Role of the National Centre in HIV Epidemiology and Clinical Research in surveillance for HIV/AIDS, viral hepatitis and sexually transmissible infections in Australia

The National Centre in HIV Epidemiology and Clinical Research (NCHECR) was established in 1986, as part of the Australian Government's response to the epidemic of human immunodeficiency virus (HIV) infection. The NCHECR's role was to provide national leadership in epidemiologic and clinical research on HIV infection and the acquired immune deficiency syndrome (AIDS), in support of the National HIV/AIDS Strategy.[1]

NCHECR receives core funding through the Australian Government Department of Health and Ageing (DOHA), and its work is overseen by a Scientific Advisory Committee. It is located on the campus of St Vincent's Hospital in Sydney, and is affiliated with the Faculty of Medicine at the University of New South Wales.

Under Australia's federal structure of government, state and territory health authorities have primary responsibility for surveillance for communicable diseases. In 1989, the state and territory health authorities and the NCHECR agreed to establish the National HIV Surveillance Committee, to provide national co-ordination and standardisation of HIV/AIDS surveillance activities. Under this framework, states and territories provide HIV/AIDS surveillance reports directly to the NCHECR.

In 1997, the NCHECR's terms of reference were extended to include epidemiologic monitoring of bloodborne viruses, sexually transmissible infections and other related infections, and their outcome. For these infections, the states and territories report cases to the National Notifiable Diseases Surveillance System, which is managed by the Surveillance and Epidemiology Section of the DOHA. NCHECR provides national coordination, as it does for HIV/AIDS.

In 2001, the National Viral Hepatitis Surveillance Committee and the Sexually Transmissible Infections Surveillance Committee were established as sub-Committees of the Intergovernmental Committee on AIDS, Hepatitis C and Related Diseases (IGCAHRD), which is, in turn, a sub-committee of the Communicable Diseases Network Australia. The National HIV Surveillance Committee was also made a sub-committee of IGCAHRD.

The role of the surveillance committees on HIV/AIDS, viral hepatitis and sexually transmissible infections is to standardise surveillance procedures across state and territory health jurisdictions in Australia, to develop new surveillance methods and analyses, to carry out quality control studies and to facilitate communication and feedback to people who directly contribute to surveillance activities. The surveillance committees include representation from each state and territory health authority, the Australian Government, organisations representing affected communities, specialist groups and the NCHECR. The committees meet at least twice per year, with an annual face-to-face meeting.

The NCHECR Surveillance Program coordinates national surveillance activities in its areas of responsibility through these surveillance committees. It provides secretariat support, and takes a leadership role in developing new initiatives in surveillance, following up surveillance outcomes and liaising with other expert groups where appropriate.

Developments in national surveillance for HIV/AIDS: a time line

Early 1980s

National surveillance for AIDS cases was established in the early 1980s, using the US Centers for Disease Control and Prevention (CDC) AIDS surveillance case definition and its revisions.[2] National AIDS surveillance provided information on the pattern of illness associated with advanced HIV infection and the pattern of HIV transmission in Australia. AIDS cases were notified to the National AIDS Registry with the namecode of the person with AIDS (consisting of the first two letters of the family name and the first two letters of the given name), to minimise duplicate notification while maintaining confidentiality.

National surveillance for HIV infection among blood donors was also established in the 1980s. Compulsory testing of blood donors for bloodborne viruses provides a unique opportunity for ongoing measurement of prevalence and incidence in a population subgroup at low risk of infection and for monitoring newly emerging patterns of transmission in Australia.

1989

National surveillance for cases of newly diagnosed HIV infection was established, providing a more recent indication of the pattern of HIV transmission than was available through national AIDS surveillance. State and territory health authorities provided monthly summaries of the number of cases of newly diagnosed HIV infection, broken down by sex, age group and HIV exposure category. However, very limited quality control of national HIV surveillance data could be carried out with tabulated data.

1990

Individual records of cases of newly diagnosed HIV infection, without namecode, were forwarded to the NCHECR to inclusion in the National HIV Database. While it was now possible to carry out some quality control studies, the lack of namecode meant that the extent of duplicate notification could not be accurately assessed.

In July 1990, the content and format of the quarterly *Australian HIV Surveillance Report* was substantially revised.[3] Counts of the number of new diagnoses of AIDS and HIV infection were published monthly in the *Australian HIV Surveillance Report* from August 1990 to December 1992. From January 1993, monthly counts of new HIV/AIDS diagnoses were published in *Communicable Diseases Intelligence.*

1991

National surveillance for newly acquired HIV infection was established, based on a prior negative or indeterminate HIV antibody test result in the 12 months prior to HIV diagnosis. Reports of newly acquired HIV infection provide information on the current pattern of HIV transmission.

Sentinel HIV surveillance through a network of public metropolitan sexual health clinics was established. HIV incidence and prevalence is monitored among people seen at the sexual health clinics, providing information on patterns of transmission of HIV in populations at higher risk of infection through sexual contact, primarily heterosexual contact, and other populations of special interest in HIV epidemiology such as female sex workers, people who have heterosexual contact overseas and injecting drug users.

National monitoring of HIV diagnoses among prison entrants in Australia was also established, providing information on HIV prevalence in a population subgroup at risk of infection primarily through injecting drug use.

1993

The Australian case definition for newly diagnosed HIV infection and AIDS was implemented.[4] Three illnesses were added to the CDC 1987 AIDS surveillance case definition. AIDS continued to be diagnosed on the basis of a diagnosis of one or more AIDS defining illnesses; like the European centres, Australia did not follow the US CDC, which expanded its AIDS surveillance case definition to include people with HIV infection whose CD4+ cell count was 200/µl or less.

The Sydney Men and Sexual Health cohort study was established among homosexually active men in Sydney, in collaboration with the National Centre in HIV Social Research, to monitor HIV incidence, risk behaviour for HIV infection and treatment uptake among men with diagnosed HIV infection.

National reporting of cases of newly diagnosed HIV infection by namecode was also introduced, facilitating more accurate reporting of trends in newly diagnosed HIV infection. State and territory health authorities gradually implemented notification of newly diagnosed HIV infection with namecode.

Collaboration commenced with the Australian Paediatric Surveillance Unit, providing information on the extent of perinatal exposure to HIV and perinatal HIV infection that was complementary to that available through national surveillance for newly diagnosed HIV infection. National surveillance for perinatal exposure to HIV also provides information on the prevalence of HIV infection among childbearing women and information on the use of interventions for reducing the risk of mother-to-child HIV transmission.

1994

A national program of assessment of self-report of exposure to HIV was established, for cases in which the exposure to HIV was attributed to sources other than male homosexual contact. An exposure assessment questionnaire was introduced to guide standardised sexual history taking, to provide information on the basis for exposure category classification and to record the doctor's assessment of the person's report of exposure to HIV.

1995

National reporting of Indigenous status among cases of newly diagnosed HIV infection and AIDS was established.

Sentinel surveillance for HIV and hepatitis C infection among people with a history of injecting drug use was initiated through a network of needle and syringe program sites.[5,6] Information on injecting risk behaviour and the prevalence of HIV and hepatitis C infection in program attenders has been made available annually through this surveillance system.

1996

The Gay Community Periodic Surveys were established in Sydney, in collaboration with the National Centre in HIV Social Research, providing information on risk behaviours for HIV infection and the use of antiretroviral treatment by men with diagnosed HIV infection.

Gay Community Periodic Surveys have also been carried out in Adelaide, Brisbane, Melbourne and Perth from 1998 and in Canberra from 2000.

The *Australian HIV Surveillance Report* was revised in preparation for publication of an annual report. Adjustment of the number of new HIV diagnoses for multiple reporting[7] and of AIDS cases and deaths for reporting delay was routinely incorporated in published analyses.[8]

1997

The first annual surveillance report, *HIV/AIDS and Related Diseases in Australia Annual Surveillance Report,* was published.[9] The *Annual Surveillance Report* provides a comprehensive analysis and interpretation of available national surveillance data on HIV/AIDS, viral hepatitis and sexually transmissible infections in Australia.

1998

The Australian HIV Observational Database was established, providing information on the pattern of use of antiretroviral treatments for HIV infection among people seen through a network of hospitals, general practitioner sites and sexual health centres.

2001

The Australian AIDS Public Access Dataset was made publicly available to Australian and international health professionals, to facilitate analysis and interpretation of the occurrence of AIDS in Australia.

The Health in Men cohort study among homosexually active men in Sydney was established as a vaccine preparedness study. Incidence and risk behaviours for HIV infection and other sexually transmissible infections are monitored through the cohort.

2002

The Australian HIV Public Access Dataset was made publicly available.

Notification to the National HIV Database of information on country of birth among cases of newly diagnosed HIV infection was established.

2004

The NCHECR Surveillance Program became a collaborative unit of the Australian Institute of Health and Welfare, further strengthening its linkages in the public health system.

Current priorities in national surveillance for HIV infection and AIDS include the development and validation of specialised tests for identifying incident HIV infection, and their use in national surveillance for monitoring the pattern of HIV transmission. Improved estimates and projections of HIV/AIDS incidence in Australia in the era of antiretroviral treatment for HIV infection is another priority.

National surveillance for viral hepatitis

Information on the pattern of hepatitis C transmission, based on surveillance reports of newly acquired hepatitis C infection, was first published in *HIV/AIDS, Hepatitis C and Sexually Transmissible Infections in Australia Annual Surveillance Report 1999*.[10]

In 2000, information on the prevalence of hepatitis B surface antigen and hepatitis C in blood donors, made available through the Australian Red Cross Blood Service, was published in *HIV/AIDS, Viral Hepatitis and Sexually Transmissible Infections in Australia Annual Surveillance Report 2000*.[11]

Estimates of hepatitis C incidence among injecting drug users seen at the Kirketon Road Centre and the long-term outcome of hepatitis C infection, measured among cases of liver transplantation, recorded by the Australia and New Zealand Liver Transplant Register, were published in the *HIV/AIDS, viral hepatitis and Sexually Transmissible Infections in Australia Annual Surveillance Report 2001*.[12]

Information on the source of exposure to hepatitis C among cases of newly acquired hepatitis C, provided through state and territory health authorities, was published in *HIV/AIDS, Viral Hepatitis and Sexually Transmissible Infections in Australia Annual Surveillance Report 2002*.[13]

Current priorities in national surveillance for viral hepatitis include:

- enhancement of national surveillance for newly acquired hepatitis B and hepatitis C through more complete identification of cases and reporting of exposure category;
- improved estimates of hepatitis C incidence among people with a history of injecting drug use;
- establishment of a network for monitoring use of treatments for hepatitis C infection; and
- establishment of a network for monitoring the long-term outcome of hepatitis C infection.

Developments in national surveillance for sexually transmissible infections

The STI Surveillance Committee is currently working towards the completion of a comprehensive review of STI surveillance in Australia. The Committee has recently completed a report of current STI surveillance methods in the state and territory health jurisdictions, identifying a variety of needs in STI surveillance in the collection, quality control, analysis and reporting of routinely collected data. Acknowledging the importance of surveillance mechanisms outside routine case reporting, the Committee is also currently undertaking a review of the prevalence of chlamydia, the most common bacterial sexually transmissible infection in Australia and one of the most frequently reported notifiable infections in Australia. Following the completion of this review, the Committee will undertake similar studies of the prevalence of gonorrhoea and syphilis in Australia.

Future directions for the STI Surveillance Committee include both long and short-term goals. In the near future, the Committee will work with the states and territories to improve routine case reporting for selected bacterial STIs and, following the recommendations of the chlamydia review, develop methods for further assessing the prevalence and risk factors for chlamydia in Australia. In the longer term the Committee aims to develop a national plan for sexually transmissible infection surveillance for consideration by the Communicable Diseases Network Australia.

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