

Sexually Transmitted Infections Case Management and Contact Tracing Best Practice Recommendations

This document is current to April 2009, and is not updated. It was prepared at a time when PIDAC reported directly to the Minister of Health and Long-Term Care and Chief Medical Officer of Health. Note that effective April 1, 2011, the responsibility for and functions of the Provincial Infectious Diseases Advisory Committee ("PIDAC") were transferred to the Ontario Agency for Health Protection and Promotion ("Agency"), and that PIDAC now reports to that Agency. You may wish to consult www.pidac.ca or the Agency's website at www.oahpp.ca for more information.

Provincial Infectious
Diseases Advisory
Committee
(PIDAC)

**Sexually Transmitted
Infections Case
Management and
Contact Tracing
Best Practice
Recommendations**

**Ministry of Health and Long-Term Care
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This document was developed by the Provincial Infectious Diseases Advisory Committee (PIDAC). PIDAC is a multidisciplinary scientific advisory body who provide to the Chief Medical Officer of Health evidence-based advice regarding multiple aspects of infectious disease identification, prevention and control. PIDAC's work is guided by the best available evidence and updated as required. Best Practice documents and tools produced by PIDAC reflect consensus positions on what the committee deems prudent practice and are made available as a resource to public health and healthcare providers.

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Preamble

About This Document

This document provides best practice recommendations meant to support public health staff in Sexually Transmitted Infection (STI) programs in Ontario Public Health Units (PHUs), that implement the Ontario Public Health Standards (OPHS), the Sexual Health and Sexually Transmitted Infection Prevention and Control Protocol, 2008 (or as current), Population Health Assessment and Surveillance Protocol, 2008 (or as current) and the Infectious Diseases Protocol, 2008 (or as current). It is also meant for decision-makers (Medical Officers of Health, Associate Medical Officers of Health, and program managers) responsible for program policies and resource allocations. It may also be of interest to other providers who work in the sexual health field. The focus of this document is on case management of persons diagnosed with sexually transmitted infections and their sexual contacts. Issues related to modes of testing (for example anonymous and point of care testing for HIV) are beyond the scope of this document.

Evidence for Recommendations

The best practice recommendations in this document were developed by the PIDAC STI Working Group, based on review of published and unpublished literature, a practice survey of Ontario public health unit STI programs, and a key informant survey of Canadian and international experts.

How and When to Use This Document

This document is for the use of PHU STI programs in Ontario to provide them with current best practice recommendations for management of STI cases and contacts.

Assumptions and General Principles

STI programs in Ontario operate within the legal framework provided by the *Health Protection and Promotion Act* (HPPA), the OPHS (2008) and incorporated Protocols. This document addresses best practices within this existing legal framework. Where there is a conflict between anything in this document, and the HPPA or its regulations, the HPPA or its regulations prevail. Wherever possible, the recommendations in this document also utilize and conform to the Canadian Sexually Transmitted Infection Treatment Guidelines (2008).

Occupational Health and Safety

Health care facilities are required to comply with applicable provisions of the *Occupational Health and Safety Act* (OHSA) and its Regulations.⁴ Employers, supervisors and workers continue to have rights, duties and obligations under the OHSA. To obtain the specific requirements under the OHSA go to:

http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_90o01_e.htm

The *Occupational Health and Safety Act* places duties on many different categories of individuals associated with workplaces, such as employers, constructors, supervisors, owners, suppliers, licensees, officers of a corporation and workers. A guide to the requirements of the *Occupational Health and Safety Act* may be found at:

<http://www.labour.gov.on.ca/english/hs/ohsaguide/index.html>

In addition, the OHSA section 25(2)(h) requires an employer to take every precaution reasonable in the circumstances for the protection of a worker.

Specific requirements for certain health care and residential facilities may be found in the *Regulation for Health Care and Residential Facilities*. Go to:

http://www.e-laws.gov.on.ca/html/regs/english/elaws_regs_930067_e.htm

There is a general duty for an employer to establish written measures and procedures for the health and safety of workers, in consultation with the joint health and safety committee or health and safety representative, if any. Such measures and procedures may include, but are not limited to, the following:

- Safe work practices;
- Safe working conditions;
- Proper hygiene practices and the use of hygiene facilities; and
- The control of infections.

At least once per year the measures and procedures for the health and safety of workers shall be reviewed and revised in the light of current knowledge and practice. The employer, in consultation with the joint health and safety committee or health and safety representative, if any, shall develop, establish and provide training and educational programs in health and safety measures and procedures for workers that are relevant to the workers' work.

A worker who is required by his or her employer or by the *Regulation for Health Care and Residential Facilities* to wear or use any protective clothing, equipment or device shall be instructed and trained in its care, use and limitations before wearing or using it for the first time and at regular intervals thereafter and the worker shall participate in such instruction and training. The employer is reminded of the need to be able to demonstrate training, and is therefore encouraged to document the workers trained, the dates training was conducted and materials covered during training. Under the *Occupational Health and Safety Act*, a worker must work in compliance with the Act and its regulations, and use or wear any equipment, protective devices or clothing required by the employer.

For more information, contact your local Ministry of Labour office. A list of local Ministry of Labour offices in Ontario may be found online at: <http://www.labour.gov.on.ca/>.

Abbreviations

CDC	Centers for Disease Control and Prevention
CIC	Citizenship and Immigration Canada
CPSO	College of Physicians & Surgeons of Ontario
EPT	Expedited partner therapy (= patient delivered partner therapy)
HBV	Hepatitis B
HCV	Hepatitis C
HPPA	<i>Health Protection and Promotion Act</i>
HIV	Human Immunodeficiency Virus
MOH	Medical Officer of Health
MOHLTC	Ministry of Health and Long Term Care
MSM	Men who have sex with men
NGU	Non-gonococcal urethritis
OHIP	Ontario Health Insurance Plan
PHUs	Public Health Units
PID	Pelvic inflammatory disease
PDPT	Patient delivered partner therapy
STDs	Sexually transmitted diseases
STIs	Sexually transmitted infections

Glossary of Terms

Case: A person who has a diagnosed STI.

Case Management: STI case management consists of appropriate treatment, counselling, and eliciting the names of contacts and determining how they will be notified of their potential exposure, need for evaluation and possible treatment.

Co-infection: Refers to a case having two or more sexually transmitted infections at the same. Some other documents and information sources referenced in this document use the term “concurrent infection” to refer to co-infection.

Conditional or contact notification/referral: An approach to contact tracing involving a negotiated approach in which the case is initially responsible for notifying contacts of his or her infection and encouraging the contacts to seek medical evaluation. There is the understanding that any contacts who have not been successfully referred for evaluation within a pre-arranged length of time will be contacted by the health care provider or public health personnel.

Contact: A person who has had sex, shared injecting drug equipment or has had some other relevant exposure to the case. The exposure may have been unprotected with no precautions taken (and therefore the contact would be at significant risk of any infection found in the case) or protected with varying degrees of precaution used (and therefore the contact would have a lesser degree of risk).

Contact tracing: The process of identifying relevant contacts of a person with an infectious disease and ensuring that they are aware of their exposure. For sexually transmitted infections (STIs), relevant contacts include those with whom the case has had sex during the infectious period, as well as babies with infected mothers. The particular sexual practices of importance vary for different STIs. For blood-borne infections (HIV, hepatitis B and C) needle and drug-equipment sharing contacts, transfusion recipients, and those who may have been accidentally exposed to blood by other means are also relevant. The term 'partner notification' has sometimes been used synonymously with contact tracing in the context of HIV, however it is important to consider contacts for whom the term 'partner' may be inappropriate, such as needle-sharing contacts, transfusion recipients and children born to infected women. In the USA, contact tracing may be synonymous with provider notification/referral (see below) while partner notification may be synonymous with patient notification/referral.

Core transmitters: Core transmitters are individuals who have multiple sexual partners and repeated sexually transmitted infections such that they contribute significantly to the maintenance of ongoing STI transmission in the population.

Incidence: Incidence refers to the number of new cases of a disease occurring in a specified population in a defined time period (usually 1 year). It is usually expressed as a rate per 100,000 population.

Incubation period: The period of time between acquisition of an infection and the appearance of symptoms.

Index case: The original person identified with an infection. The index case may or may not have infected other persons but represents a starting point for the process of contact tracing.

Infectious period: The period of risk of transmission of infection, not to be confused with incubation period. The infectious period varies for different infections and can begin before symptoms appear. All asymptomatic infected people should be assumed to be infectious for contact tracing purposes.

Partner notification: See 'Contact tracing'.

Patient (case) notification/referral: The case notifies contacts of their exposure to an infection and refers them to appropriate services. The health care provider counsels the case about the information to be conveyed and gives the case advice on techniques for providing the information to the contact(s).

Patient-delivered testing: An alternative contact-management strategy that may involve the case delivering a test, such as a urine container or self-collected swab kit, to his/her contact. This strategy may also be used in conjunction with patient-delivered partner therapy.

Patient delivered partner therapy: (also called patient delivered partner treatment, expedited partner therapy/treatment): Recent research in the USA has suggested that contacts of cases with certain STIs may be more efficiently managed by providing the case with an additional course of antibiotics to give to his/her sexual contact⁷⁴. This strategy may only be practical for conditions that are treatable with a single dose of an oral antibiotic – specifically chlamydia and gonorrhoea. Over many years, individual physicians have had recourse to this strategy (albeit unofficially and with some degree of reservation) when faced with the very real possibility of a

contact refusing to attend for testing and treatment. The benefits of prescribing a single dose of usually well-tolerated medication for an unseen but recalcitrant contact in some situations may outweigh the risks, including that of not providing treatment at all for a possibly infected person in the community. This strategy may be an appropriate way to manage a contact with limited access to medical care.

Presumptive treatment: This is also referred to as epidemiological or contact treatment. This consists of treating contacts before the contact's test results are known. The aim is to stop ongoing transmission, avert complications that may result from treatment delay, and overcome the problem of false negative tests, as well as maximize access to treatment.

Prevalence: This refers to the number of cases of a disease present in a given population over a specified time period (usually 1 year). This differs from incidence in that it includes all cases of the disease present, both new and continuing cases. It is usually expressed as a number of cases per 100,000 population.

Provider notification/referral: The case provides the names and contact information of all their sexual partners within a specified timeframe to the provider/public health unit staff person, who then takes responsibility for contacting all named partners, informing them of their potential exposure to an STI without naming the case, and encouraging partners to seek medical evaluation.

Re-infection: Refers to a second occurrence of the same infection, typically related to becoming infected a second time from an untreated infected contact.

Repeat infection: This may refer to a broader range of occurrences of STIs subsequent to an initial infection – typically the research literature refers to repeat infection as a second episode, which may be the same STI or a different one, within a specified timeframe, generally 1 or 2 years.

Safer sex: For HIV infection, safer sex can be defined as any form of sex in which HIV does not pass from the blood, semen or vaginal fluids of one person directly into the body of another. This may include the proper use of condoms or avoiding anal or vaginal intercourse. Although lower in risk, there is still some risk associated with oral sex. The use of barriers (condoms and dental dams) for oral sex is still recommended as part of the complete range of safer sex methods. Barrier methods used to prevent HIV infection (e.g. condoms and dental dams) should also help to prevent genital infections with other STIs, but are likely to be ineffective where lesions are present in areas not covered by the barrier.

Safer injection drug use: The use of injectable substances in a way that prevents the transmission of HIV, hepatitis B and C. Injecting equipment, including mixing implements, water and filters should never be shared and hands touching the equipment should be clean and not be contaminated with blood. Reusing equipment that has been cleaned with bleach is not completely safe and not recommended, as both HIV and hepatitis C have been transmitted on occasions despite bleaching.

Sexually transmitted diseases (STDs): This is the older term for sexually transmitted infections (STIs), but may still be used by some practitioners and jurisdictions.

Sexually transmitted infections (STIs): For the purpose of this document, the sexually transmitted infections focused on are those that are reportable diseases in Ontario and are managed at least to some extent by public health. In this document, they include chlamydia, gonorrhoea, infectious syphilis, late latent syphilis, and HIV. This document does not specifically address Hepatitis B and C.

Source person: The person from whom the index case acquired an infection. The original source for a cluster of infections may never become apparent.

Trace back period: The period prior to diagnosis of a sexually transmitted infection for which a case is asked to name all sexual contacts in order to allow contact tracing.

Window period: The window period for HIV infection refers to the period between the time a person becomes infected with HIV (which takes only a matter of hours or days after exposure) and the time he or she seroconverts or develops antibodies to HIV that are detectable with current tests (which can take up to 12 weeks).

Strength of Evidence

As described in Section II (Methods), each recommendation in this document is followed by a summary score, composed of a Roman numeral and a letter, representing the categorization listed in Table 1 (below). Thus for example a recommendation followed by the score IA is one for which there is evidence from at least one properly randomized controlled trial, and for which there is considered to be good evidence to support the recommendation.

Table 1: Strength and Quality of Evidence Summary Sheet*

Categories for the strength of each recommendation	
CATEGORY	DEFINITION
A	Good evidence to support a recommendation for use.
B	Moderate evidence to support a recommendation for use.
C	Poor evidence to support a recommendation for or against use.
D	Moderate evidence to support a recommendation against use.
E	Good evidence to support a recommendation against use.
Categories for the quality of evidence on which recommendations are made	
GRADE	DEFINITION
I	Evidence from at least one properly randomized, controlled trial.
II	Evidence from at least one well designed clinical trial without randomization, from cohort or case-controlled analytic studies, preferably from more than one centre, from multiple time series, or from dramatic results in uncontrolled experiments.
III	Evidence from opinions or respected authorities on the basis of clinical experience, descriptive studies, or reports of expert committees.

* From: Macpherson DW. *Evidence-based medicine*. CDR 1994;20:145-47.

Best Practices for Case Management and Contact Tracing of Reportable Sexually Transmitted Infections

I. Introduction

Overview of the Control of Sexually Transmitted Infections

Sexually transmitted infections (STIs) are of major public health importance in Ontario and throughout the world. The huge personal, economic and social costs of HIV/AIDS, including an estimated 2.9 million deaths worldwide in 2006, are an obvious example. Chlamydia is the most commonly reported communicable disease in Ontario, and along with gonorrhoea, is a major cause of pelvic inflammatory disease (PID) with its potential sequelae of tubal infertility and ectopic pregnancy. These sequelae also have great personal and economic costs. Syphilis is readily diagnosed and treated in Ontario, but without appropriate management could lead to severe cardiovascular and neurological disorders collectively referred to as tertiary syphilis.

Although prevention, rather than treatment, is the preferred method to control the spread of STIs, early detection and treatment are also effective in reducing the consequences of STIs such as PID, cervical cancer and ectopic pregnancies¹. For every dollar spent on early detection and treatment of chlamydia and gonorrhoea, it is estimated that \$12 could be saved in associated health care costs². *The Royal Commission on New Reproductive Technologies*³ estimated that 20% of infertility in Canadian couples is a result of untreated infections with chlamydia or gonorrhoea. Other studies suggest that 64% or more of female infertility and 42% of ectopic pregnancies are attributable to previous chlamydia infections⁴. In the early 1990s, attempts to correct infertility problems with in vitro fertilization were estimated to cost Canadians approximately \$30 million a year in direct health care costs². These costs are likely higher today and will continue to rise over time.

The control of communicable diseases in the population is one of the primary functions of public health practice. Infectious diseases that pose a risk to the community due to their virulence, prevalence or potential to inflict significant sequelae are designated "reportable" under public health legislation. Reporting of infections allows public health agencies to monitor the prevalence and incidence of these diseases in the community and to tailor prevention and intervention programs to reduce the risk of disease and disease transmission in the population. In Ontario, the *Health Protection and Promotion Act* (HPPA) is the legislation under which diseases are designated as reportable and under whose authority diseases are investigated and interventions undertaken. Gonorrhoea, chlamydia, syphilis and HIV (as an agent of AIDS) are all designated as reportable and communicable diseases. Gonorrhoea and syphilis in addition are classified as virulent diseases. The HPPA requires the reporting of diagnosed infections to public health and the privacy rights of the individual under the Personal Health Information Protection Act (PHIPA) are superseded by the HPPA. Guarding the confidentiality of the infected individuals reported where possible or where required by law is an essential component of public health practice and of the HPPA. Public health practice with respect to STI control differs in Ontario from some other jurisdictions where case management and contact tracing are part of clinical services provided by health care providers (which include publicly run STI clinics with specialized staff). In these jurisdictions, the role of the public health department is mainly focused on surveillance and research.

The goal of public health STI programs is two-fold: to prevent harm to the infected individual and their potentially infected contacts, and to control STIs at the population level. STI case

management and contact tracing, which are the focus of this best practice document, contribute directly to the first component, and indirectly to the second component. It is important to recognize that there may be additional aspects of STI programs which could contribute significantly to this goal. Recent research on the importance of social networks in the epidemiology of STIs may open up possibilities for new interventions beyond the level of the individual or couple. Public health policy must consider the appropriate balance of resources and expenditures to achieve the overall goal of population level STI control.

In addition to public health management of STI cases and contacts, applicable population level strategies include education, particularly of young people; social marketing campaigns, such as condom promotion campaigns and campaigns to promote voluntary counselling and testing for HIV; screening programs; and behaviour change programs targeting high risk population groups, including outreach and support delivered by peers. One of the continuing questions for public health practice in Canada is who has primary responsibility for these population level interventions: local public health units vs. other health care providers, provincial or federal public health agencies, vs other public institutions. For example, mass media campaigns may be appropriately designed and funded at a provincial or federal level, while provision of sexual health education for young people is typically considered a component of the school system. Current prevention programs tend to be compartmentalized and may fail to address in an integrated manner the needs of persons with multiple risks, whose needs extend beyond health care alone to include issues such as adequate housing, adequate income, and opportunities for social inclusion and support.

As a method of case-finding, contact tracing can be compared with other options such as screening of individuals at risk for STIs. Asymptomatic infected persons who do not routinely seek medical care and are not named as contacts may be identified if they have access to screening programs. Screening can be carried out at sexual health care sites (e.g., primary care, family planning clinics) and is therefore more likely to be available to women who attend such sites more frequently than men. The UK has recently instituted a chlamydia screening program. As evaluations become available from this program they should provide evidence about the potential cost-effectiveness of this strategy. As with contact tracing, a key issue for screening programs is how to access hard to reach persons who are at high risk of being infected.

Case-finding can also be promoted by education of the public and/or high risk groups combined with ready access to voluntary testing for STIs. The effectiveness of increasing voluntary testing depends on the degree to which cases accurately perceive themselves to be at risk, particularly if they are asymptomatic, and the degree to which they are willing to be diagnosed and treated. Fear of stigma and discrimination, concern about disclosure to others, and denial can all prevent persons at risk from seeking testing. STI control programs need to evaluate the case-finding efficiency of available strategies in order to identify the optimal allocation of resources, and the appropriate emphasis to be placed on contact tracing.

In order for local public health units to engage effectively in STI case management and to support behaviour change in cases and contacts, staff require training and quality assurance measures to be in place. Particularly important are training in counselling skills, understanding of sexual diversity and cultural norms, and opportunities for continuing education and upgrading of knowledge and skills. Case management of complex HIV cases and other STI cases involving repeated infections require access to expert consultation and support, which may be either internal or external to the public health unit. Working with clients with special needs and issues, such as members of the transsexual community, requires consultation with experts in this field.

While the focus of this document is primarily on public health practices such as case management and contact tracing, this is not meant to imply that other levels of intervention are not necessary or important. Individual STI cases are part of the bigger problem of high population levels of STI, and their management cannot provide the whole solution. At the very least, public health practitioners need to advocate for the necessary policies and programs which

are beyond the scope of their individual public health units. It may also be important to expand the resources of local public health units to allow them to provide needed services such as more extensive behaviour change interventions.

1. Epidemiology of Reportable Sexually Transmitted Infections in Ontario

Recommendations:

- 1.1 The Ministry of Health and Long-Term Care (MOHLTC) should use surveillance data to plan and evaluate STI programs [IIIA]**
- 1.2 Public health units should use surveillance data to examine the epidemiology of repeat infections and of co-infections and plan interventions where appropriate [IIIB]**
- 1.3 Public health units and the Ministry of Health & Long-Term Care should work together to remove barriers to data sharing, and to address the technical difficulties in the surveillance of co-infections and repeat infections [IIIA]**

In 2006 the Ontario Ministry of Health and Long-term Care (MOHLTC) was notified of approximately 48,600 cases of reportable disease in this province. About 64 % (31,200 cases) were STIs (including Hepatitis B & C).⁵ Rates of reportable STIs have been increasing in Ontario for the past 10 years, similar to increasing rates in other Canadian and international jurisdictions. The reasons for these increases are complex and include factors such as non-compliance with safer-sex messages, improved sensitivity of diagnostic testing and increased case finding. This rise in incidence underscores the importance of disciplined surveillance, contact tracing, education and counselling on risk reduction strategies, and monitoring of treatment compliance to reduce acquisition and transmission of STIs. Surveillance data should be analysed effectively at both local public health unit (PHU) and provincial levels in order to evaluate STI programs and direct resources most effectively. In particular, surveillance data should be analyzed to examine incidence of repeat STIs (a recurrence of the same STI within 1-2 years in the same individual) and of co-infections (e.g., HIV and a subsequent second STI). The CDC has recently issued recommendations for partner services programs⁶ for HIV, syphilis, gonorrhea and chlamydia which include a brief discussion of the potential utility of analyzing the geographic distribution of reported STIs and utilizing this information to target contact tracing and other efforts. So for example, they recommend giving priority to HIV and early syphilis cases for contact tracing by public health, and where resources may limit the ability to undertake similar services for all gonorrhea and chlamydia cases, considering focusing partner services for these diseases in geographic areas with high proportions of the overall burden of cases in a jurisdiction. GIS analysis might provide a tool for examining this issue of geographic distribution of cases.

For surveillance of repeat and co-infections to be effective, public health units must have access to the necessary data. The surveillance tool used by public health units prevents health units from easily compiling epidemiological and surveillance reports on repeat and co-infections, particularly if those infections were diagnosed in different health units. This is especially problematic for repeat or co-infections involving long-standing, chronic infections like HIV, hepatitis C, and hepatitis B. It should be noted that no such barrier exists in data sharing for individual case management, but surveillance cannot be conducted effectively on a case-by-case basis. Public health units and the Ministry of Health & Long-Term Care should work together to remove barriers to data sharing, and to address the technical difficulties in the surveillance of co-infections and repeat infections in the current and future public health information systems.

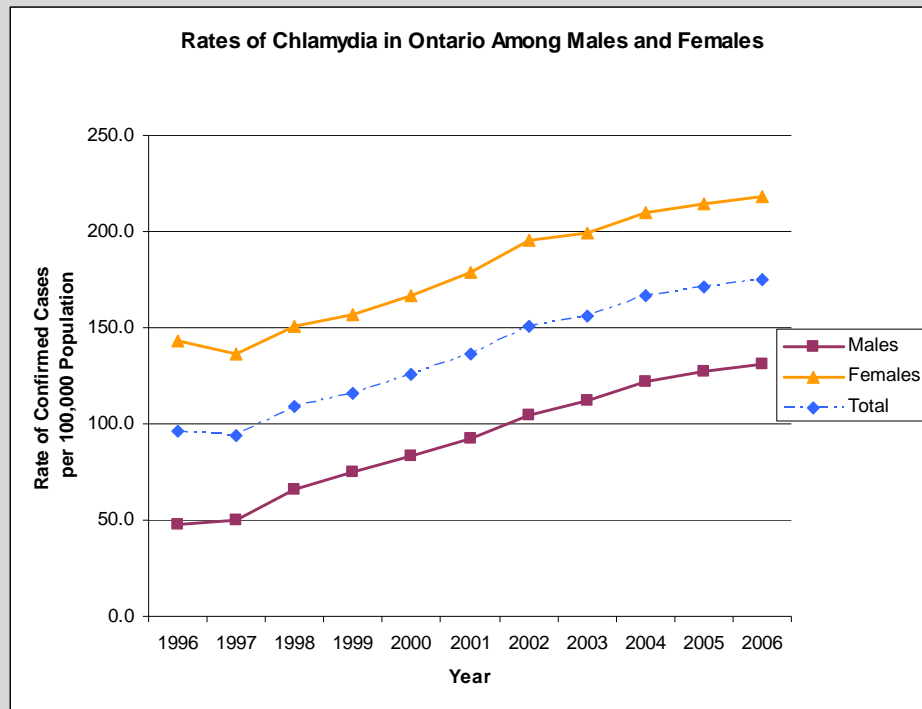
Chlamydia

Chlamydia is the most commonly reported STI and a significant public health problem in Ontario as well as other Canadian and international jurisdictions. In Ontario, rates of chlamydia declined slowly to a low of 94.03 per 100,000 in 1997 but have been steadily increasing since that time. The rate in 2006 was 174.98 per 100,000. Rates have always been highest among young women between the ages of 15 and 24 years. In 2004, almost 50% of all chlamydia infections were in females aged 15-24⁷. In 2006, the rate for this population in Ontario was 1300.52 per 100,000. With the introduction of improved laboratory testing, particularly urine screening which was introduced in 1997, the rates among males have been increasing as well. Some of the increase may also be explained by an emphasis on screening asymptomatic high risk individuals.

There are no large scale chlamydia prevalence studies available in Canada. In 2004, 62,971 cases of chlamydia were reported in Canada. However, because the majority of infections are asymptomatic and undiagnosed, and also because of underreporting, it is estimated that the true number of infections is much higher. Davies and Wang⁸ reviewed existing Canadian prevalence studies in 1996, and at that time found chlamydia prevalence rates among sexually active adolescents, college students, women attending community clinics, family planning units, and abortion clinics ranging from 7% to 25%. A 2003 prevalence study in Hamilton, Ontario found a prevalence of 6% among women aged 16-30 years⁹. These prevalence rates are in line with the results of the prevalence studies conducted in the United States (Centers for Disease Control and Prevention, 2006)¹⁰ that found a median state-specific chlamydia prevalence rate of 6.7% (range 2.8-16.9%) among 15- to 24-year-old women attending family planning clinics.

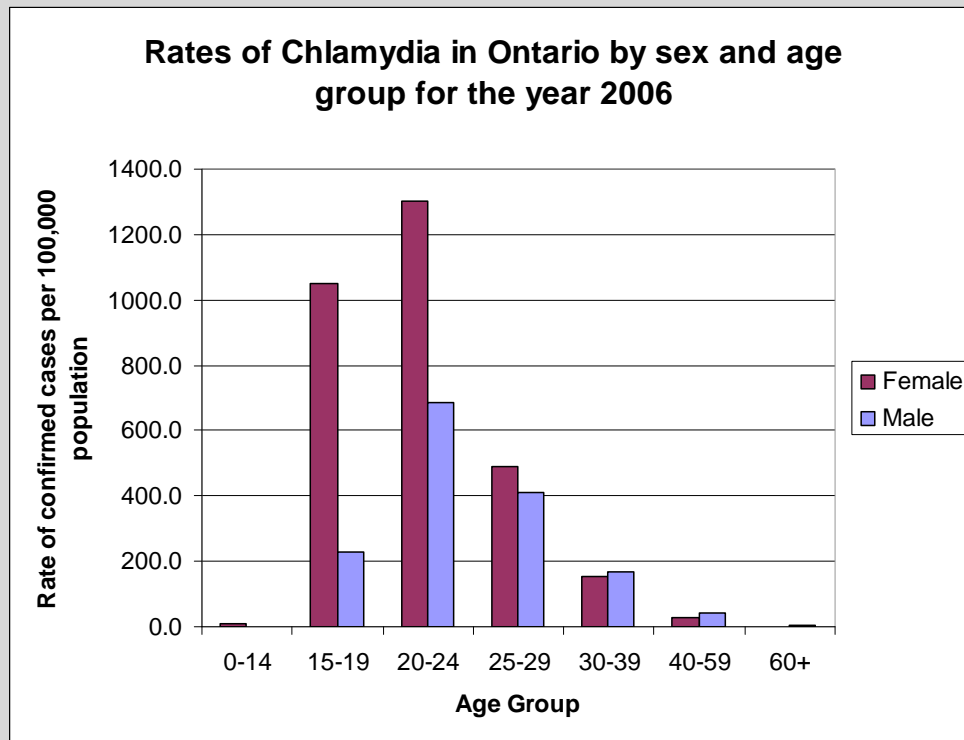
Many chlamydia cases are asymptomatic and go undetected, putting women at risk for severe reproductive health complications. Chlamydia is a leading cause of pelvic inflammatory disease, chronic pelvic pain, ectopic pregnancy and preventable infertility in women^{11, 12, 13}. The risk of adverse reproductive health complications of chlamydia infection increases significantly with repeat infections, which in some studies occur in 15-30% of young women within six months.

Figure 1:



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [09/01/2008]

Figure 2:

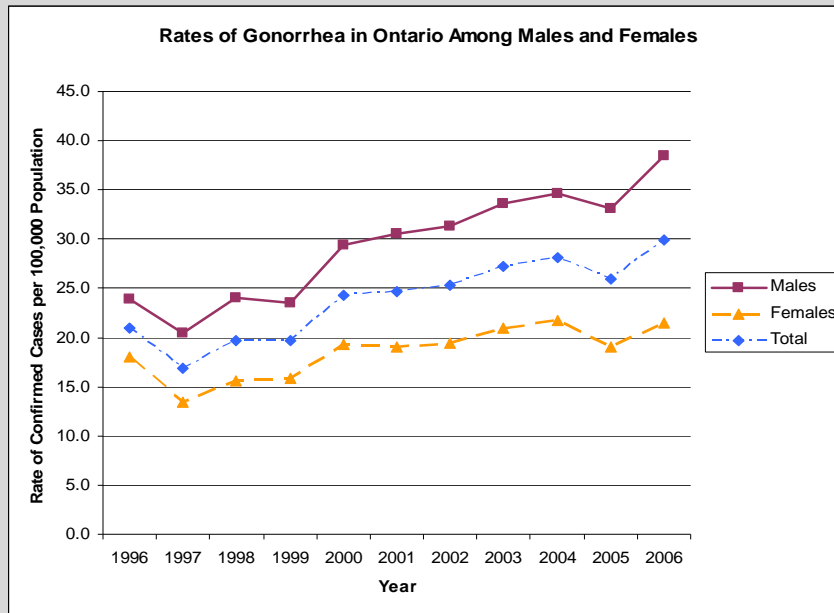


Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [09/01/2008]

Gonorrhea

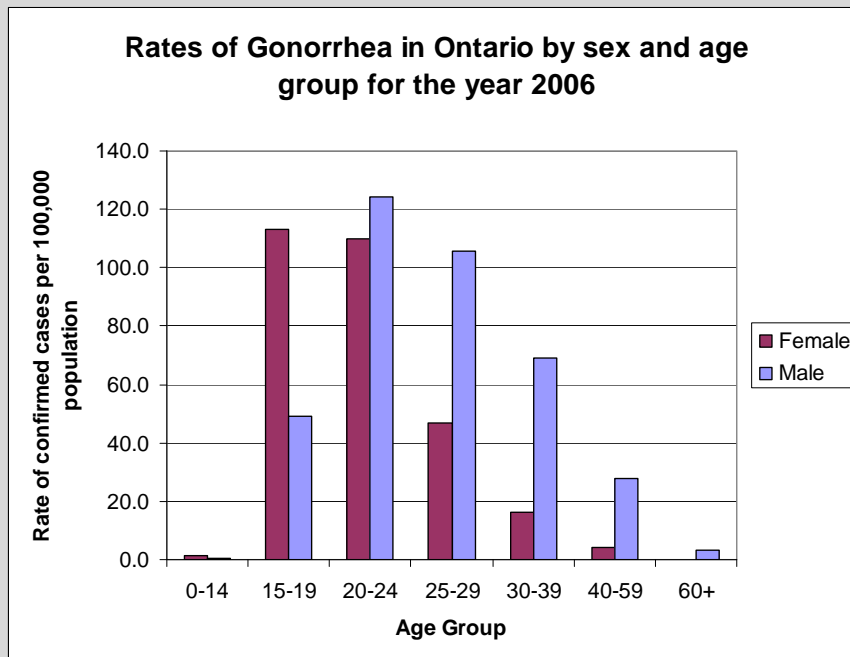
The decreasing trend in gonorrhea rates established in the early 1980's continued until 1994, at which time minor fluctuations between 17 and 30 cases per 100,000 began to occur. Since 2000 the incidence of gonorrhea has been consistently over 25 cases per 100,000. Overall, the trend since 1997 has been one of an increasing rate, with 2006 experiencing a relatively sharp increase. The most recent provincial rate (2006) is 29.91 per 100,000. Rates are highest among men between the ages of 20 and 29 years and among women between the ages of 15 and 24 years.

Figure 3:



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [09/01/2008]

Figure 4:

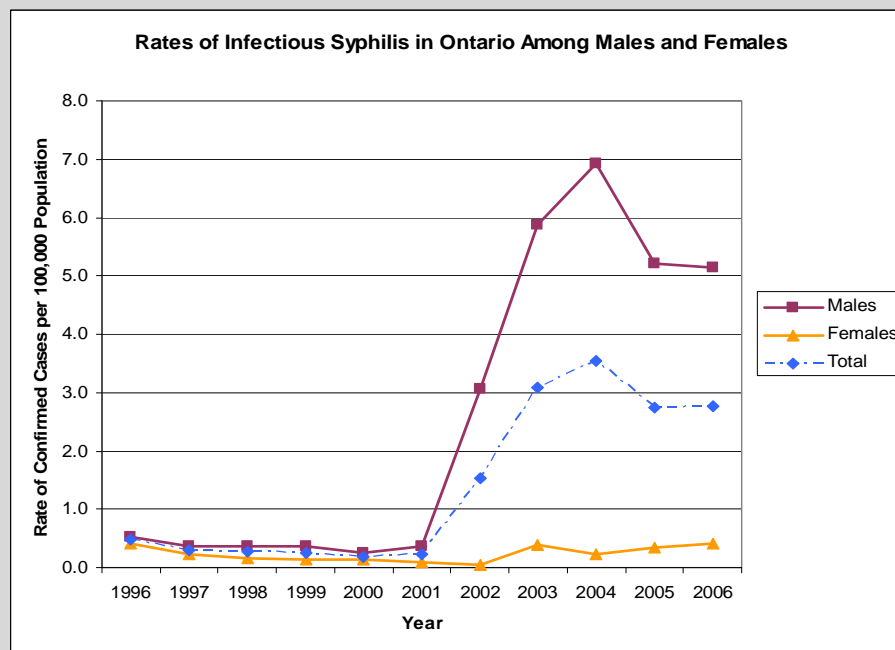


Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [09/01/2008]

Infectious Syphilis

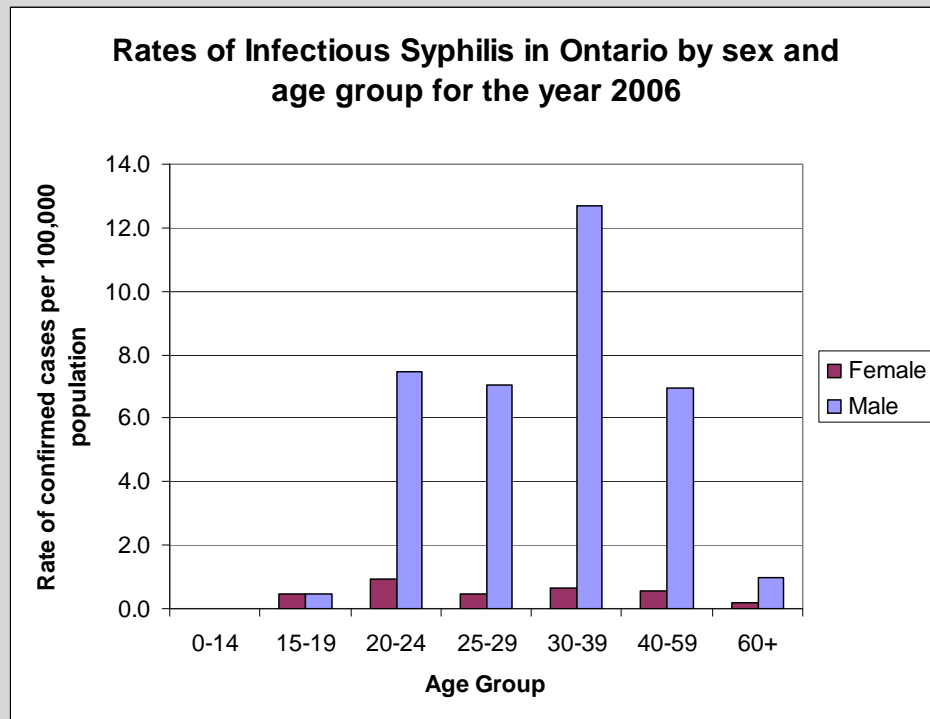
The increased incidence of infectious syphilis is of particular concern to public health officials due to the long-term consequences of undiagnosed and inadequately treated cases. As recently as 2000 there was some optimism that endemic syphilis could be eliminated in Ontario¹⁴. The 2001 rate of 0.23 per 100,000 increased 6.7 fold to 1.54 per 100,000 in 2002, primarily due to an outbreak of infectious syphilis among men who have sex with men which originated in large urban centres. Rates continued to climb to the 2004 rate of 3.54, and then have slowly declined to the 2006 rate of 2.76 per 100,000. Fortunately the number of reports of congenital syphilis has declined significantly over the past 10 years. There was only 1 case of congenital syphilis reported in Ontario in 2006.

Figure 5:



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [09/01/2008]

Figure 6:



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [09/01/2008]

HIV

By the end of 2006 there had been 27,621 HIV infections diagnosed in Ontario since reporting began in 1985. The number of HIV diagnoses increased steeply from 1986 to a peak in 1990. Since then, the annual number of diagnoses gradually decreased to a low point in 2000. There were 1,160 persons newly diagnosed with HIV in Ontario in 2006, 30% greater than in 2000. It was estimated that overall, 26,356 HIV-infected persons (including both diagnosed and undiagnosed) were living in Ontario at the end of 2006. The most affected groups by exposure category according to these estimates were MSM (15,656), persons from HIV-endemic regions (4181) and others infected by heterosexual transmission (3,715). Of the HIV diagnoses in Ontario in 2006, 30% were among women¹⁵.

Figure 7:¹⁵

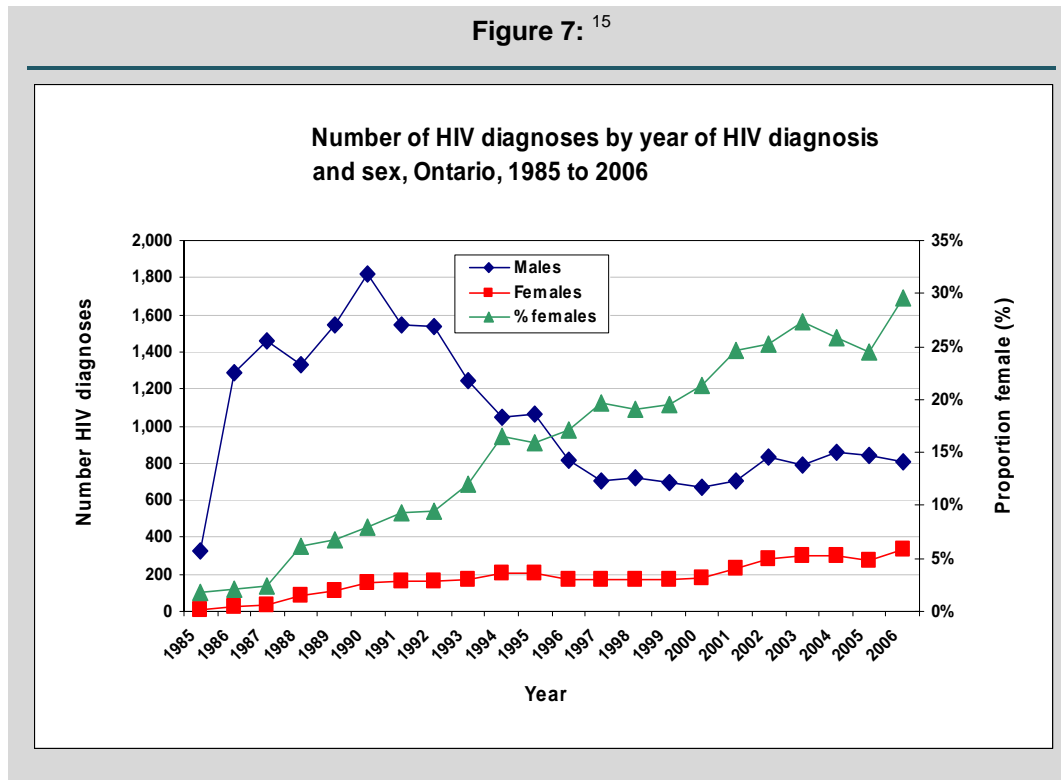
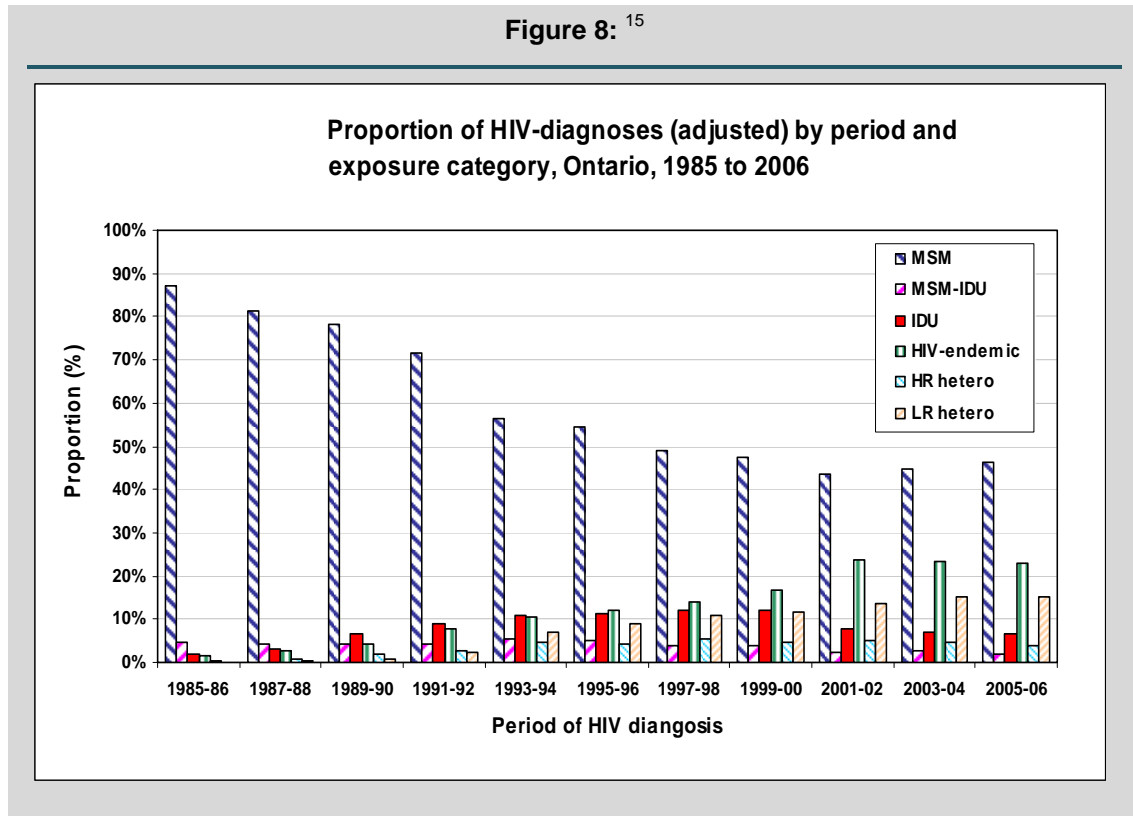


Figure 8: ¹⁵

II. Methods

This document was developed utilizing multiple evidence sources including a survey of Ontario public health units, review and evaluation of evidence from published and grey literature, and expert opinion. Expert opinion took the form of information and documentation about methods used by experienced public health practitioners and information obtained from infectious disease experts, particularly with respect to late latent syphilis. In addition, expert opinion of Canadian and international leaders in STI research and control was solicited through a key informant survey.

Sexually Transmitted Infections Case Management Practice Survey

All 36 health units in Ontario were electronically mailed a self-report survey tool developed by the STI working group in consultation with Dr Peggy Millson, a researcher in the Dalla Lana School of Public Health, University of Toronto. The survey instrument had a series of questions designed to elicit information on case and contact management for chlamydia, gonorrhoea, infectious and late latent syphilis, and HIV, as well as general information about health unit resources and case volumes. Health units were asked to share relevant written policies and guidelines with the STI working group. Surveys were emailed to each of the health unit's Medical Officer of Health and

STI Program Manager. Survey data were entered into SPSS software for quantitative analysis. Data were reported in aggregate form to preserve anonymity of health units where possible. Results of the practice survey were used to inform the STI working group about range and variability of public health practice in the management of STI cases and contacts in Ontario, as well as the range of resources available and issues of concern identified by the field.

Literature Review

To determine the nature and scope of the evidence to be sought from the published and grey literature, the working group first identified a series of key questions related to STI case and contact management for which evidence was needed. These questions are listed in Appendix A. With the help of a research librarian, search strategies were developed to address these questions. (See Appendix B for search strategies and results of searches). Dr. Millson and her research assistants reviewed the abstracts of identified studies for relevance and then conducted full reviews of articles selected as relevant. These studies were assessed for methodological rigour using the criteria published by the Community Health Practice Guidelines (CHPG) working group¹⁶, the current methods of the US Preventive Services Task Force¹⁷, and the Task Force on Community Preventive Services¹⁸. In addition, careful attention was paid to the study population and context in order to assess the generalizability to Ontario public health practice.

In addition to the search for grey literature and for published journal articles, the following text was reviewed in its entirety because of its relevance to this best practices document, and its reference lists were used as additional sources of references to be reviewed:

Aral SO & Douglas JM eds. *Behavioural Interventions for Prevention and Control of Sexually Transmitted Diseases*, Springer, New York, 2007.

Because of the complexity of issues related to syphilis, a member of the working group consulted clinical experts regarding some of the information included in Sections 8 and 9.

For the section on use of new technology (Section 13), research staff at the Waterloo Region Public Health Unit carried out a search of the published and grey literature and a practice survey of 4 Ontario university health services and 4 Ontario Public Health units about their use of electronic methods to communicate with cases and contacts.

The evidence was summarized and presented to the STI Working Group at their meetings for consideration. Discussion and feedback were incorporated into the relevant chapters of the best practices document, and recommendations were determined by consensus. For chapters for which there was very limited published literature, individual members of the Working Group assumed responsibility for examining and summarizing the grey literature, and identifying sources of expert opinion and resources to inform recommendations. Throughout the process, careful consideration was given to the Canadian STI Guidelines and wherever possible this document's recommendations harmonized with the guidelines. The approach used to assess level of evidence is presented at the beginning of this document in Table 1 (page 12)

Key Informant Survey and Interview

After the STI Working Group had reviewed the available evidence on key questions in case and contact management, there remained some issues for which evidence was considered insufficient and for which benchmarking with other jurisdictions was considered desirable. The Working Group developed a series of questions based on these issues. Subsequently, the Chair contacted a number of expert key informants to obtain the desired information through a combination of written and verbal communication. Appendix C includes the survey used and a list of the jurisdictions surveyed.

III. Case Management

2. Overview of Case Management

Recommendations:

- 2.1 Public Health Unit staff should initiate contact with the testing health care provider or case as soon as possible after receipt (by the Public Health Unit) of a laboratory test result or case report, ideally within 2 working days [IIIA]**
- 2.2 Public Health Unit staff who undertake STI case management must be culturally sensitive, have effective counselling skills, and approach clients with a supportive and non-judgemental attitude [IIIA]**
- 2.3 Public Health Unit staff who undertake STI case management must have up-to-date knowledge of treatment recommendations and resources for referral. This includes supports for those threatened by domestic violence or sexual abuse. They should also be familiar with local resources and referral mechanisms for persons infected with chronic viral diseases such as HIV, Hepatitis B and Hepatitis C (HCV) [IIIA]**
- 2.4 Public Health Units should develop lost to follow-up policies and procedures taking into account priority diseases and priority populations [IIIA]**

Resources for STI Case Management

Adequate human resources and training are paramount in the provision of good case management, especially given the Ontario context in which 64% of all cases of reportable diseases are STIs, and reported rates are increasing. Since STIs represent a majority of all communicable diseases reported to public health in Ontario, there is a need to align staffing resources to reflect this reality, with respect to both numbers and skills. STI case management requires skilled staff who can establish and maintain rapport with cases, particularly for cases who are at high risk for repeated infection and can benefit most from behaviour change intervention. The most difficult and time-consuming cases are likely to be those who are most at risk, and those most likely to represent “core transmitters”, i.e., most likely to transmit their infection to others and contribute to ongoing chains and clusters of STI transmission. HIV cases in particular are often highly complex and require excellent case management skills. Our practice survey suggested significant variation in staffing levels among PHUs in Ontario. Many PHUs believe that staffing is not proportional to the size of the disease burden being addressed, particularly given recent increases in numbers of STIs reported. STI programs require adequate resources and staff require enhanced skills training if they are to have impact on STI transmission in Ontario. The Public Health Division of the Ministry of Health and Long-term Care should develop specifications for core competencies, common training packages, and opportunities for continuing education for STI case management staff. Annual continuing education opportunities proved to be beneficial in the past. Access to and adaptation of some of the existing training models, particularly for HIV counselling, would also offer opportunities for skills development.

Legal Framework

In Ontario the *Health Protection and Promotion Act* (HPPA) R.S.O. 1990, c. H.7, provides a framework for public health to undertake control of communicable diseases including sexually transmitted infections. Regulation 559/91 under the HPPA lists which diseases are reportable in

the province of Ontario. Chlamydia, gonorrhea, syphilis and HIV (as the agent that causes AIDS) are all designated as reportable and communicable diseases. In addition, gonorrhea and syphilis are designated as virulent diseases. For all communicable diseases, medical officers of health (MOHs) can order an infected person to take preventive measures to avoid infecting others or to submit to an examination by a physician (Section 22 of the HPPA). For virulent diseases, MOHs can make an application to a judge of the Ontario Court of Justice to make a variety of orders, including detaining the case for the purposes of treatment (Section 35 of the HPPA) in order to decrease the risk of infecting others.

Ontario Regulation 569 under the HPPA outlines the reporting requirements for reportable diseases in Ontario. Physicians, other designated practitioners, hospital administrators, superintendents of institutions, school principals and laboratories are expected to report any suspect or confirmed cases of a disease on the reportable diseases list either immediately or the next working day, as specified (Sections 25-29 of the HPPA).

Components of Case Management

STI case management consists of appropriate treatment, counselling, and eliciting the names of contacts and determining how they will be notified of their potential exposure, need for evaluation and possible treatment. STI treatment is provided as part of clinical services. It is a component of public health STI case management to ensure that treatment has been adequately provided. Cases need to be counselled about the nature and significance of their infection, including its implications for their own health, their need for treatment and follow up, and the need to ensure that their sexual contacts are informed of their exposure. For HIV infections cure is not possible and cases should be advised to disclose their infection to all current and future sexual and drug equipment sharing contacts, regardless of whether protective measures and behaviours are used. Cases may require counselling from skilled public health practitioners in order to determine appropriate ways to inform contacts, and to address behaviour change to protect themselves and their contacts from future infections (see Section 3 for counselling methods and Sections 10 and 11 for further discussion of contact tracing).

For more information on public health program requirements for infectious disease case management under legislative authority, please refer to the OPHS, 2008, the Sexual Health and Sexually Transmitted Infections Prevention and Control Protocol, 2008 (or as current) and the Infectious Diseases Protocol, 2008 (or as current).

Priority Cases and Timelines

Although follow up on all cases is important, there is frequently a need to allocate limited resources of time and personnel according to specific priorities. Cases may be considered high priority if they are untreated, pregnant or male sexual partners of pregnant women, young (under 25), co-infected, repeatedly infected, or known or suspected to be putting multiple others at risk (i.e., having multiple sexual or needle-sharing partners)⁵. HIV and infectious syphilis may be considered as higher priority STIs, particularly where a case is a recent HIV seroconverter, since newly infected HIV cases have a very high viral load and therefore, are at higher risk for transmission to sexual and needle-sharing contacts, as are other HIV cases with high viral loads. Current practice guidelines in Ontario specify initiating contact with health care provider or case as soon as possible, ideally within 2 business days of receipt of a laboratory test result by the PHU. We found no specific evidence to support or refute this timeline, and propose that it remains as a goal, recognizing that in practice it is not always achieved because of resource constraints, as indicated by the results of our practice survey.

STI case management may also be made more effective by sharing of case information between public health programs, for example between HIV and tuberculosis control programs and between HIV and Hepatitis B and C programs.

Lost to Follow-up

During an STI case or contact investigation, there are times when an investigator, despite best efforts, is unable to reach individuals. Name, telephone number or address details may be incomplete, or incorrect. As well, the individual may have moved and may no longer be traceable. In addition, resources are often limited and may be more effectively utilized on other cases or contacts.

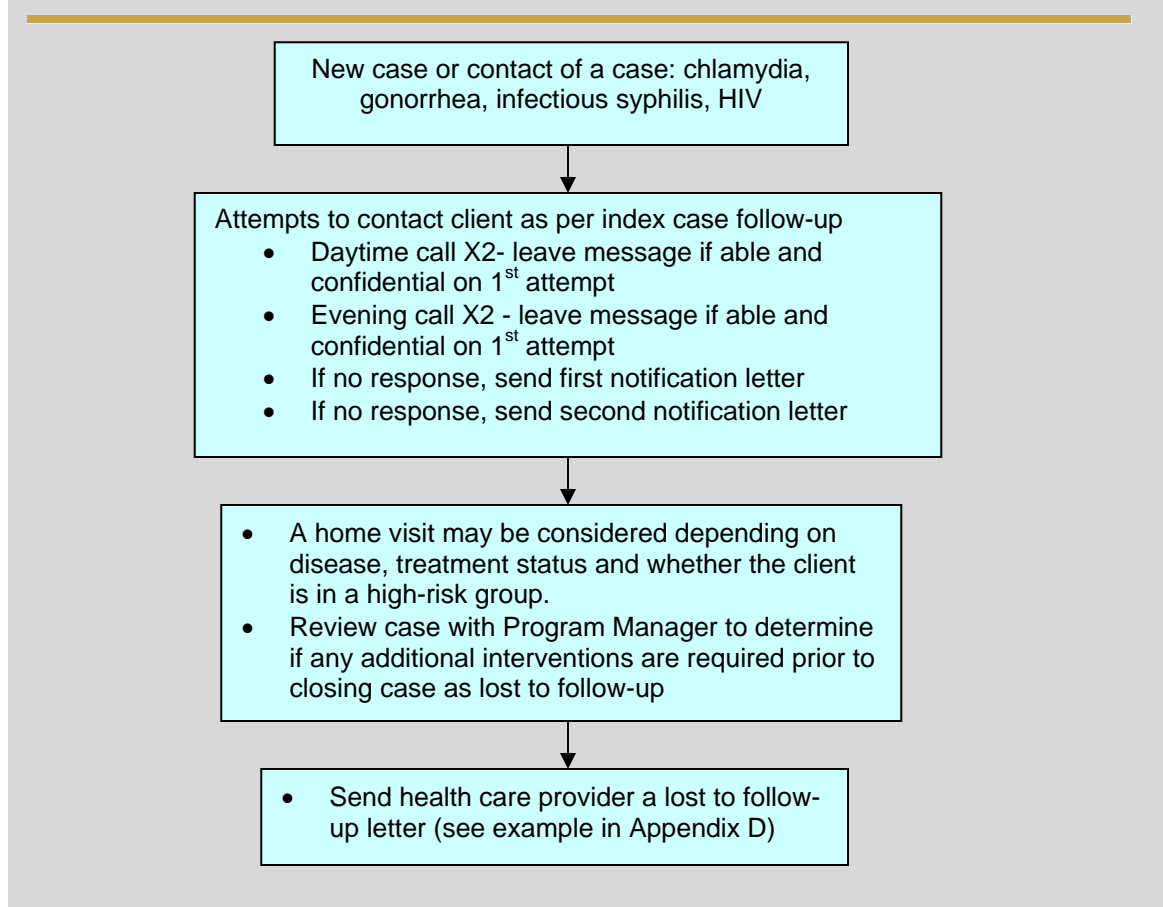
At some juncture a decision must be made whether to expend more resources on such an investigation. One may have to decide that further efforts will likely not be successful in reaching the individual, and declare that individual to be lost to follow up. Before making such a declaration, the investigator needs to ensure that multiple modalities have been used over a reasonable period of time (weeks rather than days) to attempt to contact the individual. These methods may include phone calls (daytime and evening), regular and registered mail letters and home or workplace visits. Some novel methods would include email, text messaging and internet. Regardless of modality, confidentiality of an individual's personal health information needs to be respected unless superseded by the HPPA for the purposes of public health administration to decrease the risk of a communicable or virulent disease to the public.

For individuals diagnosed with infectious syphilis and HIV, increased efforts and a longer period of time should be considered because of the associated higher morbidity. For instance, for those diagnosed with HIV, the investigator may choose to attempt to contact the individual every 6 months for 2 years if efforts were not successful in the initial weeks. Other groups that may warrant increased efforts and longer follow-up period before being considered lost to follow up would include those with higher risk of complications or of transmitting infection to others: pregnant women or their partners, persons under 25 years of age¹⁹, and those with repeated infections, untreated infections or co-infections.

An example of a lost to follow-up flow chart for routine case and contact tracing and follow-up is given below. It is suggested that telephone calls be made over one to two weeks, at different times of day and evening. As indicated, a letter should be mailed if there is no response. Registered or regular mail can be used. Registered mail provides a benefit to the investigator as there is verification that the letter has been received. However, having to pick up mail at the postal outlet may be a barrier for the case. There is the possibility that in either case, someone other than the intended individual could receive and open the letter.

With respect to the serving of communicable disease orders (s.22 of the HPPA), these are deemed to be served 7 days after being mailed or delivered personally to the last known address.²⁰

Figure 9: An Example of a Lost to Follow-up Flow Chart for Routine Case Management, Contact Tracing and Follow-up



Note that for cases and contacts that have unique challenges or risk factors, a more individualized approach may be useful and warranted.

Lessons from the Field

Our key informant survey of other Canadian and international jurisdictions indicated that most prioritize cases for follow-up, with highest priority given to infectious syphilis and HIV, and untreated cases of other STIs. As previously indicated, some jurisdictions because of differing legislations and mandates do only limited or no follow-up for gonorrhea and chlamydia. This may also occur with HIV where cases are diagnosed by health care providers. In general, timelines to initiate follow-up after a laboratory report are less well established or longer in other jurisdictions than the 2 business days recommended.

Approaches to determining cases lost to follow-up vary. One jurisdiction considers all STI cases, including HIV, lost to follow-up after 3 good-faith attempts over 14-30 days; another also specifies 3 attempts but without a specific timeframe; two others have a 60 day timeframe; several informants indicate that more intensive efforts are made regarding infectious syphilis and HIV cases.

With respect to the length of follow-up and counselling relationships with HIV positive individuals, most jurisdictions continue to follow them until they are assured that they have entered into medical/primary care.

3. Risk Reduction Counselling

Recommendations:

- 3.1 All cases with an STI should be offered client-centred risk reduction counselling. Client-centred counselling is more effective than a didactic teaching session alone: models which have shown benefit in at least one well-designed study include AIDS Risk Reduction Model (RESPECT), and Information, Motivation, Behaviour Model, as well as interventions using motivational interviewing techniques (see Appendix F) [IIA]**
- 3.2 Higher risk cases warrant more intensive intervention efforts which may require engaging them in longer term counselling and/or other interventions [IIIB]**
- 3.3 Persons with repeated STIs should be offered more intensive counselling and follow-up, as should persons with HIV, particularly those who subsequently present with another STI (see also section 4 on repeated infections, section 5 on legal aspects of bacterial STI case management, and section 6 on challenging HIV cases) [IIIB]**
- 3.4 Persons with HIV infection must also be advised regarding the need to disclose their infection to all current and future sexual and injection equipment sharing contacts, and assisted in learning how to do this, and also how to avoid sharing of injection equipment. Persons who fear rejection or violence as a result of such disclosure require additional support and should be referred for assistance if necessary [IIIB].**

Background

Individual counselling can have multiple goals including ensuring successful treatment of the current STI, contact tracing, and/or behaviour change to reduce future STI risks and avoid infection. It may incorporate a range of information provision, skills training, and addressing of barriers to behaviour change. Evidence suggests that longer interventions may have more impact than brief interventions, however, there is some evidence that even brief appropriately tailored counselling interventions can have impact (see summary of intervention evidence in Appendix E).

With ongoing concern about HIV transmission, a strong focus on prevention of infection through safer behaviour is needed, which may include abstinence from specific sexual exposures that can transmit infection, reduction in number of sexual partners, and use of protective barriers such as condoms. Counselling at the time of initial HIV testing is an important component of HIV care, but is beyond the scope of this document, which is meant to address case management after diagnosis. The document "Guidelines for HIV Counselling and Testing"²¹ can be consulted for further information on counselling at the time of initial testing.

Considerations

Prevalence, incidence and patterns of STIs are affected by context-specific factors such as demographics, socioeconomic and political factors, and health services access. Very little research has been done to address the adaptation of interventions shown to be successful in one setting to other contexts. Thus STI programs must consider their own context in adapting an intervention model. Formative research, for example seeking input from clients, service providers, experienced staff, and community stakeholders can be valuable in ensuring that a model of intervention shown to be successful elsewhere can be effectively adapted to a particular

program setting. Monitoring and evaluation of programs are important to ensure that they are working as intended and allow for necessary adjustments over time.

Individual level interventions focus on individual level outcomes, and are not often evaluated in terms of their population health impact. As an example, more intensive intervention efforts to change the risk behaviours of high risk cases may be more cost-effective than short interventions with larger numbers of low risk cases, even though the latter are less expensive on a per person basis. Engaging with high risk cases to undertake and maintain interventions is frequently a major challenge.

Client-centred counselling is more effective than a didactic teaching session alone: models which have shown benefit in at least one well-designed study include AIDS Risk Reduction Model (RESPECT), and Information, Motivation, Behaviour Model, as well as interventions using motivational interviewing techniques²². Much of the evidence has been generated from multi-session interventions, and evidence suggests that longer interventions may have more impact than brief interventions. However, there is some evidence that even brief appropriately tailored counselling interventions can have impact. Although the evidence is still quite limited, one recent trial of a brief individualized computer-delivered risk reduction intervention showed increases in participants' HIV prevention behaviours²³.

All cases with an STI can be considered to have a marker for exposure which places them at increased risk when compared to the general population and should receive risk reduction counselling; this is particularly important for persons presenting with repeat STIs. Higher risk cases may be characterized by young age, especially for females; reporting more than one sex partner concurrently or recently (e.g., 6-12 mo.); having had a previous STI; having more than one STI (e.g., HIV positive, subsequently diagnosed with another STI); having a high-risk partner (e.g., a partner with other concurrent partners, or a partner with HIV).

Evidence

There is some evidence indicating that interventions based on a theoretical model are more effective than programs which lack a theoretical model²¹. This may be because a model provides an organizing principle and ensures inclusion of key factors. There is no available evidence confirming the superiority of a single model. A study conducted by St. Lawrence has shown similar benefits from three different models²⁴. In general, elements that are included in at least some of the successful models include: information about STI/HIV and prevention methods; skills development for correct use of condoms and for successful communication and negotiation with partners; addressing issues of self-efficacy and motivation; and addressing cultural and peer norms. St. Lawrence and Fortenberry (2007)²¹ provide a review of models of behaviour change applicable to STI prevention, indicating which ones have been successfully used in changing sexual risk behaviour. A summary of their review is provided in Appendix F.

Motivational interviewing techniques were initially developed by Miller^{25, 26} to help clients address issues of ambivalence toward behaviour change primarily in the field of addiction treatment. Most of the evidence demonstrating their effectiveness relates to issues of addiction, and there is less evidence about their effectiveness in interventions to change sexual behaviour. At the same time, they do appear promising as a potential approach to clients whose ambivalence makes them resistant to behaviour change. They may be particularly useful with clients for whom substance misuse is an important factor in their sexual risk behaviours.

Manhart and Holmes (2005)²⁷ point out that prevention interventions can be intended to prevent acquisition of infection, transmission of an infection to others, or complications of STIs. Interventions to reduce risky sexual behaviour can be effective in preventing both acquisition and transmission. Behaviours which can be targeted include sexual activity itself (promotion of abstinence), reduction in numbers of sexual partners (with mutual monogamy between uninfected individuals as the lowest risk), changes in sexual activities (e.g., avoiding penetrative activities),

and use of protective measures including male and female condoms, and other barrier methods. The intervention also must be tailored to the type of STI being addressed – for example, condoms may not provide protection for infections, such as herpes simplex virus which involve the vulva, scrotum, and anogenital skin.

Appendix E provides a summary of case counselling and behaviour change intervention trials organized by level of intensity of the intervention and divided into individual interventions and group interventions, derived in part from the review of Manhart and Holmes. Other non-counselling interventions are discussed elsewhere in this document.

Lessons from the Field

In a practice survey of Ontario STI programs, 47% of programs indicated that they use a specific model for risk reduction counselling. This included client centered care; harm reduction; stages of change/Rochester stages of change; motivational interviewing; and more extensive counselling or counselling specific to HIV positive cases.

Sixty-three percent of Ontario STI programs indicate that they follow up newly diagnosed HIV cases after the initial counselling session; the reported timeframes for this were between 3 and >24 months. Longer follow-up could provide opportunity for more intensive behaviour change counselling than can be done in a single post-test counselling session. It should also provide an opportunity to ensure that HIV cases have received necessary clinical and supportive services referrals.

Practice Implications

Public health STI programs need to determine the optimal approach to counselling including partnering with clinical care providers and community agencies to engage high risk cases in intensive behaviour change interventions. This could include secondments of PHU staff to provide these services, or provision of training and support to other service providers.

PHUs may need to partner with other community organizations to involve more peer support for behaviour change. In addition to interventions focused on individual cases, PHUs need to consider involvement in and advocacy for multilevel interventions (couple, network, community, and legal/policy/systemic interventions).

Policy Implications

The ultimate goal of public health interventions related to STIs is to reduce burden of diseases and their complications, and improve the sexual health of the population. At the same time, public health programs have specific legal mandates and concerns which may shape their policies and use of resources. Current policies and resource allocations need to be reviewed to determine whether there are enough resources to undertake the interventions proven to impact risk behaviours and allow a focus on high risk populations in particular. The evidence cited suggests that STI risk behaviours are challenging to change and that longer term interventions and follow up efforts yield improved outcomes. This points to a need to ensure well-trained personnel to achieve successful intervention. The high costs of HIV infection and STI complications such as PID, infertility and ectopic pregnancy are likely to make increased investments in preventive interventions cost effective.

Research Implications

Published summaries and reviews of existing prevention models and programs indicate that there are relatively few published rigorous evaluations of interventions. More research is needed on adaptation of interventions shown to be successful in one context to other settings.

Research to define the cost-effectiveness of alternative STI prevention intervention and the optimal mix of services at different levels (individual, partners, community, specific institutions such as schools and prisons, and the general population) would help to determine what resources should be directed to patient counselling interventions vs. other interventions. Ontario STI programs need to consider elicitation research to identify the local population's level of knowledge, factors that determine their motivation for change, and their existing prevention behavioural skills. PHUs also need to undertake evaluation of their counselling interventions. Templates for such research should ideally be the same throughout all PHUs in order to allow for comparisons among locales and programs.

4. Repeat Sexually Transmitted Infections

Recommendations:

- 4.1 For all cases testing positive for an STI, review their previous STI records [IIB] and adjust counselling appropriately for those found to have previous infection [IIIB]
- 4.2 Patient delivered partner therapy should be used in certain circumstances to reduce risk of re-infection (see Section 12) [IA].
- 4.3 Public health units should consider the use of reminder methods such as telephone or electronic message reminders to recall cases for re-screening [IB for telephone reminders].
- 4.4 Cases who test positive for an STI should be offered client-centred risk reduction counselling (see Section 3) and be encouraged to be re-screened. Canadian Guidelines on STI recommend retesting those with chlamydia or gonorrhoea infection 6 months after initial diagnosis [IIB].
- 4.5 Cases with ongoing risk behaviour should be advised to be screened more frequently. The Canadian Guidelines on STI recommend every 3 months [IIIB].

Background

Repeated sexually transmitted infections occur in a person who is infected over a period of time with the same or different STIs involving different partners, or a person who may be repeatedly re-infected with the same or different STIs by the same partner. The latter type of repeat infection either arises because the partner is not effectively diagnosed and treated or is exposed to STIs from other sources. The focus here will be on persons who acquire repeated bacterial STIs. Most of the research literature addresses repeat infection intervals of 1-2 years, but the interval of concern could vary depending on the person's situation.

Considerations

Persons who acquire an initial STI may be at continuing risk for further infections because of their social and behavioural characteristics. The Canadian STI Treatment Guidelines²⁸ (page 20) recommend that persons who are at continuing risk be screened for gonorrhoea, chlamydia, syphilis and HIV at 3-monthly intervals. For women, repeated infections with gonorrhoea or chlamydia increase risk for pelvic inflammatory disease and/or tubal infertility or ectopic pregnancy. Acquiring repeated bacterial STIs is an indicator of high risk for HIV infection, and such persons warrant intensive efforts to reduce risky behaviours. Findings from research studies cited below suggest that younger women (e.g. 25 or less) are at particularly high risk for

repeat chlamydia infection. Therefore, it may be important to focus on youth as a specific high priority population. Qualitative research has also suggested that there is a link between repeat STIs and impoverishment and vulnerability. Consequently, the focus of STI counselling on awareness of risk and on the future may not be effective for clients who are already aware of risk but who are marginalized, and for whom broader health promotion and addressing of social determinants of health may be needed.

When a client is diagnosed with a repeated infection with the same organism it suggests possible reinfection by an untreated contact. The use of patient delivered partner therapy (PDPT) may be appropriate in such situations. (see section 12)

Identification of a repeat infection represents an opportunity to reconsider the nature and effectiveness of previous counselling received and to make necessary adjustments.

Evidence

Studies in both the United States²⁹ and Canada³⁰ have suggested a relatively high incidence of repeat infection for chlamydia. Rietmeijer et al found repeat infection to be correlated with younger age, non-use of condoms, and no treatment after contact with a partner with chlamydia or a related condition. These findings support the importance of treating contacts (e.g., contact tracing, patient delivered partner therapy) and could also suggest the value of screening younger persons who do not use condoms consistently. Brunham postulates in his study that chlamydia control efforts involving early treatment may have reduced population level immunity and paradoxically led to a gradual increase in repeat infections. This theory represents the minority of expert opinion. Most experts still recommend early diagnosis and treatment to control STI at an individual and population level.

During the 2006 National STD Prevention Conference, the Centers for Disease Control and Prevention (CDC) reported on new data from the New York City Department of Health and Mental Hygiene showing that one in eight women diagnosed with chlamydia in recent years had a repeat infection within one year of their initial diagnosis; nearly a third of repeat infections occurred within just three months. The research, the first citywide study to measure the extent of repeat chlamydia infection, also found that the re-infection rate for adolescent women (ages 10-19) was roughly twice that seen in women ages 25 to 29³¹. Similar findings were seen in an analysis by the California Department of Health Services, which showed that at least one in 10 women tested for chlamydia through the state family planning program and at a large health maintenance organization were infected again within six months, with adolescent women being most affected³². These findings suggest that many women are being re-infected by sexual partners who have not been diagnosed and treated for the disease. According to CDC, the studies reinforce the need for comprehensive STD prevention and treatment services for young people, including not only chlamydia screening for all sexually active women under the age of 26, but also continued follow-up for infected women and their sexual partners.

De and colleagues reported a study of repeat gonorrhea infection in Alberta using computerized records of the Ministry of Health (which may result in under-reporting and under-estimation of reinfection rates) from 1991-2003³³. They found a reinfection rate of 2.34 per 100 person years, with reinfections occurring a median of 9 months after initial infection. Being black or Aboriginal, MSM or having received treatment at an STD clinic was associated with reinfection.

Wagstaff et al³⁴ (1999) studied reinfection in 15-19 year old African-American males in a Mid-western U.S. STD clinic. Within 12 months of the baseline, 31.3% were treated for an infection. Younger age at first intercourse, number of children fathered, infection prior to or at index visit, exchange of sex for drugs in the past year, and perceived risk of infection within the year were all associated with subsequent infections, while frequency of condom use with one's steady partner was negatively associated.

Peterman et al³⁵ (2006) studied patients attending STI clinics in several US cities, and found rates of new infection of 25.8% in women and 14.7% in men followed up at 3 month intervals for one year. They recommend rescreening of STI cases at 3 months because of the significant risk of a new asymptomatic infection.

Hughes³⁶ (2001) studied characteristics of those reinfected with STI in London and Sheffield, England from 1994-8 based on 17,466 patients attending 3 STD clinics. The overall repeat attendance rate was 14% within one year. Younger females (12-15), black Caribbean participants, MSM, those with a history of previous STI, and those with 3 or more recent sexual partners were all more likely to be repeat attenders. Britain has since introduced a chlamydia screening program, and a study by LaMontagne et al in 2007 recommended annual screening for females aged 16-24, and rescreening of chlamydia-positive women within 6 months of baseline infection³⁷

Some research has also addressed the issue of effective strategies for repeat testing of cases after an initial STI. Bernstein et al³⁸, 2006 studied 3 month repeat screening of persons diagnosed with gonorrhoea at STI clinics in Baltimore in 2003-4, including field outreach to find those who did not return. Re-screening rates were still only 27%. The overall incidence of reinfection was high (13.8 per 100 person years), but the infection rate found in those who were rescreened was only 2.8%, leading to the conclusion that field staff efforts to increase follow-up rescreening rates did not identify more infections than passive surveillance.

Gift et al³⁹ (2005) studied cost-effectiveness comparing randomized assignment to one of five interventions to increase repeat testing in patients treated for gonorrhoea or chlamydia at U.S. inner city STD clinics. A brief recommendation at the time of the initial visit to return with a telephone reminder at 3 months yielded the highest return rate (33%) and was least costly in terms of cost per infection treated, when compared to motivational interviewing, brief recommendations at the time of initial visit with no reminder, and a \$20 incentive given on return. The latter two were less costly, but also less effective, resulting in lower cost-effectiveness compared to initial recommendation to return with a telephone reminder at 3 months.

Lessons from the Field

A practice survey of Ontario PHUs asked whether they do anything differently with persons with repeated STIs, such as periodic screening. Thirty six percent of PHUs (12/33) indicated that they did, while 64% (21/33) did not. Strategies used by the PHUs who answered yes include encouragement of follow up testing/routine scheduled testing; having case return for test of cure with current partner; enhanced teaching & support/increased health education; discussion/exploration of repeated infection with case; intensive counselling; partner delivered therapy; reinforcement of disease prevention; offer of routine screening to clinic clients; pushing for contact names.

In our key informant survey of other jurisdictions in Canada and internationally, we asked whether there were recall systems in place to identify persons with repeat infections. About half do not have a recall system. The rest counsel all cases, not just those with repeat infections, to return in 3-6 months for repeat testing.

Practice Implications

Efforts to address issues of repeat infection, particularly for chlamydia because of the high numbers involved, may require additional resources as well as the establishment of efficient reminder systems. In order to effectively address re-infection, providers need to consider the potential benefits of strategies such as patient delivered partner therapy and telephone reminders to return for repeat testing. In the case of persons previously diagnosed with HIV, when a new

STI diagnosis is made, it should be determined whether there has been disclosure of HIV status to the recent sexual partner(s).

Policy Implications

Repeat infections have serious implications at both the individual (PID, infertility) and the population level (increased health care costs, maintenance of high population levels of infection). At least some persons with repeat infections are likely to be part of the core group of transmitters. These core transmitters are considered to be a key element in maintaining STI transmission in populations. Therefore provision of additional resources to provide effective follow-up, retesting, and behaviour change interventions to this group has the potential to have important impacts on control of STIs, including HIV. Policies supporting patient delivered partner therapy in particular can help to increase utilization of this strategy to reduce re-infections.

Research Implications

Further research on effective methods to increase repeat testing rates particularly in the Canadian context and with vulnerable sub-populations is needed. Analyses to examine the cost-effectiveness of strategies to reduce repeat infections and the extent of their impact on important sequelae such as PID and infertility are also needed. Research to assess the role of broader determinants of health and how these can be effectively addressed to modify sexual risk should also be undertaken in order to address the role of economic and social vulnerability in STI transmission.

5. Use of Legal Measures for Bacterial STI Case and Contact Management

Recommendations:

- 5.1 **The use of legal measures such as Section 22 orders under the *Health Protection and Promotion Act* is an option for cases of chlamydia, gonorrhea or syphilis who remain untreated despite intensive public health efforts, when it is necessary to decrease or eliminate the risk for transmission to others . [IIB]**
- 5.2 **Section 22 orders may also be considered for cases who are refusing to comply with contact tracing. [IIB]**

Background

The control of communicable diseases in the population is one of the primary functions of public health practice. Infectious diseases that pose a risk to the community due to their virulence, prevalence or potential to inflict significant sequelae are designated “reportable” under public health legislation. Reporting of infections allows public health to monitor the prevalence and incidence of these diseases in the community and to tailor prevention and intervention programs to reduce the risk of disease and disease transmission in the population. In Ontario, the *Health Protection and Promotion Act* (HPPA) is the legislation under which diseases are designated as reportable and under whose authority diseases are investigated and intervention undertaken. Gonorrhoea, chlamydia, syphilis and HIV are all designated as reportable and communicable diseases. Gonorrhoea and syphilis in addition are classified as virulent diseases. The HPPA requires the reporting of diagnosed infections of reportable diseases to local medical officers of health.

All new infections are reported to local public health authorities for follow up in accordance with the OPHS, 2008, the Sexual Health and Sexually Transmitted Infections Prevention and Control Protocol, 2008 (or as current) and the Infectious Diseases Protocol, 2008 (or as current). Public health follow-up is undertaken to ensure that an infected individual receives appropriate counselling and medical care in order to reduce the risk of transmission of the infection to others in the community. Contacts of the infected case are identified and informed of the risk to their health and the need for medical assessment. Where cases refuse to notify their contacts or provide information to allow public health to do contact tracing, the HPPA provides the MOH with the authority to order cases to name their contacts. Guarding the confidentiality of the infected individual is an essential component of public health practice and is legislated in Section 39 of the Act. Further discussion of contact tracing is provided in Section 11.

Under Section 22 of the HPPA, if the legal requirements of that section are met, MOHs have the legislative authority to issue a written order to, among other things, require a person to take or to refrain from taking any action with respect to a communicable disease. In the case of bacterial STIs, which are curable, the order usually involves ordering the person to be treated for the disease. Orders may also be written to just require the individual to name their partners for the purpose of contact tracing.

Section 22 (4) (a)-(g) lists what may be included in a Section 22 order, however, it is important to note that these are not limiting and the MOH may choose to include additional requirements that are necessary to reduce or eliminate the spread of disease. Treatment for gonorrhea or syphilis can be ordered under Section 22(4)(g). This section would not apply to ordering treatment for chlamydia, as chlamydia is not a virulent disease under the HPPA in Ontario. However, ordering an individual to be treated for chlamydia can be done under Section 22(4)(h) or outside of the list included in Section 22(4) if it is deemed to be necessary to decrease or eliminate the risk presented by the communicable disease.

What may be included in an order:

Section 22 (4) An order under this section may include, but is not limited to,

- (a) requiring the owner or occupier of premises to close the premises or a specific part of the premises;
- (b) requiring the placarding of premises to give notice of an order requiring the closing of the premises;
- (c) requiring any person that the order states has or may have a communicable disease or is or may be infected with an agent of a communicable disease to isolate himself or herself and remain in isolation from other persons;
- (d) requiring the cleaning or disinfecting, or both, of the premises or the thing specified in the order;
- (e) requiring the destruction of the matter or thing specified in the order;
- (f) requiring the person to whom the order is directed to submit to an examination by a physician and to deliver to the medical officer of health a report by the physician as to whether or not the person has a communicable disease or is or is not infected with an agent of a communicable disease;
- (g) requiring the person to whom the order is directed in respect of a communicable disease that is a virulent disease to place himself or herself forthwith under the care and treatment of a physician;
- (h) requiring the person to whom the order is directed to conduct himself or herself in such a manner as not to expose another person to infection. R.S.O. 1990, c. H.7, s. 22 (4); 1997, c. 30, Sched. D, s. 3 (2).⁴⁰

With respect to the serving of communicable disease orders, these are deemed to be deemed legally served 7 days after being mailed or delivered personally to the last known address.⁴¹

Under Section 35 of the HPPA, MOHs can make an application to the Ontario Court of Justice to, among other things, have an individual be taken into custody and detained in hospital for assessment and treatment of a virulent disease. Virulent STIs under the HPPA include gonorrhoea and syphilis only.

Considerations

Compliance by the infected individual in the follow-up of a reportable bacterial STI implies that the case receives treatment with appropriate antibiotics in order to render them non-infectious and identifies sexual partners who may have been or continue to be at risk of infection. The risk of further transmission of the infection to their sexual partners and by extension to the broader community is reduced. The individual gains knowledge about the infection and risk of transmission, is treated to cure the infection and thus is protected from the potential sequelae of infection. Compliance by the contact of a case implies that the contact has been informed of their exposure, counselled and has attended for STI testing and possible treatment.

Appropriately trained public health professionals are skilled in counselling, information exchange and application of the *Health Protection and Promotion Act*. Working with community health care providers, public health practitioners ensure that infected individuals are counselled and treated expediently, and contacts identified, informed and medically assessed. Public health staff should if appropriate, always pursue less intrusive measures such as counselling and referral to community-based organizations and supports, and monitoring of a situation before the Medical Officer of Health considers issuing a Section 22 order. Individuals who are infected with STIs may also be facing many other challenges such as stigma, discrimination, lack of income, lack of housing, violence, etc. and these may be barriers to being fully compliant with public health prescriptions related to treatment, partner notification and safer sex practices. Often, by providing support to cases and addressing these other challenging issues, the need for legal measures is eliminated. Orders are considered to be a last resort for the few people who do not respond to less intrusive interventions.

There are nevertheless, cases in which the infected individual is not compliant with measures to reduce the risk of transmission to others and the Medical Officer of Health is empowered to order compliance under Section 22 of the Act.

To issue an order, the MOH must be of the opinion, upon reasonable and probable grounds:

- (a) that a communicable disease exists or may exist or that there is an immediate risk of an outbreak of a communicable disease in the health unit served by the MOH; and
- (b) that the communicable disease presents a risk to the health of the persons in the health unit served by the MOH; and
- (c) that the requirements of the order are necessary to decrease or eliminate the risk to health presented by the communicable disease.

While the Section 22 order takes effect immediately, it must inform the person to whom it is directed that they are entitled to request a hearing by the Health Services Appeal and Review Board (HSARB) by written request submitted within 15 days after the order was issued. The HSARB has broad powers to confirm, alter or rescind the order. HSARB orders may be appealed to the Ontario Divisional Court.

Evidence

In Ontario, there are no standard provincial guidelines regarding the use of Section 22 orders. Additionally, there is no evidence or published research available on the effectiveness of such legal measures and orders.

Lessons from the Field

The public health management of difficult STI cases presents ongoing challenges. Each case is unique and involves many issues that need to be individually considered. For this reason, there is variance across the province in the application of Section 22 orders for STI cases. Section 22 orders were not commonly used for STI cases in Ontario in 2005 and were even less frequently used for contacts. Orders are a last resort, albeit a necessary one, in the continuum of public health approaches to these challenging situations. MOHs should seek the opinion of their legal counsel if they are considering the use of a Section 22 order.

Key informant respondents to our survey of Canadian and international jurisdictions indicated that they usually take legal measures only for infectious syphilis and not for gonorrhea or chlamydia.

In our Case Management Practice Survey, 21-29% of Ontario PHUs considered an uncooperative individual infected with a bacterial STI to be lost to follow-up rather than identifying such cases as non-compliant.

Practice Implications

Training of public health professionals in the art and science of interventions to reduce the risk of transmission of sexually transmitted infections is essential to gaining the confidence and compliance of affected individuals and of community health care providers.

Staffing impacts significantly on case and contact follow-up, as there must be adequate time available for interaction with community health care providers and for intervention with the individual. In addition, the involvement of the program manager and the MOH is critical when dealing with difficult cases.

When an order under Section 22 of the HPPA is required to gain compliance, the process of writing the order can be time consuming.

The order should include:

- the actions that the case is being ordered to take and the time period for compliance (e.g., treatment, requirement to name sexual contacts, requirement to abstain from penetrative sexual activity until treatment is complete).
- the reasons for the order (citing the appropriate section of the HPPA, sections 25 & 26 for physician reports, section 29 for laboratory reports, attempts made by the physician or the health unit to reach the case, the risk to self/others if the case remains untreated).

Sample template orders for bacterial STIs can be found in Appendix G.

Cases who continue to be non-compliant may be prosecuted under the HPPA. Any person who fails to obey an order made under the HPPA may be charged with a provincial offence, and, upon conviction, may be fined up to \$5000 for every day that the offence continues. Alternatively, a section 102 order (application for a court order) may be sought upholding the original Section 22 order.

Section 22 orders for noncompliant contacts are very time consuming and not generally recommended for use with contacts of cases, although they may be considered in special cases such as pregnant contacts.

Policy Implications

Health units should develop a policy to follow up cases after orders are issued to ensure cases comply within the specified time period named in the order.

Research Implications

Research on the effectiveness and cost-effectiveness of Section 22 orders as a tool for the control of bacterial STIs should be conducted.

6. Challenges and Legal Measures in HIV Case Management

Recommendations:

- 6.1 All HIV positive cases must receive comprehensive post-test counselling as per the Guidelines for HIV Counselling and Testing, MOHLTC, 2008 [IIB]. They should also be considered for further follow-up counselling and behaviour change interventions depending on their needs [IB].
- 6.2 All HIV positive cases must be advised to disclose their infection to all sexual and needle-sharing contacts [IIB].
- 6.3 Public health policy and practice with regard to disclosure by HIV positive individuals should be informed by the findings and recommended model proposed by the Expert Working Group of the Federal/Provincial/Territorial Advisory Committee on HIV/AIDS⁴². [IIB]
- 6.4 Section 22 orders for HIV positive cases should be considered when intensive public health efforts have not been successful [IIIB]. This may include situations when the case
 - is refusing counselling
 - is engaging in penetrative (oral/vaginal/anal) sex or needle sharing without disclosure
 - is refusing to name sexual or needle-sharing contacts
 - has deliberately donated blood/sperm/organs/breast milk

Background

In Ontario, HIV is reportable as the agent that causes AIDS, a reportable disease under the *Health Protection and Promotion Act* (HPPA). All new infections are reported to local public health authorities. Public health follow-up is undertaken to ensure that an infected individual receives appropriate counselling and medical care for their own health and in order to reduce the risk of transmission of the infection to others in the community. Contacts of the infected individual are identified and advised of the need for medical assessment. Guarding the confidentiality of the infected individual and contacts is an essential component of public health practice and is legislated in Section 39 of the HPPA.

There are rare cases in which the infected individual is not compliant with measures to reduce the risk of transmission to others and the Medical Officer of Health is empowered to order compliance under Section 22 of the HPPA to ensure that the risk of transmission of infection is minimized.¹⁹

When HIV was first discovered in the mid 1980s, it was a fatal illness that initially was concentrated within populations already subject to stigma and discrimination. As medical science has advanced, HIV has increasingly come to be seen as a treatable chronic illness, yet stigma and fear of discrimination persist. Cooperative working relationships between those infected, those most at risk, and public health practitioners can reduce HIV transmission and eliminate the fear of discrimination that has been associated with infection.

Considerations

When HIV infection occurs, compliance implies that the case adopts behaviours such as informing partners of their HIV status and practicing safer sex. This will ensure that the partner is aware of the potential risk and can choose to protect himself or herself from transmission of the virus. An individual infected with HIV is counselled about behavioural methods to reduce the risk of transmission to others and where needed is referred for medical care. The occurrence of a bacterial STI in an HIV positive individual should prompt follow-up to review counselling about safer sex practices and disclosure and to assess whether the individual feels able to disclose their HIV status to partners.

Non-compliance thus means that the case either did not engage in counselling about means to reduce transmission or that there is evidence that despite counselling, the infected individual has put others at risk of infection without their informed consent. Disclosure by the case to their sexual or drug equipment-sharing partners prior to any sexual or drug-sharing activity allows partners to make an informed choice about engaging in those activities. Protected sexual contact still poses a low but non-negligible risk of HIV transmission due to condom failure and inconsistent condom usage, and therefore, informed consent is still necessary.

The Centers for Disease Control⁴³ have produced an evidence-based document on incorporating prevention into the medical care of persons living with HIV. This document could be adapted by public health staff working with HIV positive cases to prevent transmission of infection to others. Resources focusing on the issue of positive prevention have also been developed by the Gay Men's Sexual Health Alliance in Ontario; further information is available from the AIDS Bureau, MOHLTC. Resources can also be obtained from the Toronto People with AIDS Foundation.

It is difficult and may sometimes be counterproductive to attempt to fully address such prevention in the context of client-centred post-test counselling. Coming to terms with a positive test may be complex and traumatic, and cases are more likely to establish a co-operative relationship with a provider who is able to understand this and ensure adequate follow-up rather than attempt to deal with all issues at one post-test counselling visit. PHUs should particularly consider the most effective mix of directly providing counselling and support services, ensuring training and resources of health care providers to provide these services, and working with community-based agencies to provide these services. This mix is likely to vary according to the specific context in which each PHU works and the other resources available. Working effectively with health care providers doing long term clinical care of HIV cases is likely to be particularly important since they will have the opportunities to do repeated screening for behavioural and clinical risks (e.g., other STIs) and can refer cases needing further behavioural counselling or partner notification services to public health when necessary. Appendix H provides recommendations for behavioural interventions to reduce HIV transmission risk, adapted from MMWR, July 18, 2003. There are also existing interventions focusing on reducing the risk behaviour of HIV positive persons. For example, Kalichman^{44, 45} (2005, 2007) has described group interventions which can be delivered in community or support group settings that have been shown to reduce sexual behaviours which carry risk of transmitting HIV. In Ontario we also recommend disclosure of HIV status to all sexual partners prior to activities whether these are protected or not, since even protected sex has some degree of risk. Disclosure before sharing of any contaminated drug injection equipment is also recommended; however it is the goal of public health programs to ensure that sufficient sterile equipment is available that used equipment need never be shared.

Appropriately trained public health professionals are skilled in counselling, information exchange and application of the *Health Protection and Promotion Act*. Individuals who are infected with HIV may also be facing many other challenges such as stigma, discrimination, lack of income, lack of housing, fear of rejection, violence and cultural pressures. These factors may be barriers to being fully compliant with public health prescriptions related to disclosure, safer sex practices and the naming of sexual or needle-sharing contacts.

Needs that may result in HIV positive cases being referred to public health or from public health to other services may include:

- need for intensive HIV prevention intervention;
- excessive use of alcohol or recreational drug use;
- drug addiction, including injection drug use;
- depression, anger, guilt, fear, or other mental health needs;
- need for social support;
- sexual compulsivity;
- sexual or physical abuse (victim or perpetrator);
- desire to have children, contraceptive counselling;
- housing or transportation needs;
- nutritional needs;
- financial emergencies;
- child custody, parole, or other legal matters; or
- insurance coverage issues.

Often, by providing support to cases and addressing these other challenging issues, the need for more coercive measures is eliminated. Appendix I outlines a graduated approach to the HIV case who continues to pose a risk of infecting others. Public health staff should always pursue less intrusive measures such as counselling and referral to community-based organizations and supports, and monitoring of a situation before issuing the more coercive Section 22 order. Orders are considered to be a last resort for the few people who do not respond to less intrusive interventions.

Under Section 22 of the HPPA, MOHs have the legislative authority to issue a written order requiring a person to take or to refrain from taking actions with respect to a communicable disease. In the case of HIV, which is not curable, the order usually involves ordering the person to change their behaviour in order to reduce or eliminate the risk to others. In these situations, orders are not time limited and it can be difficult to document their effectiveness. Orders may also be written to require the individual to name their partners for the purpose of contact tracing.

To issue an order, the MOH must be of the opinion, upon reasonable and probable grounds:

- (a) that a communicable disease exists or may exist or that there is an immediate risk of an outbreak of a communicable disease in the health unit served by the MOH; and
- (b) that the communicable disease presents a risk to the health of the persons in the health unit served by the MOH; and
- (c) that the requirements of the order are necessary to decrease or eliminate the risk to the health presented by the communicable disease.

The provisions of the HPPA ensure that the person's identity and the order are confidential. While the Section 22 order takes effect immediately, it must inform the person to whom it is directed that they are entitled to request a hearing by the Health Services Appeal and Review Board (HSARB) by written request submitted within 15 days after the order was issued. The HSARB has broad powers to confirm, alter or rescind the order. HSARB orders may be appealed to the Ontario Divisional Court.

Over the past 10 to 15 years, several criminal cases have been brought forward in Canada against HIV infected people for aggravated assault, sexual assault or criminal negligence causing bodily harm. In September 1998, the Supreme Court of Canada ruled on the appeal of *R. v Cuerrier*. The court found that there is a duty on the HIV positive individual to disclose their status prior to unprotected penetrative sex where there is a significant risk of serious bodily harm. Criminal charges are usually laid by the Crown Prosecutor following a complaint made by a contact of a person infected by HIV.

Evidence

In Ontario, there are no standard provincial guidelines regarding the use of Section 22 orders for HIV. In addition, there is no published research available on the effectiveness of such orders. Unlike section 22 orders for bacterial STIs (which are time limited and have measurable outcomes), measuring the effectiveness of Section 22 orders for HIV is extremely difficult because HIV is a lifelong infection and monitoring behaviour change is difficult.

Lessons from the Field

The public health management of complex HIV cases presents ongoing challenges. Each case is unique and involves many ethical and moral issues that need to be individually considered. For this reason, there is variance across the province in the application of Section 22 orders. In some challenging situations, orders are a last resort, albeit a necessary one in the continuum of public health approaches. MOHs should consult colleagues experienced in this area and seek the opinion of their legal counsel if they are considering the use of a Section 22 order.

A majority of PHUs from the practice survey reported that they would consider the use of orders where there are HIV+ persons with repeated diagnosis of other STIs, repeated naming as a contact of HIV or STI cases, and sexual exposures (whether protected or not) without disclosure of HIV status to partners, as well as repeated sharing of injection drug using equipment. Most PHUs have other measures which they institute prior to issuing orders, including further counselling and education, consultation with HIV experts, and referral to community agencies.

An Expert Working Group convened by the Federal/Provincial/Territorial Advisory Committee on HIV/AIDS in 2002/03 reviewed the legal and ethical issues surrounding the non-disclosure of HIV/AIDS and published their findings⁴¹. The expert working group considered the risk of HIV transmission related to particular behaviours and delineated strategies to address non-disclosure. They proposed a model for public health officials to consider when framing their own policy and practice. The Ontario Advisory Committee on HIV/AIDS (OACHA) has produced a document discussing the issue of reducing HIV transmission by people with HIV who are unwilling or unable to take appropriate precautions and are not disclosing their HIV status, and addressing the approaches from least to most intrusive that may be utilized to deal with the small minority of HIV-positive individuals who continue to put others at risk⁴⁵. Further information on legal issues related to HIV and criminalization issues in particular can be found in the Guidelines for HIV Counselling and Testing, OMHLTC, 2008²⁰, and in the fact sheets on HIV and criminal law prepared by the Canadian HIV/AIDS Legal Network and available on their website (<http://www.aidslaw.ca>)⁴⁶.

Key informants in our survey of other Canadian and international jurisdictions indicated that they all counsel about and encourage disclosure of HIV status to sexual partners, but this may vary somewhat according to type of partner and type of sex act. One jurisdiction has a system to flag cases of co-infection with HIV and a subsequent STI, while others do not merge HIV and STI data and are not routinely able to identify co-infections.

Practice Implications

The practice survey has shown the variability in the application of Section 22 orders for HIV cases across Ontario. There is some variance in approach, particularly in situations where the HIV positive person discloses their status to all partners but may not use condoms, or when the HIV positive person always uses condoms but does not disclose their HIV status. The working group recommends that all HIV positive cases should be counselled to disclose their infection to all sexual contacts regardless of condom use. Where disclosure has occurred, and there is informed consent to not use condoms, the use of section 22 orders would be inappropriate.

Training of public health professionals in the art and science of interventions to reduce the risk of transmission of STIs is essential to gaining the confidence and compliance of affected individuals and of community health care providers.

Staffing impacts significantly on case and contact follow-up, as there must be adequate time available for interaction with community health care providers and for intervention with the individual.

Sample template orders for HIV can be found in Appendix J. The order should include:

- the actions that the case is being ordered to take and the time period for compliance, if applicable (e.g. counselling, requirement to name sexual partners, requirement to disclose HIV status to partners prior to penetrative sex, requirement to use condoms for penetrative oral/anal/vaginal sexual activity, ban on sharing of injection drug equipment, ban on donating blood/sperm/organs/breast milk).
- The reasons for the order (citing the appropriate section of the HPPA, sections 25 & 26 for physician reports, section 29 for laboratory reports, attempts made by the physician or the health unit to reach the case, the risk to others if the behaviour continues).

Health units should develop a policy to follow up cases after orders are issued to ensure they comply within the specified time period for those items in the order that have a time frame attached (eg. Naming contacts or attending counselling). A process for follow-up at regular intervals over a time period specific to each particular case should be in place when the order is issued.

Persons who continue to be non-compliant may be prosecuted under the HPPA. Any person who fails to obey an order made under the HPPA is guilty of a provincial offence and upon conviction, may be fined up to \$5000 for every day that the offence continues. A section 102 order (application for a court order) may also be sought upholding the original Section 22 order.

Policy Implications

It is recommended that the Chief Medical Officer of Health in collaboration with the Council of Ontario Medical Officers of Health strike an expert advisory panel on difficult HIV cases. This panel would be able to provide consultation and advice to MOHs dealing with difficult cases, particularly in jurisdictions with few HIV cases.

Research Implications

Periodic surveys should be undertaken in Ontario to document the use and contents of Section 22 orders for HIV.

7. Third Party HIV Reports

Recommendations:

- 7.1 Public Health Units should receive, assess and investigate, as appropriate, third-party reports alleging that individuals are infected with HIV and placing others at risk of infections. [IIB]**

Background

From time to time, PHUs receive reports from third parties complaining about the behaviour of someone who is allegedly HIV infected. Reports may be anonymous or the caller may identify themselves. In some situations, the caller is directly involved (e.g., a sexual partner who was not disclosed to) and in other situations the caller may be reporting behaviour they have heard about indirectly. Complaints from sexual partners and third party reports from credible sources that indicate that a person may be exposing others to HIV, are situations that warrant public health follow-up. The credibility of third party reports must be judged on a case by case basis, with legal advice as necessary.

Section 34(1) of the HPPA requires physicians to report to the MOH “the name and residence address of any person who is under the care and treatment of the physician in respect of a communicable disease and who refuses or neglects to continue the treatment in a manner and to a degree satisfactory to the physician”. Section 39 (2) of the HPPA permits physicians and others to disclose information about their patients that would otherwise be confidential “where the disclosure is made for the purposes of public health administration”^{1,9}. Similarly, the *Personal Health Information Protection Act, 2004* (PHIPA) also may permit other disclosures of a patient’s personal health information.

Considerations

When a third party report is received, the health unit should collect as much information as possible to identify the alleged HIV infected individual, to document the nature of the complaint in detail and to obtain the name and contact information for the caller. The caller should be informed of HIV case management steps in general (as well as how third party complaints are investigated) but told that any specific information relating to the person they are complaining about cannot be divulged. The caller should be assured that their identity will be protected. If the caller believes that they were exposed to or infected with HIV without disclosure, they should be told that they may also wish to make a complaint with their local police services (usually the sex crimes unit).

The first step in the investigation would be to verify if the individual is already known to public health by checking the PHU records and/or the provincial database. If they are known to be HIV positive, the record should be reviewed to determine what involvement public health has had with the case to date. Depending on the nature of the complaint, further action may include additional counselling at a minimum but may involve other measures (see Section 6). STI program staff should consult with the program manager and MOH who in turn may wish to consult with the health unit lawyer and experienced colleagues in other jurisdictions. If the individual is not known to public health (i.e., no evidence of HIV infection is available), no further follow-up is generally warranted.

Lessons from the Field

Approximately 60 percent of Ontario health units surveyed receive and investigate third party reports about HIV positive individuals. Most but not all other Canadian and international jurisdictions surveyed accept third party complaints regarding HIV. In some cases this includes anonymous complaints; in others the complainant must be identified. Actions are generally decided on a case by case basis; one jurisdiction initially counsels cases about their behaviours after a complaint, and then has an escalating response to further complaints, culminating in legal action if necessary.

Practice Implications

Health units should develop a mechanism to receive, assess and possibly investigate third party reports about HIV positive individuals.

8. Late Latent Syphilis

Recommendations:

- 8.1 The primary responsibility for case management for late latent syphilis cases (excluding pregnant women) should lie with the health care provider, as they are non-infectious. Public health efforts should focus on supporting the health care provider and on surveillance of the infection. [IIB]**
- 8.2 Late latent syphilis occurring in pregnancy requires public health follow-up because of the small risk of vertical transmission to the infant. [IA]**

Background

Proper assessment and diagnosis of syphilis is challenging due to diverse and intermittent symptoms, complexity in interpreting laboratory results, and the influence of other diseases. To add to this challenging situation, the number of late latent syphilis cases has increased since the Provincial Central Public Health Laboratory implemented the enzyme immunoassay (EIA) test as the syphilis screen test in August 2005⁴⁷. The increased specificity and sensitivity of the new EIA test detects cases which were previously missed by the Rapid Plasma Reagin (RPR) screen test.

Prior to implementation of the EIA syphilis screen test, and more recently the CMIA test, Ontario had low rates of non-infectious syphilis compared to other reportable STIs⁴⁸. As a result, health care providers had limited opportunities to familiarize themselves with the clinical management of the illness and sought the expertise of public health to diagnose, counsel, treat and provide follow up.

Considerations

There is very little utility in the public health follow-up of late latent syphilis cases, including contact tracing, as it identifies very few new cases. The exception is a pregnant woman with late latent syphilis, as there is a 10% risk of transmitting the infection to the infant in utero^{49, 50, 51}. Consequently, for pregnant women diagnosed with late latent syphilis, public health staff should maintain routine case management responsibilities of ensuring appropriate treatment, counselling and contact tracing. Follow-up in subsequent pregnancies should not be required for women who have adequate previous treatment documented by their health care provider.

Non-infectious cases of syphilis other than those in pregnant women can be adequately managed by the testing health care provider. Public health can provide education and support to the health care provider to assist in management of these cases. A discussion with the health care provider may include reference to the *Canadian Guidelines on Sexually Transmitted Infections* (2006)¹⁸

and awareness that 1/3 of untreated cases will develop complications⁵². Appendix K is an example of an information sheet which can further support health care providers to manage these cases. Appendix L is an example of an information sheet for the health care provider to discuss with the case.

Public health staff should ensure that these cases are entered in the provincial database for surveillance purposes. Documentation of epidemiological and treatment information enables appropriate interpretation of future serology done on the same individual.

Lessons from the Field

An informal survey of public health organizations in Canada, the United States, the United Kingdom, and Australia revealed that approximately half of those contacted do not follow up with the late latent syphilis case for additional counselling and contact tracing.

Practice Implications

Because of the non-infectious nature of most late latent syphilis cases, public health follow-up is recommended only for pregnant women. This will allow for scarce public health resources to be more effectively allocated to other interventions with more significant public health implications.

9. Medical Surveillance for Syphilis

Recommendations:

9.1 Syphilis Medical Surveillance reports from Citizenship and Immigration Canada (CIC) do not require follow-up from the public health unit, except for entry into the provincial database as treated cases for surveillance purposes. [IIB]

Background

In order to protect the health and safety of Canadians, persons applying for immigration status or temporary residence for a period longer than 6 months, must submit to a medical examination by a physician designated by Citizenship and Immigration Canada (CIC). Syphilis serology is required of all persons 15 years and older. A positive non-treponemal test, such as a Venereal Disease Research Laboratory (VDRL), must be confirmed with a treponemal-specific test, such as a Fluorescent Treponemal Antibody Absorbed (FTA-ABS). If the specific treponemal screening test for syphilis is unavailable or positive, then treatment in accordance with the *Canadian Guidelines on Sexually Transmitted Infections* is required by Citizenship and Immigration Canada (CIC)⁵³.

Once in Canada, CIC tells the individual to report to local public health officials as part of the immigration process and a Medical Surveillance Undertaking under the "S" code 2.04 is issued to the individual and the provincial jurisdiction where the person plans to reside⁵⁴. Notification is sent by the Ministry of Health and Long-Term Care (MOHLTC), informing the local jurisdiction of the immigrant. Attached to the MOHLTC notification will be: Appendix M, the Medical Surveillance form sent if the medical examination took place outside Canada, or, Appendix N the form sent if the medical examination occurred in Canada.

Considerations

These individuals have been assessed by medical officers employed by CIC and are considered to be adequately treated for syphilis. Therefore, there is no risk of transmitting the infection to others and no public health interventions are required. Public health staff should ensure that these cases are entered on the provincial database for surveillance purposes. Documentation of epidemiological and treatment information enables appropriate interpretation of future serology done on the same individual.

However, CIC directs the individual to contact local PHUs within 30 days. When an individual calls the PHU, staff should:

- Answer any questions regarding syphilis
- Remind them even though s/he was appropriately treated, antibodies will always be present in the blood and therefore the case will always test positive for syphilis
- Advise clients to inform their health care provider of their positive syphilis serology and treatment history.

Policy Implications

The MOHLTC should request CIC to no longer direct clients to report to local PHUs. Public health interventions are not required for these individuals. It would be useful for CIC to continue to send the information on the individuals deemed as an Immigration Medical Surveillance case, so that they can be entered in the provincial database as treated cases for surveillance purposes. Since these cases are non-infectious and already treated, no further public health action is required.

IV. Contact Management

10. Overview of Contact Management

Recommendations:

- 10.1 Public health staff who undertake contact tracing must be culturally aware, have effective counselling skills, and approach clients with a supportive and non-judgemental attitude [IIIB].**
- 10.2 Public health staff who undertake contact tracing must have up-to-date knowledge of local services and resources for referral, including supports for those threatened by domestic violence or sexual abuse [IIIB].**

Background

Contact tracing is an important and necessary part of effective public health case management. Contact tracing is an exacting and sometimes time-consuming process that requires a particular set of skills, experience and knowledge of the communities most affected. It relies on the goodwill and cooperation of the index case to be most effective. To gain cooperation, the health care provider must be supportive and non-judgemental. Contact tracing includes an educational component, in order to ensure that the index case and contacts are informed about the nature and implications of the infection, modes of transmission and prevention, and treatment options. The health care provider should be culturally aware and have basic counselling skills and other personal qualities such as tact, empathy and awareness of the physical, emotional, and social conditions of the client. The provider also needs current and accurate knowledge of treatment and support services and must be familiar with the HPPA and other legal aspects of STI management in Ontario.

Contact tracing is frequently undertaken as part of clinical care and so may be carried out by the health care provider who diagnoses the STI. However, research in the United States has suggested that primary care providers frequently do not do contact tracing, assuming that this is the responsibility of public health, or preferring to rely exclusively on patient notification/referral for contact tracing⁵⁵. In addition to not considering contact tracing as their responsibility, primary care providers may be too busy or lack the necessary skills to complete contact tracing successfully. This raises the question of whether and in what circumstances public health unit staff should confirm that clinical care providers have done contact tracing. Typically when a lab test result is first received, the PHU discussion initiated with the health care provider or the case includes determining who is doing or will do contact tracing. The Ontario public health practice survey undertaken in 2006 by the STI Working Group asked whether STI programs confirm that contact tracing has been carried out. Results suggested significant variation in this practice, both among health units for the same disease, and among diseases within the same health unit. This is likely to be at least in part a resource issue, and as such may be considered along with the question of priority setting for contact tracing.

Priorities for Contact Tracing

Contact tracing for particular cases may be deemed higher priority for diseases that are life-threatening or have major sequelae. These would include HIV, infectious syphilis, and infections where contacts are pregnant or are young women at increased risk for pelvic inflammatory disease. In the case of HIV, highest priority should be given to partners who have been exposed

within the past 72 hours and might be candidates for post-exposure prophylaxis (PEP), partners of index cases who are themselves acutely infected or otherwise known to have high viral load, and partners of index cases who are co-infected with another STI, which is known to increase risk for HIV transmission, as well as partners whose earliest known exposure has been within the past 3 months, and who are therefore potentially acutely infected and at higher risk for disease transmission to others⁵. Contact tracing should generally be considered more urgent in situations where there is imminent risk of a contact transmitting an infection to others. These situations include contacts who are likely to have other unprotected sexual partners, or are likely to continue to pass used injection equipment to others, or a contact who is pregnant. In these cases it is particularly important to ensure that contact tracing has occurred, and PHU staff may request direct communication with the contact or written confirmation from the health care provider that the contact has been informed, counselled and assessed as appropriate. Appendix O provides a sample of letters from the PHU to the health care provider regarding their responsibility for contact tracing.

Ethical and legal issues

Public health has ethical and legal responsibilities to warn known persons potentially exposed to a communicable disease. There is also a legal and ethical obligation to protect the confidentiality of persons infected with a communicable disease. As a result, contacts are not informed of the identity of the potential source person for their infection, but only that they have been named as a contact of a sexually transmitted infection. Because of their legal responsibilities to ensure that contacts are notified of their exposure and offered counselling and testing, when the case or another health care provider undertakes contact tracing, PHU STI programs need mechanisms to ensure that this is completed. This is especially important in the case of a long-term sexual partner who may be at ongoing risk for exposure to HIV.

Lost to Follow-up

For situations where public health staff attempt to trace contacts and are unable to reach them, the criteria for declaring a contact lost to follow up are similar to those for a lost to follow up case. Before making such a declaration, the investigator needs to ensure that multiple modalities have been used over a reasonable period of time (weeks rather than days to account for prolonged absences) to attempt to contact the individual. These methods may include phone calls (daytime and evening), regular and possibly registered mail letters and home visits. More novel methods may include email, internet and text-messaging (see section 13 for further discussion of use of these technologies). Regardless of modality, confidentiality of an individual's personal health information needs to be maintained.

Managing Reluctant Cases

Sometimes the index case may be reluctant to co-operate either with informing contacts or providing contact details to the health care provider and/or public health. It is useful for the provider to reassess the index case and address their reluctance. The table below, taken from a publication of the Australasian Society for HIV Medicine outlines possible reasons (often occurring in combination) for reluctance to co-operate and suggested strategies to address them.⁵⁶ Other factors not included in this reference, such as social determinants, fear of stigma and discrimination, fear of rejection or of partner abuse may also impact on willingness to co-operate with contact notification, and should be addressed based on individual client needs.

Reason	Suggested Strategies
Fear of loss of confidentiality	Offer the potential anonymity of provider notification/referral
Unassertive client	Practise role playing (perhaps with counsellor assistance)

Client not reconciled to his/her diagnosis	Allow more time and support
Logistic (time/distance/nowhere for contacts to go)	Advise on provider notification/referral, other support/health agencies. Sometimes patient-delivered partner therapy may be appropriate.
Client unaware of seriousness of consequences for contacts	Educate client
Client has little concern for consequences to contacts	Explain that contacts tend to find out eventually anyway. Advise about risk of re-infection and legal requirements.

In some circumstances where there are known to be high priority contacts who are not being notified and none of the above strategies have been successful, public health may consider use of legal orders under section 22 of the HPPA to compel cases to name their contacts so that they can be notified by public health. This should be considered on a case by case basis. Use of Section 22 orders and Section 35 orders is discussed in Sections 5 and 6.

11. Contact Tracing

Recommendations:

11.1 Provider notification/referral; conditional notification/referral; or offering cases a choice between provider and patient notification/referral, appear to be more effective than patient notification/referral only [IIB]

11.2 Contact tracing can be enhanced by:

- Patient-delivered partner therapy (see section 12) [IA]
- Provision of referral cards or other written information to be provided by cases to their contacts [IB]
- Telephone reminders to cases [IB]

11.3 Public health and health care providers who are regularly working with cases with STIs require training to do skilled case-interviewing and effective contact tracing [IIIB].

11.4 Recent evidence supports a recommendation for direct public health involvement (provider or conditional notification) in partner services for all persons with newly diagnosed or newly reported HIV infection or early syphilis, and potentially for gonorrhoea and chlamydia cases as well where resources allow [IIB]

11.5 Public health should consider mechanisms to ensure that contact tracing has been successfully carried out in situations where the case or a health care provider not affiliated with the public health unit is undertaking contact tracing [IIIB]. This is especially important for high priority contacts:

- pregnant women, young women (especially under age 25) at risk of serious sequelae such as pelvic inflammatory disease [IIB]
- contacts suspected of being the source case [IIIB]

Background

Contact tracing involves informing the sexual and needle-sharing partners of their potential exposure and encouraging them to seek medical evaluation, testing, and appropriate treatment. It may serve several purposes:

- case-finding which can benefit both the partner (bringing them to treatment and reducing their future morbidity) and the index case (preventing re-infection in the case of an ongoing relationship)
- reducing further spread of the disease
- discharging the ethical duty to inform partners of their exposure to an STI
- better defining the epidemiology of an STI within a given population

Contact tracing is a long established component of the public health approach to the control of STIs. There is limited evidence about the effectiveness of different approaches. Three reviews have been carried out examining and comparing the effectiveness of different approaches to contact tracing for STDs overall, and strategies to improve the effectiveness of contact tracing methods. Along with these reviews, a Cochrane literature review from 2001, a review focussing on contact tracing for HIV specifically, and other newer studies were analyzed for this document.

Three different approaches to contact tracing have been described: patient notification/referral, conditional or contract notification/referral, and provider notification/referral (see glossary for definitions of these). In addition, joint notification involving notification by a provider and patient together has also been described although not formally evaluated⁵⁷.

In some contact tracing models, cases are offered a choice between notifying partners themselves and having providers notify them, such that they may choose different modes of notification for different partners (for example, they might prefer to notify regular partners themselves, but request that a provider notify past partners or casual partners).

There are important issues specific to contact tracing and follow-up for incurable viral STIs as compared with the bacterial STIs for which effective antibiotic treatment is available. For bacterial STIs such as infectious syphilis, gonorrhoea, and chlamydia, the immediate goal is to ensure effective treatment for infected contacts, and to prevent re-infection of the index case, while the broader goal is to reduce the overall burden of disease in the population. With the increasing concern about viral STIs, particularly HIV, it has become important to regard any STI as a marker of increased risk, and an opportunity to address the need to change risky sexual behaviours. With respect to HIV, behavioural change is the main prevention tool. The need to support behaviour change requires public health practitioners to be knowledgeable about effective counselling and brief intervention strategies, or to be able to refer to such resources. (See Section 3)

Considerations

Effective contact tracing requires the co-operation of cases in naming contacts and informing them or providing necessary information so that they can be informed. It therefore requires skill in interviewing cases and eliciting their co-operation. Public health practitioners must be trained to do skilled case interviewing. Since health care providers are frequently the professionals interacting with cases, they too must be well trained in interviewing. Research in the United States has documented that physicians frequently do not consider contact tracing as their responsibility, and assume that it will be done by cases themselves, or by public health (which frequently lacks the necessary resources⁵⁶). There is no comparable research available in Canada, but it does suggest the need for public health to communicate clearly with local health care providers about the issue of contact tracing and to determine how best to co-operate to ensure optimal results. Anonymous HIV testing providers are a special case in that clients tested anonymously are counselled at the anonymous test site about notifying their partners as well as the need to disclose their infection to all future partners, and could request assistance for notifying partners, but will not be reported nominally to public health to enable further public health case and contact follow-up.

Efforts to obtain information about individual cases need to be balanced against the importance of maintaining effective working relationships, particularly with sexual and ethnic minority groups. Sensitivity is needed toward the barriers and issues faced by cases in notifying partners, in particular fears and concerns about domestic violence. There is very little research addressing these negative impacts in order to guide practice.

Finding new cases among contacts who themselves have additional sexual partners will have more epidemiologic impact than case finding among monogamous partners. When a case names multiple contacts, these are more likely to be casual partners who may be more difficult and time-consuming to reach. Use of resources in such situations must be balanced against the epidemiologic importance of the contacts being traced. It is important to try to reach and treat contacts who are likely to be the source/index case for their own sake and also to avoid re-infection of the identified case.

Evidence

Appendix P provides tables with details about the studies reviewed. Three systematic reviews, one of them a Cochrane review, have summarized the studies available up to 2001. Two of these reviews^{58, 59} included any study which provided a comparison between two or more groups or conditions, whether or not there was randomization. These reviews focused on developed countries only, with Macke et al limiting their review to the United States. The Cochrane review⁶⁰ focused on randomized controlled trials comparing at least two alternative contact tracing strategies, and sought to include studies from developing as well as developed countries.

Oxman et al (1994)⁵⁹ concluded that there is moderate to moderately strong evidence that for HIV, provider notification results in more contacts notified than does patient notification, but that this relationship was unclear for the other STIs. They also concluded that there was strong evidence that simple forms of assistance to improve patient notification, such as referral cards and telephone reminder calls are effective in increasing the number of contacts presenting for care.

Macke et al (1999)⁶⁰ concluded that provider notification results in more contacts notified and medically evaluated when compared with patient notification. They did not address different methods of improving patient notification.

Mathews et al⁶¹ (2001) identified some risk of bias in all the trials included in their review, as well as variability of study design which affects comparison, and the possibility of cultural issues influencing comparisons, especially when considering application of findings from the two developing country studies to the United States, and vice versa. They conclude that there is no strong and consistent evidence for the relative effects of provider vs. conditional vs. patient notification vs. choice, but cite the work of Levy et al⁶¹ (1998) in identifying the preference of many cases, particularly those with HIV, for provider notification where the case's identity is not revealed to the contact. They conclude that there is moderately strong evidence that provider notification alone, or the choice between patient and provider notification, when compared with patient notification alone, increases the rate of contacts presenting for medical evaluation. They further conclude that conditional notification, when compared with patient notification among cases with gonorrhea, results in more contacts presenting for medical evaluation⁶². As well, they conclude that verbal, nurse-given health education together with patient-centred counselling by lay workers, when compared with standard care among cases with any STD, results in small increases in the rate of contacts treated⁶³. They indicate that in the absence of compelling evidence, offering cases a choice may be most appropriate, and that there is some evidence^{64, 65} that this may be most effective, although not without possible risks of domestic conflict as identified in Faxelid et al. (1996)⁶⁶.

Hogben et al completed a systematic review of the effectiveness of HIV partner counselling and referral services in increasing identification of HIV-positive individuals in high income countries⁵⁸.

They concluded that there was sufficient evidence of the effectiveness of provider notification of partners of newly diagnosed HIV-infected persons to warrant a recommendation for this service⁶⁶. There were not enough studies to determine the effectiveness of partner notification by cases themselves. There were two studies^{67,68} reviewed which suggested that partner counselling and referral services may be effective in changing behaviour and reducing transmission, but the evidence was considered insufficient to draw firm conclusions, and further research was recommended. No clear evidence of harms associated with these services was identified, but anecdotal reports of domestic violence were cited, and again more monitoring and research on this issue is definitely required.

Several studies have also supported the likely cost-effectiveness of partner notification services for HIV^{69,70,71,72}.

Lessons from the Field

Public health practitioners contact trace by a variety of methods including telephone, face-to-face, and email/text messages. Our survey of public health STI case management practices in Ontario revealed that 29 of 32 PHUs considered phone/voicemail as quite effective or very effective; 23/32 considered letters quite effective or very effective; 18/28 considered a PHU clinic visit quite or very effective; 8/21 considered home visits quite or very effective; and 6/14 considered email/messaging as quite effective (none considered it very effective). However, lower rates of perceived effectiveness must be considered in light of the likelihood that methods such as home visits and email/messaging are used mainly in more difficult cases. Effectiveness must be considered in terms of not only ability to make contact, but also ability to elicit co-operation in ensuring contact tracing, medical follow-up, and ultimately risk behaviour change.

PHUs can consider issuing orders to name contacts or for contacts to present for assessment. Less than half of PHUs report ever using legal measures (Section 22 orders) for STIs other than HIV; only 5 PHUs reported using orders for contact management for bacterial STIs. Of these, 3 PHUs reported that they considered orders always or almost always successful.

Key informants responding to our survey of other Canadian and international jurisdictions responded that they usually try to verify that contact tracing has been done for HIV and for one jurisdiction infectious syphilis as well. One jurisdiction limits this verification to long-term partners only, but most do not.

Ontario PHUs vary widely in their current contact tracing methods. PHUs report doing contact tracing themselves, for a median of 70% of chlamydia cases (range 10-100%), 75% of gonorrhoea cases (range 10-100%), and 70% (range 5-100%) of infectious syphilis cases. The significant range for each infection suggests that some PHUs are relying heavily on contact tracing by patient notification, and may need to evaluate the effectiveness of this method in their context.

PHUs report relatively good success rates for reaching named contacts which they undertake to notify: median 80% for chlamydia (range 40-98%); median 80% for gonorrhoea (range 50-100%); median 80% for infectious syphilis (range 25-100%); median 85% for HIV (range 10-100%). Between 90-100% of PHUs, depending on the disease, use phone/voicemail and letters as methods to reach partners; 26-35% use email/messaging to some extent. For more detailed consideration of the use of electronic methods see Section 13.

Policy Implications

Provider notification, as well as methods to enhance patient notification such as patient education or reminder telephone calls requires adequate staffing resources.

Research Implications

There is a need for further research and more rigorous study designs to compare methods of contact tracing and to determine their relative cost-effectiveness. There is also a need to study methods of provider education to improve contact tracing, and to evaluate methods combining provider training and patient education. More information is needed about potential harms of contact tracing and how these can be addressed.

12. Patient Delivered Partner Therapy

Recommendations:

12.1 Patient Delivered Partner Therapy (PDPT) should be considered as an option for difficult to reach contacts of chlamydia or gonorrhea when usual contact tracing methods are unsuccessful [IA] Evidence is available only from studies of heterosexual men and women

- **PDPT must be used with caution in populations at high risk for HIV and syphilis**
- **Patient information sheets must be included in PDPT**
- **The College of Physicians and Surgeons of Ontario has a policy statement permitting PDPT (available at: www.cpso.on.ca/policies/drug_prac.htm)**

Background

To prevent re-infection of cases with gonorrhea or chlamydia, contacts must be provided timely and appropriate antibiotic treatment. Both gonorrhea and chlamydia have potentially serious consequences particularly for untreated female contacts or for females who become re-infected, since they may develop pelvic inflammatory disease with subsequent elevated risk for ectopic pregnancy and infertility due to tubal damage. However, because many infected contacts are generally asymptomatic, they are unlikely to seek medical treatment. Even when providers counsel cases about the need for contact treatment, some contacts have limited access to medical care or choose not to seek care.

Patient-delivered partner therapy (PDPT; alternative term: expedited partner therapy, EPT) is the clinical practice of treating the sex partners of cases diagnosed with chlamydia or gonorrhea by providing prescriptions or medications to the case to take to his/her partner without the health care provider first examining the partner. It is particularly intended to ensure treatment of hard-to-reach partners who might not otherwise receive treatment; it can also help to ensure that partners are treated at the same time to avoid re-infection. There is evidence that failure to treat both partners when one presents with chlamydia or gonorrhea is associated with an increased risk of development of pelvic inflammatory disease in female partners, and a significant rate of re-infection of index cases^{73, 74, 75}. The Centres for Disease Control has concluded that PDPT is a “useful option” to further partner treatment, particularly for male partners of women with chlamydia or gonorrhea. In August 2006, CDC recommended the practice of PDPT (which they refer to as EPT) for heterosexual partners of men and women with chlamydia and gonorrhea in its document “*Expedited partner therapy in the management of sexually transmitted diseases*”.⁷⁶ PDPT is currently used in several jurisdictions in the USA, including California. The current *Canadian Guidelines on Sexually Transmitted Infections* cite evidence on PDPT, but do not include specific guidelines on patient-delivered partner therapy.

Considerations

Available evidence addresses only the use of PDPT for heterosexual men and women with chlamydia and gonorrhea. There is no evidence regarding its effectiveness for MSM, nor is there evidence about its use in treating syphilis. There is reason to be very cautious about its use in populations at high risk of HIV and syphilis, since it may reduce the likelihood that partners at high risk are assessed for these infections, and could potentially result in partial or inadequate treatment in partners infected with syphilis. It is also necessary to ensure that cases understand the importance of PDPT and partners receive accurate information about their treatment and potential risks and side-effects.

Benefits of PDPT should be weighed against:

- possibility of allergic reactions or other drug-related adverse effects
- partners treated without a clinical evaluation may have concurrent STIs or sequelae, such as pelvic inflammatory disease identifiable only if they seek medical care
- with the use of PDPT opportunity may be lost to counsel sex partners to refer their other partners for evaluation and treatment (also loss of opportunity to counsel partners about risk reduction through safer sex)

Evidence

There have been three randomized controlled trials in the United States and one in Uganda which address the strategy of PDPT. In keeping with our criteria for assessing evidence most relevant to public health practice in Ontario, the three American RCTs will be focused on here.

Schillinger et al⁷⁷ (2003) studied PDPT (women giving treatment to their male partner) as an alternative to patient notification of partners for women with repeated chlamydia infections. They found comparable rates of repeated infection among both groups, suggesting that PDPT was as good as patient notification, with high reported compliance.

Golden et al⁷⁵ (2005) studied whether PDPT could reduce the rate of persistent or recurrent gonorrhea or chlamydial infections among women and heterosexual men. They found that PDPT significantly reduced the rate of persistent/recurrent infection for gonorrhea when compared to standard partner notification by patients, and resulted in a rate which was not significantly different from (no worse than) standard partner notification for chlamydia. Patients assigned to PDPT were significantly more likely than those assigned to standard notification to report that all of their partners were treated and significantly less likely to report having sex with an untreated partner.

Kissinger et al⁷⁸ (2005) carried out an RCT to determine whether PDPT is better than 2 different methods of partner notification by patients in providing antibiotic treatment to sex partners of men with urethritis and in reducing recurrence of chlamydia and gonorrhea. Among heterosexual men with urethritis, PDPT was better than standard partner notification by patients for treatment of partners and prevention of recurrence of chlamydia or gonorrhea infection. PDPT was also equal to the other method of partner notification, which involved providing cases with a booklet containing information for the partner and treatment guidelines for the professionals. The partners could then present at the clinic of their choice. The authors suggest that the latter strategy could be an alternative where PDPT was considered unacceptable or unfeasible.

In addition to these randomized trials, there were also two observational studies identified from the U.S.:

Ramstedt et al⁷⁹ (1991) studied PDPT as one of four non-randomized strategies for management of partners of women with chlamydia infection, with the finding that PDPT had the lowest rate of re-infection when compared with no partner management, counselling to refer partners, or counselling to refer partners with monitoring of compliance.

Kissinger et al⁸⁰ (1998) compared PDPT to standard partner notification by patients in an observational cohort of women with chlamydia and found a significant reduction in incident infections in the PDPT group, although their design could not distinguish treatment failure vs. re-infection in the cohort.

A national survey in 1999-2000 in the United States of physicians in specialties most likely to diagnose sexually transmitted diseases revealed that 50-56% of them had used PDPT before, and 11-14% usually or always did so. Physicians were most likely to provide PDPT for white, female index cases, suggesting that there may be a particular need to improve access to this option for minorities and for female partners of male index cases⁸¹ (Hogben et al, 2005).

A 2007 study by Golden et al reported on evaluation of a program of PDPT for gonorrhea and chlamydia instituted in 2004 by Public Health – Seattle & King County, USA⁸². The program consisted of encouraging routine use of PDPT by health care providers for heterosexual patients with gonorrhea or chlamydia, along with provision of free medication for this purpose, and case report form-based triage of cases for public health contact tracing. The case report forms asked health care providers to indicate one of three options: all partners already treated, health care provider to treat all partners, or health department help requested with notifying and treating partners. Their evaluation concluded that the proportion of cases with all partners reported as treated increased from 39% before the program to 65% after it was instituted.

No studies to date appear to have addressed specific gender or cultural issues in the application of PDPT. The fact that the three RCTs include one with cases only in women, one with cases only in men, and one with cases of both genders, suggests that PDPT is potentially applicable for heterosexual partnerships regardless of the gender of the index case.

Appendix Q provides a summary table of all studies on PDPT that were reviewed.

Lessons from the Field

The College of Physicians and Surgeons of Ontario (CPSO) has a policy which permits physicians to provide PDPT (defined as a legitimate situation in which a physician can consider prescribing outside the established doctor-patient relationship), as follows: "Treatment for a sexual partner of a patient with a sexually transmitted disease (STD) who, in the physician's determination, would not otherwise receive treatment and where there is a risk of further transmission of the STD".⁸³ (Policy #2-05; www.cpso.on.ca/policies/drug_prac.htm).

Public Health Units (PHU) wanting to encourage community physicians to provide PDPT may want to consider including information about it, and about the CPSO policy in communications with local physicians.

The practice survey conducted by the STI working group in 2006 indicated that 44% of PHUs sometimes provide PDPT. The most common reason cited for this is contact unwillingness or inability to come to the STI clinic or otherwise seek medical treatment (including contacts who do not have Ontario Health Insurance (OHIP) coverage or cannot afford to buy prescribed medications).

Practice Implications

PDPT should include provision of patient information handouts, including a copy to be provided to each contact, which explains the disease, the symptoms, the treatment and its potential risks and side-effects, particularly concerns about drug allergies and their symptoms. Female contacts should be encouraged to seek medical assessment if they have any symptoms suggestive of pelvic inflammatory disease (e.g., fever, vomiting, lower abdominal pain, pain with intercourse, etc), or if they are pregnant. Male contacts should be encouraged to seek medical assessment if

they have fever or pain or swelling in the testicles. Information should also be included on the possibility of treatment failure and the need to seek medical follow-up in that case. For example, they should be counselled to see a health care provider if symptoms are still present 7 days after treatment. Information on the prevention of STIs including HIV through the use of condoms, and on where to access local STI and HIV treatment, should also be provided. Appendix R provides an example of a patient handout adapted from a California document on PDPT.

PDPT in public health practice requires the development of medical directives to enable regulated health professionals to provide PDPT under the authority of a responsible physician. These directives must meet the requirements of the College of Physicians and Surgeons of Ontario and the College of Nurses of Ontario.

General public health case management, including recommendations to the index case for retesting in 3 months to ensure cure should be maintained in situations where PDPT is undertaken. Options for provision of PDPT include provision through sexual health clinics, and also education of community physicians to use PDPT for their cases.

Policy Implications

Current policies for physicians in Ontario allow for PDPT according to the judgment of the physician. Public health policy in Ontario should include guidelines on PDPT within public health settings utilizing medical directives. The College of Nurses of Ontario should develop policies about PDPT for registered nurses (extended class) (RN(EC)).

Research Implications

There is relatively limited research on PDPT, and none from Ontario, but the existing evidence is level I evidence. At a minimum, programs providing PDPT should collect information for process evaluation purposes indicating how often and under what circumstances PDPT is utilized, and the results of patient follow-up. More formal research evaluation of the use of PDPT in Ontario for chlamydia and gonorrhea should be undertaken. Since there is currently no evidence about the utility of PDPT for MSM with chlamydia and gonorrhea, it is essential that its use in this population be done in the context of a careful and comprehensive research study. Studies are also required of gender and cultural issues to increase understanding and effectiveness of PDPT.

13. *Electronic/ Internet-based Contact Tracing*

Recommendations:

13.1 While the literature on electronic/ internet-based contact tracing indicates that it is unlikely that electronic methods can serve as a *single* method to reach contacts at this time, these methods are additional tools that can be utilized carefully and specifically in combination with others [IIIB].

13.2 Organizations seeking to utilize electronic/ internet-based contact tracing need to address the issues of accessibility, privacy, information construction, opportunities for follow-up, and the potential for abuse [IIB].

Background

Contact tracing is defined as the process by which individuals are informed of their exposure to a sexually transmitted infection for the purpose of encouraging them to seek testing and treatment, as necessary⁸⁴. This process, important to the control of STIs⁸⁵, can be carried out by health care

personnel (provider notification) or by sex partners (patient notification)^{86,87}. A comprehensive approach to contact tracing is required, regardless of the communication medium adopted^{87,88}.

Due to resource limitations, provider notification may focus on only the most high risk populations and cases⁸⁸. Further, while research by Apoola and colleagues⁸⁵ suggests that patient notification of partners is preferred by those being contacted about a possible STI, there are limitations to a system that depends solely on cases taking action themselves^{86, 89}.

In an effort to ensure a more comprehensive and effective scope of contact tracing to limit transmission of STIs, researchers have explored a variety of contact tracing methods, using both provider and patient notification (see Hogben, 2007 for a review of many of these⁸⁷). With our increasingly 'virtual' society, electronic/ internet-based contact tracing has garnered a great deal of attention. Internet-based contact tracing is particularly relevant in the newly emerging world of meeting sex partners on-line, in which electronic contact information may be the only contact identification available.

Considerations

As noted by one author "[T]he internet presents significant public-health challenges but could yield vast benefits if harnessed properly"⁸⁹.

Tomnay, Pitts, and Fairley (2005) discuss the pervasiveness of both the internet and mobile phones as communication devices around the world⁹⁰. In the years since their research was published, these tools have grown even more entwined in daily life.

Electronic/ internet-based contact tracing is described in the literature as attempting to contact partners through the following methods: email, text messaging, chat rooms, and provision of URL linkages to web-based STI Information and follow-up materials (e.g. Health care provider letters). Although separate from the internet, mobile phone text messages are also included in this discussion.

Evidence

The findings from a variety of studies exploring the effectiveness of electronic/ internet-based contact tracing are provided below. They have been separated into two categories: 1) Relative Preference, and 2) Effectiveness.

Relative Preference: A study by Apoola and colleagues⁸⁵ provides one of the more detailed discussions of preferred methods of notification. Respondents expressed a preference for contact methods that were personal (directly from partner) or that encouraged contact with a clinic rather than the direct delivery of information regarding an STI. Only a small percentage of individuals thought it preferable to receive a text message (17%) or email (9.1%) stating that they may have an STI.

Additional studies indicate that there is not a consistent preference for the method of contact tracing and that a range of options is preferred. Researchers have found a high level of preference (76%) for: both the provision of a web address to contacts⁹¹, and direct, personal delivery methods - unless one's contact was geographically distant⁹¹.

Effectiveness of Method: Tomnay, Pitts and Fairley (2005)⁹¹ state that evaluation of effectiveness must be accompanied by questions of client preference, accessibility, and privacy. What we know about the success of a method needs to be understood in context, with consideration given to many factors, including: whether the process utilized provider or patient notifications, what community was accessed (gender, age, ethnicity, MSM chat room participants,

sexual health clinic clients, etc.), how the information was framed and delivered, and how accessible the methods were to both provider and contact. Because of the limited nature of the research in this area, meta-analyses and comprehensive studies are rare, and generalizations are made difficult. The findings presented here are categorized by population.

Individuals who use the Internet to find sexual partners:

A number of case studies have explored the success of electronic contact tracing in situations where an individual has found and connected with sex partners via internet chat rooms. These studies, all U.S. based and primarily involving MSM populations, address notification relating to syphilis.

During a syphilis outbreak, 2 infected persons provided a health department with a list of contacts using their chat room screen name. Emails distributed by the health department resulted in the confirmed notification of 42% of "named" partners⁸⁷.

In a separate case, the health department was provided with 111 email addresses for sex partners of an individual infected with syphilis. After sending emails to all these individuals, 29 responses were received⁹².

Ten on-line contacts were named during a case interview. Eight of these were found in a chat room and 7 of those sought diagnosis and treatment⁹⁰.

During a syphilis outbreak, an internet provider sent emails to the participants of a chat room notifying them of a cluster. They were encouraged to seek medical attention and a "substantially higher" number of the persons traced via the internet subsequently underwent evaluation when compared with previous studies in similar populations⁹³.

A man who sought treatment for scabies and syphilis reported that he met 16 sex partners on the internet while infectious. He provided the health unit with 16 email addresses and copies of 13 emails he had sent to partners. Seven of the thirteen individuals replied and sought testing⁹³.

Sexual Health Clinic Clients Aged 16 and Older: A study in Australia included 105 Sexual Health Clinic clients who were diagnosed with non-gonococcal urethritis (NGU) and chlamydia. Individuals were given one of two interventions: 1) a standard letter of notification, or 2) a website link with information for their sexual partner(s). Of those participants who received the letter, 65% passed it along to their partners. A slightly lower percentage (55%) of those who received the website link passed the notification on to a contact⁹². Overall, the majority of individuals preferred to contact their partner(s) through a personal meeting (45%) or via mobile phone (38%) rather than via the internet (25%).

A recent report on the use of inSPOT, a web-based, peer-to-peer STD partner notification system, describes its use as a method to allow clients to send e-postcards to notify partners of their STD exposure, with the recipient also being able to access information about the disease and about available STD clinic services on-line. Although initially targeted at improving notification of partners by MSM, particularly in the context of casual partners for whom only email addresses were available, further needs assessment has led to expansion of the service to other jurisdictions and to include heterosexual participants as well, with apparently good uptake reported⁹⁴.

Lessons from the Field

Recently, Waterloo Region Public Health conducted interviews with four Ontario University Health Service Centers and three PHUs who utilise email as a case management tool. The findings from the survey are provided in Appendix S. Overall, the combined interview data revealed that some

services found email a more effective means than telephoning to ask clients to return to the clinic. The survey provides a number of useful suggested methods for managing electronic communication with clients.

Practice Implications

As information on effectiveness is limited by few examples and the highly specific nature of the trials, it is important to examine the more general opportunities and challenges presented to practitioners by this method.

The College of Physicians and Surgeons of Ontario (2006)⁹⁵ states that there are several ways in which a physician using electronic media may inadvertently breach patient confidentiality (e.g., wireless network connections can pose security problems, e-mails can be inadvertently sent to the wrong recipient or be read by a non-intended recipient, etc.). The College has made it clear that it is the responsibility of the physician to ensure that appropriate security provisions have been made. The College strongly advises that physicians obtain patient consent to use electronic means for communicating personal health information. As part of obtaining consent, physicians must explain to patients the inherent risks of using this form of communication.

The College of Nurses of Ontario (2005)⁹⁶ expresses similar concerns. The College has stressed that e-mails are an inherently insecure method of transmitting confidential information and that messages can easily be misdirected or intercepted by unintended recipients. Further, the information can then be read, forwarded and/or printed. For these reasons, nurses should avoid transmitting client information by unsecured e-mail. There are software programs that can greatly enhance e-mail security. These programs use methods such as encryption, user verification and secure point-to-point connections. Nurses can transmit confidential information via email when they have a reasonable belief that the transmission is secure. A nurse meets the standards by:

- refraining from using standard e-mail to send health record information,
- satisfying themselves that security-enhanced e-mail is effective before using it to send health record information,
- further enhancing security by using the email subject line to alert the recipient that the message is confidential, and including a confidentiality warning in the body of the e-mail that states that the message is only to be read by the intended recipient and must not be copied or forwarded to anyone else, and
- advocating that only secured e-mail systems be used to transmit confidential health information.

Electronic/ internet-based contact tracing offers some unique opportunities to both health providers and cases. E-mail contact tracing is expected to be of greatest utility for cases and partners who use e-mail on a daily basis. There may be many benefits to using e-mail as a contact tracing tool:

- **Passive Communication:** Email and website links offer the case the opportunity to deliver the information on his/ her own time and to have it received and a record kept by the contact⁹⁰.
- **Opportunity for Anonymity:** electronic/ internet-based contact tracing may allow for the possibility that an individual can notify their sex partner anonymously and, thereby, remove some barriers to contact⁹¹. This opportunity, however, is not offered through **all** electronic methods.
- **Efficiency:** Electronic/ internet-based methods may facilitate a more efficient notification of persons who may be otherwise inaccessible and also allow service providers to quickly deliver a message to a case which is suitable for them to pass on to sexual partners^{91,93}.
- **Ability to Contact Partner(s) at a Distance:** Electronic methods may allow an individual to contact a contact who is geographically distant⁹².

- **Resource Supports:** In addition to rapid receipt of standardized notification information, utilization of electronic devices/ the internet in regard to contact tracing opens up the possibility for online education and posting of results^{91,92}.

While some of the challenges of electronic/ internet-based contact tracing are not unique to this method, others are associated with difficulties found in electronic communication and are common to developing areas of research.

- **Accessibility of Tools:** Access to mobile phones or private email/ internet by both patients and contacts is central to the acceptability of the method⁸⁵. Further, access controls including usage policies and firewalls may complicate the use of websites and email⁹⁰.
- **Privacy of Information:** Privacy concerns are a key challenge of this method of notification. Computers and mobile phones may be used by more than one person and there is a need for secured communication along with the assurance that only the *intended* recipient can access the delivered message^{87,91}.
- **Complicated Access:** Necessary security enhancements may complicate and limit the usability of websites or other internet delivery methods⁹².
- **Wording of Message:** Regardless of the method used, the wording of the information transmitted is important to its acceptability. Specifically, there appears to be a preference for messages that are discrete and urgent⁹³ and which allow for contact with PHU office or clinic rather than direct statement of possible STI⁸⁵.
- **Limits Two-way Communication:** Individuals receiving an electronic message may not be able to immediately ask questions⁹¹.
- **Abuse of Tools:** There is a possibility that these methods could facilitate abuse of the method and lead to individuals sending messages to those with whom they haven't had contact⁹¹.

Policy Implications

It is important for health units to work with local information technologists, public health lawyers and professional regulatory bodies to ensure the appropriate application of electronic/internet communications for contact tracing. Health units and regional network groups should be encouraged to share their policies and experiences.

Research Implications

While cases and service providers may be open to exploring electronic/ internet-based contact tracing, the opportunities offered by these methods are moderated by significant challenges that require research attention. Efforts must be based not only on a thorough understanding of the needs and practices of the specific target population, but also require continual evaluation amidst the increasing and dynamic scope of the opportunities presented by the internet⁹⁰.

Summary of Best Practices

The best practices recommended in this document are summarized below:

Recommendation	Compliance			Action Plan	Accountability
	Compliant	Partial Compliance	Non-compliant		
BEST PRACTICES FOR SEXUALLY TRANSMITTED INFECTIONS CASE MANAGEMENT AND CONTACT TRACING					
1.1	<i>The Ministry of Health and Long-Term Care should use surveillance data to plan and evaluate STI programs [IIIA]</i>				
1.2	<i>Public health units should use surveillance data to examine the epidemiology of repeat infections and of co-infections and plan interventions where appropriate [IIIB]</i>				
1.3	<i>Public health units and the Ministry of Health & Long-Term Care should work together to remove barriers to data sharing, and to address the technical difficulties in the surveillance of co-infection and repeat infections [IIIA]</i>				
2.1	<i>Public Health Unit staff should initiate contact with the testing health care provider or case as soon as possible after receipt of a laboratory test result or case report, ideally within 2 working days [IIIA]</i>				

	Recommendation	Compliance			Action Plan	Accountability
		Compliant	Partial Compliance	Non-compliant		
2.2	<i>Public Health Unit staff who undertake STI case management must be culturally sensitive, have effective counselling skills, and approach clients with a supportive and non-judgemental attitude [IIIA]</i>					
2.3	<i>Public Health Unit staff who undertake STI case management must have up-to-date knowledge of treatment recommendations and resources for referral. This includes supports for those threatened by domestic violence or sexual abuse. They should also be familiar with local resources and referral mechanisms for persons infected with chronic viral diseases such as HIV, Hepatitis B and Hepatitis C (HCV) [IIIA]</i>					
2.4	<i>Public Health Units should develop lost to follow-up policies and procedures taking into account priority diseases and priority populations [IIIA]</i>					
3.1	<i>All cases with an STI should be offered client-centred risk reduction counselling. Client-centred counselling is more effective than a didactic teaching session alone: models which have shown benefit in at least one well-designed study include AIDS Risk Reduction Model (RESPECT), and Information, Motivation, Behaviour Model, as well as interventions using motivational interviewing techniques (see Appendix F) [IA]</i>					

Recommendation	Compliant	Partial Compliance	Non-compliant	Action Plan	Accountability
3.2	<i>Higher risk cases warrant more intensive intervention efforts which may require engaging them in longer term counselling and/or other interventions [IIIB]</i>				
3.3	<i>Persons with repeated STIs should be offered more intensive counselling and follow-up, as should persons with HIV, particularly those who subsequently present with another STI (see also section 4 on repeated infections, section 5 on legal aspects of bacterial STI case management, and section 6 on challenging HIV cases) [IIIB]</i>				
3.4	<i>Persons with HIV infection must also be advised regarding the need to disclose their infection to all current and future sexual and injection equipment sharing contacts, and assisted in learning how to do this, and also how to avoid sharing of injection equipment. Persons who fear rejection or violence as a result of such disclosure require additional support and should be referred for assistance if necessary [IIIB].</i>				
4.1	<i>For all cases testing positive for an STI, review their previous STI records [IIB] and adjust counselling appropriately for those found to have previous infection [IIIB]</i>				
4.2	<i>Patient delivered partner therapy should be used in certain circumstances to reduce risk of re-infection (see Section 12) [IA].</i>				

Recommendation	Compliant	Partial Compliance	Non-compliant	Action Plan	Accountability
4.3					
4.4					
4.5					
5.1					
5.2					
6.1					

Recommendation	Compliant	Partial Compliance	Non-compliant	Action Plan	Accountability
6.2	<i>All HIV positive cases must be advised to disclose their infection to all sexual and needle-sharing contacts.[IIB]</i>				
6.3	<i>Public health policy and practice with regard to disclosure by HIV positive individuals should be informed by the findings and recommended model proposed by the Expert Working Group of the Federal/Provincial/Territorial Advisory Committee on HIV/AIDS⁴¹. [IIB]</i>				
6.4	<i>Section 22 orders for HIV positive cases should be considered when intensive public health efforts have not been successful [IIB]. This may include situations when the case</i> <ul style="list-style-type: none"> <i>• is refusing counselling</i> <i>• is engaging in penetrative (oral/vaginal/anal) sex or needle sharing without disclosure</i> <i>• is refusing to name sexual or needle-sharing contacts</i> <i>• has deliberately donated blood/sperm/organs/breast milk</i> 				
7.1	<i>Public Health Units should receive, assess and investigate, as appropriate, third-party reports alleging that individuals are infected with HIV and placing others at risk of infections. [IIB].</i>				

Recommendation	Compliant	Partial Compliance	Non-compliant	Action Plan	Accountability
8.1	<i>The primary responsibility for case management for late latent syphilis cases (excluding pregnant women) should lie with the health care provider, as they are non-infectious. Public health efforts should focus on supporting the health care provider and on surveillance of the infection [IIIB].</i>				
8.2	<i>Late latent syphilis occurring in pregnancy requires public health follow-up because of the small risk of vertical transmission to the infant. [IIA].</i>				
9.1	<i>Syphilis Medical Surveillance reports from Citizenship and Immigration Canada (CIC) do not require follow-up from the public health unit, except for entry into the provincial database as treated cases for surveillance purposes. [IIIB]</i>				
10.1	<i>Public health staff who undertake contact tracing must be culturally aware, have effective counselling skills, and approach clients with a supportive and non-judgemental attitude [IIIB].</i>				
10.2	<i>Public health staff who undertake contact tracing must have up-to-date knowledge of local services and resources for referral, including supports for those threatened by domestic violence or sexual abuse [IIIB].</i>				
11.1	<i>Provider notification, conditional notification, or offering cases a choice between provider and patient notification appear to be more effective than patient notification only [IIB]</i>				

Recommendation	Compliant	Partial Compliance	Non-compliant	Action Plan	Accountability
<p>11.2 Contact tracing can be enhanced by:</p> <ul style="list-style-type: none"> • Patient-delivered partner therapy (see section 12) [IA] • Provision of referral cards or other written information to be provided by cases to their contacts [IB] <p>Telephone reminders to cases [IB]</p>					
<p>11.3 Public health and health care providers who are regularly working with cases with STIs require training to do skilled case-interviewing and effective contact tracing [IIIB].</p>					
<p>11.4 Recent evidence supports a recommendation for direct public health involvement (provider or conditional notification) in partner services for all persons with newly diagnosed or newly reported HIV infection or early syphilis, and potentially for gonorrhea and chlamydia cases as well where resources allow [IIB]</p>					
<p>11.5 Public health should consider mechanisms to ensure that contact tracing has been successfully carried out in situations where the case or a health care provider not affiliated with the public health unit is undertaking contact tracing [IIIB]. This is especially important for high priority contacts:</p> <ul style="list-style-type: none"> • pregnant women, young women (especially under age 25) at risk of serious sequelae such as pelvic inflammatory disease [IIB] • contacts suspected of being the source case [IIIB] 					

Recommendation	Compliance			Action Plan	Accountability
	Compliant	Partial Compliance	Non-compliant		
12.1 <i>Patient Delivered Partner Therapy (PDPT) should be considered as an option for difficult to reach contacts of chlamydia or gonorrhea when usual contact tracing methods are unsuccessful [IA]</i>					
13.1 <i>While the literature on electronic/ internet-based contact tracing indicates that it is unlikely that electronic methods can serve as a single method to reach contacts at this time, these methods are additional tools that can be utilized carefully and specifically in combination with others [IIIB].</i>					
13.2 <i>Organizations seeking to utilize electronic/ internet-based contact tracing need to address the issues of accessibility, privacy, information construction, opportunities for follow-up, and the potential for abuse [IIIB].</i>					

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Appendices

Appendix A: Questions Researched for the Best Practices Document

Re: Gonorrhea, Syphilis, Chlamydia:

- 1) What is the optimal time frame from lab notification to contact with the responsible health care provider and then to contact with infected clients and contacts for each of the STDs? What to do when it is difficult to contact a case? When is it appropriate to stop looking for a case or contact?
- 2) What are the most effective methods of contact notification including more novel methods such as email and internet?
- 3) Are counselling methods effective? If so, which are the most effective methods: phone, face-to-face, letter, or email for case management and contacts?
- 4) What is the optimal content of counselling sessions? Are there different counselling strategies for different demographic groups e.g. age, culture, sexual orientation, geographic?
- 5) Are there any effective strategies for persons with repeat infections? What is the evidence to support screening of persons who have repeat infections?
- 6) How far back do we trace partners? 60 days is the current Canadian and CDC standard for gonorrhea and chlamydia.
- 7) What is the evidence for patient-delivered-partner therapy?
- 8) What is the effectiveness of empiric treatment for contacts VS testing and treating

Re: HIV:

- 1) What is the optimal time frame from lab notification to contact with the responsible health care provider and then to contact with infected clients and contacts for each of the STDs? What to do when it is difficult to contact a case? When is it appropriate to stop looking for a case or contact?
- 2) Are counselling methods effective? If so, which are the most effective methods: phone, face-to-face, letter or email? Should all cases be counselled by public health?
- 3) What is the optimal content of counselling sessions? Are there different counselling strategies for different demographic groups e.g. age, culture, sexual orientation, geographic?
- 4) Are there different counselling strategies for different demographic groups e.g. age, culture, sexual orientation, geographic, IV drug users?
- 5) What is the effectiveness, role, and challenges of legal tools for behavioural compliance and partner notification?
- 6) What is the appropriate follow up with co-infections? (e.g. index case diagnosed with HIV and then contracts chlamydia, syphilis, or gonorrhea at a later date)
- 7) How far back do we trace contacts of a case?
- 8) What are the most effective methods of contact notification including more novel methods such as email and internet?

Appendix B: Literature Search Strategies and Results

1. Search for Unpublished (Grey) Literature:

The grey literature search was conducted in Google using synonyms for each of the following terms: Efficacy/STD/Counselling; as well as STD/infection/control.

2. Search Strategy: Case Management, Contact Management, Partner Notification and Behavioural Intervention for STIs and HIV and for those with Repeated Infections (Sections 3.1, 3.2, 3.4, 4.1, 4.2)

Database: Ovid MEDLINE(R) <1996 to May Week 2 2007>

- 2.1 (std or sexually transmitted diseases or gonorrhoea or syphilis or chlamydia or sexually transmitted infection:).mp. (18951)
- 2.2 (behavio\$ or counsel\$ or psycholog\$ or motivat\$ or social support or interview\$ or prevention or control).mp. (1141350)
- 2.3 (case management or contact tracing or contact: management or follow\$ or patient care planning or partner notification or disease notification or surveillance).mp. (867317)
- 2.4 (effect\$ or efficacy or evidence or evaluat\$ or impact or outcome\$ or cost: or economic\$ or assess\$ or compar\$).mp. (3241084)
- 2.5 (hotline: or media or mail or email or internet or telephone or letter: or communicat\$ or social network or web).mp. (512445)
- 2.6 (strateg\$ or intervention: or screening or treatment or prevent\$ or health promotion or educati\$ or counsel\$ or campai\$ or contact tracing or partner notification or surveillance or case management).mp. (1706690)
- 2.7 (repeat or recurren\$ or comorbid\$ or multiple or second\$ or coinfection or reinfection).mp. (839452)
- 2.8 (time or seroconversion or seropositiv\$ or immunolo\$ or interval or window or risk).mp. (1413196)
- 2.9 (difficult or hard to reach or marginal or homeless or low income or low socioeconomic status or educat\$ or litera\$ or vulnerable or legisl\$ or risk).mp. (926459)
- 2.10 (case management or contact tracing or contact: management or follow\$ or patient care planning or partner notification or disease notification).mp. (829648)
- 2.11 (hotline: or media or mail or email or internet or telephone or letter: or communicat\$ or web).mp. (511493)
- 2.12 (strateg\$ or intervention: or screening or prevent\$ or health promotion or educati\$ or counsel\$ or campai\$ or contact tracing or partner notification or case management).mp. (885931)

- 2.13 8 or opportun\$.mp. or exposure.mp. or transmission.mp. (1623392)
- 2.14 1 and 2 (8109)
- 2.15 1 and 2 and 3 (1944)
- 2.16 15 and 4 (1442)
- 2.17 2 and 3 and 5 (14467)
- 2.18 17 and 1 (187)
- 2.19 1 and 5 (2120)
- 2.20 19 and 3 (319)
- 2.21 15 or 16 or 18 or 20 (2076)
- 2.22 limit 21 to (humans and english language) (1852)
- 2.23 from 22 keep selected relevant citations (474) The above strategy initially yielded 8109 articles potentially relevant to the research questions. The searches were then limited using the two limits: human population and English language, resulting in 1852 articles from which the research librarian selected 474 as relevant for review.

3. Search Strategy: Partner Notification for HIV (Section 11)

A separate search was conducted on Partner Notification for HIV, using the following methods:

Electronic searches: our search included medical databases as follows:

Ovid MEDLINE(R) 1996 to 2006, EMBASE 1980 to 2006, CINAHL - Cumulative Index to Nursing & Allied Health Literature 1982 to June Week 5 2006, EBM Reviews - Cochrane Database of Systematic Reviews, EBM Reviews - ACP Journal Club to May/June 2006, EBM Reviews - Database of Abstracts of Reviews of Effects 2006 and EBM Reviews - Cochrane Central Register of Controlled Trials 2006.

Other sources: we hand searched other sources looking for further literature such as CDC and MMWR, HIV clinical resources, the body- the complete HIV/ AIDS resource, and AIDS - HIV Resource Center. In addition, Google scholar and reference lists were searched for other relevant studies.

Search strategy:

The aim was to increase the sensitivity of our search process. Therefore, the following terms are used in the database search: HIV, AIDS, Human-Immunodeficiency-Virus-Infection, approach\$, strateg\$, method\$, and evaluation. For contact tracing, partner tracing, sexual partner, partner management, management of sex partner, partner notification, and contact notification, the following terms have been used: contact, tracing, partner, sex\$, notification, and management. Articles were collected from the electronic databases and the other sources. First, the irrelevant studies were excluded. Our electronic databases generated 1264 studies. The number of citations generated by other sources was as follows: 42 citations generated by HIV/AIDS resource websites, 58 extracted from reference lists and 61 generated by Google scholar. Many duplications and inconsistencies were found. As a result, all the titles were carefully inspected and some of the abstracts of the strongly related studies were reviewed. Finally, a total of 117 citations were selected and their full texts obtained and reviewed.

4. Search Strategy: Effectiveness of Patient Delivered Partner Therapy (Section 12)

The following steps were used in literature search:

- 4.1 **Medline** database was accessed through **OVID**.
- 4.2 The following **Medical Subject Headings** and **Keywords** (in addition to MeSH and when MeSH was not available) were used: *gonorrhea, chlamydia, syphilis, patient delivered partner therapy, partner therapy, patient delivered treatment*.
- 4.3 The searches were combined to make two sets using “**or**” **operator**: one that includes all STDs under consideration and the other that has to do with treatment.
- 4.4 The two sets were combined by “**and**” **operator** and **limited to humans and English language**, which resulted in **25** articles found using the combined set as well as “patient delivered partner therapy” and “patient delivered treatment” keywords alone.
- 4.5 Abstracts of these 25 articles were searched through to exclude the ones that apparently were not related to the search question. **9** articles were left (listed by first author in alphabetical order in Appendix Q).
- 4.6 The remaining articles were reviewed to identify **other keywords** that might be used for the search. The following keywords were identified: ‘*patient delivered partner medication*’, ‘*field delivered therapy*’, ‘*expedited partner therapy*’. **3** additional articles were found using these keywords.
- 4.7 All the previous searches were then rerun in **EMBASE** (**3** additional articles found), **CINAHL** (**1** additional article found) and **INTERNATIONAL PHARMACEUTICAL ABSTRACTS** (**no** additional articles found) databases (Total of **4** additional articles from other databases).
- 4.8 **Scholar Google** search was also performed to target articles that might have been missed (**7** articles and **1** AMA report were found).
- 4.9 **All references** in selected articles were then searched for additional relevant articles. **3** additional articles were found.
- 4.10 **Google.com** search was performed for conference proceedings, guidelines and additional literature – **4 presentations** from 2006 National STD Prevention Conference in Florida, **guidelines** from California Department of Health Services STD Control Branch, **CDC report**, as well as **1** more journal article were found.

The literature search process resulted in **34** relevant articles/documents found.

5. Search Strategy: Electronic/ Internet-based Partner Notification (Section 13)

A literature review was conducted in Medline and CINAHL (full text only), as well as in Academic Search Premier. Search terms used included: (email* OR internet) AND (partner* OR “sex partner*” OR “sexual partner*” OR “index patient*”) AND (notif*) AND (STD* OR STI* OR “sexually transmitted disease*” OR “sexually transmitted infection*” OR HIV OR syphilis OR chlamydia OR gonorrhea). MESH was also searched, using “contact tracing” as the subject heading and (email* OR internet) as the search terms.

Appendix C: PIDAC STI Workgroup Key Informant Survey and Participant's List

1. Key Informant Survey

1.1 Case Management for all STI's

Do you prioritize cases or contacts for case management/contact tracing? If so, how?

Do you have time frames for contacting cases (i.e. Time from lab notification to contact with the health care provider or case)? If yes, please describe?

Do you have time frames for contacting partners (i.e. Time from case interview to contact with partner)? If yes, please describe?

Do you have any referral resources (letters or cards) for contact tracing that you provide to the index case? Would you be willing to share these with us?

When do you decide clients are lost to follow-up? Does this differ for bacterial STI's compared to HIV?

1.2 HIV Case Management

How long is your initial follow-up of newly diagnosed HIV positive individuals?

Do you verify that partner notification has happened when the client takes responsibility for his/her own contact tracing? If yes, how?

If yes, do you do this for all partners? Only for long-term or ongoing relationships?

Do you counsel all newly diagnosed HIV positive individuals that they must disclose their status prior to penetrative intercourse? Do you modify your counselling based on level of risk (e.g. Oral sex, condom use)?

Do you counsel clients that condoms must be used for all sexual contact even with disclosure? Including oral sex?

1.3 Repeat Infections

Do you have a recall system for clients with repeat infections (for additional screening reminders or counselling)? If so, how do you define repeat infections?

1.4 Co-infections (HIV positive followed by a subsequent bacterial STI)

Do you have a system to flag individuals with co-infections? If so, do you do anything additional with these individuals? If yes, please describe?

1.5 Third Party Reports/Complaints

Do you accept and investigate third party complaints?

Does the complainant need to identify themselves or will you accept anonymous complaints? How do you determine credibility of the source?

What actions are triggered by the third party report?

1.6 Legal Tools for Bacterial STI's

Are legal measures ever used for clients with bacterial STI's and if so, when?
Are legal measures ever used for contacts of bacterial STI's?

2. Key Informant Survey Contacts:

Dr. Matthew Golden, Seattle, Washington, USA.

Dr. Heather Jebbari, Health Protection Agency Centre for Infections (HIV & STI Department), United Kingdom.

Dr. Jeff Klausner & Guiliano Nieri, San Francisco Department of Public Health (STD Prevention & Control), USA.

Dr. Michael Rekart & Ms. Linda Knowles, BCCDC, British Columbia, Canada.

Dr. Ameeta Singh, Alberta Public Health, Alberta, Canada.

Judi A. Bulmer, Director of Field Operations, Bureau of STD Control, New York State Department of Health

Dr. John Kaldor, Deputy Director for Surveillance, National Center in HIV Epidemiology and Clinical Research, New South Wales, Australia.

Appendix E: Summary Table of Behaviour Change Interventions for STIs

1.1. Randomized Trials of Brief Individual Counselling Interventions (1-2 sessions, total time of 1 hour or less)

Reference	Population Sample	Intervention Method	STI Outcome(s)	Causal Pathway Linkages	Comments/ Further considerations
Branson et al. ⁹⁷	964 men and women attending US STI clinics	2 individual counselling sessions of 20 min. each vs. 4-session, small-group counselling intervention based on information and motivation/behaviour skills model, with booster session (5 sessions total)	Equivalent rates of incident gonorrhoea, chlamydia, syphilis and HIV	Equivalent reduction in reports of >1 sex partner; equivalent increase in reported condom use	Designed to test 4 session group intervention, but found shorter individual sessions equivalent
Dilley, 2002 ⁹⁸	248 MSM repeat testers at HIV testing clinic	1 session of 1 hr. + HIV counselling & testing	None measured	Reduced unprotected anal intercourse	Licensed mental health counsellors did personalized cognitive risk-reduction counselling
Kamb et al., ⁹⁹ Peterman et al. ¹⁰⁰	5758 heterosexual HIV-negative men and women at inner-city US STI clinics	2-Session intervention modeled after the CDC's client-centered HIV-counselling vs. 4-Session, individual risk reduction counselling based on theory of reasoned action and social cognitive theory vs. didactic messages	Reduction (20%) in incident STI over 12 mo., for both counselling interventions (p=0.008)	Incident STI more common among persons with ≥3 sex partners (OR 1.9) and/or ≥6 episodes of unprotected sex with occasional partner (OR 1.9)	Only about 54% follow up
Voluntary Counselling and Testing (VCT) Efficacy Study Group ¹⁰¹	3120 individuals & 586 couples recruited via media/direct solicitation in Tanzania, Kenya, and Trinidad	VCT using the CDC's client-centered HIV-counselling model	Non-significant reduction in incident STI (OR, 0.8; 95% CI 0.53-1.20)	Reduction in unprotected sex (39% with VCT vs. 17% with health info (women); 35% with VCT vs. 13% with health info (men)	Focus is on voluntary counseling and testing for HIV, rather than on behaviour change counselling per se

1.2 Randomized Trials of Multi-session Individual Counselling Interventions*

Reference	Population Sample	Intervention Method	STI Outcome(s)	Causal Pathway Linkages	Comments/ Further considerations
Boyer et al. ¹⁰²	399 heterosexual man and women at US STI clinics	4-Session, individual cognitive-behavioural intervention based on AIDS Risk Reduction Model	No difference in acquisition of STI (7% vs. 8%, $p>0.20$ (men); 22% vs. 22% ($p>0.20$ (women)	Reduction in unprotected sex at 3 months ($p<0.05$) but not at 5 months	Results suggest short-term impact, but need for booster sessions/follow up reinforcement
EXPLORE Study Team ¹⁰³	4296 MSM in 6 US cities	10 Core-counseling modules delivered 1 on 1, followed by trimonthly maintenance sessions for 48 months, compared with twice-yearly counselling based on the Project RESPECT model	NS reduction in HIV acquisition (adjusted OR, 0.8; 95% CI, 0.66-1.08); effect on STI acquisition not reported	Reduction in unprotected anal intercourse (OR 0.9, 95% CI, 0.79-0.94), unprotected anal intercourse between serodiscordant MSM (OR 0.9, 95% CI 0.78-0.94) and unprotected receptive anal intercourse with HIV-positive partner or partner of unknown serostatus (OR, 0.8, 95% CI 0.71-0.89)	Delivered by counsellors at study site, in field or by phone
Robles ¹⁰⁴	Drug users	6 weekly sessions, case management for 1.5 mo., 2 HIV counselling & testing sessions	Not reported	Reduced injection drug use, reduced needle sharing	Involved case manager, outreach worker & nurse; delivered in drug treatment centres and by community outreach as well as at study site
Sterk ^{105, 106}	Heterosexual African American women drug users	4 sessions, total 2-2.5 hrs.; focused on female- & culturally specific negotiation skills	Not reported	reduced exchange of sex for money or drugs, increased condom use	Delivered by counsellor and female health facilitator

* some interventions with special populations or requiring very extensive interventions (more than 10 sessions) are not included here since they are considered well beyond the resources of most public health programs

1.3 Randomized Trials of Group or Individual & Group Counselling Interventions

Reference	Population Sample	Intervention Method	STI Outcome(s)	Causal Pathway Linkages	Comments/ Further considerations
Baker et al ¹⁰⁷	Heterosexual women	'Choices'; 16 sessions, 32 hours	Reduced new STIs		Delivered by male and female psychotherapist teams
Branson et al ⁹⁷	964 men and women attending US STI clinics	4-session small-group counselling intervention based on information and motivation/behavioural skills model, with booster session (5 sessions total), compared with 2 individual counselling sessions of 20 min each	Equivalent rates of incident gonorrhoea, chlamydia, syphilis and HIV	Equivalent reduction in reports of > 1 sex partner; equivalent increase in reported condom use	Designed to test group session, but was found not significantly more effective than individual counselling
DiClemente et al ¹⁰⁸	African American teenage females at a family medicine clinic	4 sessions, 16 hours	Reduced new STIs	Reduced new partners, increased condom use	Delivered by African American female health educator + peer educators
Ehrhardt et al ¹⁰⁹	Heterosexual women	Project FIO; 8 sessions, 16 hrs + 1 -2 hr. booster after 9 mo.		Reduced unprotected vaginal & anal sex	2 female facilitators, 1 of same ethnic background as participants
El-Bassel ^{110, 111}	Heterosexual couples in hospital outpatient clinic	Project Connect, couples or women alone; 6 sessions, 12 hrs.		Increased condom use, reduced unprotected vaginal sex	Delivered by ethnically matched female social workers
Hobfoll et al ¹¹²	Low income heterosexual women in hospital-based and community based clinics	6 sessions, 9-12 hrs		Increased condom use	Delivered by female facilitators

Kalichman ^{44, 113}	HIV+ adults at community AIDS service organization	'Health Relationships'; 5 sessions, 10 hrs.		Reduced unprotected anal and vaginal sex overall and with HIV-partners; increased condom use	Delivered by male and female community-based facilitators, one an HIV+ peer
Latkin ¹¹⁴	Drug users	'Shield'; 10 sessions, 15 hrs.		Reduced needle sharing and IDU and increased condom use	Delivered by male and female peer facilitators and outreach workers
NIMH Multisite Prevention Trial Group ¹¹⁵	Heterosexual men and women attending community based clinics in US inner cities	7 session focusing on attitudes, skills and risk-reduction strategies for behaviour change	Significant short term reduction in gonorrhea in men, but non-significant reduction in incident gonorrhea and chlamydia at 1 yr.	Significantly greater reduction in unprotected sex and increase in condom use in intervention group (p<0.0001)	
Shain (Project SAFE) ^{116, 117}	Heterosexual Mexican American & African American women at STI clinic + study site	3 sessions (9-16.5 hrs) + STI counselling and treatment, & repeated HIV counselling & testing	Reduced new STIs	Reduced unprotected sex, reduced number of sexual partners	Combined individual & group; delivered by nurse & female facilitator of same ethnicity as patients
Wechsberg ¹¹⁸	Inner city heterosexual African American female drug users at community sites	'Women's Co-op'; 4 sessions, 3-4 hours		Reduced unprotected sex	Delivered by African American peers
Wingood ¹¹⁹	HIV+ female clinic patients	'WILLOW'; 4 sessions, 16 hrs.	Reduced new STIs	Reduced unprotected vaginal sex, increased condom use	Delivered by female health educator & HIV+ female African American peer
Wolitski ^{120, 121}	HIV+ MSM	'SUMIT' enhanced, peer-led, 6 sessions, 18 hrs.		Reduced unprotected receptive anal intercourse with HIV- or serostatus	Delivered by HIV+ MSM peer facilitators

				unknown partners	
Wu ¹²²	Low income African American youths	FOK & ImPACT; 9 sessions (8 FOK = 12 hrs, 1 ImPACT= 20min+		Reduced unprotected sex	

Appendix F: Summary of Behavioural Change Models Relevant to STI Prevention (from St. Lawrence and Fortenberry, 2007)²²

St. Lawrence and Fortenberry identify seven conceptual groupings:

1. **Psycho-educational theories**, which focus on education and information provision. These may play a useful role in raising public awareness, but have been shown to be insufficient to alter risk behaviour.
2. **Cognitive Theories**, which assume that cognitive processes such as attitudes, values, perceptions, intentions and beliefs are causal, predisposing factors that explain sexual behaviours.
 - 2.1. *The Health Belief Model (HBM)* hypothesizes that factors such as perceived vulnerability to a health threat, perceived severity of the threat, beliefs in the effectiveness of taking preventive actions, perceived costs of taking the actions, and presence of environmental cues interact to cause behaviour change, with specific, identifiable cues being necessary to trigger the decision-making process. With respect to STI risk behaviours, the HBM has shown mixed results in predicting risk behaviours, typically explaining relatively little behavioural variation. It also does not explain the origins or persistence of health beliefs. Furthermore, it does not address research findings suggesting that many health beliefs may be a consequence rather than a cause of behaviour.
 - 2.2. *Theory of Reasoned Action (TRA)* also views behaviour as an outcome of beliefs, but adds the concept that perceptions about peers' attitudes and the extent to which the individual values peer approval interact with beliefs to form an intention to behave in a particular way, which then leads to the behaviour. The TRA has the same limitations as the HBM. It has also been criticized for assuming that sexual behaviours result entirely from a conscious decision-making process, while much recent research suggests that sexual behaviours may be determined at least in part by emotion rather than deliberative evaluation. Other research raises questions about the intention-behaviour connection which is a key element in TRA. In addition TRA does not offer insight into intervention to change the relationships it addresses.
 - 2.3. *Theory of Planned Behaviour (TBP)* is a modification of TRA, adding a component of perceived behavioural control, addressing the person's belief that it is possible to control a specific behaviour. Like the TRA, it assumes the major importance of behavioural intention, and also does not address cultural or environmental context.
 - 2.4. *Decision-making Theory* is similar to TRA and TBP in assuming that people make rational choices about sexual risk behaviours based on expectations of positive outcomes. These theories do not address the issue of immediate gratification from risky behaviours vs. the long term nature of negative consequences, although there is significant evidence that immediate gratification usually wins out¹²³ (Mischel, 1970).
3. **Learning Theories** are applied in behavioural interventions with the focus on identifying stimulus cues and reinforcers to explain acquisition and maintenance of behaviours.
 - 3.1. *Operant Learning Theory* focuses on three components: specifying the behaviour, identifying current consequences of the behaviour that operate to maintain it (reinforcers), and identifying environmental stimuli which "trigger" the behaviour. Behaviour change

strategies using these theories incorporate reinforcements to increase desirable behaviours (either internal which are things people do to reward themselves or external which are rewards provided by others); punishment (which usually suppresses but does not eliminate a behaviour) and extinction (which seeks to eliminate a behaviour by systematically removing the reinforcers that give rise to or maintain it); shaping, which replaces behaviours in a chain that has led to risky behaviour in order to lead to another outcome instead; counter-conditioning which involves substituting an alternative to the problematic behaviour which is not compatible with it, for example teaching assertiveness to someone who is being easily led into risky behaviours; and stimulus control which involves avoiding or countering stimuli which have previously elicited problem behaviours, for example avoiding particular locations associated with unsafe sex in the past. Operant learning theory is usually incorporated in the social learning theory approaches described below.

- 3.2. *Social Learning and Self-Efficacy Theory*. Social Learning Theory and a later derivative, social cognitive theory, add to the above operant learning approaches the concept that new behaviours are also acquired by observational learning, that is watching others, observing the consequences of their actions, and imitating the observed skills with positive consequences¹²⁴ (Bandura, 1977). Social cognitive theory adds the idea of self-efficacy as well, that is confidence in one's ability to successfully implement changes¹²⁵ (Bandura, 1989). Many interventions use these theories, and most tend to also incorporate information and cognitive aspects (see above), so that learning theories are additive to the others discussed earlier.
4. **Theories of Motivation and Emotional Arousal** were to some extent developed to address the emotional and motivational aspects under-represented in the Cognitive Theories discussed above. However overall there is concern that methods used to arouse fear may lead to an increase in denial, so that programs utilizing scare tactics are not advisable.
 - 4.1. *Fear-Drive and Dual Process Models* address fear as a motivator to change behaviour. They also recognize that fear can lead to behaviours such as denial that cause a failure to change behaviour. These theories are rarely used as a basis for interventions.
 - 4.2. *Protection Motivation Theory* (PMT) combines cognitive and emotional arousal theories, suggesting that concern related to a health threat leads to coping responses that may be either adaptive or maladaptive. The response depends on the balance between 'threat appraisal' and 'coping appraisal'. Threat appraisal involves the balance between anticipated rewards of the behaviour and severity of and personal vulnerability to the threat, while coping appraisal involves balancing the perceived likelihood that the action will reduce the threat, the belief that the person can carry out the behaviour, and the barriers or inconvenience associated with the behaviour. PMT is used mainly in research examining causes of risky and protective behaviour, rather than in intervention research itself, and even in the former, all the variables included in PMT typically explain only a small amount of behavioural difference.
5. **Transtheoretical Model** (TTM) (Stages of Change) defines five distinct stages through which people move in making behaviour changes, and specifically identifies intervention methods linked to each stage. These stages are precontemplation, in which consciousness-raising techniques such as observations, confrontations, and interpretations can be used to try to overcome resistance to recognizing a problem or risk; contemplation, in which a person is aware that a problem exists but is not yet committed to taking action, and in which dramatic relief techniques can be used to raise positive emotions about the benefits of change and clarify negative emotions that could be lowered by change, as well as potentially leading to reevaluation of how the behaviour is affecting others; preparation, in which people begin to

take small steps toward action, and in which change methods such as initiating counter conditioning and stimulus control can begin to alter behaviour or to avoid situations in which risky behaviour commonly occurred in the past; action, in which overt changes in environment and behaviour are initiated and problem behaviour is modified for some defined period of time, with interventions involving ensuring the person has the skills needed and uses the necessary stimulus control; and maintenance, in which people consolidate gains and concentrate on preventing relapse, for example through anticipating situations in which relapse is more likely and developing specific ways to deal with them.

6. **Information, Motivation, Behaviour (IMB) Model** is a practical and widely applied model which was proposed following an extensive review of the AIDS risk reduction literature that identified characteristics favouring risk reduction behavioural changes. It integrates educational, cognitive and behavioural theories, based on the concept that AIDS risk-reduction interventions need to provide people with information about AIDS transmission and prevention, include strategies that increase motivation to reduce AIDS risk, and train people in behavioural skills needed to carry out the specific risk reduction behaviours. It also describes a process of population intervention development which begins with elicitation research (similar to needs assessment) which identifies the population's level of knowledge, factors that determine their motivation for change, and their existing prevention behavioural skills. This is followed by development of appropriate and evidence-based interventions to address the findings from the elicitation research, and sound evaluation to determine whether the intervention has produced the intended changes.
7. **Social Influence Theories** do not lend themselves to case management approaches, but are used to develop interventions attempting to alter social norms regulating or supporting behaviours, usually through attempting to reach a critical mass of people in a community or population with information, motivation and skills.
 - 7.1. *Social Marketing* involves "the design, implementation, and control of programs seeking to increase the acceptability of a social idea or practice in a target group"¹²⁶ (Silvestre, 1986, p.223). Social marketing has been used for community AIDS prevention campaigns such as STOP AIDS¹²⁷ (Puckett, 1987), and programs specifically targeting promotion of condoms. Evaluation of social marketing is complex since there are typically other influences on behaviour occurring at the same time whose effects cannot be readily separated.
 - 7.2 *Diffusion of Innovation Theory (DOI)/Popular Opinion Leader (POL)* interventions address behaviour change in communities, based on the theory that new innovations are most effective when a critical mass of opinion leaders (people who are respected or popular), usually 15% of the total population, adopt or support the innovation. POL interventions systematically identify these popular and socially influential individuals and enlist them into an intervention in which they are trained to initiate risk reduction conversations with friends and acquaintances and to use effective behaviour change message techniques. The interventions provide extensive ongoing follow-up with the POLs, as well as logos and other cues for POLs to use as conversation starters. This model was evaluated and shown to be successful in a community-level intervention in clubs frequented by MSM in 3 small American cities^{128, 129, 130} (Kelly et al, 1991; Kelly et al, 1992; St. Lawrence et al, 1994).

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Appendix G: Sample Templates for Orders Regarding Bacterial STIs issued under Section 22 of the Health Promotion Act

Sample 1.1 Chlamydia Template

ORDER

made pursuant to Section 22 of the Health Protection and Promotion Act, R.S.O. 1990, c.H.7

[insert date]

TO: [insert client name]
[insert client address]

I, [insert health care provider's name], Associate Medical Officer of Health for the [insert health unit name], order you to take the following action:

1. Within five (5) working days of receiving this order attend the office of
[insert health care provider's name]
[insert health care provider's address]

or another health care provider mutually acceptable to you and [insert health unit name], and comply with the recommended treatment for chlamydia including compliance with prescribed medications, regular medical assessments and in-hospital care if so advised until, in the opinion of your health care provider and [insert health unit name], you no longer pose a risk of infection with chlamydia to others in the community.
2. Provide to [insert health unit name] within 5 working days of receipt of this order the name of the health care provider whom you attended as prescribed in paragraph 1 of this Order.
3. Abstain from any sexual activity that involves penetration into your vagina, anus or mouth. This requirement is in effect until one week after you have completed the recommended course of treatment for chlamydia which is prescribed for you.
4. Provide the [insert first name of PHN and phone number], within 5 working days of receipt of this Order, the names and last known addresses of all the partners with whom you have had unprotected sexual activity since [insert date].

THE REASONS for this ORDER are that:

1. I have received reports pursuant to Sections 25, 26 and 29 (insert relevant sections of HPPA depending on source of report) of the Health Promotion and Protection Act indicating that:
 - a. You have been diagnosed with chlamydia as reported to [insert health unit name], on [insert date], laboratory test number [insert lab #], testing date [insert testing date].

- b. You were not treated for this infection.
 - c. You did not return to the clinic where the test was done to be treated.
 - d. You did not respond to telephone messages left for you by the public health nurse on [insert date] or to a letter sent to you by [insert health unit name] on [insert date].
 - e. As of [insert date], you still had not attended [insert health care provider name] office.
2. Chlamydia is spread to other persons by unprotected sexual activity and may result in pelvic inflammatory disease and/or infertility.

I am of the opinion, on reasonable and probable grounds that:

- a. a communicable disease exists or may exist or there is an immediate risk of an outbreak of a communicable disease in the health unit served by me;
- b. the communicable disease presents a risk to the health of persons in the health unit served by me; and
- c. the requirements specified in this order are necessary in order to decrease or eliminate the risk to health presented by the communicable disease.

NOTICE

TAKE NOTICE THAT you are entitled to a hearing by the Health Services Appeal and Review Board if you deliver to me and to the Health Services Appeal and Review Board, Health Boards Secretariat, 151 Bloor Street West, 9th Floor. Toronto, Ontario, M5S 2T5, notice in writing, requesting a hearing within 15 days after service of this Order.

AND TAKE FURTHER NOTICE THAT although a hearing may be requested this Order takes effect when it is served upon you.

FAILURE to comply with this Order is an offence for which you may be liable, on conviction, to a fine of not more than \$5,000.00 for every day or part of each day on which the offence occurs or continues.

[insert signature]
Associate Medical Officer of Health

Served upon:

Time [insert time]

on [insert date]

Hand delivered by [insert name]

Sample 1.2 Syphilis Template

ORDER

made pursuant to Section 22 of the Health Protection and Promotion Act, R.S.O. 1990, c.H.7

[insert date]

TO: [insert client name]
[insert client address]

I, [insert physician's name], Associate Medical Officer of Health for the [insert health unit name], order you to take the following action:

1. Within five (5) working days of receiving this order attend the office of

[insert health care provider name]
[insert health care provider address]

or another health care provider mutually acceptable to you and [insert health unit name], and comply with the recommended treatment for syphilis including compliance with prescribed medications, regular medical assessments and in-hospital care if so advised until, in the opinion of your health care provider and [insert health unit name], you no longer pose a risk of infection with syphilis to others in the community.

2. Provide to [insert health unit name], within 5 working days of receipt of this order the name of the health care provider whom you attended as prescribed in paragraph 1 of this Order.
3. Abstain from any sexual activity that involves penetration into the vagina, anus or mouth of your partner. This requirement is in effect until one week after you have completed the recommended course of treatment for syphilis which is prescribed for you.
4. Provide the Public Health Nurse, [insert first name of PHN and phone number], within 5 working days of receipt of this Order, the names and last known addresses of all the partners with whom you have had unprotected sexual activity since [insert date].

THE REASONS for this ORDER are that:

1. I have received reports pursuant to Sections 29 of the Health Promotion and Protection Act indicating that you have been diagnosed with syphilis as reported to insert health unit name], on [insert date], laboratory test number [insert lab number], testing date [insert date].
2. On [insert date] you agreed to call the Clinic to make an appointment for follow-up.
3. On [insert date] the Clinic informed insert health unit name], that you had not yet attended.
4. You have not responded to a letter left for you at your address on [insert date] requesting

that you call the Public Health Nurse.

5. Syphilis is spread to other persons by unprotected sexual activity and may result in long term organ damage to the individual or if passed to a woman who is or becomes pregnant, damage to the infant.

I am of the opinion, on reasonable and probable grounds that:

- a. a communicable disease exists or may exist or there is an immediate risk of an outbreak of a communicable disease in the health unit served by me;
- b. the communicable disease presents a risk to the health of persons in the health unit served by me; and
- c. the requirements specified in this order are necessary in order to decrease or eliminate the risk to health presented by the communicable disease.

NOTICE

TAKE NOTICE THAT you are entitled to a hearing by the Health Services Appeal and Review Board if you deliver to me and to the Health Services Appeal and Review Board, Health Boards Secretariat, 151 Bloor Street West, 9th Floor. Toronto, Ontario, M5S 2T5, notice in writing, requesting a hearing within 15 days after service of this Order.

AND TAKE FURTHER NOTICE THAT although a hearing may be requested this Order takes effect when it is served upon you.

FAILURE to comply with this Order is an offence for which you may be liable, on conviction, to a fine of not more than \$5,000.00 for every day or part of each day on which the offence occurs or continues.

[insert signature]
Associate Medical Officer of Health

Served upon:

Time [insert time]

on [insert date]

Hand delivered by [insert name]

Appendix H: Recommendations for behavioural interventions to reduce HIV

The following document from CDC addresses recommendations for individual information and prevention options. At the same time, it does not attempt to address social determinants of health which may play an important part in healthy decision making.

Table X: **Recommendations for behavioural interventions to reduce HIV transmission risk** (from MMWR, July 18, 2003)

Recommendation	Rating
Patients should have adequate, accurate information regarding factors that influence HIV transmission and methods for reducing the risk for transmission to others, emphasizing that the most effective methods for preventing transmission are those that protect noninfected persons against exposure to HIV (e.g., sexual abstinence; consistent and correct use of condoms made of latex, polyurethane or other synthetic materials; and sex with only a partner of the same HIV status). HIV-infected patients who engage in high-risk sexual practices (i.e., capable of resulting in HIV transmission) with persons of unknown or negative HIV serostatus should be counselled to use condoms consistently and correctly.	A-III *(for using brief health care provider delivered messages to influence patient behaviour)
Patients' misconceptions regarding HIV transmission and methods for reducing risk for transmission should be identified and corrected. For example, ensure that patients know that 1) per-act estimates of HIV transmission risk for an individual patient vary according to behavioural, biologic, and viral factors; 2) highly active antiretroviral therapy (HAART) cannot be relied upon to eliminate the risk of transmitting HIV to others; and 3) nonoccupational postexposure prophylaxis is of uncertain effectiveness for preventing infection in HIV-exposed partners.	A-III (for using brief health care provider delivered messages to influence patient behaviour)
Tailored HIV prevention interventions, using a risk-reduction approach, should be delivered to patients at highest risk for transmitting HIV.	A-III (for efficacy in promoting safer behaviours)
After initial prevention messages are delivered, subsequent longer or more intensive interventions in the clinic or office should be delivered, if feasible.	A-I (for efficacy of multi-session, clinic-based interventions in promoting safer behaviours)

HIV-infected patients should be referred to appropriate services for issues related to HIV transmission that cannot be adequately addressed during the clinic visit.

A-I (for efficacy of HIV prevention interventions conducted in nonclinic settings)

Persons who inject illicit drugs should be strongly encouraged to cease injecting and enter into substance abuse treatment programs (e.g., methadone maintenance) and should be provided referrals to such programs.

A-II (for reducing risky drug use and associated sexual behaviours)

Persons who continue to inject drugs should be advised to always use sterile injection equipment and to never reuse or share needles, syringes, or other injection equipment and should be provided information regarding how to obtain new, sterile syringes and needles (e.g., syringe exchange program).

A-II (for reducing risk for HIV transmission)

* Level of evidence in the MMWR document consists of I-III as used in our document, and a letter rating, with A meaning that there is sufficient evidence to recommend in favour of an intervention.

The following table provides information on relative levels of risk for differing sex acts, with and without use of condoms. As noted below, a variety of factors can increase these risk levels, such as presence of another STI. It is important to note that none of the acts discussed are risk free – the information below is to offer guidance on degrees of risk for counselling purposes.

TABLE 5. Estimated per-act relative risk for a person without human immunodeficiency virus (HIV) infection acquiring HIV infection, based on sex act^{*} and condom use[†]

Risk factor	Relative risk for a person without HIV infection of acquiring HIV infection
Sex act	
Insertive fellatio [§]	1
Receptive fellatio [§]	2
Insertive vaginal sex [¶]	10
Receptive vaginal sex [¶]	20
Insertive anal sex [¶]	13
Receptive anal sex [¶]	100
Condom use	
Yes ^{**}	1
No ^{**}	20

Note: This table quantifies the relative risk for HIV transmission in a way that can help compare the effects of a person's choices of sex act and condom use. It is presented from the point of view of a person without HIV infection and should be used to educate the HIV-infected patient regarding risks for transmission to partners who are not HIV infected or have unknown HIV serostatus. These risks are estimated from available data. Risks can vary depending on several factors, including presence of STDs in either partner and the HIV-infected partner's viral load. In addition, the relative frequency of performance of higher- and lower-risk sex acts will affect risk for transmission (see Prevention Messages for All Patients).

Note: The risks of these choices are multiplicative. Compared with the lowest relative risk (performing insertive fellatio using a condom; referent group, RR = 1), the overall relative risk increases to 2,000 when performing receptive anal sex (RR = 100) without a condom (RR = 20).

* Data regarding risk for transmission from sharing drug injection equipment are too limited to be included in this table.

† **Source:** Varghese B, Maher JE, Peterman TA, Branson BM, Steketee RW. Reducing the risk of sexual HIV transmission: quantifying the per-act risk for HIV infection based on choice of partner, sex act, and condom use. *Sex Transm Dis* 2002;29:38–43.

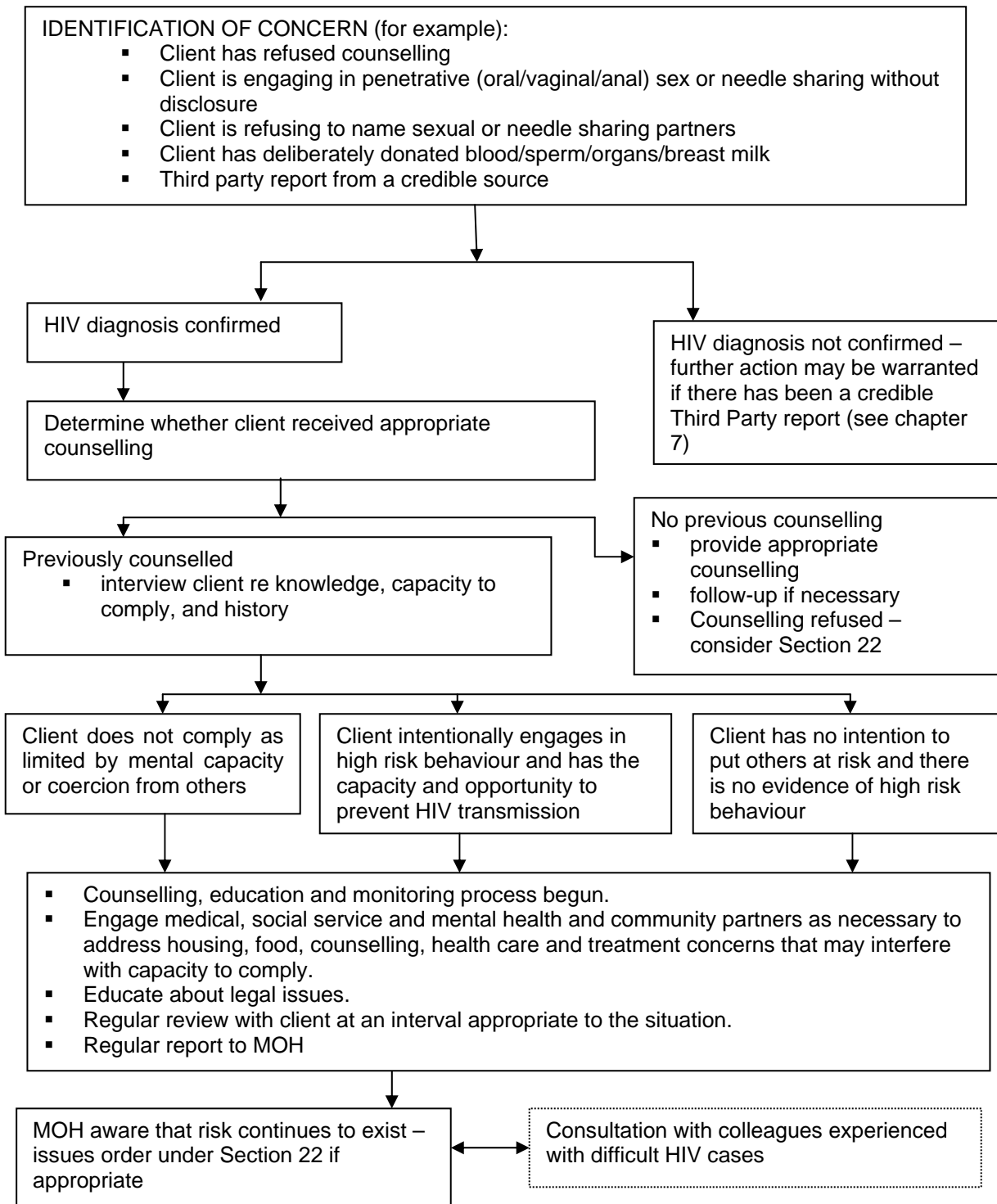
§ Best guess estimate, from Varghese et al.

¶ **Source:** European Study Group. Comparison of female-to-male and male-to-female transmission of HIV in 563 stable couples. *BMJ* 1992;304:809–13.

** **Source:** Macaluso JM, Kelaghan J, Artz L, et al. Mechanical failure of the latex condom in a cohort of women at high STD risk. *Sex Transm Dis* 1999;26:450–8.

Appendix I: Graduated Follow-up of HIV Cases Who Risk Infecting Others

- ↳ A graduated approach may involve collaboration with medical services, social services, community care partners and mental health.
- ↳ Interventions may occur at several levels concurrently.
- ↳ Interventions are aimed at improving quality of life, reintegration into the community, and protecting the health of the public.



Appendix J: Sample Section 22 Order for HIV

ORDER

made pursuant to Section 22 of the Health Protection and Promotion Act, R.S.O. 1990, c.H.7

[insert date]

TO: [insert client name]
[insert client address]

I, [insert physician's name], Associate Medical Officer of Health for the [insert health unit name], order you to take the following action:

1. Abstain from any sexual activity that involves penile penetration into the vagina, anus or mouth of another person or penile penetration into your mouth or anus by another person, unless the following conditions are met:
 - a) Inform your partner prior to penetrative sexual activity that you are infected with Human Immunodeficiency Virus (HIV), the causative agent of AIDS; and
 - b) Wear a latex condom on your penis from onset of erection up to and including the completion of sexual activity;
2. Do not provide to any other individual, equipment or other material, such as needles or syringes, which you have used to inject drugs or other substances, or which you have used to penetrate your skin;
3. Do not donate blood, plasma, organs, sperm or tissue;
4. Continue to attend [insert health care provider's name] and comply with recommended treatment and advice including attendance at scheduled medical appointments in connection with your HIV diagnosis;
5. Provide to the public health nurse [insert first name], at [insert phone number] within 5 working days of receipt of this order the names and last known addresses of any partners with whom you have had unprotected penetrative sexual activity since [insert date].

THE REASONS for this ORDER are that:

1. I received a report pursuant to Section 29 of the Health Promotion and Protection Act indicating that you are infected with Human Immunodeficiency Virus (HIV) the agent of a communicable disease, namely Acquired Immune Deficiency Syndrome (AIDS), Laboratory report number [insert lab number], testing date [insert date] reported to [insert health unit name] on [insert date].
2. On [insert date] the public health nurse, [insert first name] advised you of the importance of partner notification and the need for names of partners who might be at risk of having been exposed to HIV. [Insert name] requested that you provide her with the names and addresses of partners who might be at risk of having been exposed to HIV.

3. On [insert date] you refused to provide [insert health unit name] with the name and address of your sexual partner.
4. On [insert date] your health care provider [insert provider's name] reported to [insert health unit name] that you refused to provide him with the name and address of your sexual partner.
5. HIV is spread to other persons by unprotected sexual activity and can result in serious illness and/or death. Notification of sexual partners of their possible exposure to HIV is essential.

I am of the opinion, on reasonable and probable grounds that:

- a. a communicable disease exists or may exist or there is an immediate risk of an outbreak of a communicable disease in the health unit served by me;
- b. the communicable disease presents a risk to the health of persons in the health unit served by me; and
- c. the requirements specified in this order are necessary in order to decrease or eliminate the risk to health presented by the communicable disease.

NOTICE

TAKE NOTICE THAT you are entitled to a hearing by the Health Services Appeal and Review Board if you deliver to me and to the Health Services Appeal and Review Board, Health Boards Secretariat, 151 Bloor Street West, 9th Floor. Toronto, Ontario, M5S 2T5, notice in writing, requesting a hearing within 15 days after service of this Order.

AND TAKE FURTHER NOTICE THAT although a hearing may be requested this Order takes effect when it is served upon you.

FAILURE to comply with this Order is an offence for which you may be liable, on conviction, to a fine of not more than \$5,000.00 for every day or part of each day on which the offence occurs or continues.

[insert signature]
Associate Medical Officer of Health

Served upon:

Time [insert time]

on [insert date]

Hand delivered by [insert name]

Appendix K: Information sheet health care providers regarding late latent syphilis

[Insert public health unit's letterhead]

[insert date]

Management of Late Latent Syphilis

The information provided by you indicates your patient has been diagnosed with late latent syphilis. In order to confirm the diagnosis, manage and treat the illness, please refer to **page 232** in the *Canadian Guidelines on Sexually Transmitted Infections, 2006 Edition* found at

http://www.phac-aspc.gc.ca/std-mts/sti_2006/sti_intro2006_e.html

And:

- Assess clinical history
- Assess clinical findings
- Repeat serological tests in 2-4 weeks to rule out incubating infectious syphilis, if necessary

Counselling

We recommend you counsel your patient regarding the following:

- Transmission of STIs (including HIV) and risk reduction,
- Discussion of late latent syphilis and necessity of treatment completion,
- Assess marital or other long-term partners as appropriate,
- Assess children as appropriate,
 - during late latent syphilis, there is a 10% risk of passing the infection to the infant during pregnancy
 - symptoms of congenital syphilis may not be clinically apparent
- Discussion of post treatment serological follow up, if required.

Treatment

If Treatment is recommended, please call us at [insert phone number], to order medication free of charge.

As a reportable disease under the *Health Protection and Promotion Act, R.S.O 1990*, you are also required under regulation 569 to fulfill the requirements of a report. Please call the health unit to inform us of the treatment provided [insert phone number].

This confirms that [insert health unit] does not consider this to be a case of infectious syphilis based on serology and that you are taking responsibility for the case.

Thank you for your co-operation.

[insert case manager's name and designation]

Appendix L: Information sheet for providers to discuss with cases regarding late latent syphilis

[insert health unit logo]

Late Latent Syphilis

You may have an infection called syphilis.

What is it?

Syphilis is a sexually transmitted infection caused by a bacterium called *Treponema pallidum*. It is spread in the first one to two years after the infection, by direct contact with syphilis sores or rashes during sex (anal, oral or vaginal). It may also be spread through injection drug use or from a pregnant mother to her baby.

Symptoms

When the bacterium enters the body, the infection goes through a few stages; however you may not have recalled having any symptoms.

Primary stage occurs with a painless sore called a chancre may appear on the penis, buttocks, vagina, or throat, 3 - 90 days after contact. The chancre will go away even without treatment, but will continue into the secondary stage.

Secondary stage occurs 2 - 12 weeks after the chancre appeared. At this stage a rash may appear on the palms of the hands, soles of the feet or on any part of the body. In some there is patchy hair loss, muscle and joint pain and swollen glands. Again these symptoms go away without treatment and the infection goes into early latent and late latent stages.

Early latent stage has no symptoms, but you can still pass this infection onto others. Without treatment, will progress to late latent stage.

Late latent stage has no symptoms. Approximately, 30% of the untreated cases may develop serious heart, brain, and bone disease. At this stage, you cannot pass the infection on to others unless you are pregnant you may pass it onto your infant.

Diagnosis

Along with an assessment of your past medical history, a blood test is used to tell if you have syphilis.

Treatment

Syphilis is treated with antibiotics. You may receive weekly injections or oral antibiotics for 1 month. Treatment is available free of charge from the health department. If you don't get treated you have about 30% chance of developing serious heart, brain and bone disease.

Implications for Your Partners and Children

For the stage of your infection, all sexual and needle sharing partners should be assessed. If you are a woman and had this infection when you were pregnant, you may have passed it on to your children. If you have children, they may also require assessment. Please discuss this with your health care provider.

Follow up

Follow up blood tests may be necessary and your health care provider will discuss this with you. It is important to remember the blood tests for syphilis may remain positive for life, even when you are treated with the correct medication. This diagnosis is part of your medical history and you should share this information with other health care provider(s).

Appendix M: Example of a medical surveillance form for syphilis sent to public health regarding a medical examination that took place outside Canada

Citizenship and Immigration Canada / Citoyenneté et Immigration Canada		PROTÉGÉ UNE FOIS REMPLI	
MEDICAL SURVEILLANCE UNDERTAKING SURVEILLANCE MÉDICALE - ENGAGEMENT		Date D - J M Y - A	
PART A TO BE COMPLETED BY PROCESSING OFFICER / PARTIE A RÉSERVÉ AU BUREAU COMPÉTENT			
1 Family name - Nom de famille		2 Given name(s) - Prénom(s)	
4 Date of birth - Date de naissance D - J M Y - A		5 Head of family - Chef de famille <input type="checkbox"/> Same as in box 1 or Même qu'à la case 1 ou	
7 Address where you intend to reside in Canada - Adresse prévue au Canada Street & no. - N° et rue		6 IMM file no. - N° de réf. IMM	
City - Ville Province Postal code - Code postal		8 "S" code - Code « S »	
9 Office where medical assessment performed Bureau où l'évaluation médicale a été effectuée		10 Type of entry document and serial no. Genre de document d'admission et n° de série	
11 I understand that provincial/territorial health authorities in Canada may wish to monitor my health. I agree to them doing so. I understand my landing in Canada is conditional upon my reporting to a provincial/territorial health clinic within 30 days of my admission to Canada as a permanent resident. I shall report any changes in residence forthwith to Canada Immigration and the appropriate provincial/territorial authorities.		Je sais qu'au Canada les autorités provinciales/territoriales de la santé voudront vérifier mon état de santé, ce à quoi je consens. Je sais que mon établissement au Canada me sera accordé sous réserve que je me présente à une clinique provinciale/territoriale dans les 30 jours suivant mon admission comme résident permanent. Je dois signaler tout changement d'adresse à Immigration Canada et aux autorités provinciales/territoriales compétentes.	
Signature of applicant - Signature requise		Date D - J M Y - A	
<p>The information you provide on this document is collected under the authority of the <i>Immigration Act</i> for the purpose of notifying provincial health authorities in Canada that your medical condition requires surveillance. It will be stored in one of the following Personal Information Banks: EIC PPU 225, 230, 285, 290 and 295 and is protected and accessible under the provisions of the <i>Privacy Act</i>.</p> <p>Les renseignements que vous fournissez sur ce document sont recueillis en vertu de la <i>Loi sur l'immigration</i> aux fins d'informer les autorités provinciales de la santé compétentes au Canada que votre état de santé doit faire l'objet d'une surveillance médicale. Ces renseignements seront versés à l'un des fichiers de renseignements personnels suivants : CEI PPU 225, 230, 285, 290 et 295 et sont protégés et accessibles en vertu des dispositions de la <i>Loi sur la Protection des renseignements personnels</i>.</p>			
PART B TO BE COMPLETED BY SECONDARY EXAMINING OFFICER AT PORT OF ENTRY / PARTIE B RÉSERVÉ À L'AGENT D'IMMIGRATION PRÉPOSÉ AU BUREAU		DEUXIÈME INTERROGATOIRE AU POINT D'ENTRÉE	
12 Confirmation/Update address in Canada Confirmation/Mise à jour de l'adresse au Canada <input type="checkbox"/> Same as in box 7 above or La même qu'à la case 7 ou		13 Office stamp - Timbre du bureau	
Street & no. - N° et rue Apt. - App.			
City - Ville Province Postal code - Code postal			
Telephone no. / N° de téléphone Area code / Ind. rég.			
Any change of address within three (3) months of date in box 14 should be provided to a Canada Immigration Centre. See blue pages of telephone directory.		14 Signature of examining officer / Signature de l'examinateur	
Tout changement d'adresse au cours des trois (3) mois suivant la date inscrite à la case 14 doit être signalé à un Centre d'immigration Canada. Consulter les pages bleues de l'annuaire téléphonique.		Date D - J M Y - A	

IMM 0535 (06-1998) B

THIS FORM HAS BEEN ESTABLISHED BY THE MINISTER OF CITIZENSHIP AND IMMIGRATION
FORMULAIRE ÉTABLI PAR LE MINISTRE DE LA CITOYENNETÉ ET DE L'IMMIGRATION

Canada

1 - ORIGINATING VISA / IMMIGRATION OFFICE
POUR LE BUREAU DES VISAS OU D'IMMIGRATION D'ORIGINE

Appendix N: Example of a medical surveillance form for syphilis sent to public health regarding a medical examination that took place in Canada

PUBLIC HEALTH AUTHORITY NOTIFICATION LETTER FOR MEDICAL SURVEILLANCE (IN-CANADA PUBLIC HEALTH FOLLOW-UP)

The following is for your information and action as deemed necessary.

An immigration medical examination conducted in Canada has recently been completed on the following individual who is currently residing in your jurisdiction.

This examination has revealed the presence of a condition which would normally result in a medical surveillance notification by Citizenship and Immigration Canada.

As the individual resides in Canada, this notification is being issued before the immigration application is completed.

The client has been provided with an informational handout entitled "IN-CANADA PUBLIC HEALTH FOLLOW-UP."

FAMILY NAME:

GIVEN NAMES:

DATE OF BIRTH: DD/MM/YYYY

SEX: M F

"S" CODE: S 2.04

ADDRESS:

Postal Code:

TELEPHONE:

IMS FILE NO.:

UPON INITIATION OF MEDICAL SURVEILLANCE, PLEASE RETURN THIS SHEET BY FAX TO CIC MEDICAL SURVEILLANCE UNIT. FAX: (613) 952-3891

DATE SURVEILLANCE INITIATED:

PUBLIC HEALTH AUTHORITY STAMP
DD/MM/YYYY

Appendix O: Sample letter to be sent to health care providers regarding partner notification responsibilities

Sample #1: bacterial infections

[insert health unit letterhead]

[insert date]

PERSONAL AND CONFIDENTIAL

[insert name of health care provider]

[insert current address of health care provider]

Dear [insert name of health care provider]:

Re: [insert client's name]

D.O.B [insert client's date of birth]

Diagnosis:

The letter is to confirm our telephone conversation on _____ in which you advised us that you would be taking the responsibility for counselling the above named client, and notifying their partners.

Public health recommends that this counselling include:

- informing your client of the rationale for partner tracing,
- counselling your client about the transmission of STDs (including HIV) and risk reduction,
- advising your client not to resume sexual activity with any partners until all those involved have finished treatment,
- ensuring your client completes treatment given and has a TOC if necessary,
- discussing with your client whether he or she wishes to inform partners of the situation prior to your involvement,
- assuring your client that partner notification is done without revealing his/her name, date or place of exposure,
- recording identifying information about each partner as completely as possible including name, gender, address, telephone number (home, work, cell, pager), age/date of birth,
- providing each partner with infection information, prevention information, and testing and treatment options,
- referring to Public Health if:
 - your client does not wish to provide you with names,
 - partners cannot be located or will not be contacted by you,
 - partners refuse to be tested or treated following notification by you that they are a "contact".

If you have any questions or require assistance with any of these areas, please call me at [insert phone number].

Yours truly,

[insert name, professional designation, & title]

Sample Letter # 2: HIV

[insert public health unit's letterhead]
[insert date]

PERSONAL AND CONFIDENTIAL

[insert name of health care provider]
[insert current address of health care provider]

Dear [insert name of health care provider]:

Re: Name: ____ [insert client's name] ____ (HIV Positive) D.O.B. [insert client's date of birth]

As you are aware, HIV infection is reportable to the health department under the *Health Protection and Promotion Act*. You will, by this time, have already been approached by our Public Health Nursing staff to provide us with the epidemiological information on the case involved.

[insert name of health unit] is also responsible for ensuring that post-test counselling and partner notification is completed for each case of HIV reported. Health care providers can do post-test counselling and partner notification in situations that they feel appropriate.

This letter is to confirm that you have advised us on _[insert date]_____ through our telephone conversation/correspondence that:

1. You will be taking the responsibility for the post-test counselling of the above-named patient and the notification of partners/contacts.

[insert name of health unit] recommends that this include:

- ensuring that your patient understands the test results and the difference between HIV infection and AIDS
 - instructing your patient not to donate blood, semen or body organs or breast milk
 - assessing your patient's support system and need for follow-up care or counselling and provide appropriate referrals
 - assisting your patient to notify sexual partners and persons with whom needles were shared and encourage these partners/contacts to seek counselling and medical evaluation
 - counselling your patient on safer sex, sterile needle use practices and the appropriate disclosure of his/her HIV positive status to sexual partners
 - discussing the need, as appropriate, for your patient to inform other health care attendants, e.g. dentists
 - discussing the implications of pregnancy with patients in their child-bearing years
 - discussing with your patient the need for TB testing
 - informing your patient that the Canadian Blood Services must be informed if he or she has received or donated blood.
2. You will distribute the attached resources [insert the name of health unit's pamphlets], ensuring that he/she receives the messages in the pamphlet.

If you have concerns that the individual is unwilling or unable to take appropriate precautions to reduce HIV transmission or if you require assistance in any of these areas, please call [insert phone number].

Yours truly,

[insert name, professional designation, & title]

Appendix P: Contact Tracing Literature Reviewed

Note: Patient-delivered partner therapy references are not included here, but are in Appendix R.

Published Reviews of Contact Tracing

First Author	Year	Country / population & STI(s) studied	Study Design	Outcomes	Additional Comments
Hogben	2007a	All countries; All main STIs	Review: focus on partner notification (PN) strategies; internet PN; network methods; PDPT	Flexibility in use of methods according to patient/context & policies allowing flexibility are recommended;	PDPT may not be desirable for MSM because of possibility of partners not being followed up for possible HIV co-infection; network methods mainly useful to improve efficiency over time and allow for more efficient future investigations e.g. of outbreaks
Hogben	2007b	High income countries; HIV	Systematic review	Partner counselling & referral services (provider notification) successful in identifying previously unknown HIV+; insufficient evidence on effect in changing behaviour or reducing transmission	Provider notification identified a high risk population for testing; new HIV positives not necessarily infected by case
Macke B	1999	United States; All STIs	Review		
Mathews C	2002	All; GC, CT, syphilis, HIV	Systematic review	Moderately strong evidence that provider notification or choice between provider notification & patient notification more partners to	Most studies relate to GC & CT; little study re syphilis More evidence needed on potential harms of contact tracing

				medical care than patient notification; & conditional notification more than patient notification for GC.	
				Nurse-given education & patient-centred counselling small increase in partners treated	
Oxman A	1994	All; GC, CT, syphilis, HIV	Systematic Review	Moderate evidence that provider/conditional notification is more effective than patient notification; evidence of the benefits of assistance methods to improve patient notification	More evidence needed on potential harms of contact tracing

References Reviewing Contact Tracing:

Hogben M, McNally T, McPheeters M, Hutchinson AB, Task Force on Community Preventive Services. The effectiveness of HIV partner counselling and referral services in increasing identification of HIV-positive individuals: a systematic review. *American Journal of Preventive Medicine*, 2007; 33(2S): S89-S100.

Hogben M. Partner notification for sexually transmitted diseases. *Clinical Infectious Diseases*, 2007; 44(Suppl 3): S160-S174.

Macke BA, Maher JE. Partner notification in the United States. An evidence-based review. *American Journal of Preventive Medicine*, 1999; 17(3):230-42.

Mathews C, Coetzee N, Zwarenstein M, Lombard C, Gutmacher S, Oxman A, Schmid G. Strategies for partner notification for sexually transmitted diseases (Review), 2001; *Cochrane Collaboration*, Wiley and Sons, Ltd., 2007.

Oxman AD, Scott EAF, Sellors JW, Clarke JH, Millson ME, Rasooly I, Frank JW, Naus M, Goldblatt E. Partner notification for sexually transmitted diseases: an overview of the evidence. *Canadian Journal of Public Health*, 1994; 85: 127-32.

References on Contact Tracing Methods:

Gonorrhoea, chlamydia, non-gonococcal urethritis:

Giesecke J, Ramstedt K, Granath F, Ripa T, Rado G, Westrell M. Efficacy of partner notification for HIV infection. *Lancet*, 1991; 338:1096-100.

Hogben M, St. Lawrence J, Montano D, Kasprzyk D, Leichter J, Phillips W. Physicians' opinions about partner notification methods: case reporting, patient referral, and provider referral. *Sexually Transmitted Infections*, 2004; 80:30-34.

Katz BP, Danos CS, et al. Efficiency and cost-effectiveness of field follow-up for patients with *Chlamydia trachomatis* infection in a sexually transmitted disease clinic. *Sexually Transmitted Diseases*, 1988;15(1):11-16.

Montesinos L, Frisch L, Greene B, Hamilton M. An analysis of an intervention in the sexual transmission of disease. *Journal of Applied Behavior Analysis*, 1990; 23(3): 275-84.

Tomnay JE, Hatch BA, Pitts MK, Carter TR and Fairley CK. Partner notification: a 2002 Victorian audit. *International Journal of STD & AIDS*, 2004; 15: 629-631.

Syphilis:

Peterman TA, Toomey KE, Dicker LW, Zaidi AA, Wroten JE, Carolina J. Partner notification for syphilis: a randomised controlled trial of three approaches. *Sexually Transmitted Diseases*, 1997;24(9):511-18.

HIV:

Landis SE, Schoenbach VJ, Weber DJ, Mittal M, Krishan B, Lewis K, Koch GG. Results of a randomized trial of partner notification in cases of HIV infection in North Carolina. *New England Journal of Medicine*, 1992; 326(2):101-6.

Pavia AT, Benyo M, Niler L, et al. Partner notification for control of HIV: Results after 2 years of a statewide program in Utah. *American Journal of Public Health*, 1993;83:1418-1424.

Ramstedt K, Hallahagen G, Lundlin BI, et al. Contact tracing for human immunodeficiency virus (HIV) infection. *Sexually Transmitted Diseases*, 1990;17:47-41.

Rutherford GW, Woo JM, Neal DP, Rauch KJ, et al. Partner notification and the control of human immunodeficiency virus infection. Two years experience in San Francisco. *Sexually Transmitted Diseases*, 1991; 18:107-110.

Spencer NE, Hoffman RE, Raevsky CA, Wolf FC, Vernon TM. Partner notification for human immunodeficiency virus infection in Colorado: results across index case groups and costs. *International Journal of STD & AIDS*, 1993;4(1):26-32.

Wells KD, Hoff GL. Human immunodeficiency virus partner notification in a low incidence urban community. *Sexually Transmitted Diseases*, 1995; 22:377-379.

Methods to improve partner notification by patients:

Ellison G, Moniez V, Stein J. A randomized controlled trial of a standardised health message vs patient-centred counselling to improve STD partner notification. *Annals of Human Biology* 2001;**30**.

Faxelid E, Tembo G, Ndulo J, Krantz I. Individual counselling of patients with sexually transmitted diseases: a way to improve partner notification in a Zambian setting? *Sex Transm Dis* 1996;**23**:289-92.

Levy JA, Fox SE. The outreach-assisted model of partner notification with IDUs. *Public Health Reports*, 1998; 113:160 –169.

Solomon MZ, DeJong W. The impact of a clinic-based educational videotape on knowledge and treatment behaviour of men with gonorrhoea. *Sexually Transmitted Diseases*, 1988;15:127-32.

Appendix Q: Patient Delivered Partner Therapy Literature Reviewed

Articles on Partner Delivered Therapy Found & Reviewed

	1st author	Year	Journal	Name of article	Type of article
1	Auerswald	2006	Journal of Adolescent Health	Street-based STD testing and treatment of homeless youth are feasible, acceptable and effective	Clinical Trial. JA*
2	Fortenberry	1999	Sexually Transmitted Diseases	Subsequent STIs among adolescent women with genital infection due to CT, NG, or TV	Prospective cohort study
3	Golden	1999	Sexually Transmitted Diseases	PN for chlamydial infections among private sector health care providers in Seattle-King County	JA
4	Golden	2001	Sexually Transmitted Diseases	Partner management for gonococcal and chlamydial infection: expansion of public health services to the private sector and expedited sex partner treatment through partnership with commercial pharmacies	JA
5	Golden	2005 a	Sexually Transmitted Diseases	The legal status of PDPT** for STI in the US: a national survey of state medical and pharmacy boards	JA
6	Golden	2005 b	NEJM	Effect of expedited treatment of sex partners on recurrent or persistent gonorrhea or chlamydial infection	RCT
7	Golden	2005 c	Clinical Infectious Diseases	Expedited partner therapy for STD	EditComment
8	Golden	2007	Sexually Transmitted Diseases	Evaluation of a population-based program for expedited partner therapy for gonorrhea and chlamydial infection	JA Program evaluation
9	Gotz	2005	Sexually Transmitted Diseases	Management of chlamydia cases and their partners: results from a home-based screening program organized by municipal public health services with referral to regular health care	JA
10	Hogben	2005	Sexually Transmitted Diseases	Patient-delivered partner therapy for STD as practiced by US physicians	JA
11	Khan	2005	Sexually Transmitted Diseases	The prevalence of chlamydia, gonorrhea, and trichomonas in sexual partnerships: implication for PN & treatment	JA

12	Kissinger	1998	Sexually Transmitted Infections	Effectiveness of PDPM for preventing recurrent chlamydia trachomatis infection	JA
13	Kissinger	2005	Clinical Infectious Diseases	PDPT for male urethritis: a RCT	JA
14	Klausner	2003	Sexually Transmitted Diseases	Patient-delivered therapy for chlamydia: putting research into practice	Review
15	Klausner	2005	Sexually Transmitted Diseases	The Public Health Response to Epidemic Syphilis, San Francisco, 1999-2004	JA
16	McConnell	2003	Perspectives on Sexual and Reproductive Health	Integrating chlamydia trachomatis Control Services for males in Female Reproductive Health programs	
17	McGree	2005	Am J of Health-System Pharmacy	Status of and pharmacists' role in PDPT for STD	JA. Review
18	Niccolai	2005	Sexually Transmitted Infections	Knowledge of sex partner treatment for past bacterial STI and risk of current STI.	JA
19	Nuwaha	2001	Sexually Transmitted Diseases	Efficacy of PDP medication in the treatment of sexual partners in Uganda	Clin. Trial. JA. RCT
20	Ramstedt	1991	International Journal of STD & AIDS	Contact tracing in the control of genital <i>Chlamydia trachomatis</i> infection	JA
21	Rietmeijer	2002	Sexually Transmitted Diseases	Incidence and repeat infection rates of <i>Chlamydia trachomatis</i> among male and female patients in an STD clinic: implications for screening and rescreening	Retrospective cohort study
22	Schillinger	2003	Sexually Transmitted Diseases	PDPTreatment with azithromycin to prevent repeated chlamydia trachomatis infection among women: a RCT	Clin Trial. JA. Multi-centre study. RCT
23	Steiner	2003	American Journal of Public Health	Field-delivered therapy increases treatment for chlamydia and gonorrhea	JA
24	Stekler	2005	Clinical Infectious Diseases	Concurrent STIs in sex partners of patients with selected STIs: implications for PDPT	JA: Review
25	St. Lawrence	2002	American Journal of Public Health	STD screening, testing case reporting, and clinical and PN practices: a national survey of US Physicians	JA
26	Author not indicated	2005	Contraceptive Technology Update	Evidence supports use of PDPT for STDs: programs must overcome legal, financial barriers	JA

27	Whittington	2001	Sexually Transmitted Diseases	Determinants of Persistent and Recurrent <i>Chlamydia trachomatis</i> infection in young women: Results of a multi-centre cohort study	Multicentre cohort study
28	XU	2000	American Journal of Epidemiology	Repeat <i>Chlamydia trachomatis</i> Infection in women: analysis through a surveillance case registry in Washington State, 1993-1998	Database analysis
Conference presentations and reports					
1	Bauer	2006	2006 National STD Prevention Conference presentation	Patient-delivered partner treatment for chlamydia in California: legislation, implementation, and evaluation	Conference presentation
2	Boudov	2006	2006 National STD Prevention Conference presentation	Field-delivered patient and partner therapy as a creative chlamydia	Conference presentation
3	California Department of Health Services STD Control Branch	2001	Guidelines for Medical Providers in California	PDPT of antibiotics for <i>Chlamydia trachomatis</i>	Guidelines
4	Handsfield	2006	2006 National STD Prevention Conference presentation	Evidence Summary and CDC guidance for Expedited Partner Therapy	Conference presentation
5	Handsfield	2006	CDC. Atlanta, GA: US Department of Health and Human Services Report	Expedited Partner Therapy in the Management of STDs	Review and Guidance Report
6	McClain	2006	2006 National STD Prevention Conference presentation	Acceptability of PDPT for <i>Chlamydia trachomatis</i> Infection	Conference presentation
7	presented by Sterling	2005	CSA of American Medical Association Report 9-A-05	Expedited PT (PDPT) (Resolution 820, 1-04)	Report
TOTAL: 34 articles/documents					

* JA – Journal Article

**PDPT – patient delivered partner therapy/treatment

Appendix R: Sample Patient Handout for Patient-Delivered Partner Therapy

(BASED ON A HANDOUT DEVELOPED BY THE STATE OF CALIFORNIA)

[insert health unit letterhead]

URGENT AND PRIVATE INFORMATION ABOUT YOUR HEALTH READ THIS CAREFULLY

DIRECTIONS FOR SEX PARTNERS FOR TAKING MEDICATION

Your sex partner has recently been treated for (*chlamydia / gonorrhea*). (*chlamydia / gonorrhea*) is a curable bacterial infection you can get from having sex with a person who already has it. Many people with (*chlamydia / gonorrhea*) do not know they have it because they have no symptoms and feel fine. Others may develop pain in their pelvis or testicles, when urinating or during sex.

If you do not take medicine to cure it, you can get very sick. If you have unprotected sex with your partner, you could also give the infection back to them. Women can become unable to have children if they don't get treated.

You could have (*chlamydia / gonorrhea*).
It is important that you get treated.

You should get the medicine you need to treat it as soon as possible. The best way to take care of yourself is to have a check up and get medicine. See a doctor or come to:

[insert name and address of clinic]
[insert Telephone Number of clinic]

If you are not able to see a doctor within 1 week, you should take the medicine enclosed or prescribed as soon as possible.

**BEFORE YOU TAKE THE MEDICINE, PLEASE READ THE
FOLLOWING INFORMATION CAREFULLY**

Don't share or give this medicine to anyone else.

Do not take this medication if any of the following are true:

- < You are a female and you have lower belly pain, pain during sex, vomiting or fever.
- < You are pregnant.
- < You are male and you have pain or swelling in the testicles (balls) or fever.
- < You have serious long-term illness like kidney, heart or liver disease.
- < You are currently taking another prescription medication.

If your sex partner has chlamydia:

- < The medicine you will take is called azithromycin.
- < **Do not take this medication if** you have ever had a bad reaction, rash or allergy to the following antibiotics: azithromycin ("Zithromax"), erythromycin, clarithromycin ("Biaxin").

If your sex partner has gonorrhea:

- < The medicine you will take is called cefixime.
- < **Do not take this medication if** you have ever had a bad reaction, rash or allergy to the following antibiotics: cefixime, "Keflex", cephalosporins, penicillin, ampicillin, amoxicillin.

If any of the above are true, or you are uncertain, talk to your health care provider or call:
[insert health unit info line].

Some people get a mild upset stomach or diarrhea after taking this medicine. Others may develop pain in the abdomen, vomiting or rash. These don't last long. If you have any other side effects or allergic reaction, call your health care provider immediately. There can be other more severe side effects, but these are extremely rare.

Do not have sex for 7 days. It takes 7 days for the medicine to cure (*chlamydia/gonorrhea*). If you have unprotected sex during the 7 days after taking the medicine, you could still pass the infection to your sex partners. While condoms are effective, the safest way to make sure you don't pass the infection on to anyone is to not have sex for the 7 days.

If you have any questions about the medicine or *chlamydia / gonorrhea* please call: [insert phone number]. All calls are confidential.

Appendix S: Summary of Findings from a Survey of Seven Public Health Units and University Health Services Regarding Use of Electronic Communication Technologies in STI Case Management and Contact Tracing – 2007

- First, four agencies obtained consent to contact clients via e-mail (one did so via a first visit form, one did so when clients registered as a new patient or booked an appointment online, and two did so via an intake assessment form). Two agencies used e-mail to directly ask clients to return to the clinic, but one did so only after first trying to contact the person via telephone and letter without success. Three agencies simply e-mailed to ask clients to contact them. The response to requested returns was reported to be 'great' by three, and 'pretty good' by one. In fact, three agencies reported that e-mail was more successful an approach than telephoning.
- To prevent the e-mails from being sent directly to clients' SPAM folders, various subject titles were used for e-mails: 1) "Please call Health Services," 2) Message from your doctor," 3) "Appointment," 4) "Message from Dr. (their doctor's last name)," 5) "(name) Health Unit," followed by a second e-mail titled "(name of client) I am a nurse from (location)" if the first e-mail went ignored, and 6) "Confidential Information" (coming from an address with the city name in it). One health unit ensured that the subject title did not indicate that it was a Public Health Unit. Most universities and units had little knowledge of whether their e-mails were ever taken as SPAM, although many seemed to indicate that it certainly was possible. Three agencies gave the name of the software program they used to enhance security, but the others did not know which program they used.
- Five agencies reported that the use of e-mail for case management was working well/ good, one reported that it was poor, and one reported that it was simply a last resort. It is important to note, however, that the one unit that reported that it worked poorly was the one that specifically did not indicate that the message was from a Health Unit in the title. Benefits given for e-mail as a case management tool included: its being another option for contacting clients, its utility for contact tracing, the personal nature of the correspondence, the assurance that a message has gone out, the ease with which the correspondence can be documented, the speed with which responses are often given (especially since young clientele uses e-mail so much), the ease with which appointment times can be changed or cancelled, and the ease with which clients can be informed of such changes.
- Issues associated with using e-mail as a case management tool were reported to be: a lack of knowledge as to whether you're corresponding with the right person, protecting the confidentiality of the person, and security. Other issues included: a client's inability to respond to the e-mail if it is a blocked account, that some accounts may be full or rarely used thus causing the messages to not be received (if the messages do not bounce back to the sender there is no way of knowing that it happened), that e-mails may end up in a SPAM folder, that some individuals may have lost their access to a computer, that some individuals may delete the e-mails if they do not know who they are from, that there is a lack of consistency in the messages sent out (blanket messages should be used), and that there is a poor response rate. Further, there were concerns that if the Public Health label was used, then it may cause the client discomfort and leave them without privacy.
- Finally, recommendations for implementing e-mail case management included: e-mailing the person first to get permission to discuss health matters with them, being cautious of all of the problems above, taking caution with how e-mail is used (have a clear distinction between clinic follow-up and partner notification), being cautious about what information is given and know who's using it, using blanket statements, and documenting all e-mails in charts. It was also recommended that any health unit considering beginning to use e-mail as a case management tool should research the use of e-mail with their legal department, and check with the policies of the regulatory body, and the Personal Health Information Protection Act.

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