

**Laboratory Surveillance of
Chlamydia and Gonorrhoea in Auckland,
Waikato, and Bay of Plenty Regions**

January – March 2003

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by

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Summary

This report presents data on chlamydia and gonorrhoea from all laboratories in Waikato, Bay of Plenty (BOP) and Auckland for the three-month period January to March 2003 (this period will be referred to as “the current period”). It provides annualised¹ incidence data from January 2000 to March 2003.

Chlamydia

- A total of 2944 cases of chlamydia were diagnosed for the current period. The highest incidence of laboratory diagnosed chlamydia for the current period occurred in BOP (785 per 100 000), followed by Waikato (730 per 100 000) and Auckland (628 per 100 000).
- The incidence of chlamydia was higher in females than males in the BOP (1162 and 336 per 100 000 respectively), Waikato (1003 and 444 per 100 000 respectively) and Auckland (906 and 332 per 100 000 respectively). The highest rates of chlamydia in all three regions were in females aged 15-24 years.
- In the Waikato, case numbers for the current period were 33.7% higher than the previous three-month period and 53.7% higher than the July to September period in 1998. In the BOP case numbers were 7.8% higher than for the previous three-month period and 151.4% higher than the July to September period in 1998. In Auckland, case numbers for the current period were 10.7% higher than the previous three-month period and 39.9% higher than the January to March 2001 period.

Gonorrhoea

- A total of 314 cases of gonorrhoea were diagnosed for the current period. The highest incidence of gonorrhoea was in BOP (76 per 100 000), followed by the Waikato (44 per 100 000) and Auckland (78 per 100 000).
- The incidence of gonorrhoea was higher in females than males in the BOP (85 and 66 per 100 000 respectively). In Auckland the incidence was higher in males than females (94 and 62 per 100 000, respectively). In the Waikato the incidence of gonorrhoea was higher in males than females (55 and 33 per 100 000 respectively). The highest rate of gonorrhoea in Auckland was found in males aged 20 -24 years (374 per 100 000). The highest rate of gonorrhoea in the BOP was found in females aged 15-19 years (809 per 100 000). The highest rate of gonorrhoea in Waikato was found in males aged 20-24 years (279 per 100 000).
- Auckland gonorrhoea case numbers were 28% higher than case numbers for the previous three-month period and 200% higher than January to March 1997 when data were first collated. In Waikato, case numbers for the current period were 41% higher than the previous three-month period and 278% higher than the July to September period in 1998. In the BOP, case numbers for the current period were 12% higher than the previous three months and 2% lower than July to September 1998.

¹Annualised: An incidence rate correction has been applied to quarterly rates (x4) or six monthly rates (x2) to reflect probable annual incidence rates. This is calculated for comparison purposes and is possible, as STI's are not affected by seasonality.

Introduction

Historically, surveillance of sexually transmitted infections (STIs) in New Zealand has been based on data collected by sexual health clinics. In July 1998, STI surveillance was expanded to include laboratory surveillance of chlamydia and gonorrhoea in the Waikato and BOP, and in 2001, in Auckland. All laboratories in the Waikato, BOP and Auckland provide data on positive chlamydia and gonorrhoea test results for patients seen by all health providers, including general practitioners, sexual health clinics, and family planning clinics. The provision of complete laboratory data for these regions allows the incidence of chlamydia and gonorrhoea in the general population to be calculated.

This report presents data provided by the Waikato, BOP and Auckland laboratories for the period January to March 2003, and trend data from January 2000.

Methods

All ten laboratories in the Auckland, Waikato, and BOP report to ESR anonymous data on laboratory-confirmed cases of chlamydia and gonorrhoea, by age and sex.

For chlamydia, five laboratories provided age and sex for all test-positive patients and five laboratories provided age and sex for all test-positive specimens. For the purposes of analysis, it was assumed that each test-positive specimen was equivalent to one test-positive patient. For gonorrhoea, all ten laboratories provided age and sex for all test-positive patients.

Analyses of laboratory data were performed in SAS version 8. Annualised population-based disease rates were calculated in Microsoft Excel by dividing the number of test-positive patients or specimens by 2001 census data from the Auckland, Waikato, and BOP regions. For Auckland, census data from South Auckland, Central Auckland and North West Auckland health districts were used. For Waikato, census data from the Waikato health district was used. For the BOP, census data from Tauranga, Eastern BOP, Rotorua and Taupo health districts were used.

Results

Chlamydia Incidence Rates for the Waikato Region: January to March 2003 (Table 1 and Figure 1)

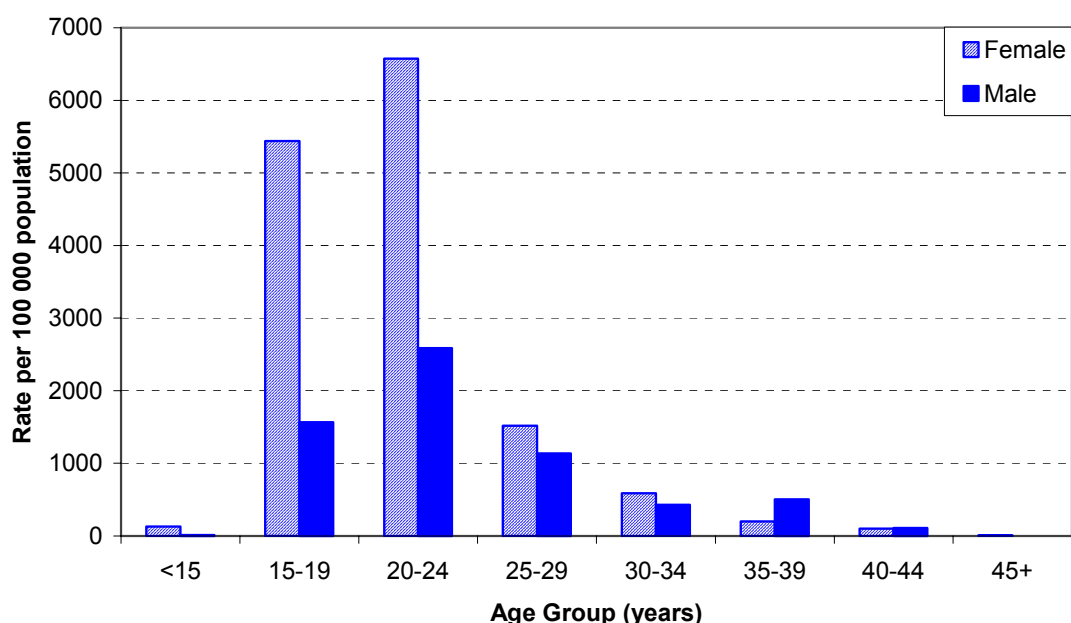
From January to March 2003, laboratories in Waikato tested 5947 specimens for chlamydia, of which 563 (9.5%) specimens or 563 cases (patients) were positive. The male to female case ratio was 1:2.3. The mean age of chlamydia cases was 21.8 years (median age 20.0 years, range 0 to 45 years). Male cases were significantly older than female cases (median age 23.7 years and 21.0 years); $p < 0.05$)

Seventy six percent of all chlamydia cases occurred in people aged 15-24 years. Fourteen cases of chlamydia were reported in people aged less than 15 years. Of these, eleven were aged 14 years, and two were aged less than 12 months. Overall, the highest rates of chlamydia were found among females aged 15-24 years.

**Table 1. Number of cases and rates of chlamydia in Waikato by age group and sex:
January to March 2003**

Agegroup	Number of Cases				Rate per 100 000		
	Female	Male	Unknown	Total	Female	Male	Total
<15	12	1	1	14	132	10	75
15-19	154	47	0	201	5438	1564	3443
20-24	163	65	0	228	6576	2587	4568
>24	65	55	0	120	261	241	252
Unknown	0	0	0	0	-	-	-
All ages	394	168	1	563	1003	444	730

**Figure 1. Rates of chlamydia in Waikato by age group and sex:
January to March 2003**



***Chlamydia incidence rates for the Bay of Plenty Region:
January to March (Table 2 and Figure 2)***

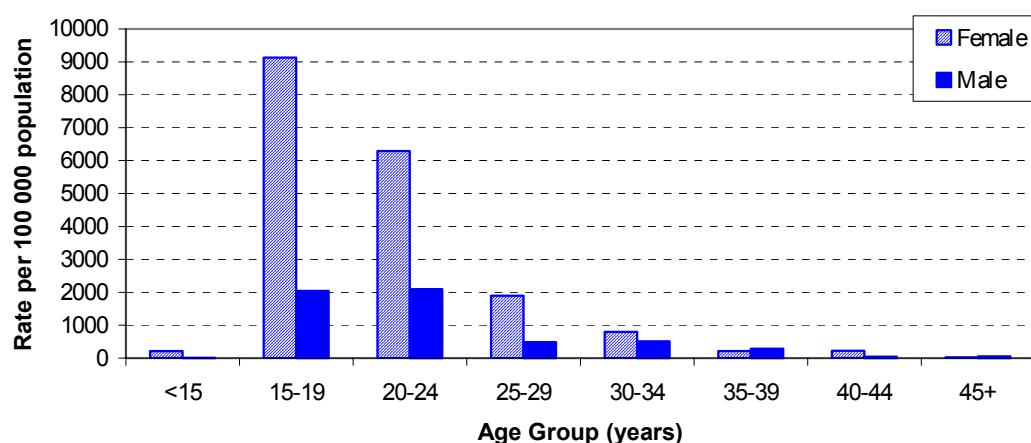
From January to March 2003, laboratories in the BOP tested 4954 specimens for chlamydia, of which 539 (10.8%) specimens or 539 cases (patients) were positive. The male to female case ratio was 1:3.4. The mean age of chlamydia cases was 21.4 years (median age 19 years, range 0 to 84 years). Male cases were significantly older than female cases (mean age 23.5 vs. 20.1 years; $p < 0.05$).

Seventy four percent of all chlamydia cases occurred in people aged 15-24 years. Nineteen cases of chlamydia were reported in people aged less than 15 years. Of these, seventeen were aged 13 to 14 years, and two were aged less than 12 months. Overall, the highest rates of chlamydia were found among females aged 15-24 years.

**Table 2. Number of cases and rates of chlamydia in the BOP by age group and sex:
January to March 2003**

Agegroup	Number of Cases				Rate per 100 000		
	Female	Male	Unknown	Total	Female	Male	Total
<15	18	1	0	19	220	12	113
15-19	203	48	1	252	9126	2040	5505
20-24	111	36	0	147	6293	2096	4222
>24	75	34	0	109	326	164	249
Unknown	2	3	6	11	-	-	-
All ages	409	122	7	538	1162	366	785

**Figure 2. Rates of chlamydia in the BOP by age group and sex:
January to March 2003**



***Chlamydia incidence rates for the Auckland Region:
January to March 2003 (Table 3 and Figure 3)***

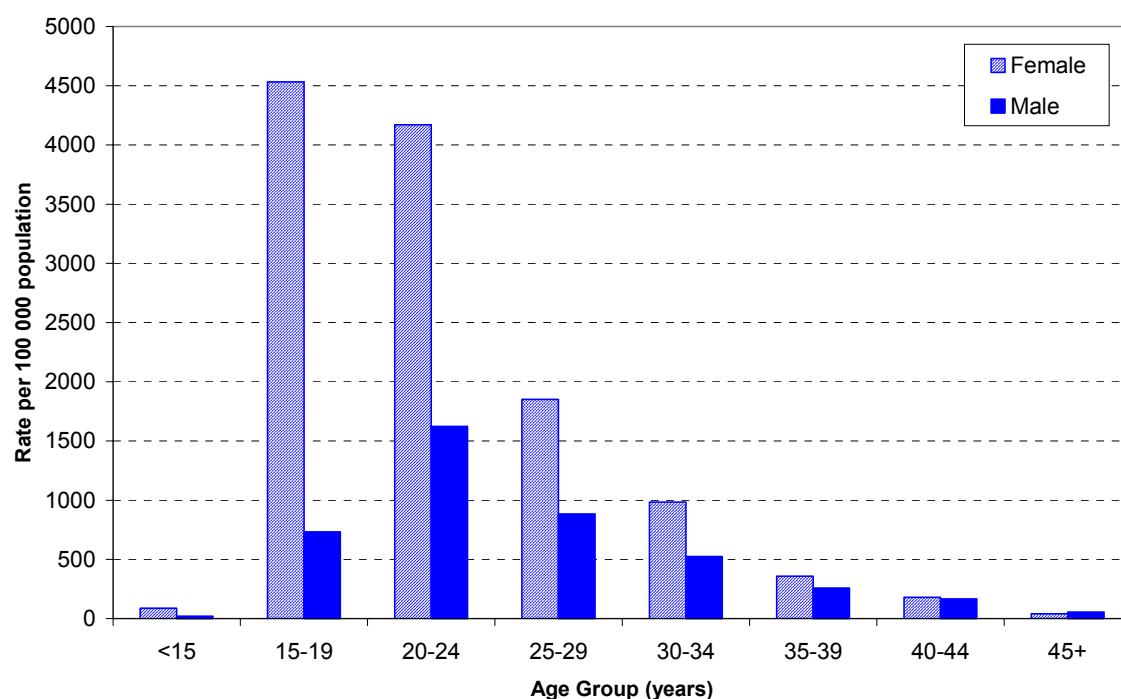
From January to March 2003, laboratories in Auckland tested 29572 specimens for chlamydia, of which 1859 (6.29 %) specimens or 1843 cases (patients) were positive. The male to female case ratio was 1:2.9. The mean age of chlamydia cases was 23.8 years (median age 22 years, range 0 to 70 years). Male cases were significantly older than female cases (mean age 26.3 vs. 22.9 years; $p < 0.05$).

Sixty-three percent of all chlamydia cases occurred in people aged 15-24 years. Thirty-six cases of chlamydia were reported in people aged less than 15 years. Of these, 25 were aged between 10 to 14 years and 10 were aged less than 12 months. Overall, the highest rates of chlamydia were found among females aged 15-19 years.

**Table 3. Number of cases and rates of chlamydia in Auckland by age group and sex:
January to March 2003**

Agegroup	Number				Rate		
	Female	Male	Unknown	Total	Female	Male	Total
<15	29	7	0	36	88	20	53
15-19	474	78	1	553	4533	731	2618
20-24	439	165	0	604	4171	1623	2919
>24	422	223	1	646	436	256	351
Unknown	2	0	2	4	-	-	-
All ages	1,366	473	4	1,843	906	332	628

**Figure 3. Rates of chlamydia in Auckland by age group and sex:
January to March 2003**



Chlamydia trend data: Auckland, Waikato and Bay of Plenty Regions

January to March 2003 (Figure 4)

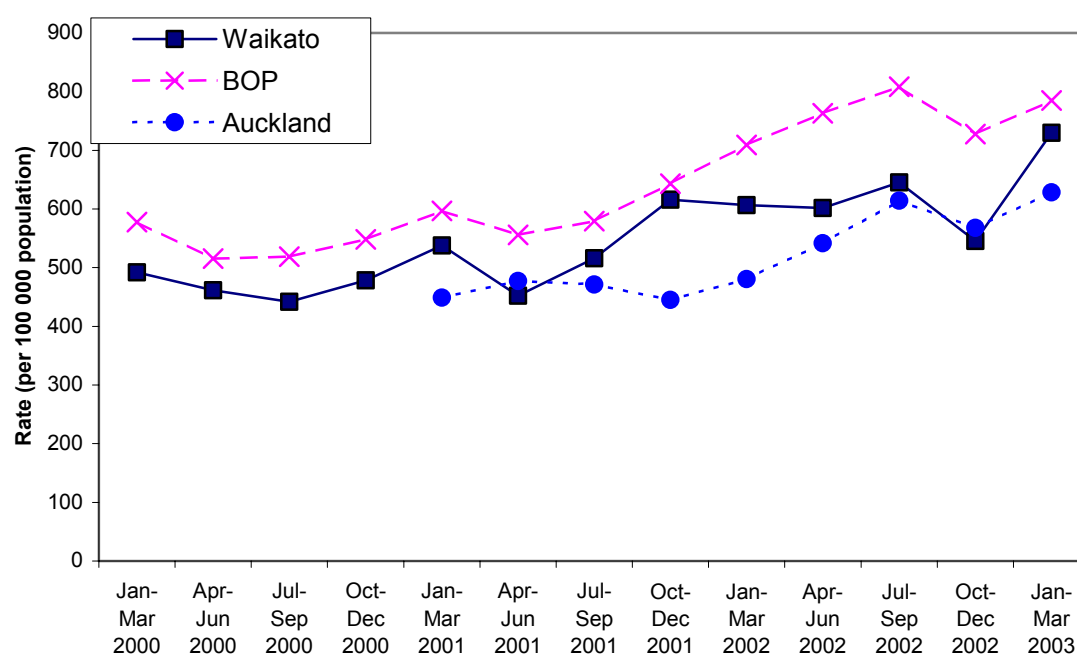
Test numbers in Waikato for the January to March 2003 period were 7% higher than for the previous three-month period and 49% higher than test numbers for the July to September 1998 period, during which data were first collated. In the BOP, test numbers for the current three-month period were 4% higher than the previous three months, and 15% higher than the July to September 1998 period. In Auckland, test numbers for the current three-month period were 10% lower than the previous three months, and 12% higher than the January to March 2001 period, during which data were first collated.

In Waikato, chlamydia case numbers for the current period were higher than case numbers for the previous three-month period (33.7%), and higher than the July to September 1998 period (57.3%). In the BOP, case numbers for the current period were 7.8% higher than the previous three-month period and 151.4% higher than the July to September 1998 period. In Auckland, case numbers for the current period were 10.7% higher than the previous three months and 39.9% higher than the January to March 2001 period.

Rates of chlamydia for the current period were highest in the BOP region (785 per 100 000). The rate of chlamydia in the BOP was not significantly higher than rates in the Waikato (730 per 100 000); however, it was significantly higher than the Auckland region (628 per 100 000) ($p < 0.0001$). The rate of chlamydia in Auckland was significantly higher than the rate in the Waikato Region ($p < 0.05$).

For the current period 14 cases of chlamydia were reported in infants.

Figure 4. Rates of chlamydia reported by region:
January 2000 to March 2003



**Gonorrhoea incidence rates for the Waikato Region:
January to March 2003 (Table 4 and Figure 5)**

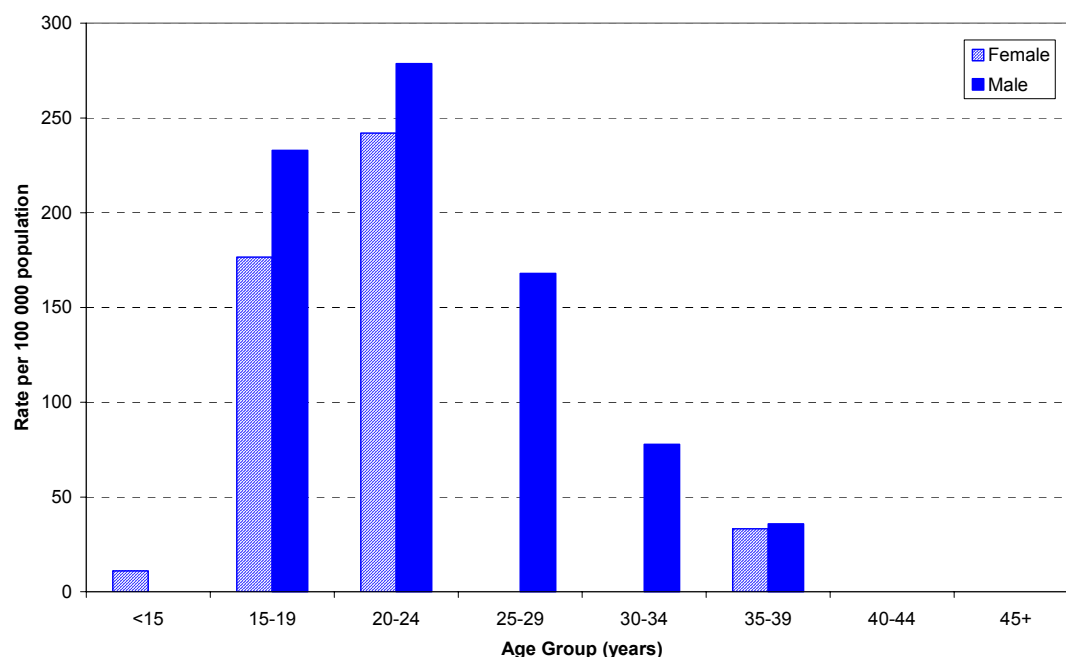
Laboratories in the Waikato region reported 34 patients with positive gonorrhoea test results. The male to female case ratio was approximately 1.6:1. The mean age of gonorrhoea cases was 21.8 years (median 20.5 years, range 14 to 36 years). There was no significant difference between the age of males and females (mean age 22.6 vs. 20.6 years).

Seventy four percent of all reported gonorrhoea cases occurred in people aged 15-24 years. Overall rates of gonorrhoea were higher in males than females. The highest age-specific rates of gonorrhoea were found in males aged 20-24 years and females aged 20-24 years (fig. 5).

**Table 4. Number of cases and rates of gonorrhoea in the Waikato region by age group and sex:
January to March 2003**

Agegroup	Number of Cases				Rate per 100 000		
	Female	Male	Unknown	Total	Female	Male	Total
<15	1	0	0	1	11	0	5
15-19	5	7	0	12	177	233	206
20-24	6	7	0	13	242	279	260
>24	1	7	0	8	4	31	17
Unknown	0	0	0	0			
All ages	13	21	0	34	33	55	44

**Figure 5. Rates of gonorrhoea in the Waikato region by age group and sex:
January to March 2003**



**Gonorrhoea incidence rates for the Bay of Plenty Region:
January to March 2003 (Table 5 and Figure 6)**

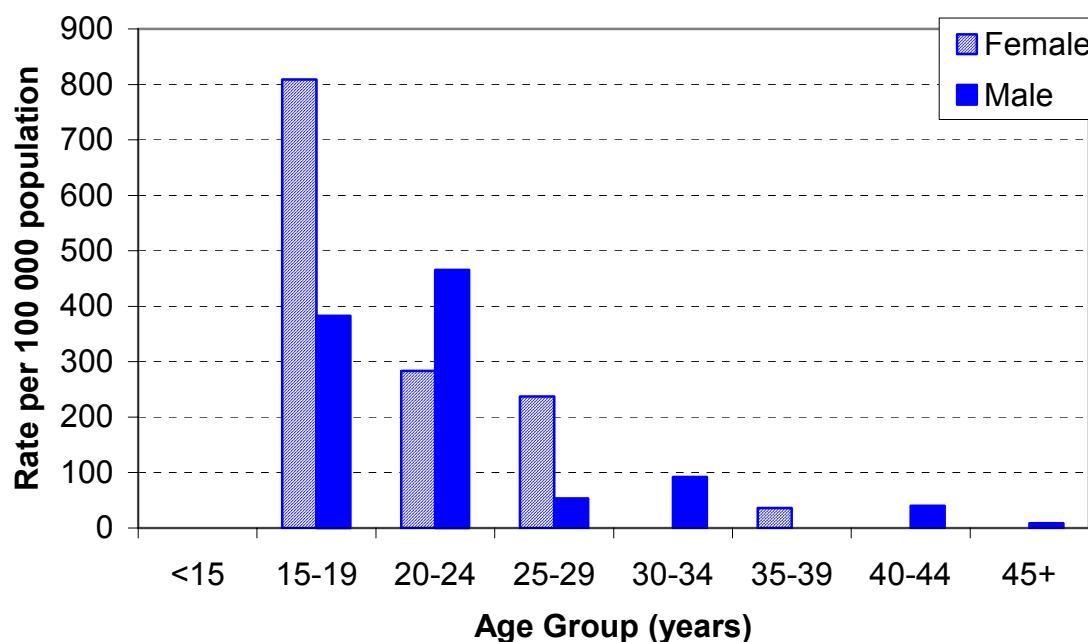
Laboratories in the BOP reported 52 patients with positive gonorrhoea test results. The male to female case ratio was 0.7:1. The mean age of gonorrhoea cases was 21.5 years (median 18 years, range 15 to 48 years). There was no significant difference between the age of males and females (mean age 22.8 vs. 20 years).

Seventy four percent of all reported gonorrhoea cases occurred in people aged 15-24 years. Overall rates of gonorrhoea were higher in females than males and the highest age-specific rates of gonorrhoea were found among females aged 15-24 years (fig.6).

**Table 5. Number of cases and rates of gonorrhoea in the BOP by age group and sex:
January to March 2003**

Agegroup	Number of Cases				Rate per 100 000		
	Female	Male	Unknown	Total	Female	Male	Total
<15	0	0	0	0	0	0	0
15-19	18	9	0	27	809	383	590
20-24	5	8	0	13	283	466	373
>24	6	5	0	11	26	24	25
Unknown	1	0	0	1	-	-	-
All ages	30	22	0	52	85	66	76

**Figure 6. Rates of gonorrhoea in the BOP by age group and sex:
January to March 2003**



**Gonorrhoea incidence rates for the Auckland Region:
January to March 2003 (Table 6 and Figure 7)**

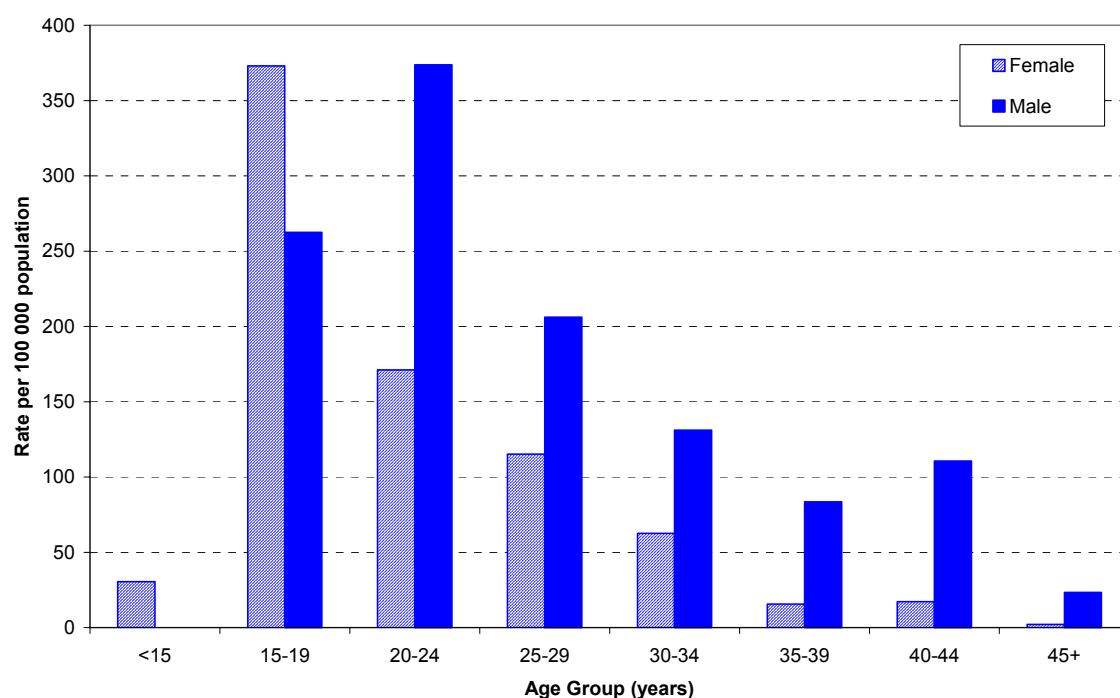
Laboratories reported 228 patients with positive gonorrhoea test results. The male to female case ratio was approximately 1.4:1. The mean age of gonorrhoea cases was 24.9 years (median 22 years, range 0 to 56 years). Male cases were significantly older than female cases (mean age 27.7 vs. 20.8 years; $p < 0.05$).

Fifty-four percent of all reported gonorrhoea cases occurred in people aged 15-24 years. Ten cases were reported in people aged less than 15 years. Seven of these were aged 10-14 years old and three were less than 1 year old. Overall rates of gonorrhoea were higher in males than females, and the highest age-specific rate of gonorrhoea was found in males aged 20-24 years (fig. 7).

**Table 6. Number of cases and rates of gonorrhoea in Auckland by age group and sex:
January to March 2003**

Agegroup	Number of Cases				Rate per 100 000		
	Female	Male	Unknown	Total	Female	Male	Total
<15	10	0	0	10	30	0	15
15-19	39	28	0	67	373	263	317
20-24	18	38	0	56	171	374	271
>24	26	68	0	94	27	78	51
Unknown	1	0	0	1			
All ages	94	134	0	228	62	94	78

**Figure 7. Rates of gonorrhoea in Auckland by age group and sex:
January to March 2003**

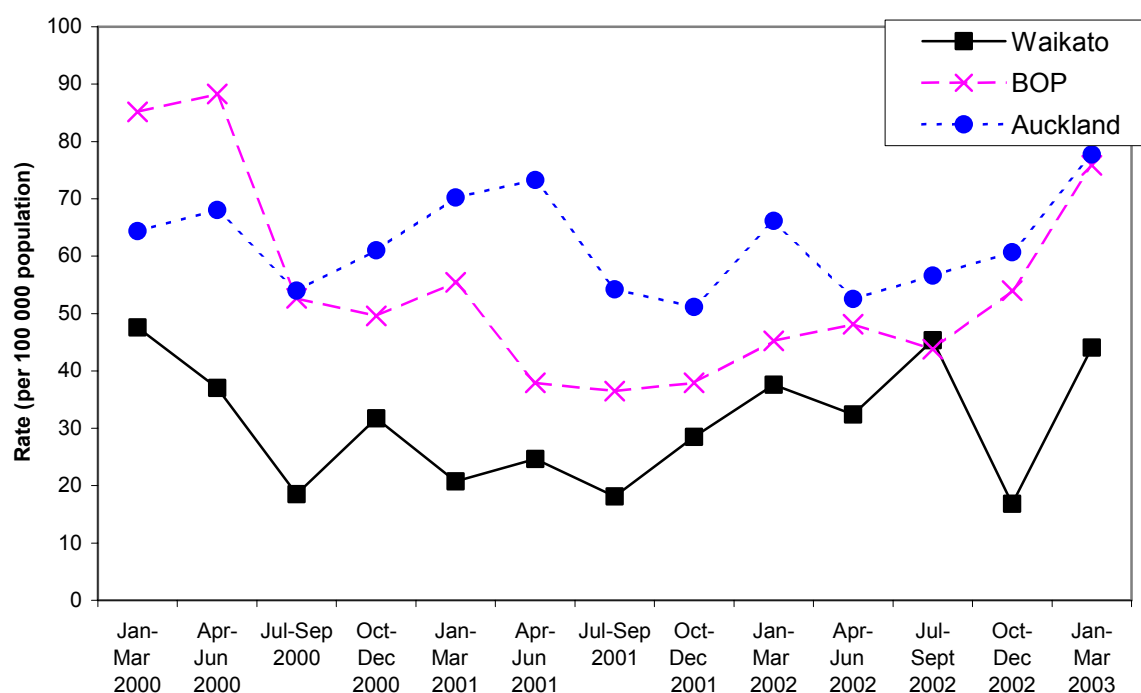


Gonorrhoea trend data: Auckland, Waikato and Bay of Plenty Regions
January to March 2003 (Figure 8)

In Waikato, case numbers for the current period were higher (162%) than the previous three-month period and 278% higher than the July to September 1998 period, when testing began. In the BOP, case numbers for the current period were higher (41%) than the previous three months and 2% lower than October to December 1998. In Auckland, gonorrhoea case numbers for the current period were 28% higher than case numbers for the previous three-month period and 200% higher than January to March 1997, the period when data were first collated.

The rate of gonorrhoea for the current period was highest in Auckland (78 per 100 000). The rate of gonorrhoea in Auckland was not significantly higher than rates in BOP (76 per 100 000); however, it was significantly higher than in the Waikato region (44 per 100 000) ($p < 0.05$). There was a significant difference between the rate of gonorrhoea in the BOP and Waikato regions ($p < 0.05$).

Figure 8. Rates of gonorrhoea reported by region:
January 2000 to March 2003



Commentary

Chlamydia

During the first quarter of 2003, the incidence of chlamydia increased in all three regions (Auckland, the BOP and Waikato), particularly in Waikato with a 33.7% increase from the previous period. However, the rate of chlamydia remained highest in the BOP region (785 cases per 100 000), followed by Waikato (730 per 100 000) and Auckland (628 cases per 100 000).

Sex specific rates of chlamydia have remained high for females compared with males. The highest rates for all three regions were in females aged 15-24 years. The highest rate was found in women in the BOP aged 15-19 years (9126 per 100 000).

Gonorrhoea

The incidence of gonorrhoea increased in all three regions for the current period. Auckland had the highest rate (78 per 100 000), followed by the BOP (76 per 100 000) and Waikato (44 per 100 000).

The decline of gonorrhoea in Waikato reported last quarter was the biggest decrease during the last two years, reaching the lowest rate since 1998, when the laboratory surveillance commenced. However, given the increase seen during this quarter to levels similar to those of July to September, 2002, the drop can be considered a fluctuation due to reporting practices, seasonal variations or a combination of both.

The majority of gonorrhoea cases during the current period were reported in people aged 15-24 years, of which BOP reported the highest proportion of cases in the age group (77%), followed by the Waikato (74%) and Auckland (54%).