Australian Government

Department of Health and Ageing

SECOND
NATIONAL

Sexually Transmissible Infections

STRATEGY
2010–2013

Second National Sexually Transmissible Infections Strategy

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1. Background

This is the second national sexually transmissible infections (STIs) strategy to be adopted in Australia. It builds on the first national STI strategy which guided Australia's response to these infections between 2005 and 2008. This strategy is also one of a suite of five strategies aiming to reduce the transmission of STIs and blood borne viruses (BBVs), and the morbidity, mortality and personal and social impacts they cause. The relationship of the Second National Sexually Transmissible Infections Strategy 2010-2013 (this strategy) to the other four is detailed in section 1.2.

1.1 Roles and responsibilities of parties to this strategy

While governments are the formal parties to this document, a partnership approach has been central to the development of this strategy. This has included significant consultation with, and input from, community organisations, researchers, clinicians and health sector workforce organisations. A number of people who contributed are members, or representative members, of the advisory committees detailed further below.

The priority actions identified in this strategy will be progressed through a continuation of this partnership between governments and the community sector, representing people with the infections and their communities, researchers, clinicians and health sector workforce organisations.

Leadership is provided by the Australian Government which works through the Australian Health Ministers' Conference and its sub-committees to facilitate national policy formulation and coordination. The Blood Borne Virus and Sexually Transmissible Infections Sub-Committee of the Australian Population Health Development Principal Committee includes representatives of all governments as well as community based organisations. It provides expert advice to health ministers through the principal committee and the Australian Health Ministers' Advisory Council.

The Australian Government further seeks advice from the Ministerial Advisory Committee on Blood Borne Viruses and Sexually Transmissible Infections.

These groups will work in the context of funding arrangements for the health system, reshaping existing policies and programs or extending them where possible. These funding arrangements are provided jointly by the Commonwealth and the states and territories under the National Healthcare Agreement, which is a Schedule to the Council of Australian Governments (COAG) Intergovernmental Agreement on Federal Financial Relations (which came into effect on 1 January 2009). Related national partnership agreements provide the broad basis for funding reform in the Australian health system. The partnerships relevant to these strategies include the Indigenous Early Childhood Development Partnership and the National Essential Vaccines Partnership.

The Australian Government also funds community and professional organisations, and program delivery organisations and research centres to engage with, and build a knowledge base for, communities affected by BBVs and STIs—to put effective responses in place. The involvement of these organisations and research centres helped develop the overall response to these health challenges.

1.2 Relationship to other strategies

This strategy is one of a suite of five strategies aiming to reduce the transmission of STIs and BBVs in Australia, and the morbidity, mortality and personal and social impacts they cause. The five strategies which cover the period 2010 to 2013, include the:

- Second National Sexually Transmissible Infections Strategy (this strategy)
- Sixth National HIV Strategy
- National Hepatitis B Strategy

- Third National Hepatitis C Strategy
- Third National Aboriginal and Torres Strait Islander Blood Borne Viruses and Sexually Transmissible Infections Strategy.

While the first four strategies focus on individual infections, the fifth strategy focuses on the combined health impact these infections have on Aboriginal and Torres Strait Islander peoples in Australia. Despite their specific focus, each strategy shares common structural elements. This is designed to support a coordinated effort across stakeholder groups and pinpoint common concerns. The shared structural elements are:

- guiding principles (Chapter 4 in each strategy)
- priority populations (Chapter 5)
- or similar priority action areas (Chapter 6)
- issues around surveillance, research and workforce development (later chapters in each strategy).

1.3 Sexually Transmissible Infections in Australia

This is the second national STI strategy to be adopted in Australia. It builds on the first National Sexually Transmissible Infections Strategy 2005–2008[1], which was developed in recognition of the:

- rising rates of STIs, particularly chlamydia
- causal relationship between STIs and reproductive and sexual health consequences, such as pelvic inflammatory disease and infertility
- relationship between STIs and HIV.

As STIs do not impact on the health of the Australian population evenly, the first strategy identified priority populations requiring targeted and tailored interventions to promote their sexual and reproductive health and effect positive change. The first strategy also provided a framework in which these

interventions could be planned, delivered and evaluated.

This strategy addresses the health needs caused by STIs in Australia. It provides a framework for promoting the health of priority populations at risk of the negative health impacts of STIs, thus improving public health. This section details the health needs resulting from STIs for priority populations.

Infections caused by sexually transmitted pathogens other than HIV impose a burden of morbidity and mortality in the community both directly (through their impact on quality of life, reproductive health and child health) and indirectly, through their role in facilitating the sexual transmission of HIV and their economic impact.[2] STIs are also easily preventable and as such are a cost-effective focus for health promotion activities.

STIs are the main cause of infertility, particularly in women. Between 10% and 40% of women with untreated chlamydial infection develop symptomatic pelvic inflammatory disease. Post-infection tubal damage is responsible for 30% to 40% of cases of female infertility. Furthermore, women who have had pelvic inflammatory disease are six to 10 times more likely to develop an ectopic (tubal) pregnancy than those who have not, and 40% to 50% of ectopic pregnancies can be attributed to previous pelvic inflammatory disease.[3]

Chlamydia was the most frequently reported infection notified in Australia in 2008[4], with nearly 60 000 cases. In men, the rate nearly doubled between 2004 and 2008 from 125 for every 100 000 to 220 for every 100 000. In women, rates increased from 180 for every 100 000 to 325 for every 100 000 for the same period. Rates were greatest in the 20 to 24 and 25 to 29-year-old age groups.[5]

The trends in gonorrhoea notifications were different. There was a 5% decline in men over the period 2004–08 but a 16% increase in women. These trends varied across Australia's states and territories. Notifications of rectal isolates of gonorrhoea in men decreased in New South Wales and Victoria in 2008.[6]

Nationally, rates of diagnosis of infectious syphilis more than doubled, from three for every 100 000 in 2004 to seven for every 100 000 in 2007. This increase was most pronounced in the 40 to 49–year–old age group. Diagnoses were almost completely confined to gay men and other men who have sex with men in New South Wales, Victoria and Queensland. In the Northern Territory, diagnoses decreased to 49 for every 100 000 in 2007, with the vast majority of cases being diagnosed affecting Aboriginal and Torres Strait Islander peoples.[7]

In Aboriginal and Torres Strait Islander peoples, chlamydia rates generally increased between 2004 and 2008, with the exception of South Australia where they decreased. There was also an increase in rates of gonorrhoea in 2008, which are 36 times that for the non-Indigenous population.[8] Infectious syphilis increased in the period 2004–08, although jurisdiction trends vary and in 2008 remain up to 15 times higher (Northern Territory, 105 for every 100 000) than the rest of the Australian population (seven for every 100 000).[9] The continuing decline in the number of diagnoses of donovanosis, from 10 in 2004 to two in 2008, may be a consequence of a coordinated response around improved diagnosis and treatment.

Genital herpes infections caused by herpes simplex virus type 2 (HSV2) are estimated to affect 12% of adult Australians and can cause significant psychological morbidity and some physical morbidity. Transmission to neonates is rare, but potentially fatal. Infection with HSV2 also increases the risk of acquiring HIV several-fold, but efforts to treat HSV2 to prevent HIV infection have so far proved ineffective. A vaccine against HSV2 is not yet licensed in Australia, but may be during the course of this strategy.

The above data show that epidemics of STIs continue in Australia. Notification data show upward trends for most STIs in most priority populations. This data must be carefully interpreted because notifications and trends may not reflect true population prevalence or change and may be influenced by testing practices. Sentinel and enhanced surveillance and research findings provide a more comprehensive picture, particularly on priority populations. The notification data do not provide information on psychological, reproductive or sexual consequences of STIs.

Australia has a network of publicly funded sexual health clinics, but the majority of STIs are diagnosed and treated in general practice as a result of symptom recognition or identification of risk.[10] The importance of training in this area of medicine needs to be emphasised in undergraduate as well as continuing education. As many programs or campaigns will continue to rely heavily on the continued participation of general practice, practitioner-initiated testing and treatment and partner notification initiated in the general practice setting will continue to be important.

The first national STI strategy successfully addressed the priority areas of chlamydia surveillance and service models and the response to syphilis in gay men. It also delivered national STI campaigns targeting gay men and young people. During the life of the first strategy, human papillomavirus (HPV) vaccination, which has significant benefits for morbidity arising from genital warts as well as HPV-related cancers, was incorporated into Australia's National Immunisation Program.

Some data suggest that trichomonal infection is endemic in Aboriginal and Torres Strait Islander populations. In the Northern Territory in 2008, for example, there were 2218 cases of this infection of which 2140 were in the Aboriginal and Torres Strait Islander population.

This second National Sexually Transmissible Infections Strategy 2010–2013 continues and expands the work of the first. Within the priority populations, this strategy concentrates primarily on bacterial STIs, specifically chlamydia, gonorrhoea and syphilis, because this focus will likely produce the most significant public health benefits over the life of the strategy. There is an additional and new focus on the issues of trichomonal infection[11] and HPV prevention.

In common with the first strategy, the focus of this strategy is on preventing and managing STIs. Sexual and reproductive health, while linked to the strategic management of STIs, is outside the scope of this strategy. Unless specifically referring to HIV, this strategy deals with STIs other than HIV (which is the focus of another national strategy).

2. Goal

The goal of the Second National Sexually Transmissible Infections Strategy 2010–2013 is to reduce the transmission of and morbidity and mortality caused by STIs and to minimise the personal and social impact of the infections.

3. Objectives and indicators

This section details the objectives and indicators that will be used to monitor progress. Indicators are measurable targets that apply to the related objective.

The primary indicators are those that have been agreed under the National Healthcare Agreement. These have been specified and will be regularly reported on during the life of the agreement. Additional indicators have been included for the more specific objectives relevant to this strategy. Further work will be undertaken during the implementation phase to develop a surveillance and monitoring plan. This will include further work on specifications for the indicators, and development of an agreed process for reporting on them. In some circumstances further data development may also be needed.

GOAL	OBJECTIVE	INDICATOR[1]
To reduce the transmission of and morbidity and mortality caused by STIs and to minimise the personal and social impact of the infections.	Reduce the incidence of gonorrhoea	Incidence of gonorrhoea (National Healthcare Agreement)
	Reduce the incidence of infectious syphilis	Incidence of infectious syphilis (National Healthcare Agreement)
	Reduce the incidence of chlamydia	Incidence of chlamydia
	Increase testing for chlamydia among priority populations	Proportion of 16 to 25 year olds receiving a chlamydia test in the previous 12 months Proportion of gay men who report having had an STI test in the previous 12 months

GOAL	OBJECTIVE	INDICATOR(1)
To reduce the transmission of and morbidity and mortality caused by STIs and to minimise the personal and social impact of the infections.	Increase young people's knowledge of STIs, including through improved delivery of age-appropriate education within the school curriculum	Proportion of secondary school students giving correct answers to STI knowledge questions
	Incorporate STI-related prevention and treatment into broader health reforms	Proportion of the population who undergo a chlamydia test in general practice

(1) In areas with available data

4. Guiding principles

The guiding principles informing this strategy are drawn from Australia's efforts over time to respond to the challenges, threats and impacts of HIV, STIs and hepatitis C. Strategies addressing each of these diseases, including as they relate to Aboriginal and Torres Strait Islander peoples, seek to minimise their transmission and impacts on individuals and communities and establish directions based on their unique epidemiology, natural history and public health imperatives.

The guiding principles underpinning Australia's response to hepatitis B, hepatitis C, HIV and STIs, are:

- The transmission of HIV, STIs and hepatitis C can be prevented by adopting and maintaining protective behaviours. Vaccination is the most effective means of preventing the transmission of hepatitis B. Vaccination, education and prevention programs, together with access to the means of prevention, are prerequisites for adopting and applying prevention measures. Individuals and communities have a mutual responsibility to prevent themselves and others from becoming infected.
- The Ottawa Charter for Health Promotion[12] provides the framework for effective HIV, STI and viral hepatitis health promotion action and facilitates the:
  - ~ active participation of affected communities and individuals, including peer education and community ownership, to increase their influence over the determinants of their health
  - ~ formulation and application of law and public policy that support and encourage healthy behaviours and respect human rights as this protects those who are vulnerable or marginalised, promotes confidence in the system and secures support for initiatives.

- Harm reduction principles underpin effective measures to prevent transmission of HIV and viral hepatitis, including through the needle and syringe programs (NSPs) and drug treatment programs.
- People with HIV, STIs and viral hepatitis have a right to participate in the community without experience of stigma or discrimination, and have the same rights to comprehensive and appropriate healthcare as do other members of the community (including the right to the confidential and sensitive handling of their personal and medical information).
- An effective partnership of governments, affected communities, researchers and health professionals is to be characterised by consultation, cooperative effort, respectful discussion and action to achieve this strategy's goal. This includes:
  - ~ non-partisan support for the pragmatic social policy measures needed to control HIV, STIs and viral hepatitis
  - ~ recognition that those living with, and at risk of, infection are experts in their own experience and are therefore best placed to inform efforts that address their own education and support needs
  - ~ timely and quality research and surveillance to provide the necessary evidence base for action
  - ~ a skilled and supported workforce
  - ~ leadership from the Australian Government, but also the full cooperative efforts of all members of the partnership struck to implement this strategy's agreed directions and early adoption of a framework for monitoring and evaluation.

5. Priority populations

This strategy identifies priority populations for action in the prevention and management of STIs. This determines priority on the basis of the epidemiology of STIs and sexual behaviour which result in risk. It also promotes equity and responds to social disadvantage and factors which may impact on access to health services, including those infected being marginalised or experiencing stigma.

While national consistency is critical to reduce fragmentation of effort, jurisdictional or local differences demand a local response. Similarly, identifying subpopulations helps in the identification of possible opportunities for intervention, such as with young people in or entering juvenile detention.[13] These issues will be explored further during the implementation planning process for this strategy.

The priority population groups identified in this strategy are:

- young people
- Aboriginal and Torres Straight Islander peoples
- gay men and other men who have sex with men
- sex workers.

5.1 Young people

Young people are a new priority group, included in this second strategy because of the importance of working with all young people who are sexually active. Australia's National Sex Survey[14] indicates that 50% of young people have had their first sexual intercourse by the time they are 16[15] and found that more than one quarter of year 10 students and more than half of year 12 students have had sexual intercourse. A recent sero-survey of Aboriginal and Torres Strait Islander girls aged 16 to 19 years had a HSV2 rate

of 22% compared to the rate of 12% for all other Australian women.[16] This evidence strongly supports the potential health benefits of sex education and targeted health promotion for young people.

Based on STI prevalence data, this population is at greatest risk of:

- increasingly higher rates of STIs
- earlier sexual debut than previous cohorts of young people
- higher rates of partner change
- limited health literacy and health skills
- barriers to service access and use.[17]

Normal developmental processes such as short-term romantic relationships (or serial monogamy) and risk-taking are important for healthy adolescent adjustment, but may expose young people to a greater risk of contracting STIs.[18] Factors defining the behavioural, cultural and social contexts (such as alcohol and peer norms) may also contribute to this risk.[19, 20,21]

In 2008, slightly more than 25% of all chlamydia infections were in the 15 to 19–year–old age group and nearly a further 65% were notified in 20 to 29–year–olds. In the younger group, women had nearly three times the notifications as men, whereas 20 to 29–year–old women had 1.4 times as many cases notified as men in the same age group. Chlamydia notifications have increased across all age groups by 60% over the period 2004–08, but most steeply in the 15 to 29–year–old age groups.[22]

The needs of young people who are homeless, those in juvenile detention, same-sex-attracted young people and Aboriginal and Torres Strait Islander young peoples are also important.[23] Local data (such as educational and socio-economic status, cultural background and institutional risk) will help further identify individual groups of young people in need. An understanding of this broad priority population group reveals that a wide variety of strategies and approaches is required to address the diversity of experience and needs of young people in relation to STIs.[24]

5.2 Aboriginal and Torres Strait Islander peoples

In 2006, there were more than 500 000 Aboriginal and Torres Strait Islander peoples living in Australia, approximately 2.5% of the total population. Approximately 40% of the Aboriginal and Torres Strait Islander population is less than 15 years of age, compared to 19% of the non-Indigenous population. Twenty–five per cent of Aboriginal and Torres Strait Islander peoples live in remote or very remote areas, again in contrast to less than 3% of the non-Indigenous population (Australian Bureau of Statistics 2006) and they are more mobile. Aboriginal and Torres Strait Islander peoples have less access to preventive and therapeutic health interventions than do other Australians, as well as to other determinants of health such as education, housing and employment.[25]

Although incomplete data are available for Aboriginal and Torres Strait Islander populations, the rates of bacterial STIs are much higher in these populations than in the non-Indigenous population. Data from jurisdictions where Aboriginal and Torres Strait Islander status is generally recorded show chlamydia notifications have increased from 2004 to 2008. Furthermore, the age standardised rates for chlamydia and gonorrhoea are many times greater than those for non-Indigenous populations. Age standardised rates of infectious syphilis are also greater in the Aboriginal and Torres Strait Islander population.[26]

In the Aboriginal and Torres Strait Islander population, some sub-populations require targeted interventions based on available surveillance data, perceived risk and service availability. These include young people, people who live in rural and remote areas, those in prison or juvenile detention and gay men and sistergirls. Local data will define other priority subgroups for targeted interventions. The Third National Aboriginal and Torres Strait Islander Blood Borne Viruses and Sexually Transmissible Infections Strategy 2010–2013 prioritises young people based on surveillance and behavioural data and recommends improvements in national surveillance data for Aboriginal and Torres Strait Islander peoples.

5.3 Gay men and other men who have sex with men

Gay men and other men who have sex with men have a high prevalence of STIs. Other reasons for prioritising this population are:

- the role of STIs in HIV transmission, increasing both susceptibility to, and infectiousness of, HIV
- higher risk sexual practices
- barriers to service access.

There has been a resurgence of some STIs in gay men and it is unclear whether this extends to other men who have sex with men. More data are required to determine this and whether additional preventive action is needed in this group. There has also been a recent doubling in notifications of syphilis in the non-Indigenous population in gay men.[27] This rise in notifications prompted the development of the National Gay Men's Syphilis Action Plan through the Blood Borne Viruses and Sexually Transmissible Infections Subcommittee of the Australian Population Health Development Principal Committee. In addition, there have been small clusters of notifications of a previously rare condition, lymphogranuloma venereum.

Gay men and other men who have sex with men are not a homogeneous group with respect to STI prevalence, social and behavioural factors. High priority subpopulations requiring specifically tailored interventions include: sexually adventurous gay men, gay men with HIV, and young men reporting same sex attraction.

5.4 Sex workers

Despite the occupational risks, the incidence of STIs in sex workers in Australia is among the lowest in the world. This has largely been through the establishment of safe-sex as a norm, the availability of safe sex equipment and community-driven health promotion and peer-based interventions.

Sustaining this achievement will require continuing support of prevention initiatives to minimise transmission of STIs and BBVs.

Sex workers are a priority population because of their significantly higher number of sexual encounters than other community members and the higher potential for transmission of STIs. Other contributing factors are relative youth, discrimination, mobility and migration, and barriers to control over the occupation health and safety conditions of their work and to health service access. High priority subpopulations require tailored and targeted interventions. This includes transgender sex workers, street based sex workers, Aboriginal and Torres Strait Islander sex workers (including those who provide sex for favours), culturally and linguistic diverse sex workers, sex workers who inject drugs and male sex workers.

6. Priority action areas

Committed leadership, effective partnerships and engagement with affected populations are key elements for successful and sustained implementation of this strategy. Chlamydia (serovars D-K and L1-3), gonorrhoea, syphilis and trichomonas infection, and the vaccine-preventable conditions, HPV and hepatitis B virus (which is the subject of a separate national strategy), are the highest priority infections. Their high priority relates to their prevalence and the associated and preventable complications, such as pelvic inflammatory disease, infertility, genital and other cancers, chronic liver disease and liver cancer, as well as the enhanced transmission of HIV. Inequity in health literacy, access to health services for testing, treatment and support are among the factors that contribute to the vast differences in the epidemiology of these infections between Aboriginal and Torres Strait Islander peoples and other Australians.

Three variables influence the spread of STIs:

- the risk of transmission
- the number of at-risk partners an individual has
- the period of infectiousness.

Comprehensive responses to STIs must address these aspects. The main elements of a comprehensive response to STI control are:

- health promotion and prevention
- patient and provider initiated testing
- early intervention and partner notification
- access to and delivery of clinical care and support
- surveillance and research.[28]

6.1 Health promotion and prevention

Sexual health promotion is defined by the World Health Organization as the holistic process of enabling individuals and communities to increase control over the determinants of sexual health, and thereby managing and improving it through their lifetime. Effectively and sustainably addressing STIs in priority populations requires a range of interventions, as no single one can deliver sustained changes in health outcomes. Complex behavioural change, such as increasing use of condoms and reducing unsafe sex, requires an integrated and sustained health promotion approach.

Broad community engagement and social marketing which presents the issues and consequences of STIs in Australia, is a priority activity of this strategy. A broad approach to informing and raising the awareness of priority and non-target populations such as individuals at very low risk of STIs, (e.g. individuals in long-term monogamous relationships), is an important precursor to community discussion, debate and cultural change about STIs and other related matters for priority populations.[29,30] Previous community awareness programs fundamental to cultural and behavioural change have used this approach. It is most effective when activities are developed and implemented incrementally over a number of years, but with stand-alone and integrated components.[31]

Implementation planning for this strategy also needs to consider opportunities for health promotion, prevention, testing, diagnosis and treatment of STIs in a range of settings, including custodial settings. Whether in adult prison or juvenile detention, people who are incarcerated are at risk for STI and BBVs.[32,33,34] As many incarcerated people come from priority populations, the risks can be seen to be multiplied. However, custodial settings can provide people at high risk of infection with access to education, screening, diagnosis and treatment as well as vaccination where recommended.[35] The continuation of sexual health screening in routine encounters, such as the Aboriginal and Torres Strait Islander adolescent and Adult Health Check, is supported.

6.1.1 *Young people*

The fourth National Secondary Schools Health Survey[36] indicates gaps in secondary students' knowledge, and attitudes and behaviour about sexual matters, that could compromise their health and wellbeing in the short and long term. Sex education in schools is a highly effective strategy for decreasing sexual risk-taking in young people.[37] Sex education as part of a range of health promotion activities is therefore supported. A national curriculum is currently being developed in Australia, and any new developments in sex education will be formulated as part of this development process.

Ongoing and enhanced sex education within schools as an integral part of the school curriculum is strongly recommended. A holistic approach places risk-taking behaviours within the social context of young people's lives. It will require a committed and strong partnership between health and education departments, with a clear enunciation of roles and responsibilities and supportive evidence. This approach is supported by the health reform agenda. Other approaches, such as youth peer education and social marketing, are recognised as effective tools to engage with young people about STIs, including HIV.

Young people of school age who are no longer in the school system are also potentially at risk of STIs, including HIV. The development and delivery of health promotion interventions targeted to this dynamic and diverse group is a priority.

6.1.2 *Aboriginal and Torres Strait Islander peoples*

Addressing, understanding and incorporating Aboriginal and Torres Strait Islander cultural expectations and values is fundamental to effective health promotion. Approaches that strengthen individual and community capacity to improve knowledge and understanding, and modify attitudes and behaviours, are valued. The presentation of gendered, integrated health promotion programs is important for this priority group.

Health promotion and education initiatives for most young people in Australia are delivered through school-based programs. A greater proportion of young Aboriginal and Torres Strait Islander peoples are outside the school system. They need to have access to and be supported by access to equitable levels of health promotion, education testing, immunisation and clinical services. Education programs for young Aboriginal and Torres Strait Islander peoples therefore need to respond to the social, cultural and environmental context in which they live. The high rates of teenage pregnancy in this community suggest the need to develop education programs that promote healthy living, responsible parenthood, avoidance of mother-to-child transmission of infectious disease, and building capacity to make choices in relationships. These issues will be explored through the recent National Partnership Agreement on Early Childhood Development.

There is evidence that peer education and social marketing are effective interventions in Aboriginal and Torres Strait Islander communities.[38] Pilot programs for young people have recently commenced at six sites across Australia, focusing on STI and BBV health promotion and employing techniques such as social marketing, peer education and awareness activities. Findings from these evaluations will guide further action during the implementation of this strategy.

The rate of infectious syphilis in the Aboriginal and Torres Strait Islander population (especially in young women) is much higher than in the non-Indigenous population. While there has been some success in reducing infectious syphilis over recent years in Aboriginal and Torres Strait Islander communities (such as downward trends in the Northern Territory, Queensland and South Australia), a greater national focus is required to work towards eliminating infectious syphilis in this population group. Given the diversity within Aboriginal and Torres Strait Islander communities and service settings, a jurisdiction-led response that strengthens comprehensive sexual health programs in the primary care setting will be developed for communities affected by syphilis. This may include strategies and detailed

implementations plans for improving syphilis testing, contact tracing and follow-up, as well as health-provider and community education.

6.1.3 Gay men and other men who have sex with men

The health promotion components of the proposed National Gay Men's Syphilis Action Plan will need to explicitly and effectively address sexual risk and responsibility for a highly literate, well informed and sexually adventurous group of gay men who are at high risk for STIs and HIV transmission.

The effectiveness of peer-based responses to HIV has been clearly demonstrated in gay communities. The challenge is to promote risk reduction and safe behaviour among gay and other men who have sex with men while acknowledging the changing nature of Australia's gay communities. Prevention programs will respond to the cultural diversity of gay men (including Aboriginal and Torres Strait Islander gay men), transgender people, sistergirls, and gay men from culturally and linguistically diverse backgrounds.

6.1.4 Sex workers

Continued peer education for sex workers is a priority for maintaining a safe sex culture and protecting the health of sex workers and their clients. Sex worker organisations have been fundamental to raising awareness of STIs and BBVs and supporting sex workers to develop and refine skills in STI and BBV prevention.

An understanding of workplace safety and sex worker marginalisation and vulnerability is fundamental to the development of targeted and funded health promotion initiatives. Ensuring sex workers are equipped to maintain safe sex practices, while adapting to a changing industry, requires complex, flexible, education and community development approaches by sex worker organisations.

The continued consultation, development and implementation of prevention and health promotion programs for sex workers, in a variety of changing environments, is an integral part of any STI strategy. Different legal environments can facilitate or hinder health promotion and education initiatives. This strategy supports actively exploring these. Access to appropriate, private and non-discriminatory health services is vital. Support for safe work practices and cultural change to reduce stigma and discrimination towards sex workers are other important features of health promotion interventions.

6.1.5 Tools for prevention

While the definition of safe sex varies for each STI, the promotion of condoms and water-based lubricants will remain as the primary tool for the prevention of STI transmission. Vaccination against specific infections is one of the most efficient methods of infectious disease control as it reduces or eliminates the risk of transmission. The national HPV immunisation program, listed on the National Immunisation Program Schedule and funded under the Immunise Australia Program, provides a course of three vaccines to 12 to 13–year–old girls in the first year of secondary school (Department of Health and Ageing 2009). A catch-up program for young women ended in June 2009. Emerging data regarding the efficacy of this vaccine in young men and in the prevention of the cancers associated with HPV could be reviewed to consider extending coverage to this cohort. The data regarding the population-level benefits and cost effectiveness of the impact on genital warts in all men and anal cancer in gay men will also be reviewed.

Consideration could be given to reviewing data relevant to extending the catch-up and other preventive efforts for priority populations that have documented high associated morbidities, such as Aboriginal and Torres Strait Islander women.[39] Any review would need to be consistent with the role of the Australian Technical Advisory Group on Immunisation and the Pharmaceutical Benefits Advisory Committee in making recommendations regarding vaccination and eligibility for subsidised pharmaceuticals.

Hepatitis B vaccination is an important element of STI prevention. The National Immunisation Program Schedule recommends universal neonatal immunisation. Hepatitis B is transmitted through contact with infected body fluids, including by sexual intercourse. This strategy supports the recommendation of the National Hepatitis B Strategy 2010–2013 to promote national consistency in groups and communities eligible for funded vaccination with priority to communities at greatest risk of hepatitis B infection.

Priority actions in health promotion and prevention

- Foster a partnership approach with the Australian Government and state and territory government education departments to ensure a national education teaching and assessment framework supporting the implementation of a comprehensive approach to age-appropriate sexuality and sex education.
- Develop and implement targeted prevention and health promotion programs for high priority groups, building on past and current work.
- Support the professional development of a health promotion workforce in this area.
- Continue to build an evidence base, especially for priority populations.
- Improve access to condoms for high priority groups through building on existing interventions and developing and testing new methods.
- Promote the uptake of, and access to, HPV and Hepatitis B vaccine.

6.2 Patient and provider initiated testing and early detection

Early detection is important to prevent the development of complications and to limit further transmission of STIs. Many STIs are asymptomatic and will go undiagnosed and untreated unless at-risk individuals are encouraged to be tested. The implementation of methods to improve early STI detection and management is supported.[40,41,42.] Improved health-seeking behaviour (through health promotion) and access to testing are key elements of a response.

Voluntary testing is recognised as a successful approach to detecting STIs. Recent cost benefit analysis research identified mandatory testing of sex workers as unnecessarily frequent and excessively expensive.[43] Mandatory testing also impacts on access to sexual health services. Recent research identified that when condom use is high and STI rates are low, frequent mandatory testing is unnecessary and has the potential to limit access to services for higher risk groups.[44]

The Australian Government will provide leadership in the assessment of new testing technologies and strategies. Administrative mechanisms for these assessments are underway as part of the broader health reform process.

6.2.1 Testing and screening

Provider initiated testing underpins Australia's chlamydia screening program and was implemented during the first National Sexually Transmissible Infections Strategy 2005–2008. Pilot programs will be evaluated early in the life of this strategy and recommendations for further implementation considered as part of this strategy.

Testing guidelines should be available for health professionals to support proactive practice. There are guidelines available for health providers working with some priority populations and in specific jurisdictions. They will be further informed by the evaluation of the chlamydia program.

6.2.2 *Partner notification*

Partner notification identifies relevant contacts of a person with an infectious disease and ensures they are aware of their exposure. The objective of partner notification is to inform and educate those who have, or are at risk of getting, STIs.[45]

Data to guide efficient practice and allocation of resources for partner notification are needed. This information is being developed through the evaluation of the chlamydia program and jurisdictional activities. Constant review of the effectiveness of approaches to partner notification is necessary as it is an essential part of STI control at jurisdictional level.

A number of projects related to partner notification were funded under an initiative of the first national STI strategy. These are drawing to a close and their effectiveness is being evaluated. Findings will inform future policy direction.

In general, partner notification and treatment should be undertaken as a matter of urgency because of the seriousness of the condition (e.g. HIV and syphilis) or because early intervention can interrupt transmission (e.g. gonorrhoea and chlamydia).

6.2.3 *A response to trichomonal infection*

Data suggest that trichomonal infections are endemic in some Aboriginal and Torres Strait Islander communities. While it is usually asymptomatic in men, this readily treatable infection causes under-reported, localised genital symptoms in women and is associated with adverse pregnancy outcomes and increased risk of transmission of HIV.[46] The development of testing treatment guidelines for trichomonas based on a literature review is supported. Targeted interventions will also be considered to reduce the burden of this infection in remote communities. The literature review will also make recommendations on developing an evidence base around this infection for Aboriginal and Torres Strait Islander women living in urban areas.

6.2.4 *Syphilis control and prevention*

The existing work undertaken under the National Gay Men's Syphilis Action Plan is noted. Strengthened and comprehensive sexual health programs for Aboriginal and Torres Strait Islander communities affected by syphilis are endorsed and supported. While there are appropriate common general responses to these epidemics, these populations will require quite different interventions which acknowledge their social, behavioural and epidemiological contexts.

Priority actions in patient and provider initiated testing and early detection

- Develop strategies to improve STI testing rates and coverage in priority populations to reduce rates in gonorrhoea[47], syphilis, chlamydia, and trichomonas and the appropriate surveillance of this testing activity, particularly among Aboriginal and Torres Strait Islander peoples.
- Consider strategies to facilitate access to health services for younger people, including the provision of independent Medicare cards.
- Consider the recommendations from the Australian Collaboration for Chlamydia Enhanced Sentinel Surveillance and the Australian Chlamydia Control Effectiveness Pilot and their impact on the implementation plan for this strategy.
- Develop and implement a process to consider and evaluate models of contact tracing and partner notification that may apply to different contexts in Australia—particularly with respect to cost-benefit and legal responsibilities—to guide public health policy.
- Conduct a systematic review of the evidence base around trichomonas vaginalis infection, to develop actions to deal with it.

- Respond to high rates of syphilis in Aboriginal and Torres Strait Islander populations through greater emphasis on comprehensive sexual health programs in the primary care setting that may include improved syphilis testing, contact tracing and follow up as well as healthcare provider and community education.

6.3 Clinical management, care and support

The vast majority of testing and treatment for STIs in Australia occurs in general practice and any strategy for STI control therefore needs to recognise and support general practitioners and other primary care providers in this role, and to develop strategic relationships between strategy stakeholders and other peak bodies. A common feature of this strategy's priority populations is their difficulty in accessing health services. The improvement to clinical management, care and support through the consideration of issues associated with improved service access and delivery is supported.

Divisions of General Practice and other professional associations and Colleges need to be encouraged and supported to become more involved in the delivery of educational and support services to their members related to sexual health. Professional organisations, Colleges and Divisions serving rural and remote communities nationally are well equipped to work with specialist education providers to respond to local epidemiology, and to tailor education and quality improvement initiatives to increase practice capacity to respond to local STI needs.

General practitioners are the main providers of primary healthcare services in Australia, including for sexual health. Australian research has indicated that the key trigger for individuals going to a sexual health service is a symptom or sign of infection. The asymptomatic nature of most STIs means that seeking medical care specifically for STI-related symptoms is unlikely to lead to the detection of most infections.

Although many people with asymptomatic infection may not access healthcare services specifically for STI testing and treatment, they may access primary healthcare for other health concerns. General practitioners are able to initiate discussion on sexual health and encourage targeted testing for people who are considered to be at risk. General practice plays a vital role in encouraging appropriate testing and thus reducing the pool of undiagnosed and untreated STIs in the community.

As general practices are the main providers of sexual health services, it is important that they have access to STI resources and to education and training programs. These programs need to address issues relevant to general practice including sexual history taking, screening and treating non-complex STI presentations, disease notification, contact tracing, and gathering referral information. STI resources and education and training programs could also highlight the sexual health needs of priority population groups. A focus on sexual health training needs to be embedded in medical training for general practitioners and is best initiated during university medical education programs and reinforced through professional medical education.

The role of practice nurses in providing STI services—including testing, counselling treating and assisting in a range of partner notification approaches—needs to be further explored in the setting of the primary healthcare team. Practice nursing staff and new advances in data collection could be explored to ensure evidence on the efficacy of various interventions is collected and promulgated.

Use of existing health checks, including antenatal, adolescent and well person's checks, will assist in treating syphilis and eradicating congenital syphilis.

6.3.1 Primary healthcare

There is diversity in the provision of primary health care across Australia, however most is provided through general practice. It is a priority to

ensure sufficient numbers and distribution of primary health care providers who proactively provide STI services in private and public practice. This requires recruitment, retention and training of medical, nursing and health worker professionals by various strategies. An exploration of Australia's HIV workforce[48] and HIV models of access to and delivery of clinical services[49] provides some direction. This needs to include:

- considering practice incentives and enhancements
- strengthening training programs for general practitioners, practice nurses and nurse practitioners
- considering alternative models of health service delivery and expanding the roles of the other professional members of the primary healthcare team, including nurses and health workers
- improving the 'youth-friendly' nature of health services and expanding youth-specific services to improve the access of young people.

Reorienting services so they can better manage young people's sexual health needs (including STIs) is a priority. These services have been shown to be effective and well suited to a multidisciplinary team approach, with opportunity for case management for higher risk clients.

Consideration could be given to increasing the availability of genital wart treatment to support patient self-administered treatment. The advent of effective topical therapy presents an opportunity to shift much of the management of genital warts from the healthcare setting to the patient.

6.3.2 Specialist services

Specialist public sexual health services have an essential and historical role in improving access to high priority groups and managing more complex clinical problems. As well as a clinical role, many specialist services are also responsible for providing continuing professional development,

clinical advice and support, population health advice, contact tracing and research. Each state and territory has dedicated public sexual health centres. The number and distribution of sexual health services within states and territories is highly variable as is the range of services they provide, but they are nonetheless essential to support those services provided in general practice and other primary care settings.

6.3.3 Clinical guidelines

Clinical guidelines are the cornerstone of best clinical practice and a range is available for different health service providers. These cover treatment and management strategies in general practice, primary care and specialist settings. Clinical guidelines need to be regularly revised and accessible electronically as decision support tools.

Priority actions in clinical management, care and support

- Improve access to sexual health services to priority groups through the support and action of strategy partners.
- Explore improvements to primary healthcare provision of sexual health services and develop and implement models of care for priority populations.
- Investigate and apply models to improve recruitment, retention and training of primary healthcare professionals in STI prevention, clinical and public health management.
- Consider methods to encourage general practitioners into sexual health training, including specialist sexual health training.
- Maintain currency and broaden the accessibility of sexual health clinical guidelines.

7. Surveillance

Surveillance data and epidemiological analyses provide essential information for planning disease interventions. They also provide background for determining public health priorities and developing focused evidence-based policy.

The national surveillance of communicable diseases of public health importance is co-ordinated through the National Notifiable Diseases Surveillance System in collaboration with the Communicable Diseases Network Australia. Currently more than 60 communicable diseases are nationally notifiable. These include a number that are usually or frequently sexually transmitted—in particular chlamydia, gonococcal infection, syphilis (infectious, latent and of unknown duration), HIV, hepatitis B, donovanosis and hepatitis A.[50] The collection of observational data through sexual health clinics is possible and can provide a valuable evidence base.

Genital herpes, genital HPV and trichomoniasis (notifiable in the Northern Territory only) infections are not nationally notifiable. Data provided to the National Notifiable Diseases Surveillance System by states and territories include a number of fields, including unique record reference number, state or territory identifier, disease code, sex, age, Indigenous status, date of onset, date of notification to the relevant health authority, and postcode of residence. Information from a number of fields is frequently incomplete, particularly Aboriginal and Torres Strait Islander status, which causes problems in analysing trends and designing effective interventions.

It is a priority of this strategy, as well as the Third Aboriginal and Torres Strait Islander Blood Borne Viruses and Sexually Transmissible Infections Strategy 2010–2013, to improve the completeness of surveillance data, particularly in important fields such as Aboriginal and Torres Strait Islander status. Work has been underway at a national level to respond to this deficiency.

Consideration could be given to collecting surveillance data for STIs from prisons and juvenile detention centres, as well as the extent to which this could contribute to newly developing sentinel surveillance systems for STI such as the Australian Collaboration for Chlamydia Enhanced Sentinel Surveillance program.

Opportunities for improving data collection, including getting a clearer indication of the number of tests performed to test STIs, could be explored during implementation planning. Methods to enhance surveillance for particular conditions could be instituted. Further information about testing numbers and generalising surveillance data to populations of interest is required. Again, strategies for targeting these areas could be developed as a priority. There could be greater coordination and engagement of the agencies involved in the diagnosis, surveillance and management of STIs and linkages between laboratories and testing and diagnosis sites.

Priority actions in surveillance

- Improve knowledge of the prevalence and incidence of STIs in priority groups.
- Promote culturally appropriate STI surveillance and behavioural research in priority populations and emerging groups.
- Support the extension of enhanced sentinel surveillance programs such as the Australian Collaboration for Chlamydia Enhanced Sentinel Surveillance (for chlamydia surveillance).
- Investigate data linkage as a mechanism to improve the completeness and accuracy of Aboriginal and Torres Strait Islander status within data sets.
- Through partnerships, investigate the status of the Communicable Diseases Network Australia's work on Improving Indigenous Identification in Communicable Disease Reporting Systems.

8. Research

Responsibility for funding STI research lies primarily with the Australian Government. The states and territories also contribute to the funding of research through a number of institutions.

A range of research priorities will inform policy and practice in Australia. This strategy recommends that research be undertaken in priority populations to better inform priority action areas at all levels (e.g. social, behavioural, clinical and health system, and basic research). This strategy also highlights the benefits of collaborative research and reporting and analysis to maximise investment.

Research focusing on patterns of sex work, mobility and migration, barriers to accessing services, and identifying particularly vulnerable or marginalised groups of workers to support improved program development, is important and should continue in consultation with sex worker organisations.

Priority actions in research

- Establish consultative mechanisms to set the agenda for social, behavioural, clinical and health service, and basic scientific research at national, state and territory levels.
- Create opportunities for increased collaboration between national centres, other research centres and researchers in Aboriginal and Torres Strait Islander health.

9. Workforce development

A trained and competent clinical and public health workforce is fundamental to managing and responding to STIs and to supporting this strategy's implementation. All five national strategies identify the difficulties of developing and maintaining such a workforce and combined efforts must address this issue. The problems of recruiting, retaining and training an undersupplied and ageing workforce have been identified.[51]

This strategy supports the promotion of training and support across all levels of the response and models of service delivery which incorporate multidisciplinary teams and general practitioners, nursing staff and Aboriginal Health Workers.

Priority actions in workforce development

- Strengthening training programs, continuing education in STIs and supporting mechanisms for primary healthcare providers.
- Strengthening the capacity of non-specialist service providers in health, education, justice and other related services to take on STI education and prevention and to respond to the needs of priority populations in respect to STI prevention and other needs.

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References

(Endnotes)

1 Australian Department of Health and Ageing, 2005, 'National Sexually Transmissible Disease Strategy 2005–2008'.

2 World Health Organization, 2006, 'Global strategy for the prevention and control of sexually transmitted infection 2006–2015', ISBN 978 92 4 156347 5.

3 Ibid.

4 National Centre for HIV Epidemiology and Clinical Research, 2009, *Annual Surveillance Report*, University of New South Wales.

5 Ibid.

6 *Communicable Diseases Intelligence* Volume 33 No3, September 2009, Annual Report of the Australian Gonococcal Surveillance Programme, 2008

7 National Notifiable Diseases Surveillance System, 2008, *Communicable Diseases Intelligence Annual Report*, viewed 13 September 2009, <http://www.health.gov.au/internet/main/publishing.nsf/Content/cda-cdi3202-pdf-cnt.htm/$FILE/cdi3202a.pdf>.

8 National Centre for HIV Epidemiology and Clinical Research, 2009, *Bloodborne viral and sexually transmitted infections in Aboriginal and Torres Strait Islander people: surveillance and evaluation report*, University of New South Wales.

9 National Centre for HIV Epidemiology and Clinical Research, 2009, *Annual Surveillance Report*, University of New South Wales.

10 Donovan B, Knight V, McNulty A, Wynne-Markham & Kidd M, 2001, 'Gonorrhoea screening in general practice: perceived barriers and strategies to improve screening rates', *Medical Journal of Australia* 175: pp. 412–414.

11 Northern Territory Health, 2002 'Trichomonas vaginalis: Consideration of the issues that underpin testing: which way to go?', Background paper prepared by the Northern Territory AIDS/STD program, Disease Control, Darwin, March 2002.

12 The Ottawa Charter for Health Promotion is a 1986 document produced by the World Health Organization. It was launched at the first international

conference for health promotion that was held in Ottawa, Canada.

13 Department of Juvenile Justices, 2003, *Young People in Custody Health Survey, Key Findings Report*, 2003, NSW Department of Juvenile Justice, ISBN: 0 7347 6518 5, pp. 23.

14 Australian Research Centre in Sex Health and Society, 2003, National Sex Survey, La Trobe University.

15 Australian Research Centre in Sex Health and Society, 2009, National Secondary School Survey of Sexual Health and HIV, La Trobe University.

16 Brazzale AG, Russell DB, Cunningham AL, Taylor J & McBride WJH, 'Seroprevalence of herpes simplex virus type 1 and type 2 amongst the Indigenous population of Cape York, Far North Queensland, Australia', *In press*.

17 Henderson M, Wight D, Raab GM, Abraham C, Parkes A & Scott S, et al., 'Impact of a theoretically based sex education programme (SHARE) delivered by teachers on NHS registered conceptions and terminations: final results of cluster randomised trial', *British Medical Journal 2007* doi: 10.1136/bmj.39014.503692.55.

18 Dilorio C, Kelley M & Hochenberry-Eaton M, 'Communication about sexual issues: mothers, fathers and friends', *Journal of Adolescent Health*, 1999;24: pp. 181–9.[CrossRef][ISI][Medline].

19 Paton D, 'Random behaviour or rational choice? Family planning, teenage pregnancy and sexually transmitted infections', *Sex Education*, 2006;6: pp. 281–308.

20 Skinner SR, Parsons A, Kang M, Williams H & Fairley C, *International Journal of Adolescent Medical Health*, 2007;19(3): pp. 285–294, 'Sexually transmitted infections, Initiatives for prevention, NSW Department of Health (2006)', NSW Sexually Transmissible Infections Strategy: Environmental Scan 2006–2009, Sydney.

21 Wilkinson P, French R, Kane R, Lachowycz K, Stephenson J & Grundy C, et al., Teenage conceptions, abortions, and births in England, 1994–2003, and the national teenage pregnancy strategy. *Lancet* 2006;368; pp. 1819–86.[CrossRef][ISI][Medline].

22 National Centre for HIV Epidemiology and Clinical Research, 2009, *Annual Surveillance Report*, University of New South Wales.

23 Skinner SR, Parsons A, Kang M, Williams H & Fairley C, *International Journal of Adolescent Medical Health*, 2007;19(3): pp. 285–294, Sexually Transmitted Infections, Initiatives for prevention NSW Department of Health, 2006, NSW Sexually Transmissible Infections Strategy: Environmental Scan 2006–2009, Sydney, published online 20 October 2009.

24 Skinner SR, Parsons A, Kang M, Williams H & Fairley C, *International Journal of Adolescent Medical Health*, 2007;19(3): pp. 285–294, Sexually Transmitted Infections, Initiatives for prevention NSW Department of Health, 2006, NSW Sexually Transmissible Infections Strategy: Environmental Scan 2006–2009, Sydney, published online 2009.

25 Australian Bureau of Statistics and Australian Institute of Health and Welfare, 2005, The Health and Welfare of Australia's Aboriginal and Torres Strait Islander Peoples, Government of Australia, accessed 28 August 2009, <http://www.aihw.gov.au/publications/index.cfm/title/10172>.

26 Indigenous sexual health and HIV promotion, <http://www.public.health.wa.gov.au/cproot/376/2/Just%20gettin%20on%20with%20with%20my%20life%202004.pdf>.

27 National Centre for HIV Epidemiology and Clinical Research, 2009, *Annual Surveillance Report*, University of New South Wales.

28 Huang R, Torzillo P, Hammond VA, Coulter ST & Kirby AC, 2008, 'Epidemiology of sexually transmitted infections on the Anangu Pitjantjatjara Yankunytjatjara Lands: results of a comprehensive control program', *Medical Journal of Australia* 189 (8): pp. 442–445, viewed 13 September 2009, <http://www.mja.com.au/public/issues/189_08_201008/hua11315_fm.html>.

29 Nicoll A, Hughes G, Donnelly M, et al., 2001, 'Assessing the impact of national anti-HIV sexual health campaigns: trends in the transmission of HIV and other sexually transmitted infections in England, Sexually Transmitted Infections', 77: pp. 242–247, viewed 13 September 2009, <http://www.pubmedcentral.nih.gov/picrender.fcgi?artid=1744349&blobtype=pdf>.

30 Smith A, Agius P, Mitchell A, Barrett C & Pitts M, 2009, 'Secondary Students and Sexual Health 2008', monograph series no. 70, Melbourne: Australian Research Centre, *Sex, Health and Society*, La Trobe University, viewed 7 August 2009, <http://www.latrobe.edu.au/arcshs/assets/downloads/reports/SSASH_2008_Final_Report.pdf>.

31 Downing J, Jones L, Cook A & Bellis MA, 'Prevention of STIs: a review of reviews into the effectiveness of non—clinical interventions', evidence briefing update, 2006, <http://www.nice.org.uk/media/ABC/87/STIEvidenceBriefingFinal.pdf>.

32 Richters, J, Butler, T, Yap, L, Kirkwood, K, Grant, L, Smith, A, Schneider, K & Donovan, B, 2008, 'Sexual health and behaviour of New South Wales prisoners', Sydney: School of Public Health and Community Medicine, University of New South Wales, 2008.

33 Butler T, Ritchters J, Yap L, Papanastasiou C, Richards A, Schneider K, Grant L, Smith AMA & Donovan B, 2009, 'Sexual health and behaviour of Queensland prisoners—with Queensland and New South Wales comparisons', In Press, National Drug Research Institute and School of Public Health and Community Medicine, University of New South Wales), ISBN: 978-0-9807054-0-9.

34 Butler T & Milner L, 'The 2001 New South Wales Inmate Health Survey', 2003 Corrections Health Service, Sydney, ISBN: 0 7347 3560 X.

35 Yap L, Butler T, Richters J, Kirkwood K, Grant L, Saxby M, Ropp F & Donovan B, 'Do condoms cause rape and mayhem? The long-term effects of condoms in New South Wales prisons', *Sexually Transmitted Infections*, 2007; 83: pp. 219–222.

36 Smith A, Agius P, Mitchell A, Barrett C & Pitts M, 2009, 'Secondary Students and Sexual Health 2008', monograph series no. 70, Melbourne: Australian Research Centre, *Sex, Health & Society*, La Trobe University, <http://www.latrobe.edu.au/arcshs/assets/downloads/reports/SSASH_2008_Final_Report.pdf>, accessed 7 August 2009.

37 Kirby DB, Laris BA & Rolleri LA, 2007, 'Sex and HIV Education Programs: Their Impact on Sexual Behaviors of Young People Throughout the World', *Journal of Adolescent Health*, vol. 40, pp. 206–217.

38 Powell F, 2008, *Mooditj impact evaluation: report to FPWA Sexual Health Services Perth*: FPWA Sexual Health Services,<http://www.healthinfonet.ecu.edu.au/health-resources/programs-projects?pid=301>. Snake Condom program Marie Stopes, <http://www.mariestopes.org.au/cms/snake-condoms.html>.

39 Stark A & Hope A, 'Aboriginal women's stories of sexually transmissible infection, transmission and condom use in remote central Australia', *Sexual Health 2007*, vol. 4, pp. 237–242.

40 Ostergaard L, Moller J, Andersen B & Olesen F, 1996, 'Diagnosis of urogenital Chlamydia trachomatis infection in women based on mailed samples obtained at home: multipractice comparative study', *BMJ* 313: pp. 1186–1189.

41 Ostergaard L, Andersen B, Olesen F &Moller J, 1998, Efficacy of home sampling for screening of Chlamydia trachomatis: randomised study. *British Medical Journal*, 317: pp. 26-27.

42 Mahilum-Tapay L, et al., 2007, New point of care Chlamydia Rapid Test—bridging the gap between diagnosis and treatment, performance evaluation study, *British Medical Journal*, 335(8 December), pp.1190–1194.

43 Wilson D, Heymer K, Anderson J, O'Connor J, Harcourt C & Donovan D, 2009, 'Sex workers can be screened too often: a cost-effectiveness analysis in Victoria, Australia',

44 Samaranayake A, Chen M, Hocking J, Bradshaw C, Cumming R & Fairley C, 2009, Legislation requiring monthly testing of sex workers with low rates of sexually transmitted infections restricts access to services for higher risk individuals.

45 Bangor-Jones RD, McCloskey J, Crooks L, Bastian LA, Mak DB, Dykstra C, Marshall LJ & Achitei SR, 2009, 'Attitudes of WA GPs to Chlamydia Partner Notification: A Survey', poster presentation, GP'09 A Doctor for All Seasons Conference, Perth, 1 October.

46 Schultz R, Read AW, Straton JA, Stanley FJ & Morich P, 'Genitourinary tract infections in pregnancy and low birth weight: case control study in Australian Aboriginal women', *British Medical Journal*, 1991; 303; pp. 1369–1373.

47 Johnson GH & Mak DB, 2002, 'Gonorrhoea screening in general practice: perceived barriers and strategies to improve screening rates', letter, *Medical Journal of Australia*, 176 (9): pp. 448–449.

48 McLean S & Savage J, 'Australia's Health Workforce: roles, supply, trends, recruitment and capacity to deliver HIV services', background paper for the Models of Access and Clinical Service Delivery Project, *Australasian Society for HIV Medicine*, Sydney, NSW, 2009b, <http://www.ashm.org.au/default2.asp?active_page_id=168>.

49 Savage J, Crooks L & McLean S, 'Models of Access and Clinical Service Delivery for People with HIV in Australia: final report', *Australasian Society for HIV Medicine*, Sydney, NSW, 2009, <http://www.ashm.org.au/default2.asp?active_page_id=168>.

50 Communicable Diseases Network of Australia, 2008, Communicable Diseases Intelligence.

51 McLean S & Savage J, 'Australia's Health Workforce: roles, supply, trends, recruitment and capacity to deliver HIV services', background paper for the Models of Access and Clinical Service Delivery Project, *Australasian Society for HIV Medicine*, Sydney, NSW, 2009b, <http://www.ashm.org.au/default2.asp?active_page_id=168>.


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