

# Gonorrhoea, chlamydia and syphilis incidence in the Kimberley

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## Abstract

The Kimberley region in far-north Western Australia has some of the highest reported incidences of sexually transmitted infections (STIs) in the nation. This report documents the region's incidence rates of gonorrhoea and syphilis from 1997 to 2001 and of chlamydia from 1993 to 2001. Chlamydia rates have been increasing since 1993 when genital chlamydia became a notifiable disease. By contrast, gonorrhoea rates remained stable from 1997 to 2001. Syphilis rates, which plateaued between 1996 and 2000 following a steep decrease in the previous decade, rose in 2001 in association with a regional syphilis outbreak. Factors important in interpreting changes in STI rates over time include the increased accuracy of more recent census data, the introduction of new and more sensitive diagnostic techniques and the influence of health workforce numbers and skills on STI diagnosis. *Commun Dis Intell* 2003;27:370–372.

*Keywords: chlamydia, gonorrhoea, sexually transmissible diseases, syphilis*

## Introduction

The Kimberley region in far-north Western Australia has some of the highest reported incidences of sexually transmitted infections (STIs) in the nation.<sup>1</sup> This sparsely populated region has a resident population of 32,000, one half of whom are Indigenous. Access to, and delivery of, primary health care, and in particular STI prevention and management, is often challenging in this remote region, with its poor roads, flooding, high staff turnover and cross-cultural issues.

A previous publication documented gonorrhoea and syphilis incidence in the Kimberley from 1987 to 1996.<sup>2</sup> Since then, new diagnostic techniques (such as nucleic acid testing and self obtained lower vaginal swabs for gonorrhoea and chlamydia) have become widely available in the region, laboratory notification of gonorrhoea and chlamydia was introduced in Western Australia, and the region's periodic syphilis screening program was evaluated, modified and subsequently ceased.<sup>3,4,5,6,7</sup>

This report aims to document incidence rates in the Kimberley, of gonorrhoea and syphilis from 1997 to 2001 and of chlamydia from 1993 to 2001.

## Methods

Population data from the Australian Bureau of Statistics' 1996 and 2001 census collections were obtained from the Epidemiology Branch of the Health Department of Western Australia.

The number of reports of gonorrhoea and chlamydia were obtained from laboratory and doctors' notifications to the Kimberley Public Health Unit. The number of reports of syphilis were obtained from the Kimberley Public Health Unit's syphilis database and doctors' notifications. Early syphilis was defined as an infection with clinical features of primary, secondary or congenital syphilis or syphilis of less than two year's duration as evidenced by the patient's serological history. All other new cases of syphilis were classified as late or unknown onset. Duplicate notifications were removed from the database before analysis.

## Results

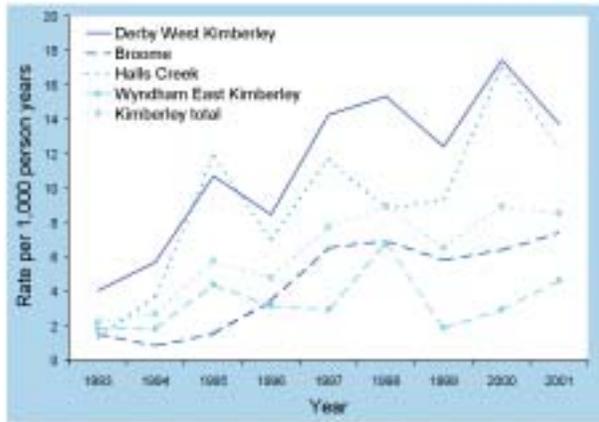
Incidence rates are shown in Figures 1, 2, 3, 4 and 5.

Since genital chlamydia became a notifiable disease in 1993, chlamydia rates in all Kimberley Shires have been increasing in both males and females (Figures 1 and 2). By contrast, total Kimberley gonorrhoea rates remained stable from 1997 to 2001 and the decrease in male gonorrhoea rates observed between the

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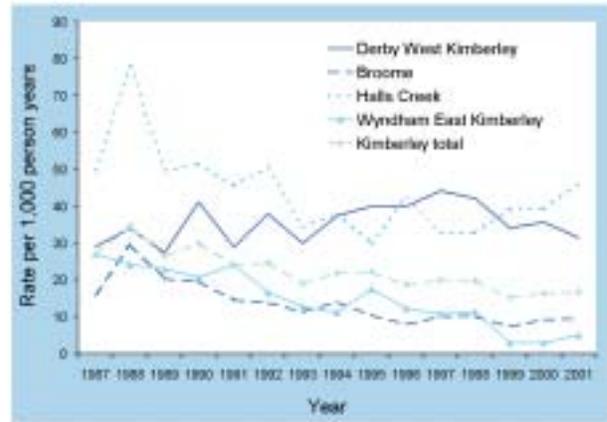
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**Figure 1. Incidence rates per 1,000 person years, of chlamydia in males in the Kimberley, 1993 to 2001, by shire**



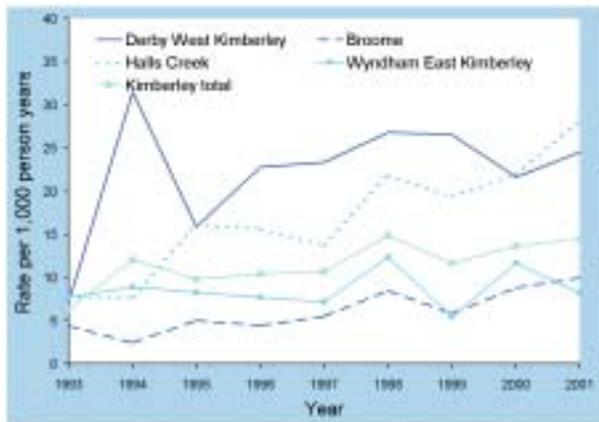
Nucleic acid testing was introduced in mid-1995

**Figure 3. Incidence rates per 1,000 person years, of gonorrhoea in males in the Kimberley, 1987 to 2001, by shire**



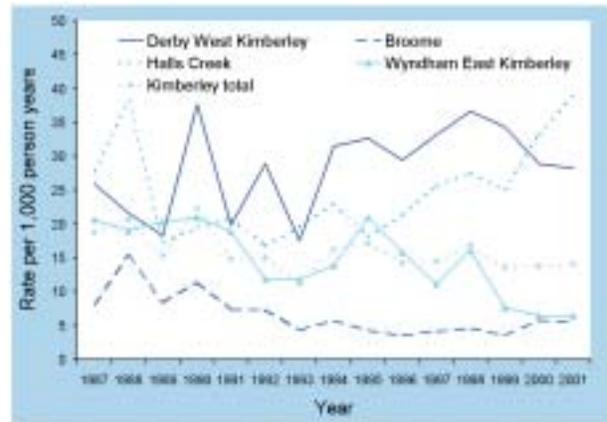
Nucleic acid testing was introduced in mid-1996

**Figure 2. Incidence rates per 1,000 person years, of chlamydia in females in the Kimberley, 1993 to 2001, by shire**



Nucleic acid testing was introduced in mid-1995

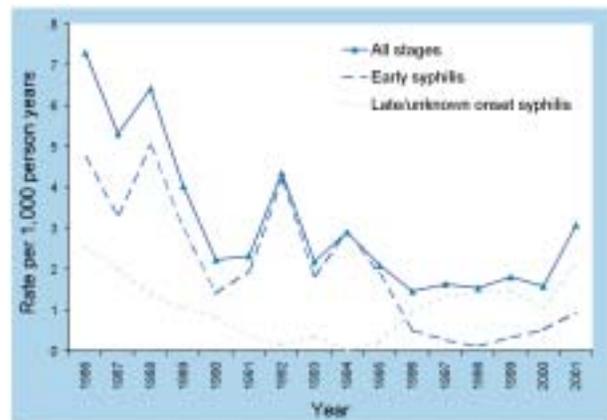
**Figure 4. Incidence rates per 1,000 person years, of gonorrhoea in females in the Kimberley, 1987 to 2001, by shire**



Nucleic acid testing was introduced in mid-1996

mid-1980s and the mid-1990s has plateaued (Figures 3 and 4). However, there were significant local variations, with male and female gonorrhoea rates in the Halls Creek Shire increasing, whereas in both males and females in the Shire of Wyndham East Kimberley there was a sustained decrease between 1998 and 2001. The decrease in syphilis rates observed between the mid-1980s and the mid-1990s plateaued in the late-1990s. Syphilis rates increased in 2001 in a regional syphilis outbreak that probably started in August 2000.<sup>8</sup> This outbreak has continued to the present (2003). The first case of congenital syphilis in the Kimberley since 1989 was reported in 2001.<sup>8</sup>

**Figure 5. Incidence rates per 1,000 person years, of syphilis in the Kimberley, 1986 to 2001, by stage**



## Discussion

The Kimberley Public Health Unit has received both doctors' and laboratory notifications of notifiable STIs since 1986. This contrasts with other parts of Western Australia, where laboratory notification was introduced in 2000. In the first year following this change, there was an increase in STI notifications from all regions of Western Australia except the Kimberley (Dr Sandra Thompson, Medical Coordinator, Sexual Health Program Health Department of Western Australia, personal communication). Therefore this change in the notification process is not thought to be significant for the Kimberley region.

Population data from the Australian Bureau of Statistics were used in these calculations, even though they probably underestimate the Kimberley population and, in particular, the Kimberley Aboriginal population.<sup>9</sup> The degree of underestimation is likely to have been greater in earlier than in more recent years.<sup>9</sup> This needs to be remembered when interpreting changes in rates over time.

Another factor that needs to be remembered is that nucleic acid testing for gonorrhoea and chlamydia was introduced to, and became available throughout, the Kimberley (at no cost to the patient or health care provider) in mid-1995 and mid-1996, respectively. Prior to this, gonorrhoea and chlamydia may have been under-diagnosed because previous diagnostic tests (gonorrhoea culture and chlamydia enzyme-linked immunosorbent assay) were far less sensitive than nucleic acid tests. Self obtained lower vaginal swabs for gonorrhoea and chlamydia were piloted in the Kimberley in 2000 and became widely available in 2001. This could be expected to result in increased testing and diagnosis of STIs in women, particularly in areas without female health staff able to perform vaginal examinations.

Diagnosis of STIs, especially in more remote areas, is very dependent, not just on the presence or absence of health staff, but also on the skills and personalities of individual staff members. For example, part of the increase in gonorrhoea incidence in the Halls Creek Shire between 1998 and 2001 is likely to have been caused by the presence of a few individuals who had the necessary clinical and public health skills required to effectively manage patients with STIs and who were also trusted by people living in the area. In the Wyndham East Kimberley Shire there was a decrease in gonorrhoea incidence between 1998 and 1999 which was maintained over the next two years. Due to the relative stability of health staff, and the collaboration between health, education and youth work professionals in sexual health education that has occurred since the late-1990s in this Shire, the observed decrease in gonorrhoea rates is probably due to a real decrease in disease incidence rather

than a decrease in diagnosis due to poor access to health services.

Gonorrhoea, chlamydia and syphilis rates in the Kimberley, while far higher than those in other parts of Western Australia, are comparable with those reported from the Northern Territory.<sup>1,10,11</sup> With the increasing numbers of residents in, and visitors to, the Kimberley it is crucial that adequate resources be allocated to STI surveillance, control and prevention to limit the spread of STIs and HIV. Timely diagnosis and treatment is essential to minimise permanent consequences of STIs, e.g. infertility, congenital syphilis. The current outbreak of syphilis, a disease which only recently was thought to be under control in the Kimberley, is a salutary reminder of how easily and quickly STIs can spread throughout remote Australia<sup>8</sup>

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