

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

July – September 2003

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by

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- Waikato Hospital Laboratory, Hamilton
- Whakatane Hospital Laboratory, Whakatane

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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 July to September 2003 (this period will be referred to as “the current period”). It provides annualised¹ incidence data from January 2000 to September 2003.

Chlamydia

- A total of 2789 cases of chlamydia were diagnosed for the current period. The highest incidence of laboratory diagnosed chlamydia for the current period occurred in BOP (721 per 100 000), followed by Waikato (688 per 100 000) and Auckland (601 per 100 000).
- The incidence of chlamydia was higher in females than males in BOP (1069 and 351 per 100 000 respectively), Waikato (960 and 404 per 100 000 respectively) and Auckland (824 and 361 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 19.4% lower than the previous three-month period and 48.3% higher than the July to September period in 1998. In the BOP case numbers were 7.5% lower than for the previous three-month period and 130.8% higher than the July to September period in 1998. In Auckland, case numbers for the current period were 2.9% lower than the previous three-month period and 33.9% higher than the January to March 2001 period.

Gonorrhoea

- A total of 277 cases of gonorrhoea were diagnosed for the current period. The highest incidence of gonorrhoea was in BOP (76 per 100 000), followed by Auckland (69 per 100 000) and Waikato (30 per 100 000).
- The incidence of gonorrhoea was higher in males than females in all three regions. BOP (81 and 71 per 100 000 respectively), Auckland (89 and 50 per 100 000, respectively) and the Waikato (42 and 18 per 100 000 respectively). The highest rate of gonorrhoea in Auckland was found in females aged 15-19 years (363 per 100 000). The highest rate of gonorrhoea in the BOP was found in females aged 15-19 years (719 per 100 000). The highest rate of gonorrhoea in Waikato was found in males aged 20-24 years (199 per 100 000).
- Auckland gonorrhoea case numbers were 14.4% lower than case numbers for the previous three-month period and 166% higher than January to March 1997 when data were first collated. In Waikato, case numbers for the current period were 53% lower than the previous three-month period and 156% higher than the July to September period in 1998. In the BOP, case numbers for the current period were 6% 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 July to September 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: July to September 2003 (Table 1 and Figure 1)

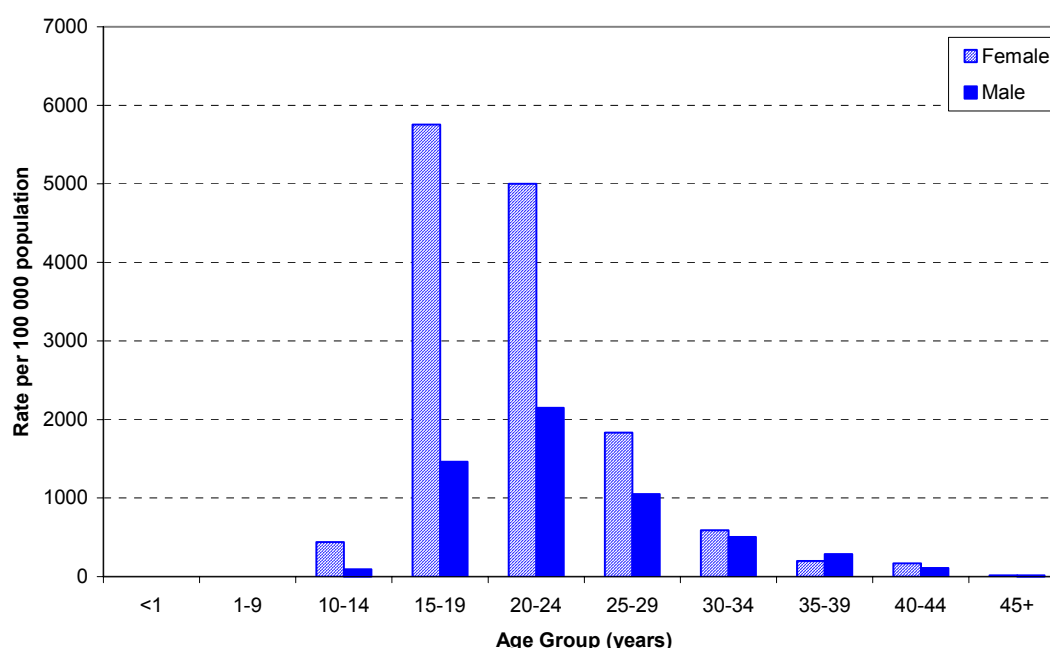
From July to September 2003, laboratories in Waikato tested 6369 specimens for chlamydia, of which 531 (8.3%) specimens or 531 cases (patients) were positive. The male to female case ratio was 1:2.5. The mean age of chlamydia cases was 21.8 years (median age 20 years, range 12 to 52 years). Male cases were significantly older than female cases (mean age 23.5 years and 21.1 years); $p < 0.05$)

Seventy two percent of all chlamydia cases occurred in people aged 15-24 years. Eighteen cases of chlamydia were reported in people aged less than 15 years. Of these, thirteen were aged 14 years, three were aged 13 and two were aged 12. 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:
July to September 2003**

Agegroup	Number				Annualised Rate		
	Female	Male	Unknown	Total	Female	Male	Total
<1	0	0	0	0	0	0	0
1-9	0	0	0	0	0	0	0
10-14	14	3	1	18	440	92	280
15-19	163	44	0	207	5756	1464	3546
20-24	124	54	0	178	5003	2149	3566
>24	76	51	0	127	306	224	266
Unknown	0	1	0	1	-	-	-
All ages	377	153	1	531	960	404	688

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



Chlamydia incidence rates for the Bay of Plenty Region:

July to September 2003 (Table 2 and Figure 2)

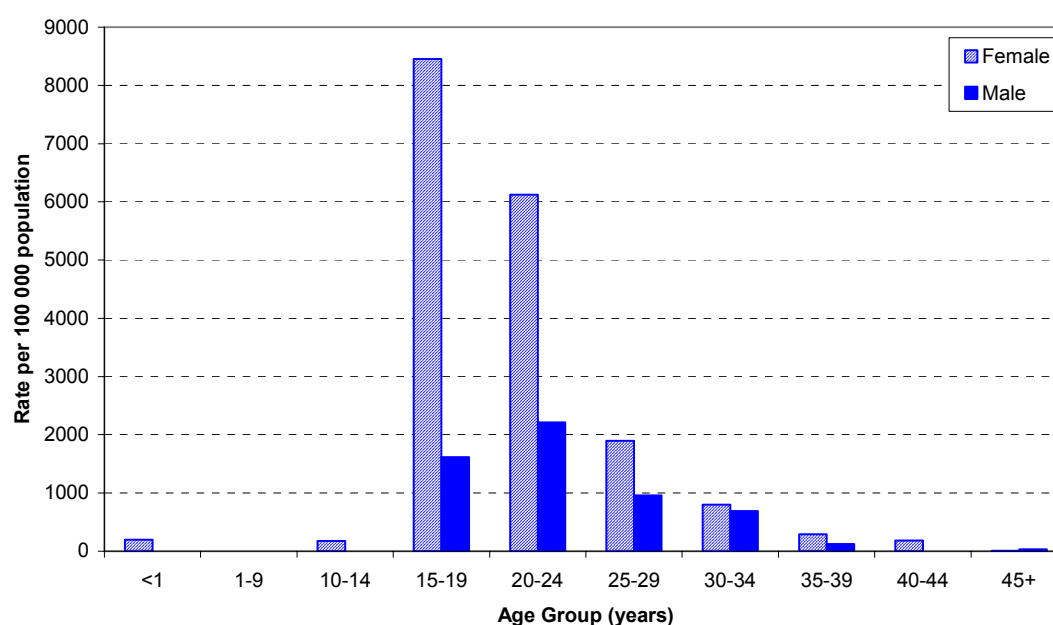
From July to September 2003, laboratories in the BOP tested 5347 specimens for chlamydia, of which 489 (9.1%) specimens or 489 cases (patients) were positive. The male to female case ratio was 1:3.2. The mean age of chlamydia cases was 21.6 years (median age 20 years, range 0 to 50 years). Male cases were significantly older than female cases (mean age 23.8 vs. 21 years; $p < 0.0001$).

Seventy five percent of all chlamydia cases occurred in people aged 15-24 years. Six cases of chlamydia were reported in people aged less than 15 years. Of these, five were aged 13 to 14 years and one was 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:
July to September 2003**

Agegroup	Number				Annualised Rate		
	Female	Male	Unknown	Total	Female	Male	Total
<1	1	0	0	1	200	0	97
1-9	0	0	0	0	0	0	0
10-14	5	0	0	5	175	0	87
15-19	188	38	0	226	8451	1615	4937
20-24	108	38	0	146	6122	2213	4194
>24	74	40	0	114	322	193	261
Unknown	0	1	1	2	-	-	-
All ages	376	117	1	494	1069	351	721

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



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

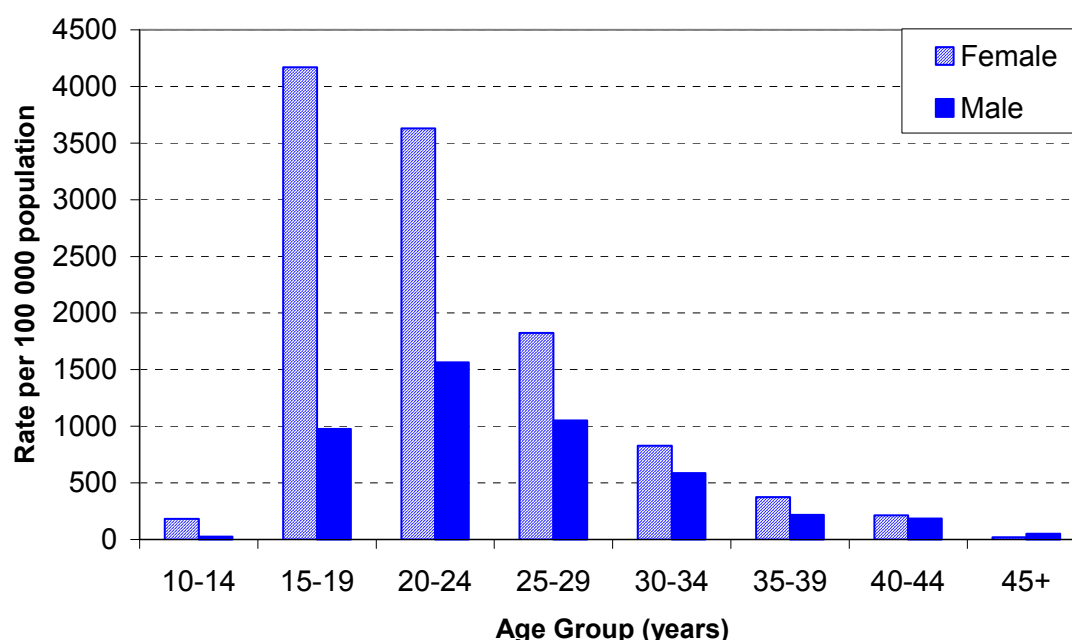
From July to September 2003, laboratories in Auckland tested 28672 specimens for chlamydia, of which 1773 (6.2%) specimens or 1766 cases (patients) were positive. The male to female case ratio was 1:2.4. The mean age of chlamydia cases was 23.8 years (median age 22 years, range 0 to 81 years). Male cases were significantly older than female cases (mean age 26 vs. 22.9 years; $p < 0.0001$).

Sixty two percent of all chlamydia cases occurred in people aged 15-24 years. Thirty-four cases of chlamydia were reported in people aged less than 15 years. Of these, 23 were aged between 10 to 14 years and 11 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:
July to September 2003**

Agegroup	Number				Annualised Rate		
	Female	Male	Unknown	Total	Female	Male	Total
<1	7	4	0	11	310	169	238
1-9	0	0	0	0	0	0	0
10-14	20	3	0	23	183	26	103
15-19	436	104	1	541	4170	975	2561
20-24	382	159	5	546	3629	1564	2639
>24	395	242	0	637	408	278	346
Unknown	2	2	2	6	-	-	-
All ages	1,242	514	8	1,764	824	361	601

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



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

July to September 2003 (Figure 4)

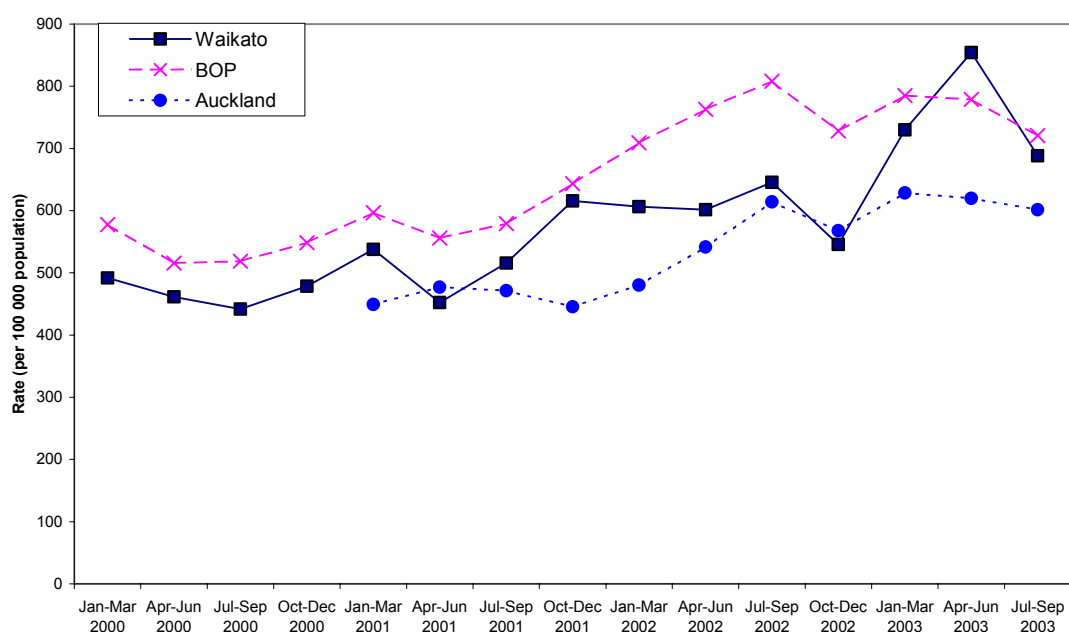
Test numbers in Waikato for the current period were 4% higher than for the previous three-month period and 59% higher than test numbers for the July to September 1998 period, during which data were first collated. In the BOP, test numbers for the current three-month period were 12% lower than the previous three months, and 24% higher than the July to September 1998 period. In Auckland, test numbers for the current three-month period were 8% higher than the previous three months, and 41% higher than the January to March 2001 period, during which data were first collated.

In Waikato, chlamydia case numbers for the current period were lower than case numbers for the previous three-month period (19.4%), and higher than the July to September 1998 period (48.3%). In the BOP, case numbers for the current period were 7.5% lower than the previous three-month period and 130.8% higher than the July to September 1998 period. In Auckland, case numbers for the current period were 2.9% lower than the previous three months and 41% higher than the January to March 2001 period.

Rates of chlamydia for the current period were highest in the BOP region (721 per 100 000). The rate of chlamydia in the BOP was not significantly higher than rates in Waikato (688 per 100 000); however, it was significantly higher than the Auckland region (601 per 100 000) ($p < 0.05$). The rate of chlamydia in Waikato was significantly higher than the rate in the Auckland Region ($p < 0.05$).

For the current period 12 cases of chlamydia were reported in infants.

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



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

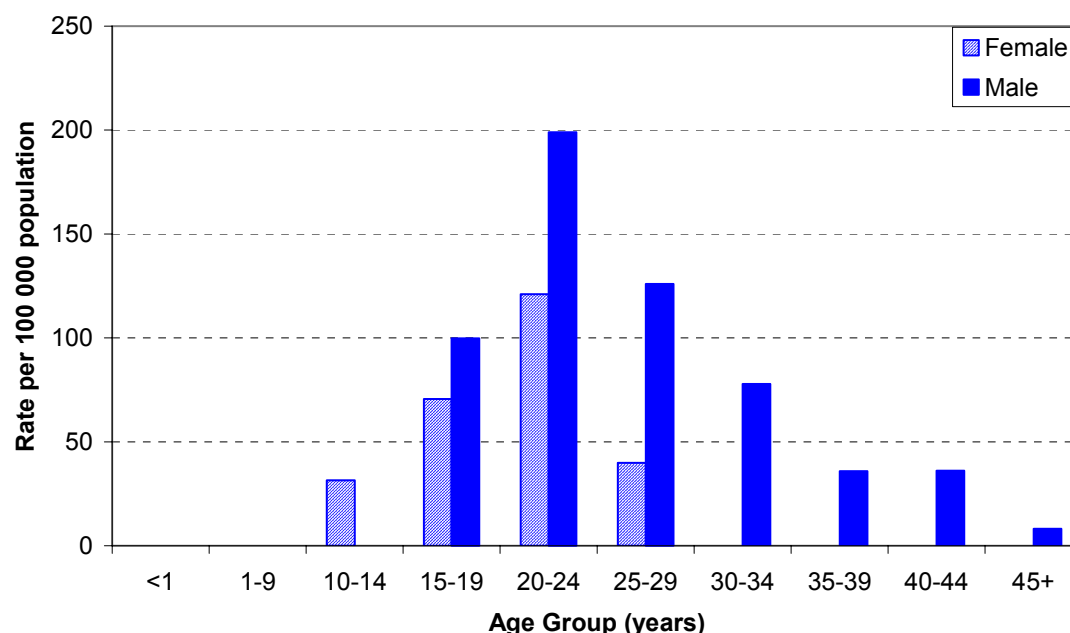
Laboratories in the Waikato region reported 23 patients with positive gonorrhoea test results. The male to female case ratio was approximately 1:0.4. The mean age of gonorrhoea cases was 25 years (median 23 years, range 14 to 45 years). There was no significant difference between the age of males and females (mean age 27.1 vs. 20.3 years).

Fifty seven 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 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:

July to September 2003							
Agegroup	Number				Annualised Rate		
	Female	Male	Unknown	Total	Female	Male	Total
<1	0	0	0	0	0	0	0
1-9	0	0	0	0	0	0	0
10-14	1	0	0	1	31	0	16
15-19	2	3	0	5	71	100	86
20-24	3	5	0	8	121	199	160
>24	1	8	0	9	4	35	19
Unknown	0	0	0	0	-	-	-
All ages	7	16	0	23	18	42	30

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



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

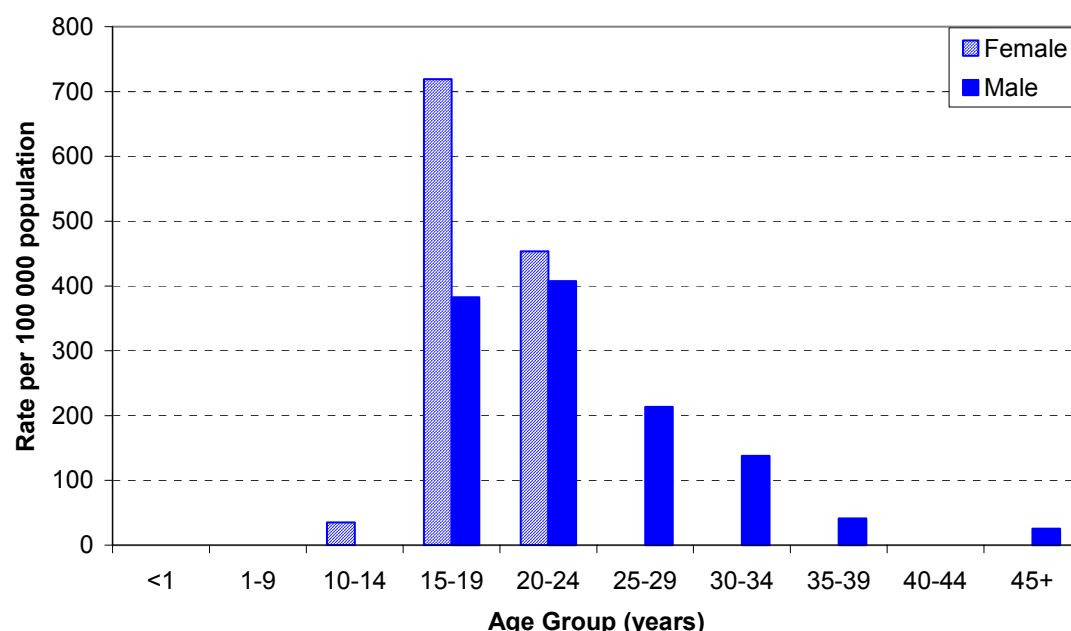
Laboratories in the BOP reported 52 patients with positive gonorrhoea test results. The male to female case ratio was 1:0.9. The mean age of gonorrhoea cases was 22.3 years (median 19.5 years, range 13 to 56 years). There was no significant difference between the age of males and females (mean age 25.9 vs. 18.5 years).

Seventy seven percent of all reported gonorrhoea cases occurred in people aged 15-24 years. Overall rates of gonorrhoea were higher in males than females 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:
July to September 2003**

Agegroup	Number				Annualised Rate		
	Female	Male	Unknown	Total	Female	Male	Total
<1	0	0	0	0	0	0	0
1-9	0	0	0	0	0	0	0
10-14	1	0	0	1	35	0	17
15-19	16	9	0	25	719	383	546
20-24	8	7	0	15	454	408	431
>24	0	11	0	11	0	53	25
Unknown	0	0	0	0	-	-	-
All ages	25	27	0	52	71	81	76

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



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

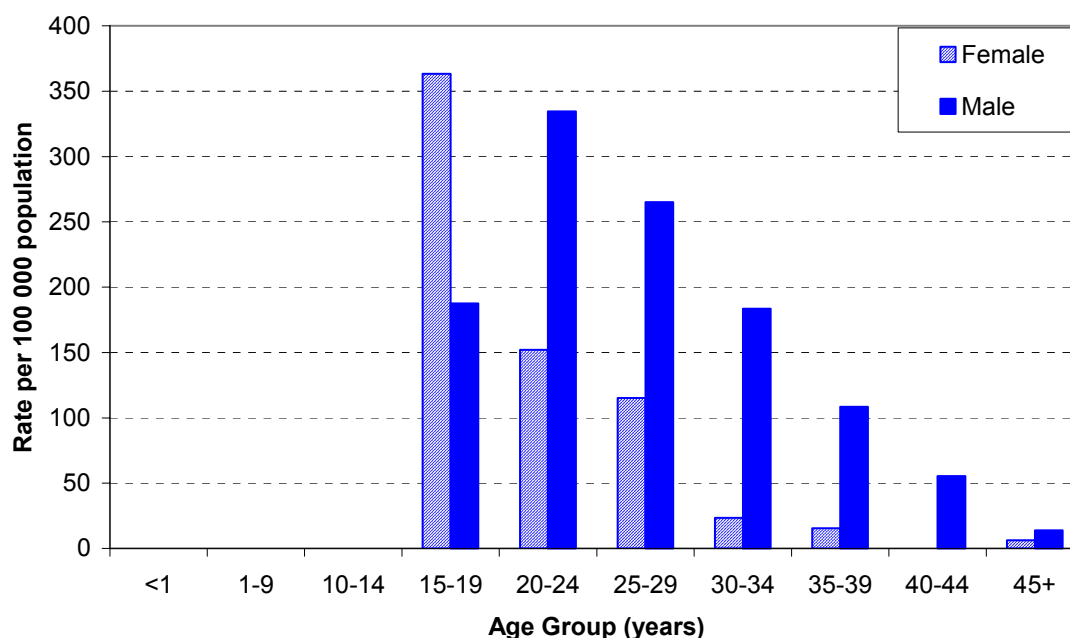
Laboratories reported 202 patients with positive gonorrhoea test results. The male to female case ratio was approximately 1:0.6. The mean age of gonorrhoea cases was 25.6 years (median 24 years, range 15 to 54 years). Male cases were significantly older than female cases (mean age 27.7 vs. 22.2 years; $p < 0.0001$).

Fifty four percent of all reported gonorrhoea cases occurred in people aged 15-24 years. No cases were reported in people aged less than 15 years. Overall rates of gonorrhoea were higher in males than females, and the highest age-specific rate of gonorrhoea was found in females aged 15-19 years (fig. 7).

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

Agegroup	Number				Annualised Rate		
	Female	Male	Unknown	Total	Female	Male	Total
<1	0	0	0	0	0	0	0
1-9	0	0	0	0	0	0	0
10-14	0	0	0	0	0	0	0
15-19	38	20	0	58	363	188	275
20-24	16	34	0	50	152	334	242
>24	21	73	0	94	22	84	51
Unknown	0	0	0	0	-	-	-
All ages	75	127	0	202	50	89	69

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

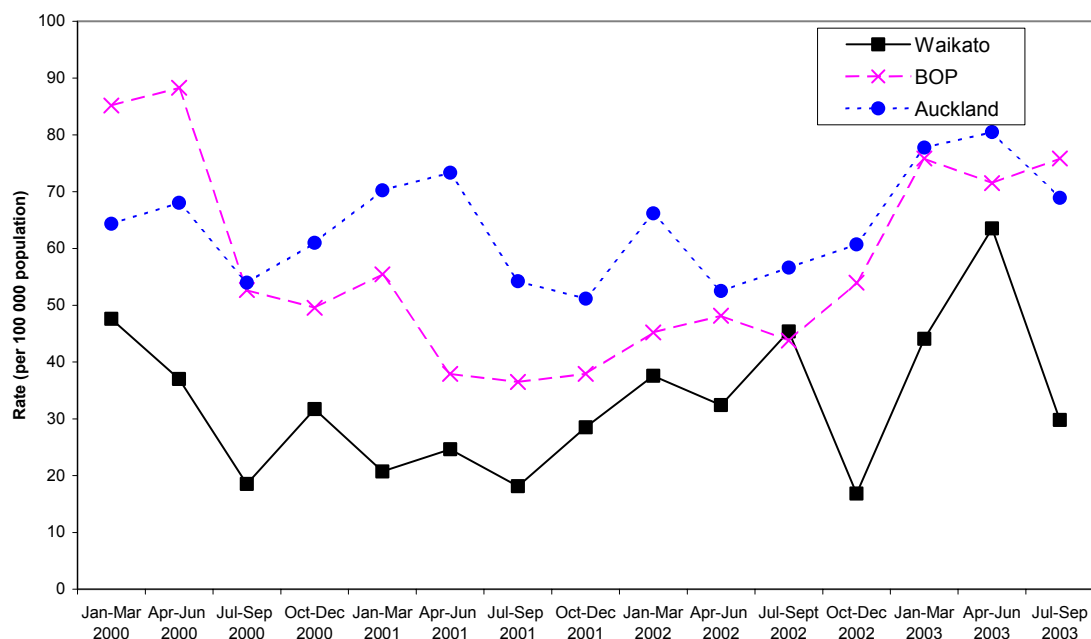


Gonorrhoea trend data: Auckland, Waikato and Bay of Plenty Regions
July to September 2003 (Figure 8)

In Waikato, case numbers for the current period were lower (53%) than the previous three-month period and 156% higher than the July to September 1998 period, when testing began. In the BOP, case numbers for the current period were higher (6%) than the previous three months and 2% lower than October to December 1998. In Auckland, gonorrhoea case numbers for the current period were 14% lower than case numbers for the previous three-month period and 166% higher than January to March 1997, the period when data were first collated.

The rate of gonorrhoea for the current period was highest in the BOP region (76 per 100 000). The rate of gonorrhoea in the BOP region was not significantly higher than in Auckland (69 per 100 000), however, it was significantly higher than in the Waikato region (30 per 100 000) ($p<0.05$). The rate of gonorrhoea in the Auckland region was significantly higher than the rate in the Waikato Region ($p<0.05$).

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



Commentary

Chlamydia

During the current quarter, there was a decrease in the incidence of chlamydia in all regions. The rate of chlamydia was highest in the BOP region (721 cases per 100 000), followed by Waikato (688 per 100 000) and Auckland (601 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 (8451 per 100 000).

Gonorrhoea

The incidence of gonorrhoea decreased in Waikato and Auckland, however, there was a 7% increase in the BOP region. BOP had the highest rate (76 per 100 000), followed by the Auckland (76 per 100 000) and Waikato (30 per 100 000).

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 (57%) and Auckland (54%).