to hiring someone from within the target community to educate and inform their own community. Paid peers can be particularly effective at accessing hard to reach groups.

| Location | Outbreak first noted | Population | Risk Factors | Public Health Responses | Impact |
|---|---|---|---|---|---|
| Montreal | 2001 | Males, MSM,<br>50% of 2002 cases are HIV+,<br>av. Age 38.6yrs | 2/3s of 2002 cases had sexual contact in public sauna | ▪ Information to health care providers<br>▪ Encouragement to physicians to notify public health of cases<br>▪ Printed materials for bathhouses- problems staffing and organizing programs in these venues<br>▪ Encouraging gay community organizations to focus on Sexually Transmitted Infections (STIs) not just HIV<br>▪ Hire part-time staff to work on MSM, STI issues | Outbreak is recent and community is getting mobilized. 2003 rates will likely be double those of 2002. |
| Calgary | 2002 | Heterosexual preceded by small MSM outbreak (no links made between the two populations) | | ▪ Focused on gay media – made a conscious decision not use mainstream media<br>▪ Web site information, introduced an MD into a chat room to advise on STIs which proved to be very labour intensive<br>▪ Key opinion leaders were used to help communicate with the community through a gay newsletter and at bathhouses. | Small cluster disappeared<br><br>The STI clinic physician feels that they had high credibility and got the message of the outbreak out fast through their high profile contacts within the gay community. |

| Location | Outbreak first noted | Population | Risk Factors | Public Health Responses | Impact |
|---|---|---|---|---|---|
| Ottawa | 2002 | MSM | High numbers of partners, frequently anonymous | ▪ Reconvened an advisory group of leaders from the gay community and bath house managers<br>▪ Public Service Announcements (PSAs) and media follow-up<br>▪ Newsletters to physicians<br>▪ Postcards distributed to bars, bath houses street youth<br>▪ Booth at Gay Pride week<br>▪ Extra clinics set up following Pride week<br>▪ Planned awareness campaign with Montreal and Toronto<br>▪ Educational intervention developed for a PHN and health educator to present wherever requested (e.g. gay men's clubs etc.) | Reduced to 1 new case per month which is higher than their pre- outbreak rate |
| *USA* | | | | | |
| Seattle, Washington | 1997 | Majority MSM & HIV+ | High Number of partners<br>Anonymous partners<br>Anonymous venues | ▪ Extensive<br>▪ Print media, PSAs, outreach, expanded screening<br>▪ A summit was held with community organizations to identify actions to address the outbreak<br>▪ In 2002 did a 'rapid ethnographic assessment' and identified challenges in addressing the issues<br>▪ The task force established objectives<br>▪ Awareness interventions targeted health care providers, bathhouses, community groups, general media<br>▪ Series of billboard advertisements in 2002 | The tremendous increases observed from 1996-99 have been followed by a plateau stage in 2000-02. |

| Location | Outbreak first noted | Population | Risk Factors | Public Health Responses | Impact |
|---|---|---|---|---|---|
| Southern California: Los Angeles | 2000 | Majority MSM<br>Majority HIV+ | Anonymous partners<br>Bath houses<br>Illicit drug use | ▪ Comprehensive response, referred to pre-existing syphilis plan which included press releases, letters to health care providers, community-based recruitment, media campaign, a hotline, community outreach and screening, correctional service intervention, enhanced active surveillance and rapid evaluation. | By late 2000, the number of reported syphilis cases had markedly diminished suggesting that the rapid response had had a significant impact. However, review of LA County's subsequent cases of syphilis reported as of December 31, 2002 shows that the outbreak did not abate but appears to be increasing and becoming more concentrated in MSM. In MSM cases with known HIV status, almost two thirds are HIV-positive. |

| Location | Outbreak first noted | Population | Risk Factors | Public Health Responses | Impact |
|---|---|---|---|---|---|
| San Francisco | 1999 | Male, MSM | High number of partners<br>Met partners at sex clubs, adult book stores, internet, bath houses | ▪ Healthy Penis campaign focused on providing information and testing rather than behaviour change. Safer sex messages have been used for 20 years and continue today as part of mainstream STI messaging. Another reason was the preference of the gay community to have health information to guide decisions rather than have their behaviour targeted.<br>▪ Press releases, newspaper advertisements, information to health care providers, outreach, graphic chancre poster, information venues, education to media, community groups, testing (looking for a rapid syphilis test), policy changes (e.g. encourage longer relationships through same sex legislation), look at health issues of gay men in a more holistic fashion and address co-factors (e.g. drug use), provide clients with additional treatment to pass along to their partners (proved ineffective as it involved disclosure that the clients were not comfortable with)<br>▪ Established advisory group | Infectious syphilis rates have shown an upward trend from December 2000 to January 2003. The number of cases has doubled each of the past three years. Preliminary evaluation of the Healthy Penis campaign shows increasing awareness of syphilis and increased testing for it in the MSM population.<br><br>Update: Reported in November 2003, San Francisco case numbers have started to plateau. |

| Location | Outbreak first noted | Population | Risk Factors | Public Health Responses | Impact |
|---|---|---|---|---|---|
| *UK* | | | | | |
| London | 1995 | MSM 73%<br>50% HIV+<br><br>Heterosexual 27% | MSM: 38% of MSM acquired through unprotected oral sex<br>Majority of MSM born is UK<br>High risk social/sexual networks identified in MSM<br>Heterosexual: 79% born outside UK<br>55% acquired infections outside UK<br>Few high risk social/sexual networks identified | ▪ Mass media campaign "Look what's back", including a web site, posters, briefing package for professionals, information booklet, press release, advertisements in gay publications, detailed leaflets distributed by outreach workers.<br>▪ Phase II has involved the targeting of harder to reach men with the "Sex Pigs" campaign. It is a music CD produced for users of sex venues in London and comes with a syphilis information booklet designed to appeal to this specific sub-population. Both campaigns have been adopted for use in other areas of the UK and abroad. | The campaign indicated an increase in awareness from 40% of symptoms pre-intervention to 60% afterwards.<br>The current view of the Health Protection Agency (HPA) is that the outbreak is leading to a new and higher background rate for syphilis, but that the outbreak is beginning to level off. |

| Location | Outbreak first noted | Population | Risk Factors | Public Health Responses | Impact |
|---|---|---|---|---|---|
| Dublin, Manchester & Brighton | 1999-2001 | Large outbreaks, predominantly MSM, many HIV+ | Majority of contacts were untraceable<br>Many cases reported oral sex as only risk factor, high number of partners, drug use more common in MSM cases than heterosexual cases<br>High number of anonymous partners | ▪ In Manchester initial interventions to control the outbreak were not successful. They included distribution of free condoms, outreach, education and posters.<br>▪ Conducted a survey at a bar which indicated high awareness of syphilis but poor interest in screening<br>▪ In Dublin, posters, information cards, and extra clinics were established but cases continued to increase<br>▪ In Brighton, initial interventions included letters to GPs, help line, additional staffing at MSM health clinics, briefing of outreach workers and a health promotion campaign including articles and advertisements in gay press, syphilis alert cards, and posters for the clinics and annual gay festival. | After 12 months, the outbreak was still continuing and more intensive interventions were being planned. |
| *Europe* | | | | | |
| Oslo, Norway | 1999 | Male, MSM | Bathhouses, infrequent use of condoms for anal and oral sex | ▪ Public health officials partnered with the Norwegian Gay Health Committee and in cooperation with two bathhouse owners, launched a campaign targeting gay men and bathhouse visitors that provided information on the outbreak, modes of transmission, and testing possibilities. Free condoms were also provided at the bathhouses. | |

| Location | Outbreak first noted | Population | Risk Factors | Public Health Responses | Impact |
|---|---|---|---|---|---|
| *Additional locations experiencing syphilis outbreaks* | | | | | |
| New York City | 2001 | Male,<br>Median age =35 years<br>50% HIV+ | Night clubs, bars, public cruising sites, internet chat rooms, bathhouses | | |
| Russia | Mid-1990's | 1:1 male to female ratio | | | |
| France, Belgium, Denmark | | MSM | | | |
| Netherlands | | Sex trade workers | | | |
| Bristol, Peterborough/ Cambridgeshire | | Heterosexual | | | |