Sexually transmissible diseases surveillance in Australia: towards a coordinated national system

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Abstract

Communicable diseases surveillance is essential for directing policy development. In most regards, sexually transmissible diseases (STD) surveillance is no different to surveillance for other communicable diseases. There are nevertheless several aspects of STDs that have to be taken into consideration in designing and managing surveillance activities. These include particular confidentiality concerns associated with STDs, the disproportionate morbidity STDs confer on marginalised or stigmatised populations, and clinical limitations due to the requirement of often uncomfortable genital examinations for the diagnosis of many STDs. Furthermore, interpretation of STD surveillance data requires information on sexual behaviour which is not routinely collected for other types of surveillance. In addressing new STD surveillance strategies the key public health questions that can be answered by surveillance need to be defined. These include the prevalence of individual STDs among the total population and specific population subgroups, the rates of symptomatic versus asymptomatic disease, treatment seeking levels, and antibiotic sensitivity patterns for some agents. This article describes possible STD surveillance methodologies to meet these demands. *Comm Dis Intell* 1998;22:49-52

Introduction

Notifications of gonorrhoea and syphilis to the National Notifiable Diseases Surveillance System (NNDSS) over the period 1991-1996 demonstrated an increase of 51% and a decline of 29% respectively (Figure 1). These contrasting trends may indicate a true divergence in risk factors for these two infectious diseases, but it is likely that changes in surveillance methodology have played a role. Gonorrhoea incidence may have increased due to:

• an increase in screening, assisted by more widespread use of new diagnostic technology such as the polymerase chain reaction (PCR);

• greater access to sexual health care services;

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• improved surveillance;

• a real increase in the rate of infection.

In contrast, syphilis incidence may have declined due to:

• a decrease in screening activities;

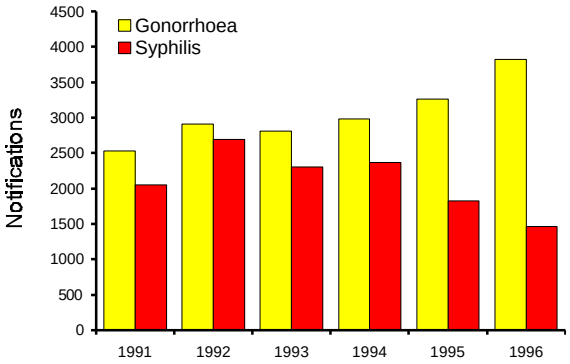
• changes to the surveillance case definition towards notification of only early cases;

• decreased surveillance;

• a real decline in the rate of infection.

The difficulty in interpretation of these trends in STD incidence highlights some of the deficiencies in the existing national surveillance system.

Figure 1. Notifications of gonorrhoea and syphillis in Australia 1991 to 1996, by year and disease



Current initiatives

The definition of disease surveillance as 'the collection, analysis and interpretation of information on the health status of population groups', indicates areas where attention can be focussed at improving STD surveillance. Some initiatives to support this goal are already underway. Firstly, there have been considerable recent efforts towards improving overall surveillance of communicable diseases in Australia, including the standardisation of case definitions, which is now taking place within the framework of the National Communicable Diseases Surveillance Strategy.[1] Surveillance of STDs should benefit from these wider initiatives in the area of communicable diseases.

Secondly, the subtext to the third National HIV/AIDS Strategy,[2] 'a strategy framed in the context of sexual health and related communicable diseases', has obvious implications for STD management and control, including surveillance activities. The monitoring and evaluation section of the strategy document specifically states that 'there will be a particular emphasis on improving surveillance and social and behavioural data on HIV/AIDS, hepatitis C, sexually transmissible diseases and sexual health among Aboriginal and Torres Strait Islander people.' The convening of the Indigenous Australians' Sexual Health Working Party as a subcommittee of the Australian National Council on AIDS and Related Diseases (ANCARD), and the subsequent release of *The National Indigenous Australians' Sexual Health Strategy 1996-97 to 1998-99*[3] has provided a policy framework for addressing STD control among indigenous people.

Thirdly, some States and Territories have made considerable advances towards the development of more comprehensive STD surveillance systems. For example, in Victoria there has been a marked improvement in STD surveillance during the 1990s. An enhanced surveillance system has been developed through the use of active and 'stimulated passive' surveillance programs for HIV/AIDS, syphilis and hepatitis B.[4] Specific measures which facilitated development of more comprehensive STD surveillance have been the introduction in 1990 of mandatory laboratory-based notification of some STDs in addition to the established clinician-based reporting mechanisms, the establishment of STD case definitions, and systematic consultation with laboratories and other stakeholders. Laboratory-based surveillance programs for gonorrhoea and syphilis have been augmented to provide data on sexual orientation and ethnicity (gonorrhoea and syphilis), site of infection and probable place of acquisition of infection (gonorrhoea), and reason for testing and stage of disease (syphilis). Call-back mechanisms have also been introduced to support these secondary surveillance mechanisms.[4] Several other States have also moved to a greater reliance on laboratory-based STD surveillance methods.

Outside the routine health department surveillance system, the reporting of data on gonorrhoea incidence and antibiotic sensitivity through the laboratory-based Australian Gonococcal Surveillance Programme (AGSP) continues to make a substantial contribution to Australian STD surveillance and has been a stimulus for enhanced gonococcal surveillance in the Asia-Pacific Region.[5]

Despite these current initiatives, further steps towards an integrated national STD surveillance program in Australia are required. An STD surveillance system should provide ongoing information on the incidence of infection, the occurrence of symptomatic versus asymptomatic disease, the extent of treatment seeking, associated patterns of sexual behaviour, and the demographic variation of these indices.

Surveillance system options

In continuing to improve national STD surveillance, it must be kept in mind that no simple system can satisfy all these requirements. Options for the future of STD surveillance in Australia include the current routine centralised case reporting system, monitoring routine STD testing in selected population groups or clinical sites, or emphasis on special surveys in selected population groups or clinical sites. The current centralised passive surveillance system provides some information on the pattern of STDs in Australia, but quantitative interpretation is impeded by both under-reporting, and duplicate reporting particularly for diseases with persistent markers such as syphilis and hepatitis B. Under-reporting for gonorrhoea has been well documented.[6] For donovanosis, a study in the Northern Territory demonstrated a reporting rate of only 30% of treated cases during 1993.[7] Incorporation of personal identifiers into the national case reporting system, as is the case for HIV and AIDS surveillance, would reduce the possibility of duplicate reporting for STDs such as syphilis, and would enable cross-linkage with other communicable

disease databases including the national HIV and AIDS databases. Even with the current extent of under-reporting however, the routine case notification rate for other STDs far outweighs that for HIV/AIDS. For this reason therefore, an identifier encoded database for other STDs would be a substantial and probably unrealistic undertaking.

Monitoring of routine STD testing in selected population groups or clinical sites (sentinel surveillance) is an alternative core surveillance mechanism. This form of surveillance would make use of existing health care infrastructure and STD screening and diagnostic services, such as sexual health clinics, blood transfusion services, and antenatal clinics. Sentinel surveillance has been employed widely in Australia for the monitoring of HIV infection. The national network of major sexual health clinics that has been reporting on HIV diagnoses since 1991, also provides limited data on a core group of STDs.[8] This system could be improved by the inclusion of information such as denominator testing data, symptomatology, and reason for testing, and could be expanded to incorporate other sexual health clinical sites. This would enable an estimation of the level of testing for diagnostic and screening purposes. Routine screening for syphilis which is already conducted through antenatal clinics and blood transfusion services, could also provide a form of sentinel surveillance. However, a potential limitation of sentinel surveillance is the representativeness of subjects. For example, blood donors are likely to be a lower risk population than the general population.

Monitoring of trends in transmission of some STDs may be most effectively performed through special surveys, such as serial cross-sectional serological or PCR-based urinary surveys. For example, genital herpes is difficult to monitor because of the lack of a standardised case definition, difficulties with distinguishing new from recurrent infection and variation in diagnostic methodology. The level of transmission of genital herpes, which is not currently notifiable at a national level, could be monitored through regular serological surveys of HSV-2 among young adults or pregnant women. In regions with low levels of classical STDs, such as Tasmania, where reports of syphilis and gonorrhoea are extremely uncommon,[9] special surveys to monitor transmission of herpes and chlamydia could play a vital role in monitoring trends in STD transmission. Surveys of chlamydia and gonorrhoea could utilise the PCR-based methodologies for urinary detection, which have recently been trialed in remote aboriginal communities in central Australia.[10] PCR detection of gonorrhoea, chlamydia, trichomonas and human papilloma virus utilising self-administered tampon specimens, also recently reported for women in the Northern Territory[11] could also be used.

Monitoring outcomes of infection is an area in which surveillance mechanisms utilised to examine patterns of, and trends in advanced HIV disease, could be adopted for other STDs and incorporated within a national surveillance program. As with the Australian AIDS Cohort,[12] a three hospital HIV/AIDS unit-based surveillance mechanism, surveillance of pelvic inflammatory disease and other complications of STDs could be established in sentinel hospital sites. The analysis of pelvic inflammatory disease from Royal Darwin Hospital over the period 1991-1994[13] is an example of the type of surveillance which could be undertaken on an ongoing basis.

The importance of sexual behaviour surveillance in defining the level of risk, and in following trends in risk activity, has been well demonstrated in the area of HIV infection. It has also complemented and enhanced HIV epidemiological surveillance activities in many areas. Due to the focus of the Australian HIV epidemic among homosexual men, and the continuing relatively low levels of risk among the heterosexual population, sexual behaviour surveillance has been concentrated among gay men. Other sub-populations in which a better understanding of sexual behaviour is required include the young adult heterosexual population, travellers to areas where considerable numbers of imported STDs are acquired, such as Thailand and the Philippines, and among the indigenous population. The support and involvement of community groups in behavioural surveillance, a feature of the monitoring of the HIV epidemic among homosexual men, is crucial for the success of these initiatives in other STDs and with other target groups.

Appropriate feedback mechanisms for STD surveillance data also need to be developed. These mechanisms need to take into consideration the potentially sensitive nature of outputs from an STD surveillance system. For example, reporting of STD data by indigenous status would require the involvement and support of indigenous people through mechanisms such as the Indigenous Australians' Sexual Health Working Party. The inclusion of STD surveillance data collected through the NNDSS and the AGSP in the *HIV/AIDS and Related Diseases in Australia Annual Surveillance Report*[8] should improve the integration of STD and HIV data in policy development and evaluation, particularly as further improvements in STD data collection, analysis and interpretation take place.

National coordination

Many of these STD surveillance considerations could be facilitated by the designation of specific responsibility for coordination of STD surveillance to a body with maintenance of linkages with the National Centre for Disease Control and Communicable Diseases Network Australia New Zealand within the framework of the National Communicable Diseases Surveillance Strategy. National coordination would be improved through the creation of a STD surveillance network and the development of a National STD Surveillance Strategy. The STD surveillance network should involve State and Territory representation along with representation from appropriate bodies such as the National Venereology Council of Australia (NVCA) and the Indigenous Sexual Health Working Party and the AGSP.

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An outbreak of non-sexually transmitted gonococcal conjunctivitis in Central Australia and the Kimberley region

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Abstract

From 13 February to 27 June 1997, 447 cases of gonococcal conjunctivitis were identified by Communicable Disease and Public Health Centres and Community Clinics in the Northern Territory, Western Australia and South Australia. The outbreak involved Aboriginal communities predominantly in Central Australia and the Kimberley region in Western Australia. This was the first outbreak recorded in the Kimberley region. It is not yet known whether the Kimberley cases were part of the larger Central Australian outbreak or whether they represented a separate and unrelated outbreak. Environmental factors associated with this outbreak were similar to those seen in previous outbreaks. Control measures were based on early recognition and treatment of index cases and identifying and treating contacts. Until sexually transmitted *Neisseria gonorrhoeae* is controlled in communities gonococcal conjunctivitis is likely to appear again. The role of oropharyngeal carriage of *N. gonorrhoeae* needs to be evaluated further. *Comm Dis Intell* 1998;22:52-58

Introduction

Gonococcal conjunctivitis is an acute painful conjunctivitis characterised by rapid transmission between individuals through non-sexual person to person contact. It has caused considerable morbidity in Aboriginal communities in Central Australia during five previously documented outbreaks (Table 1).[1,2,3,4,5]

Environmental factors associated with these outbreaks included: above average summer rainfall preceding the outbreak; summer temperatures at the onset changing to winter temperatures towards the end; an increase in the percentage of *Haemophilus* species isolates from eye swabs; and increased fly numbers at the start of the outbreak. None of the outbreaks were characterised by an increase in notifications of sexually transmitted gonorrhoea in the time period preceding the outbreak.

This article reports on an outbreak of gonococcal conjunctivitis in Aboriginal communities predominantly in Central Australia during the period 13 February to 27 June 1997, and examines some of the environmental factors associated with the outbreak. The Central Australian area involved included the western Alice Springs region in the Northern Territory (NT), the Ngaanyatjarra central desert area and the Pitjantjatjara Lands of South Australia (SA). Cases also occurred in the Kimberley region in Western Australia (WA).

Methods

Case definition

A clinical illness was defined as intense inflammation of the conjunctivae, copious purulent discharge with or without periorbital oedema. A clinical case was confirmed

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