

21 SEXUAL AND REPRODUCTIVE HEALTH

KEY FINDINGS

- Chlamydia trachomatis infection is the most commonly diagnosed sexually transmitted infection (STI) in New Zealand
- From 2002 to 2006, the number of cases of Chlamydia and gonorrhoea diagnosed at Sexual Health clinics (SHCs) increased by 27.7% and 52.1% respectively. Over the same period, clinic visits increased by 10.5%.
- Around 90% of genital warts infection diagnosed belongs to human papillomavirus (HPV) Types 6 and 11 strains and it remains the most common viral infection diagnosed. In SHCs this rate was highest in the 15-19 years age group.
- From 2002 to 2006, the number of genital herpes (first presentation) infections diagnosed at SHCs remained relatively constant, fluctuating between 712 and 747 cases.
- SHCs reported 68 cases of syphilis in 2006, an increase of 44.7% from 2005.
- The total number of cases of Non Specific Urethritis (NSU) reported in 2006 by SHCs was 687. The rate of NSU steadily decreased over the last five years, which may reflect the use of more sensitive Chlamydia tests.
- Young people were confirmed as being at the greatest risk of Chlamydia and gonorrhoea with the highest rates being in females aged 15-19 years (excepting Chlamydia in Auckland which was 20 to 24 years) and in males aged 20 to 24 years.
- Infections in infants due to sexually transmissible organisms continue to be diagnosed, reinforcing the need for effective STI screening during pregnancy.
- The laboratory diagnosed rate of Chlamydia infections for the Auckland, Waikato and Bay of Plenty regions combined increased by 1.4 times between 2002 and 2006.
- In the Waikato, avoidable hospitalizations for STIs were the highest among 15-24 year olds at 66% followed by 25-44 year olds at 21%.
- Waikato's age standardized rate of hospitalization increased to 9.41 per 100,000 in 2006.
- In 2006, five women tested positive for HIV through antenatal screening and one of these women was diagnosed as a direct result of the antenatal HIV screening programme in Waikato.
- At a national level, the majority of HIV cases (85.3%) were aged between 20 and 49 years at time of diagnosis, with 17% in the 20-29 age group, 40.2% in the 30-39 age group and 28% in the 40-49 age group.
- As with HIV diagnosis, around 90% of AIDS diagnoses were among 20-49 year olds at the time of notification.
- In 2006, those aged less than 30 years and non-Europeans were disproportionately burdened with STIs.
- Young people with mental illnesses and/or in trauma tend to get trapped in the cycle of sexual and reproductive health problems.
- Around 70% of cervical cancers are caused by HPV Type 16 and 18 strains.

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Currently in New Zealand, the Ministry of Health (MoH) is deciding on the funding implications for a HPV vaccine and the implementation of this for providers in the next 12-18 months. The vaccination process has the potential to reduce the cervical cancer by 70% and will have an impact on other HPV related cancers.

RECOMMENDATIONS FOR STRATEGIC CONSIDERATION

It is evident from the detailed analysis that the risks associated with STIs are highest among youth aged 15 to 24 years old and non-Europeans. Continued incidence among neonates highlights the need to improve STI screening during pregnancy and reinforces that eye infections in neonates require close observation and investigation.

The distribution of STIs in the Waikato is of concern, as STIs can lead to the development of serious sequelae such as pelvic inflammatory disease, ectopic pregnancy and infertility, cervical cancer, as well as facilitating the transmission of HIV.

Areas for future planning are:

- **Specialists Sexual Health Clinics:** Maintaining patient confidentiality through unique identifiers in sexual health clinics and maintaining free, confidential and self referrals to the clinics.
- **Workforce Development:** Sexual health specialists to provide training for primary care providers and to engage in clinical guideline development and maintenance, research activities and workforce development.
- **Increase Public Awareness to Social Marketing:** Improve the provision of necessary STI prevention aids as a component of promotional activities.
- **Re-establishment of Sexual Health Network:** Although the sexual health network that was operating for a few years was building collaboration with relevant sexual health experts across the continuum of care, it slowly vanished due to competing demands on the resources. The re-establishment of the sexual health network of population health, sexual health specialist and PHOs is essential to gain optimum exposure for social marketing and to monitor and control the growing problems with STI in the community.
- **Linking of HIV and STI Strategies:** There is a need to link the HIV and STI prevention strategies. This includes the normalisation of medical HIV testing currently being promoted by the Ministry of Health to encourage more widespread and frequent testing of persons with risk behaviours.
- **Effective Registration and Screening:** In order to effectively control the prevalence of cervical cancers, it is essential to review the current processes and procedures and implement continuous improvements.
- **STI Clinics in Rural Towns:** Most STI surveillance clinics are located in cities and larger rural towns. Some rural towns and isolated populations have limited to no access to the services offered by these clinics. Further service planning processes need to consider best options for extending the surveillance services to rural towns that are in need of these services.

The law changes now in place combined with the current legislative changes for laboratories to report sexual health data will facilitate better national data collection in the future for effective monitoring and control of STIs nationally.

21.1 Introduction

The term “sexual and reproductive health” refers to all aspects of healthy sexuality, including prevention, avoidance and treatment of Sexually Transmitted Infections (STIs). Often STIs are a major cause of long term and acute illnesses, infertility, cervical cancer, and deaths worldwide¹¹⁹. Prevention and control of STIs is a complex challenge, but the resulting human and economic costs are almost completely preventable, especially for bacterial STIs¹²⁰.

The World Health Organisation (WHO)’s working definition of sexual health encapsulates all aspects (positive and negative) of sexual health:

“Sexual health is a state of physical, emotional, mental and social well-being in relation to sexuality; it is not merely the absence of disease, dysfunction or infirmity. Sexual health requires a positive and respectful approach to sexuality and sexual relationships, as well as the possibility of having pleasurable and safe sexual experiences, free of coercion, discrimination and violence. For sexual health to be attained and maintained, the sexual rights of all persons must be respected, protected and fulfilled”.

21.2 Reproductive Health - Waikato

21.2.1 Births

There were approximately 5072 live births in the Waikato region in 2006, and around 41% of these occurred in Hamilton City. Of the total live births in New Zealand, around 9% occurred in the Waikato region.

Table 304: Live Birth by Waikato Territorial Local Authorities - 2000-2006

Live Birth by Territorial Local Authorities	December Year						
	2000	2001	2002	2003	2004	2005	2006
Thames-Coromandel District	303	301	250	239	278	267	268
Hauraki District	224	210	205	218	189	198	205
Waikato District	640	693	583	647	641	699	721
Matamata-Piako District	433	424	408	417	439	446	388
Hamilton City	1,806	1,929	1,785	1,943	1,947	2,053	2,077
Waipa District	575	537	583	581	616	591	604
Otorohanga District	136	123	133	122	128	125	110
South Waikato District	381	392	358	363	403	376	320
Waitomo District	153	152	168	144	148	134	138
Ruapehu District	251	237	241	214	215	216	241
Waikato DHB	4902	4998	4714	4888	5004	5105	5072

119 UNAIDS/WHO. Guidelines for Sexually Transmitted Infections Surveillance: UNAIDS/WHO Working Group on Global HIV/AIDS/STI Surveillance. WHO: Geneva; 1999. <http://www.who.int/hiv/pub/sti/pubstigidelines/en/>

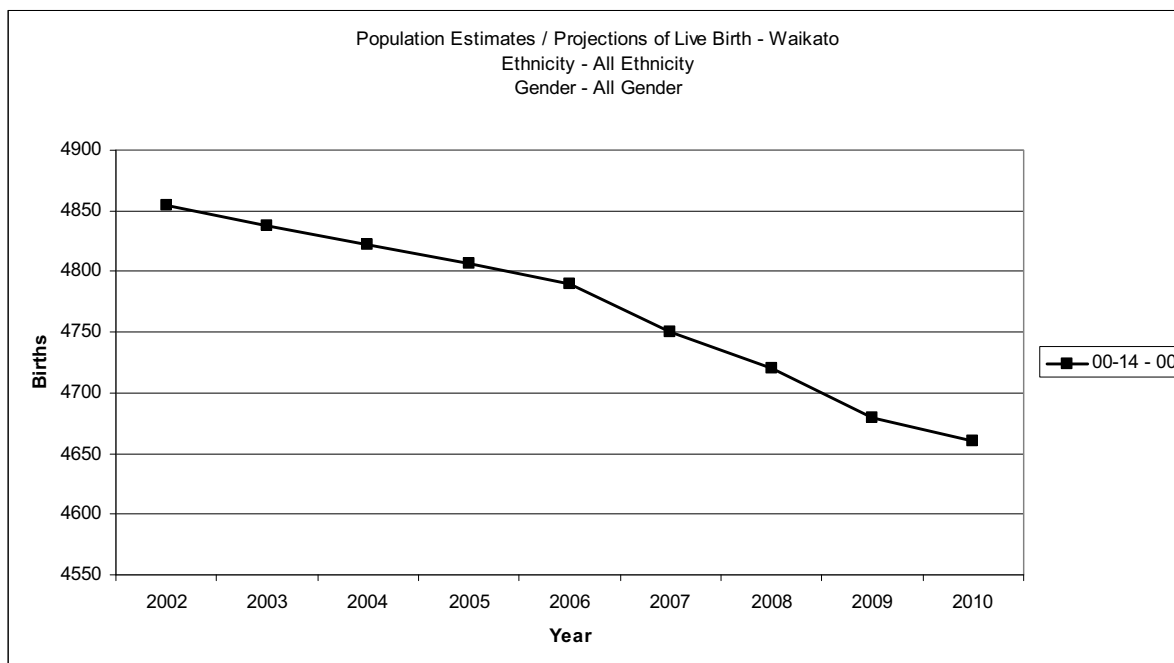
120 Patrick DM. The Control of Sexually Transmitted Diseases in Canada: A Cautiously Optimistic Overview. The Canadian Journal of Human Sexuality. 1997a;6(2).

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In total, 4,769 live births were recorded by Health Waikato (Waikato District Health Board) for the period July 2006 to June 2007, excluding births occurred in private hospitals or at home.

The projection of Waikato's 00-14 age group shows a gradual decline of birth by around 4% from 2002 to 2010.

Graph 123: Population Projection of Births - Waikato



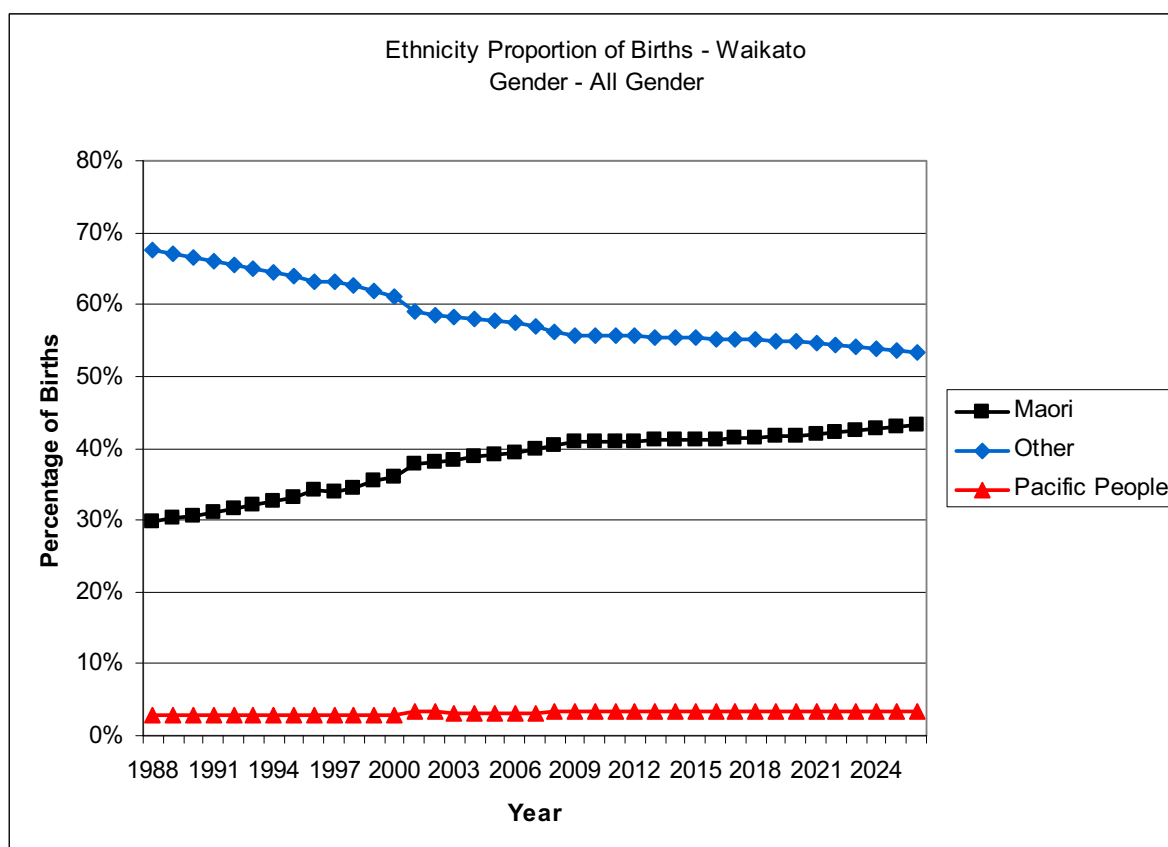
The birth numbers are expected to decrease in the Other ethnic groups, increase in Maori, and remain stable in Pacific People in the Waikato.

Note: Other ethnic groups in the projections of new born babies includes Asians.

As a result of these changes, the proportion of Maori babies is projected to increase from 40% in 2007 to 43% in 2026, while Other babies are projected to decrease from 57% in 2007 to 53% in 2026. Pacific People babies are projected to remain at around 3% of the 00 population.

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Graph 124: Population Projection of births by Ethnicity - Waikato



Information presented by Statistics New Zealand (StatsNZ) showed around 9% of babies were born to women less than 20 years old (Table 305). As StatsNZ include other regions such as Taupo as part of the Waikato region, the number of babies shown below (5,613) differs from the total number of around 4770 shown above.

Table 305: Statistics New Zealand Maternal Age and Number of Births - Waikato Region - 2006

Waikato Region	Waikato Region - Maternal age group (years)							All Ages
	Under 20	20-24	25-29	30-34	35-39	40-44	45+	
Number of Births	503	1,116	1,438	1,595	794	153	12	5,613

21.3 Hospitalisation for Pregnancy and Pregnancy Complications - Waikato

In Waikato, in total, there were 57,652 hospitalisations related to pregnancy complications (**which includes normal spontaneous delivery**) recorded from 2000 to 2006. Around 17% of these hospitalisations were related to normal delivery and 14% related to medical abortions.

Around 64% of the hospitalisation for pregnancy was among Other ethnic group, followed by Maori at 29%.

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Table 306: Hospitalisation for Pregnancy complications by Ethnicity - Waikato

ICD10 Chapter Sub Group	Maori	Asian	Other	Pacific People	Total	% of Total
O00-O08 - Pregnancy with unplanned abortive outcome	1189	217	2910	106	4422	7.7%
O04 - Medical abortion	2316	426	5057	203	8002	13.9%
O10-O16 - Oedema, proteinuria and hypertensive disorders in pregnancy, childbirth and the puerperium	898	56	1942	89	2985	5.2%
O20-O29 - Other maternal disorders predominantly related to pregnancy	893	147	1998	112	3150	5.5%
O30-O48 - Maternal care related to the fetus and amniotic cavity and possible delivery problems	3211	461	7386	327	11385	19.7%
O60-O75 - Complications of labour and delivery	3577	710	9215	407	13909	24.1%
O80-O84 - Delivery	3546	304	5755	276	9881	17.1%
O85-O92 - Complications predominantly related to the puerperium	399	32	691	34	1156	2.0%
O95-O99 - Other obstetric conditions, not elsewhere classified	820	71	1809	62	2762	4.8%
Grand Total	16849	2424	36763	1616	57652	100%

The prevalence of hospitalisation for pregnancy complications remained reasonably stable across all NZDep quintiles with minor variations.

The age proportion of hospitalisation for pregnancy complications was the highest among 25-44 year olds at 64% followed by 15-24 year olds at 36% in 2006. Further breakdown of 15-24 year olds revealed around 13% of the hospitalisations among 15-19 year olds. There were a small number of admissions in the 10-14 age group.

Table 307: Hospitalisation for pregnancy and pregnancy complications by age group - Waikato

Year	Age Group							
	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49
2000	0.14%	11.05%	22.05%	28.32%	23.74%	11.56%	2.94%	0.20%
2001	0.17%	10.53%	22.51%	26.18%	25.64%	11.79%	3.09%	0.10%
2002	0.14%	11.20%	22.56%	25.98%	25.39%	11.53%	3.02%	0.16%
2003	0.13%	12.60%	21.45%	24.41%	25.94%	12.34%	2.92%	0.16%
2004	0.17%	12.35%	22.72%	24.58%	24.19%	12.49%	3.22%	0.26%
2005	0.19%	11.74%	22.31%	24.53%	24.46%	13.05%	3.53%	0.17%
2006	0.15%	13.30%	22.49%	23.46%	23.64%	13.31%	3.45%	0.20%

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21.3.1 Ethnic Comparison of Pregnancy related Hospitalisation

In 2006, the Waikato age standardised rate of pregnancy related hospitalisation was 5055.24 per 100,000. This rate was slightly higher than the national rate of 4893.91 per 100,000 in 2006.

Table 308: Age standardised and specific rates - Hospitalisation for pregnancy complications by Ethnicity - Waikato rates compared with NZ rates - 2006

Ethnicity	Age Standardised Rate 2006		Age Specific Rate - 15-24 Year Olds - 2006		Age Specific Rate - 25-44 Year Olds - 2006	
	Waikato Rate	NZ Rate	Waikato Rate	NZ Rate	Waikato Rate	NZ Rate
Maori	5954.04	6387.38	15541.8	17542.1	11436.8	11708.7
Other	4681.71	4243.16	8855.9	6754.5	10889.5	10590.4
Pacific People	5487.24	7879.12	13142.9	15884.8	11092.4	17748

Key findings based on the information in Table 308 are:

- Waikato Maori pregnancy related age standardised rate of hospitalisation decreased and, in 2006, was lower than the national rate.
- Among Waikato Other ethnic group, the age standardised rate of hospitalisation for pregnancy complications decreased slightly in 2006, however the rate remained higher than the national rate for the same period.
- The age specific rate among Other ethnic group aged 15-24 also remained higher than the national rate. However, in 2006, the age specific rate among 25-44 year olds reached the lowest since 2000, and there was no notable difference between the Waikato age specific rate and the national rate.

The age specific rates among Waikato Pacific People aged 15-24 and 25-44 were lower than the national rates.

21.4 Low Birth Weight – Small for Gestational Age and Preterm Birth

Low birth weight is a term used to describe babies who are born weighing less than 2,500 grams (5 pounds, 8 ounces). Low-birth weight babies are at increased risk of serious health problems as newborns, lasting disabilities and even death.

Small for gestational age (SGA: birth weight <10th percentile for gestational age) is often used as a proxy for Intrauterine growth restriction (IUGR) in statistical reports. Using NZ population percentile charts, SGA rates are highest amongst Indian, followed by Asian, Maori, European and finally lowest in Pacific women and are significantly elevated amongst those living in the most deprived areas. Some of the known risks include maternal smoking and poor nutritional status. While New Zealand's SGA rates are decreasing, socioeconomic disparities in SGA are not.

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In recent years, preterm birth rates among New Zealand women have been highest amongst Indian > Maori > European > Asian > Pacific women and those in the most deprived areas. It is unclear whether these increases are due to increasing obstetric intervention and the selective delivery of high risk babies or whether they reflect a true rise in spontaneous preterm birth. Advances in newborn medical care have greatly reduced the number of deaths associated with low birth weight. However, a small percentage of survivors develop mental retardation, learning problems, cerebral palsy, and vision and hearing loss.

Birth defects, chronic health problems in the mother such as maternal high blood pressure, diabetes, heart, lung and kidney problems, smoking, infections in the mother, (especially those involving the genito-urinary tract), infections in the fetus, (including cytomegalovirus, rubella and chickenpox), alcohol and illicit drugs, placental problems, inadequate maternal weight gain, and socioeconomic factors. (Low income and lack of education are associated with increased risk of having a low-birth weight baby, although the underlying reasons for this are not well understood).

21.4.1 Waikato Low Birth Weight (<2500 grams) and Very Low Birth Weight (<1500 grams) Statistics

Most very low birth weight babies are born at Waikato Hospital. The proportion of babies born weighing less than 2,500 grams has decreased slightly as has the average length of stay for these babies.

Comparison of low and very low births to total births within each ethnicity shows a high proportion of very low birth weight babies per Maori birth compared to the NZ European rate.

21.4.2 Summary of Findings - Low birth weight ¹²¹

In New Zealand during 1980-2006, rates of preterm birth increased and then reached a plateau, while rates of small for gestational age (SGA) declined. In contrast, rates of low birth weight remained relatively static during this period.

In the Waikato, during this period the pattern was similar, with rates of SGA declining, while rates of preterm birth increased and then reached a plateau. While for the majority of this period, rates of preterm birth in the Waikato were similar to the New Zealand average, rates of SGA birth were slightly higher.

During 1996-2006, rates of preterm birth were highest amongst Maori babies, males and those in the most deprived areas, while rates of SGA were highest amongst Asian / Indian and Maori babies and those in the most deprived areas.

It is difficult to determine whether the recent rise in preterm rates will have detrimental impacts, as it is unclear whether these increases were due to increasing obstetric intervention and the selective delivery of high risk babies or whether they reflected a true rise in spontaneous preterm birth.

¹²¹ "Health of Children and Young People in the Waikato", by E Craig, C Jackson, D Y Han, November 2007

21.5 Teenage Pregnancies

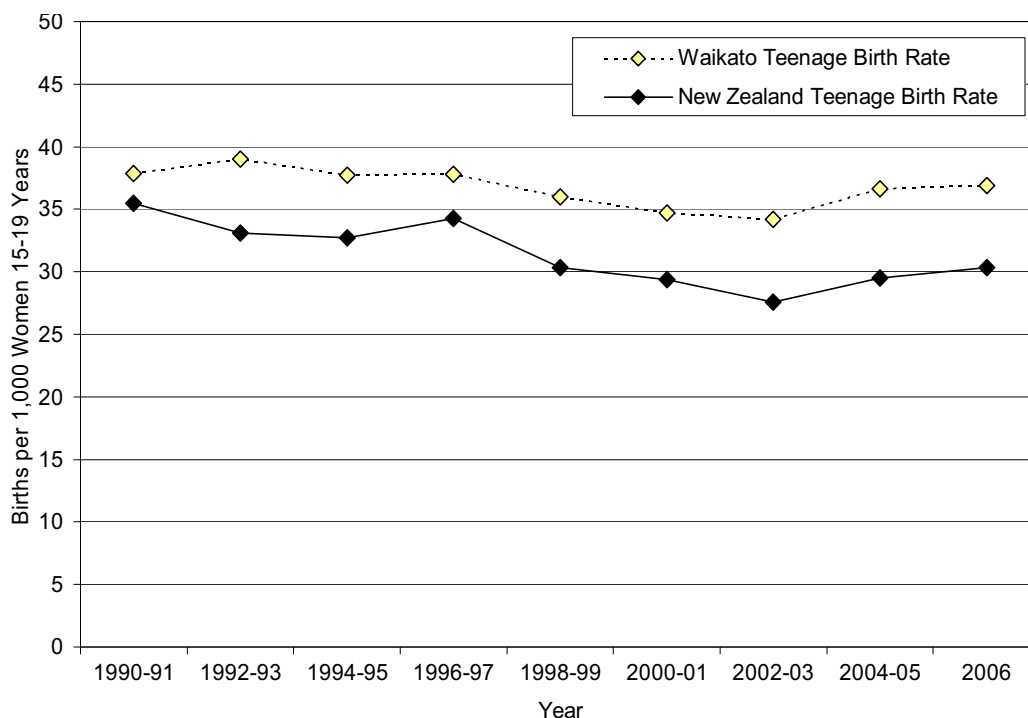
The information presented below is extracted from the report “The Health of Children and Young People in the Waikato¹²² prepared for the Waikato DHB under contract with the NZ Child and Youth Epidemiology Service, a joint venture between Paediatric Society of New Zealand and Auckland UniServices.

21.5.1 Teenage Births in the Waikato - Distribution and Trends

Teenage pregnancy encompasses three distinct outcomes: births, terminations of pregnancy and spontaneous miscarriages amongst women <20 years of age. While New Zealand’s teenage birth rates declined during the period 1980-2004, teenage pregnancies did not, with a gradual increase in the number of teenagers seeking therapeutic abortion. Thus by 2003, for every woman giving birth in her teenage years, there was one corresponding therapeutic abortion. During 2002-2006, teenage birth rates in New Zealand were highest amongst Māori and Pacific women and those living in the most deprived areas. Higher teenage birth rates amongst Māori and Pacific women resulted from both a shift to the left in the maternal age distribution (i.e. towards birth at a younger age), as well as from higher overall fertility rates amongst Māori and Pacific women.

During 1990-2006, Waikato’s teenage birth rates were consistently higher than the New Zealand average (Graph 125). During 1996-2006, teenage birth rates in the Waikato were highest amongst Māori, followed by Pacific, then European and finally Asian women.

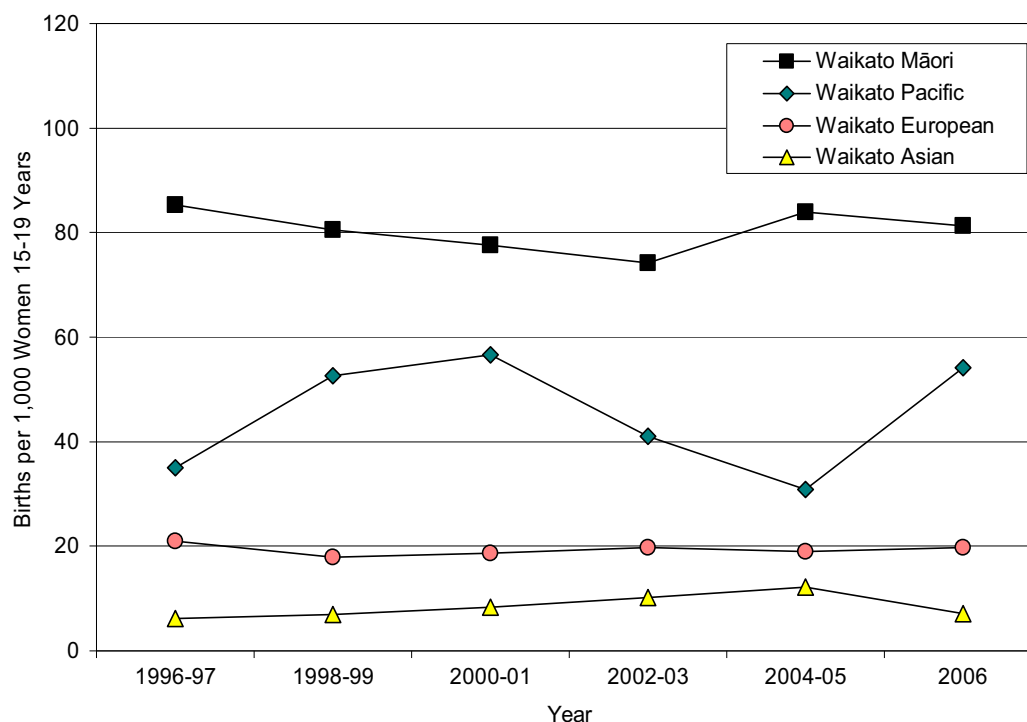
Graph 125: Teenage Birth Rates, the Waikato vs New Zealand 1990-2006



¹²² Elizabeth Craig, Catherine Jackson and Dug Yeo Han, New Zealand Child and Epidemiology Service, November 2007

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Graph 126: Teenage Birth Rates by Maternal Ethnic Group, Waikato vs New Zealand 1996-2006



21.6 Sexual Health

In New Zealand, surveillance of STIs is undertaken by the Population and Environmental Health Group, Institute of Environmental Science and Research Limited (ESR) as part of a Ministry of Health contract for scientific services. The surveillance data is based predominantly on voluntary data provision and reporting from these services:

Information presented in this section of the HNA is sourced from the following reports:

- “Youth Sexual Health: Our Health, Our Issue”¹²³ - Full copy of the report is available at: www.fpaid.org.nz
- Sexually Transmitted Infections in New Zealand, Annual surveillance Report 2006, MoH, April 2007¹²⁴. Full copy of the report is available at: www.surv.esr.cri.nz
- The Health of Children and Young People in the Waikato¹²².

21.6.1 Clinical Surveillance Key Points:

Key points from the Clinical Surveillance, at a national level are:

- Chlamydia trachomatis infection is the most commonly diagnosed STI in New Zealand
- From 2002 to 2006, the number of cases of Chlamydia and gonorrhoea diagnosed at SHCs increased by 27.7% and 52.1% respectively. Over the same period clinic visits increased by 10.5%.

¹²³NZ Parliamentarians’ Group

¹²⁴ ISSN 1176-080X, Prepared by STI Surveillance Team, Population and Environmental Health Group, Institute of Environmental Science and Research Limited, April 2007

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- Genital warts remains the most common viral infection diagnosed and in SHCs the rate was the highest in the 15-19 years age group.
- From 2002 to 2006, the number of genital herpes (first presentation) infections diagnosed at SHCs remained relatively constant, fluctuating between 712 and 747 cases.
- SHCs reported 68 cases of syphilis in 2006, an increase of 44.7% from 2005.
- The total number of cases of NSU (Non Specific Urethritis) reported in 2006 by SHCs was 687. The rate of NSU steadily decreased over the last five years, which may reflect the use of more sensitive Chlamydia tests.
- Young people remain at high risk of STIs with those aged less than 25 years having the highest rates of consultation for Chlamydia, gonorrhoea, and genital warts at SHCs.
- In 2006, 621 SHC attendees were diagnosed with concurrent infections. Young people, Maori and Pacific Peoples are at greater risk of concurrent infections.
- Of the 9774 SHC patients diagnosed with an STI in 2006, 10.7% presented with a subsequent STI infection.

21.6.2 Laboratory Surveillance - Key Points

Some of the key points from the Laboratory Surveillance data source are:

- Young people were confirmed as being at the greatest risk of Chlamydia and gonorrhoea with the highest rates being in females aged 15-19 years (excepting Chlamydia in Auckland which was 20 to 24 years) and in males aged 20 to 24 years.
- Infections in infants due to sexually transmissible organisms continue to be diagnosed, reinforcing the need for effective STI screening during pregnancy.

21.6.3 Sexual Health Clinics (SHCs) and Laboratories

Specialist sexual Health Clinics (SHCs)¹²⁵ are:

- Family Planning Clinics (FPCs)
- Student and Youth Health Clinics (SYHCs)
- Laboratories in the Waikato, Bay of Plenty (Bay of Plenty) and Auckland regions

From June 2004 additional laboratories sending data are located in the following DHBs: Northland, Tairāwhiti, Hawke's Bay, Taranaki, Mid Central, Hutt Valley, Capital and Coast, Canterbury, West Coast, Otago and Southland.

21.6.4 Limitations of current surveillance system and STI surveillance

It is important to understand the limitations with the surveillance information collected at the national level:

- The STI findings may underestimate the true infection rates as not all clinics and laboratories are participating in the surveillance process.
- Deprivation details are not collected by ESR.

¹²⁵Although SHC see only a small portion of the population with STIs, their data provides the most comprehensive source of information on the epidemiology of STIs in New Zealand.

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- STIs diagnosed by a range of health care providers, such as General Practitioners are not included in the surveillance information.
- An individual with multiple positive laboratory specimens may be double counted, although attempts are made to minimize such double counting.
- Reliable and accurate estimate of burden of STIs in the New Zealand population cannot be determined from the current surveillance national system.
- No STIs are currently notifiable under the health Act, and therefore surveillance remains dependent on voluntary notification.
- Laboratories are provided with limited information with a specimen and this would be insufficient for analysis at the sub-population group levels, eg. By ethnicity, DHB.
- Most clinics participating in STI surveillance are located in cities and larger rural towns. Some rural towns and isolated populations have limited to no access to the services offered by the above clinics.
- Universities and polytechnic clinics provide services only to their registered students.

The inclusion of NHI number in most specimens will provide the foundation for gathering extra data fields for adequate surveillance in the future.

21.6.5 STIs - Sexual Health Clinics (SHC)

In total, SHCs reported 88,681 clinic visits during 2006 with 58.9% females. Compared to 2005, the clinic visits increased by 1.9% in 2006. Where age and ethnicity information were provided, 49.3% were less than 25 years old, 66.9% were European ethnic group, 19.7% were Maori, 3.8% were Pacific People and 9.6% were Other ethnic groups.

In 2006, there were 4,295 cases of Chlamydia and 803 cases of gonorrhoea diagnosed at SHCs. From 2005 to 2006, male and female gonorrhoea clinic visit rates increased by 2.4% and 34%, while other STI clinic visit rates decreased. Males NSU clinic visit rates steadily decreased from 2002.

Table 309: STI diagnosis, clinical visit rates and age comparisons at SHCs - 2006

STIs	Cases	Rate	Mean Age (Years)	Age Range (Years)
Chlamydia	4295	4.8%	22	13-69
Gonorrhoea	803	0.9%	24	13-57
Genital Herpes (1st Presentation)	720	0.8%	28	15-68
Genital Warts (1st Presentation)	3201	3.6%	24	2-79
Syphilis	68	0.1%	32	16-80
NSU (Males only)	687	1.9%	31	14-69
STI Cases	9774	11.0%		
Total Clinic Visits	88681			

Rate = Cases/total number of clinic visits. For NSU denominator is male clinic visits only

21.6.6 Family Planning Clinics (FPCs)

FPCs reported 183,479 clinic visits during 2006, 95.4% of which were females. Compared to 2005, the number of clinic visits increased by 1.6% in 2006.

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Where age and ethnicity information were provided, 67.5% were aged less than 25 years, 72.8% were of European ethnic group, 8.7% were Maori, 4% were Pacific People and 14.5% were Other ethnic groups.

In 2006, a total of 3,995 cases were diagnosed, a clinic visit rate of 2.2% in FPC attendees with Chlamydia being the most commonly reported STI. There were 3,037 cases of Chlamydia and 196 cases of gonorrhoea diagnosed at FPCs.

From 2002 to 2006, clinic visit rates of Chlamydia more than doubled for both males and females, however there were only a little change in the other STI visit rates for either sex.

Table 310: STI diagnosis, clinical visit rates and age comparisons at FPCs - 2006

STIs	Cases	Rate	Mean Age (Years)	Age Range (Years)
Chlamydia	3037	1.7%	20	13-57
Gonorrhoea	196	0.1%	20	14-55
Genital Herpes (1st Presentation)	137	0.1%	24	14-59
Genital Warts (1st Presentation)	611	0.3%	21	13-57
Syphilis	3	0.0%	23	16-27
NSU (Males only)	11	0.1%	22	19-30
STI Cases	3995	2.2%		
Total Clinic Visits	183479			

Rate = Cases/total number of clinic visits. For NSU denominator is male clinic visits only

21.6.7 Student and Youth Health Clinics (SYHCs)

In total there were 202,514 clinic visits reported by SYHCs in 2006, 70% by females. Compared to 2005, the number of attendances to the clinics increased by 30.2% in 2006. Age and ethnicity were not reported for 41.2% and 41.1 of clinic attendees respectively.

Demographics of SYHC attendees are not routinely collected and some clinics are not computerised and the manual collation of data may not be completed to due time restraints.

Where age and ethnicity were provided, 72.3% were aged less than 25 years old, 66.6% were of European ethnic group, 10% were Maori, 2.5% were Pacific People and 20.8% were Other ethnic groups.

In 2006, 1079 STI cases were diagnosed with 751 cases of Chlamydia and 48 cases of gonorrhoea diagnosed at SYHCs. From 2005 to 2006, there were increases in the clinic visit rates of Chlamydia, gonorrhoea and genital herpes in both males and females and no change in NSU clinic visit rate in males.

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Table 311: STI diagnoses, clinical visit rates and age comparisons at SYHCs - 2006

STIs	Cases	Rate	Mean Age (Years)	Age Range (Years)
Chlamydia	751	0.4%	21	14-58
Gonorrhoea	48	0.02%	21	15-32
Genital Herpes (1st Presentation)	68	0.03%	23	17-54
Genital Warts (1st Presentation)	206	0.1%	21	14-39
Syphilis	0	0.0%	23	16-27
NSU (Males only)	6	0.0%	19	17-20
STI Cases	1079	0.5%		
Total Clinic Visits	202514			

Rate = Cases/total number of clinic visits. For NSU denominator is male clinic visits only

21.7 Cases of Chlamydia

In 2006, Genital Chlamydia infection was the most commonly diagnosed STI in New Zealand. Untreated infection can lead to the development of:

- Sequelae, including pelvic inflammatory disease (PID)
- Ectopic pregnancy
- Infertility in females and males
- Urethritis
- Epididymo-orchitis
- Reactive arthritis

Infants born vaginally to infected mothers can be infected resulting in neonatal conjunctivitis or pneumonia.

In 2006, case numbers increased at FPCs and SYHCs but SHCs were similar to 2005 levels. Incomplete case data for Auckland SHC may account for the lack of an increase in SHC cases.

The laboratory-based rate of Chlamydia infections for the Auckland, Waikato and Bay of Plenty regions combined has increased by 1.4 times between 2002 and 2006. Improved awareness and testing levels and more sensitive tests will account for some but not all of this increase in laboratory tests.

21.7.1 Laboratory Surveillance

In 2006, laboratories in the Waikato region tested 24,469 specimens for Chlamydia, of which 2,349 (9.6%) specimens tested positive from 2343 patients.

Overall rate for the region was 691 per 100,000. The rate in females (972 per 100,000) was two and half times the rate in males (382 per 100,000).

The mean age of cases of Chlamydia cases was 22 years (median age 20 years, range 0 to 66 years). 77% of all cases of Chlamydia were less than 25 years old.

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23 cases of Chlamydia were reported for the less than one year age group. Rate could not be calculated separately for this age group as population data was not available.

The highest female rates were among the 15 to 19 years age group, with a rate of 5,824 per 100,000 population, which equates to more than eight times the regional rate. In males the rates were the highest in the 20 to 24 years age group with a rate of 1,939 per 100,000 population followed by the 15 to 19 years age group, with a rate of 1,629 per 100,000 population.

Table 312: Waikato - case numbers and rates of chlamydia, age group and sex - 2006

Age Group (Years)	Number of Cases			Total	Rate Per 100,000 Population		
	Female	Male	Unknown		Female	Male	Total
< 1 year	15	5	3	23	*	*	*
1-14	36	1	0	37	95*	3*	48*
15-19	753	216	2	971	5824	1629	3707
20-24	547	226	11	784	4863	1939	3423
25-29	179	116	5	300	1789	1196	1522
30-34	94	32		126	829	312	584
35-39	31	17		48	245	150	200
40+	26	21	1	48	34	30	33
Unknown	0	1	5	6			
Waikato Total	1681	635	27	2343	972	382	691
Auckland Total	7101	2400	21	9522	1049	373	722
BoP Total	2286	619	2	2907	1518	434	991
Other Regions - Total	5018	1974	91	7083			

- Rates are combined for <1 and 1-14 age groups

21.7.2 Chlamydia Trends - Waikato, Auckland and Bay of Plenty Regions

The rate of Chlamydia diagnosed by the participating laboratories increased steadily by 43.3%, from 528 per 100,000 in 2002 to 757 per 100,000 in 2006.

From 2005 to 2006, the Chlamydia rates and numbers in the Waikato decreased by 21.8% in males and 13.4% in females. Bay of Plenty had the highest rate overall at 991 per 100,000 compared with 722 per 100,000 for Auckland and 691 per 100,000 for Waikato.

21.8 Cases of Gonorrhoea

Infections due to *Neisseria gonorrhoeae* can cause dysuria and vaginal discharge in females and urethral discharge in males. Untreated infections may be associated with long-term serious sequelae, including PID in females, epididymo-orchitis in males and severe conjunctivitis in neonates.

From 2005 to 2006, the number of cases increased by 16% in SHCs (803 compared to 692), 29% in FPCs (196 compared to 151) and 128.6% in SYHCs (48 compared to 21). The number of cases by ethnic breakdown was:

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Table 313: Number of STI cases by Clinics and by Ethnicity - 2005 & 2006

Clinics	Number of Cases			Europeans	Maori	Pacific People	Other	Unknown
	Female	Male	Total					
SHCs	341	462	803	42%	43%	6%	7%	2%
FPCs	156	40	196	49%	24%	10%	14%	4%
SYHCs	31	17	48					

In 2006, 64% at SHCs, 88% each at FPCs and SYHCs of the cases of diagnosed gonorrhoea were in those aged <25 years. The mean age was 24 years in SHCs, 20 years in FPCs and 21 years in SYHCs.

In SHCs, the cases of gonorrhoea were the highest in males aged 20 to 24 years (121 cases) and in females aged 15-19 years (171 cases). In FPCs, gonorrhoea cases were the highest for both males and females aged 15-19 years (20 and 92 cases).

21.8.1 Laboratory Surveillance

In 2006, there were 41,750 specimens of gonorrhoea tested by the participating laboratories, of which 404 (1%) specimens tested positive from 274 patients.

The rate in the region was 110 per 100,000. The female rate was 112 and male 108 per 100,000.

The mean age of cases of gonorrhoea was 24 years (median age 21 years, range 14 to 69 years). 67% of all cases of gonorrhoea were aged <25 years. No cases were reported for <1 year age group.

The gonorrhoea rate in 15 to 19 year old females (619 per 100,000) was nearly six times higher than the regional gonorrhoea rate (110 per 100,000). The highest male rates were in the 20 to 24 years age group (489 per 100,000), followed by the 15-19 years age group (362 per 100,000).

Table 314: Waikato Case numbers and rates of gonorrhoea by age group and sex

Age Group (Years)	Number of Cases				Rate Per 100,000 Population		
	Female	Male	Unknown	Total	Female	Male	Total
< 1 year	0	0	0	0	0	0	0
1-14	6	3	0	9	16*	8*	12*
15-19	80	48	0	128	619	362	489
20-24	56	57	1	114	498	489	498
25-29	19	27	0	46	190	278	233
30-34	22	22	0	44	194	215	204
35-39	3	9	0	12	24	79	50
40+	7	13	0	20	9	18	14
Unknown	0	0	1	1			
Waikato Total	193	179	2	374	112	108	110
Auckland Total	463	740	2	1205	108	181	144
BoP Total	166	131	0	297	110	92	101
Other Regions - Total	367	471	9	847			

21.8.2 Trend in Auckland, Waikato and Bay of Plenty Regions

Over the last five years (2002 to 2006) gonorrhoea rates in Auckland, Waikato and Bay of Plenty regions doubled from a rate of 63 per 100,000 in 2002 to 128 per 100,000 in 2006.

Bay of Plenty had the highest increase in male numbers (27.2%) and Waikato region had the highest increase in female numbers (82.1%).

Unlike for Chlamydia, there were no changes in gonorrhoea testing methods over the 2002 to 2006 years, hence the trend suggests a true increase in the rate of gonorrhoea.

From 2002 to 2006, the number of cases increased by 52.1% in SHCs, 19.5% in FPCs and more than doubled in SYHCs. In SHCs the clinic visit rate of gonorrhoea diagnosed in males and females increased by 37.6%.

The above trend is supported by the rate of gonorrhoea reported through laboratory surveillance in the Auckland, Waikato and Bay of Plenty regions which was 128 per 100,000 population in 2006, double the rate in 2002.

Key areas of focus are:

- Safe sex messages that are convincing to the target population
- More targeted sexual health promotions
- Early notification of infections by both parties
- Minimising barriers to accessing sexual health services.

21.9 Genital Herpes (first presentation)

This infection is caused by the *Herpes simplex* virus (HSV) types 1 or 2. HSV2 is regarded as the primary cause of genital infection and HSV1 is associated with oral infections. However, HSV1 has been increasingly associated with genital infection.

21.9.1 Cases of genital herpes in 2006

In 2005 and 2006, the number of cases of genital herpes decreased by 3.6% in SHCs and 16% in FPCs. In contrast the number of cases increased by 126.7% in SYHCs.

In 2006, 46% at SHCs, 65% at FPCs and 72% at SYHCs of the cases of genital herpes diagnosed were in those aged <25 years old. The mean age of cases was 28 years in SHCs and 24 years in FPCs and 23 years in SYHCs.

In SHCs, cases of genital herpes were the highest in males aged 25-29 years and females 20 to 24 years. There were no cases aged less than 15 years.

In FPCs, cases of genital herpes were the highest in males aged 20 to 24 years and females aged 15 to 19 years.

21.9.2 Recent Trends

From 2002 to 2006, the number of cases reported by SHCs fluctuated, however the clinic visit rate remained between 0.8% and 0.9%.

The prevalence in the population is much higher and increases with age. The prevalence of HSV2 antibodies in the Dunedin birth cohort was 3.4% at age 21, 11% at age 26 and 18.4% at age 32.

21.9.3 Limitations for Consideration

Some of the limitations for future consideration are:

- Clinic surveillance methods in New Zealand do not facilitate the collection of data on the type of HSV infection, so it is not possible to determine if the trends in genital herpes differ by type of viral infection.
- Surveillance reported here covers only the initial presentation of genital herpes, thereby under estimating the burden of disease caused by genital herpes.

21.10 Genital Warts (first Presentation)

Genital warts are visible manifestation of human papillomavirus (HPV) infections and it is the most commonly reported viral STI in New Zealand. Genital warts are of particular public health importance because of the association between some types of human papillomavirus (HPV, mainly types 16 and 18) and cervical, penile and anal cancers. Approximately 90% of genital warts are caused by HPV types 6 or 11, which are not associated with cervical cancers.

21.10.1 Cases of genital warts in 2006

In 2005 and 2006, the number of cases decreased by 14.2% in SHCs, but increased in FPCs by 14.6% and in SYHCs by 104%.

In 2006, the majority of cases at all clinics were aged less than 25 years (SHCs - 66%, FPCs 84% and SYHCs 80%). The mean age of cases was 24 years in SHCs and 21 years in both FPCs and SYHCs.

In SHCs and FPCs, genital warts were most common in males aged 20 to 24 years and females aged 15-19 years.

Majority of the cases of genital warts were in those of European ethnicity (SHCs 73%, FPCs 74% and SYHCs 76%) followed by Maori (SHCs 18%, FPCs 10% and SYHCs 10%).

21.10.2 Recent Trends

From 2002 to 2006, the number of cases of genital warts reported by SHCs decreased by 7.9%. From 2002 to 2005, the clinic visit rate was relatively stable (between 4.3% to 4.5%) but decreased in 2006 to 3.6%.

21.11 Waikato - Hospitalisation for STIs

There were 157 avoidable hospitalisation for STIs. Around 66% of the avoidable hospitalisations were among 15-24 year olds followed by 25-44 years at 21%.

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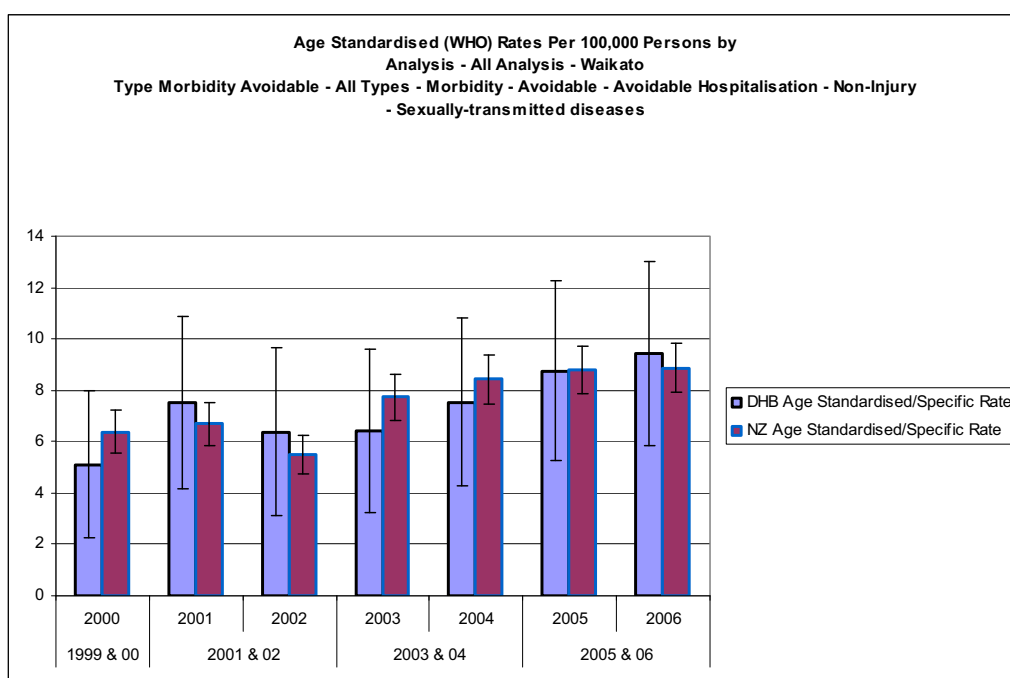
Table 315: Avoidable hospitalisation for STIs by age group - Waikato

Year Group	Age Group Breakdown									Total
	00-14	15-19	20-24	25-29	30-34	35-39	40-44	45-64	65+	
1999 & 00	1	5	4	3	0	0	0	1	2	16
2001 & 02	2	18	11	5	1	1	0	3	0	41
2003 & 04	4	21	4	5	3	1	1	3	1	43
2005 & 06	1	23	18	7	4	1	1	1	1	57
Total	8	67	37	20	8	3	2	8	4	157

Further breakdown of 15-24 year olds showed the highest number of hospitalisation for STIs among 15-19 year olds, followed by 20-24 years at 37 and 25-29 at 20 for the periods from 1999 to 2006.

The age standardised rate of hospitalisation for STIs increased from 5.11 per 100,000 in 2000 to 9.41 per 100,000 in 2006. There were no notable differences between the Waikato age standardised rate and the national rate.

Graph 127: Age standardised rate of avoidable hospitalisation for STIs - All Ethnic Group - Waikato rate compared with NZ rate

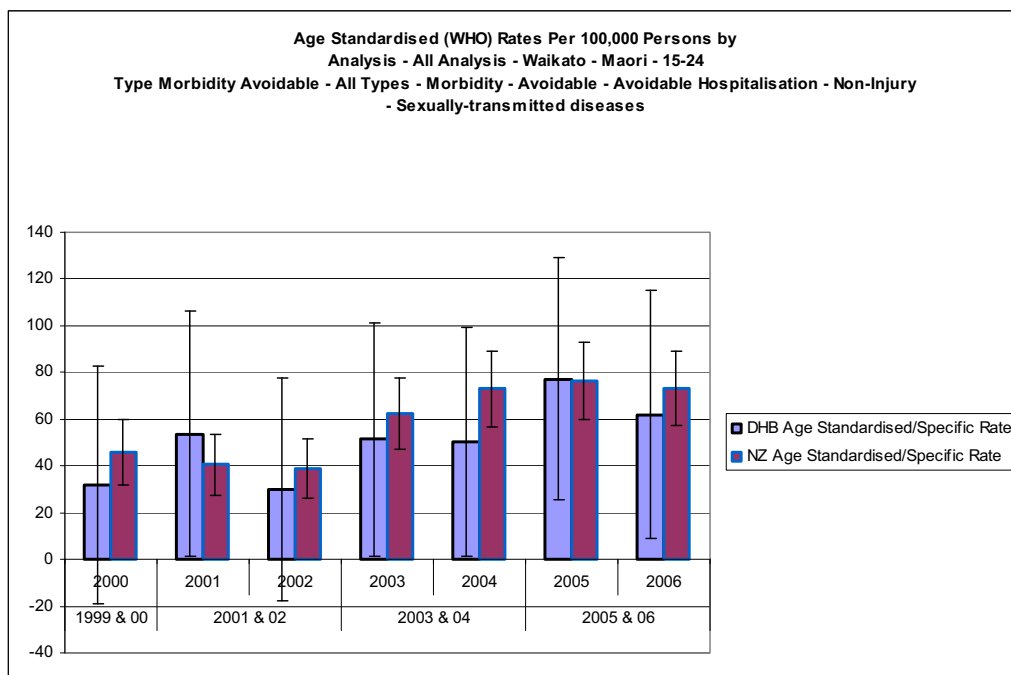


The age standardised rate among Waikato Maori, decreased slightly from 18.82 in 2005 to 16.22 per 100,000 in 2006.

The age specific rate of hospitalisation among Maori aged 15-24 year old decreased from 77.3 in 2005 to 61.9 per 100,000 in 2006.

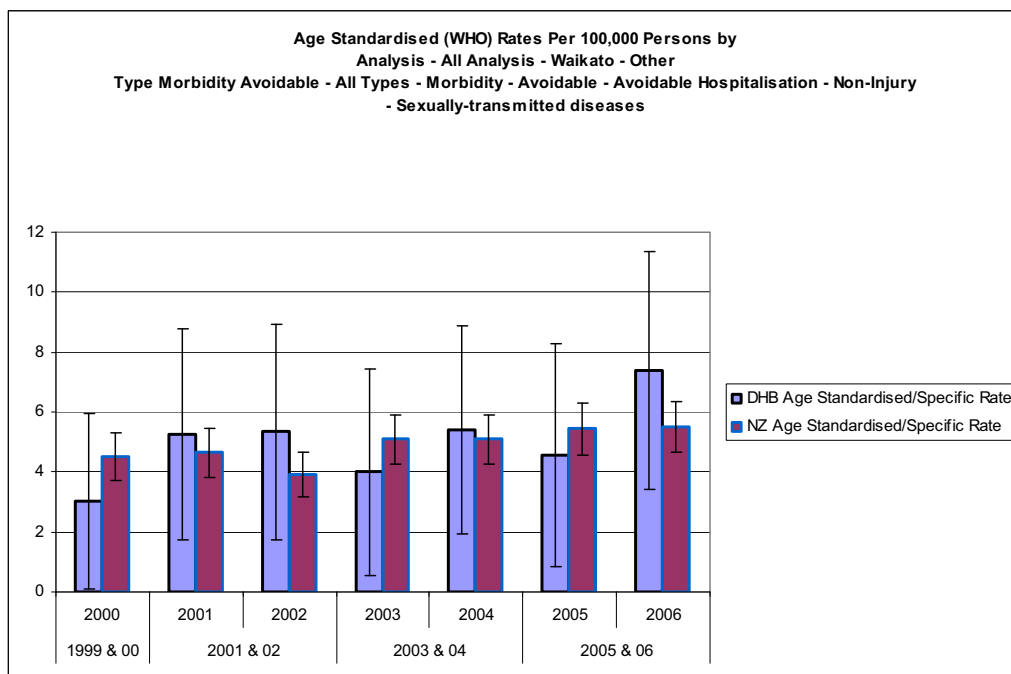
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Graph 128: Age specific rate of avoidable hospitalisation for STIs among Waikato Maori aged 15-24 years - Waikato rate compared with NZ rate



The age standardised rate of hospitalisation among Other ethnic reached the highest in 2006 at 7.39 per 100,000.

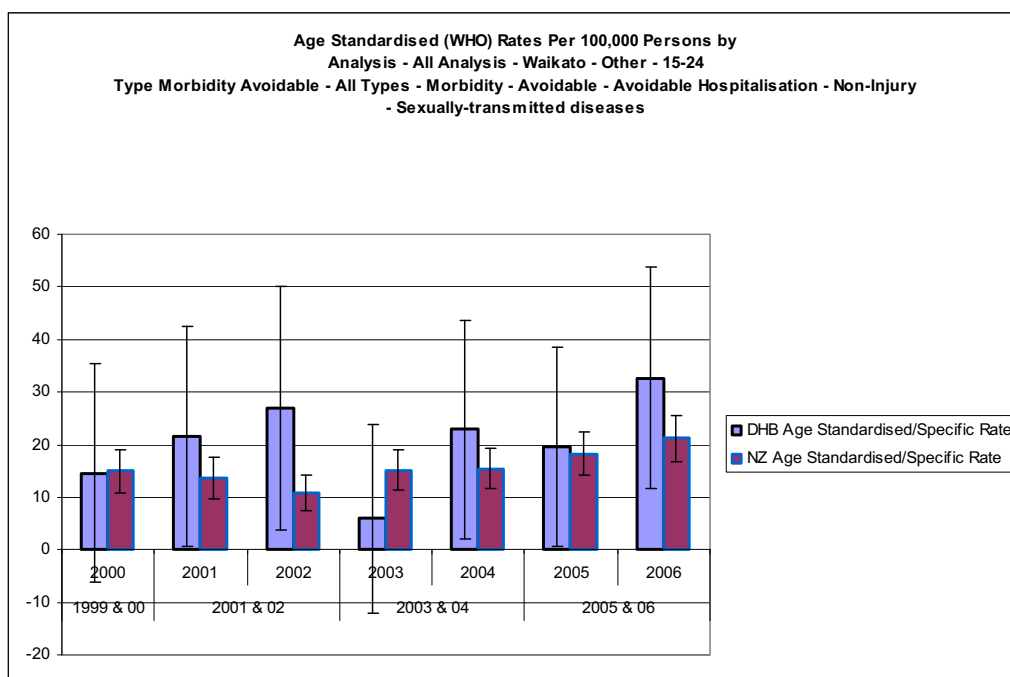
Graph 129: Age standardised rate of avoidable hospitalisation for STIs among Waikato Other ethnic group - Waikato rate compared with NZ rate



The age specific rate among Other ethnic group aged 15-24 years old increased to 32.7 per 100,000 in 2006.

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Graph 130: Age specific rate of avoidable hospitalisation for STIs among Waikato Other ethnic group aged 15-24 years - Waikato rate compared with NZ rate



The volume of hospitalisation for STIs among the Pacific People was too low for a meaningful age standardised rate calculation.

21.12 HIV / AIDS

In New Zealand, the Human Immunodeficiency Virus (HIV) and Acquired Immuno-Deficiency Syndrome (AIDS) surveillances are carried out by the AIDS Epidemiology Group (AEG).

The information presented in this section is extracted from the report published by the MoH, "HIV - AIDS in New Zealand 2006, Issue 59, February 2007.

Waikato DHB introduced HIV screening for all pregnant women on the 20th of March 2006. The overall objective of the project was to reduce the likelihood of transmission of HIV from an HIV infected mother to her baby before or during birth, or by breastfeeding as treatment can reduce the chance of babies becoming infected from more than 20% to less than 1%. The routine offer of HIV screening was achieved by adding HIV as a sixth blood test to the five already routinely offered as first antenatal bloods by midwives and GPs on the confirmation of pregnancy. The provider and woman could "opt-out" of having an HIV test. All women are now routinely offered an antenatal HIV test.

21.12.1 HIV Infection

A total of 177 people were diagnosed with HIV through antibody testing in New Zealand in 2006.

70 were men infected through sex with other men (MSM), 85 were people infected through heterosexual contact, 2 were children infected through perinatal transmission overseas, for

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8 people information is yet to be received and for 12 people the mode of infection was unknown.

A further 27 people with HIV infection, who had not had an antibody test here, had their first viral load test in New Zealand in this period. These were mostly people who had been previously diagnosed overseas.

The number of heterosexual HIV infections was the highest ever reported in New Zealand in one year. Of the total heterosexual infected with HIV, 84% were believed to have been infected overseas. Similarly, 2006 saw the highest number of females ever reported.

New immigrant HIV screening regulations introduced in November 2005 are likely to have contributed to these increases.

In 2006, five women tested positive for HIV through antenatal screening. One of these women was diagnosed as a direct result of the antenatal HIV screening programme in Waikato.

The majority of cases (85.3%) were aged between 20 and 49 years at time of diagnosis, with 17.2% in the 20-29 years, 40.2% in the 30-39 years and 27.9% in the 40-49 years age groups.

Of the 204 cases, the ethnic compositions were:

- Europeans -- 38.7%
- Maori -- 5.9%
- Pacific People -- 3%
- Mainly African and Asian (Other) ethnicity -- 44.6%
- Unknown ethnicity -- 7.8%

21.12.2 AIDS

- 29 people were notified with AIDS in 2006.
- 14 were men infected through sex with other men and 15 were people infected through heterosexual contact.
- 13 were European, 3 Maori, 2 Pacific people, 6 Africans and 5 Asians.

Similarly to HIV, 89.6% were aged between 20-49 years at the time of notification. However, the age distribution of cases of AIDS was slightly older with 10.3% aged 20-29 years, 37.9% aged 30-39 years and 41.4% aged 40-49 years. The ethnic distribution of AIDS was similar to HIV, with around 40% of cases of each in the European and Other ethnic groups.

There were 4 deaths (2 females and 2 males) from AIDS during the year. The number of deaths peaked to 66 in 1992, but has declined steadily over the subsequent years.

21.13 Waikato HIV/AIDS - Avoidable Hospitalisation

Table 316: Avoidable hospitalisation for AIDS - Waikato

Year Group	Total
1999 & 00	0

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2001 & 02	1
2003 & 04	4
2005 & 06	1

There were 6 hospitalisations for HIV/AIDS from 2001 to 2006. As the number is too low no further analysis will be undertaken.

21.13.1 At Risk Groups - Youth, Non Europeans and Neonates

In 2006, those aged <30 years and non-Europeans were disproportionately burdened with STIs.

More than three quarters with concurrent infections were aged <25 years and Maori and Pacific People cases were approximately twice as likely to have concurrent infections compared with European cases.

Young people and non-Europeans were over-represented in complicated Chlamydia and gonorrhoea infection cases, i.e those resulting in PID and epididymitis.

In 2006, based on laboratory data, 135 Chlamydia and 5 gonorrhoea infections were diagnosed in children <1 year old.

These neonatal infections highlight the need to improve STI screening during pregnancy and reinforces that eye infections in neonates require close observation and investigation.

21.14 International Comparisons

It is difficult to meaningfully compare incidence rate between New Zealand and other countries, as the way in which STI surveillance data is collected varies widely between countries.

New Zealand rates are for specific regions only and as rates will vary geographically, may not be representative of the overall New Zealand rate.

Taking the above factors into account, New Zealand's regional STI rates were consistently higher than the national rates for countries such as Australia, United Kingdom and United States.

21.15 STIs - Trends and Summary

Economic and social factors impact on the incidence of STIs in the population. Some of the risk factors are:

- Increasing social and educational deprivation, family violence and poverty, movement of persons across borders and substance use and abuse will continue to affect the incidence of STIs.
- The incidence of HIV infection through sexual contact will continue to rise.

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- As the complexity of sexual health grows there will be an increasing need for specialist practitioners and service provisions in the field of STIs and HIV prevention and disease management.
- As increasing number of young people are faced with the consequences of STIs and AIDS, sexual health must be considered as one of the national strategic priorities.

The data presented in this report, although imperfect and possibly underestimated indicates that:

- A considerable STI burden in New Zealand disproportionately affects some ethnic groups.
- Improvement to surveillance of STI and data collection to capture STI incidence in New Zealand, including private laboratory reporting information is essential. The proposed improvement will ensure alignment of services to the provisions of the Public Health Act (currently being amended) and to decrease the overall STI rates and reduce inequalities in the burden of disease.
- Comprehensive laboratory-based surveillance system that includes ethnicity data is required for medium to long term planning.
- In order to enhance the data collection and to move away from relying on voluntary reporting from the clinics and laboratories, it is essential to make STIs notifiable diseases.
- The distribution of STIs in the Waikato is of concern, as STIs can lead to the development of serious sequelae such as pelvic inflammatory disease, ectopic pregnancy and infertility, cervical cancer, as well as facilitating the transmission of HIV.