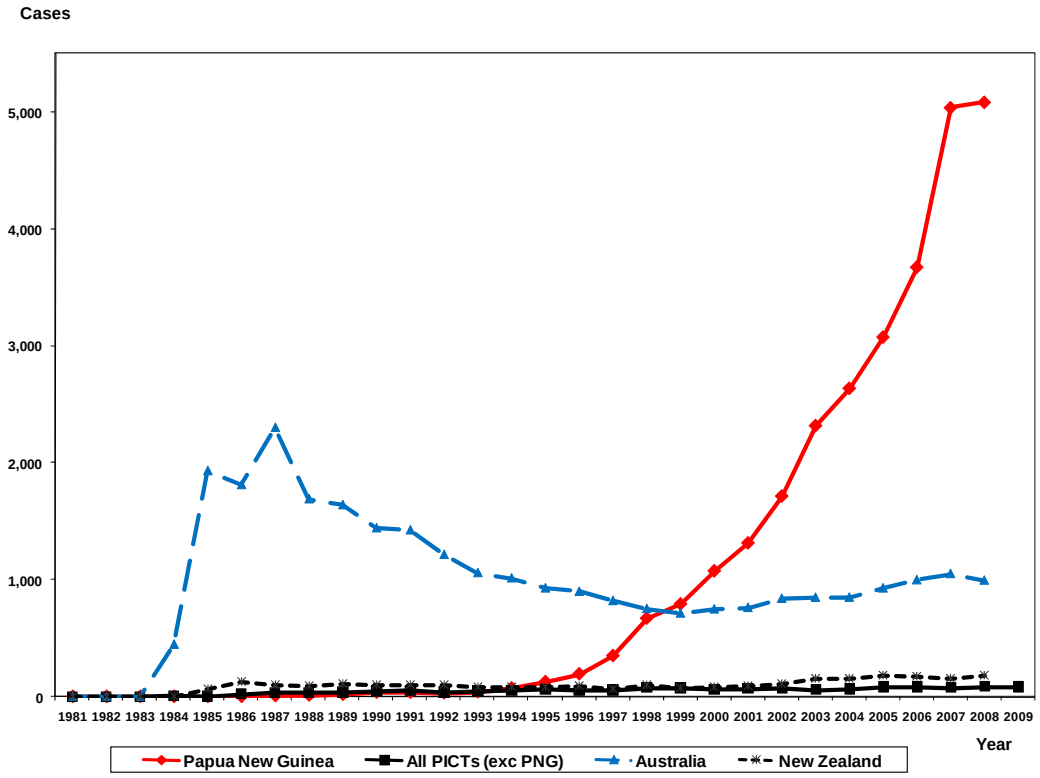
HIV Epidemiological Update for Pacific Island Countries 2008 and 2009

Data is available for new diagnoses of Human Immunodeficiency Virus (HIV) infections from all Pacific Island Countries and Territories (PICTs) except Papua New Guinea (PNG) for the year to December 2009 and to December 2008 for PNG, Australia and New Zealand. In 2008, there were 5,169 new HIV diagnoses reported in Pacific Island Countries and Territories (PICTs), and diagnoses in PNG accounted for 5,084 or 98.4% of notifications.[1] Excluding PNG, the annual number of new HIV diagnoses reported in PICTs was 85 cases in 2008 and 82 in 2009. Figure 1 shows the annual reported HIV cases in PNG, Australia and New Zealand from 1981 to 2008 and 1981-2009 for all other PICTs.

Figure 1: **Annual Reported HIV Cases: PNG, Australia and New Zealand 1981-2008 and other PICTs 1981-2009**

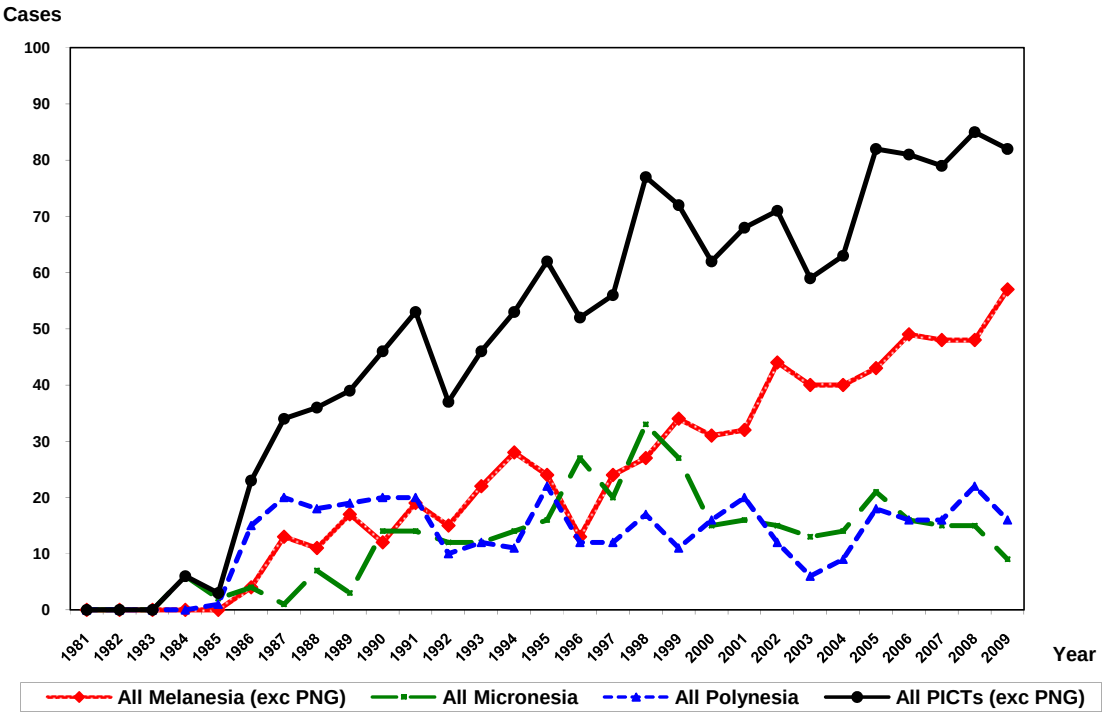


Between 1995 and 2007 there was an exponential increase in the number of HIV cases reported in PNG each year. There has, however, also been a substantial increase in the number of HIV tests carried out each year. Therefore the increase in reported cases alone does not necessarily imply an increase in either incidence (the number of newly acquired HIV infections) or prevalence (the percentage of the population living with HIV infection). The 2008 data shows only a small increase over 2007 annual reported HIV infections in PNG.

The annual number of HIV cases reported in Australia peaked in 1987 and then decreased until 1999, from which time there has been a slight upward trend to 2008. The very low numbers of annual reported HIV cases in New Zealand and PICTs hardly register on the scale in Figure 1, but Figure 2 shows annual reported cases in PICTS only, excluding PNG.

[1] Cumulative reported HIV, AIDS and AIDS deaths. Secretariat of the Pacific Community June 2010 http://www.spc.int/hiv/

Figure 2: **Annual Reported HIV Cases in Melanesia (excl PNG), Micronesia, Polynesia and PICTs (excl PNG), 1981-2009**

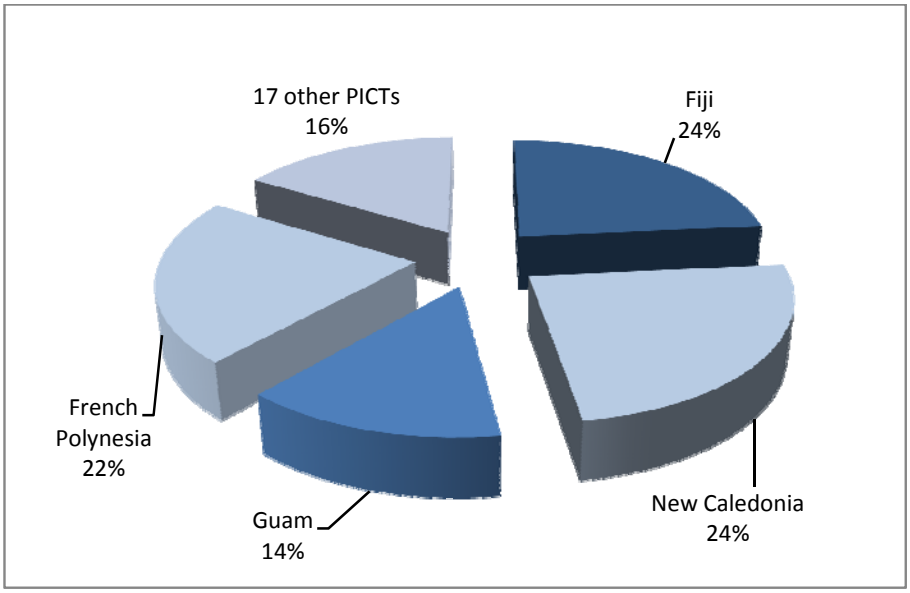


There has been a steady increase in the number of HIV cases reported annually in all PICTs since 1985, due primarily to the increase in cases reported in Fiji. The number of annual reported HIV cases in Polynesia has been relatively constant since 1986, and annual reported case numbers in Micronesia have fallen steadily from a peak in 1998. As the volume of HIV tests carried out each year has not been previously reported, it is not possible to determine from this data whether there has been any change in the HIV positivity rate.

Testing has increased significantly in recent years and has not, so far, resulted in a concurrent increase in reported HIV infections. However, testing is predominantly undertaken among populations with low levels of risk behaviour, primarily blood donors and women attending antenatal clinics. With limited testing of most-at-risk groups, it is likely that there is underreporting of HIV in the Pacific region.

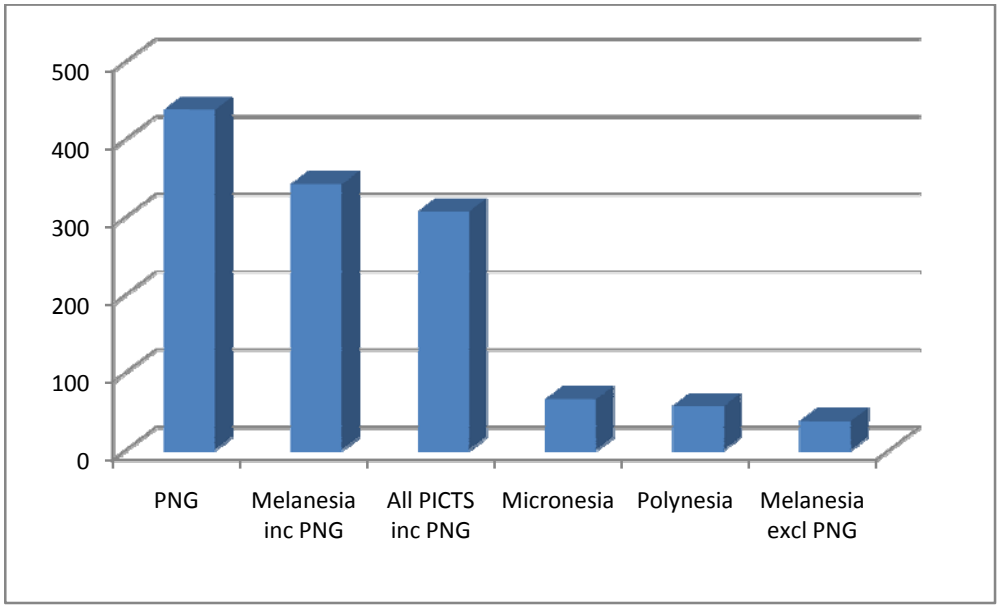
Of all cumulative reported HIV cases in the Pacific, excluding PNG, (1,419 to December 2009), half have been reported in Melanesia, which has just over 60% of the region's population. The number of cumulative reported HIV cases is not distributed evenly between the PICTs: cumulative HIV cases in four PICTs (Fiji, New Caledonia, French Polynesia and Guam) represent 84% of all reported cases, with only 16% from the remaining 17 PICTs. This is due to a combination of factors, including the relatively larger populations in these four PICTs and the likely higher volume of testing in the French and US territories. Figure 3 shows the proportion of cumulative HIV cases in the four highest burden PICTs compared with all others.

Figure 3: Proportion of cumulative reported HIV cases by PICT (excl. PNG)



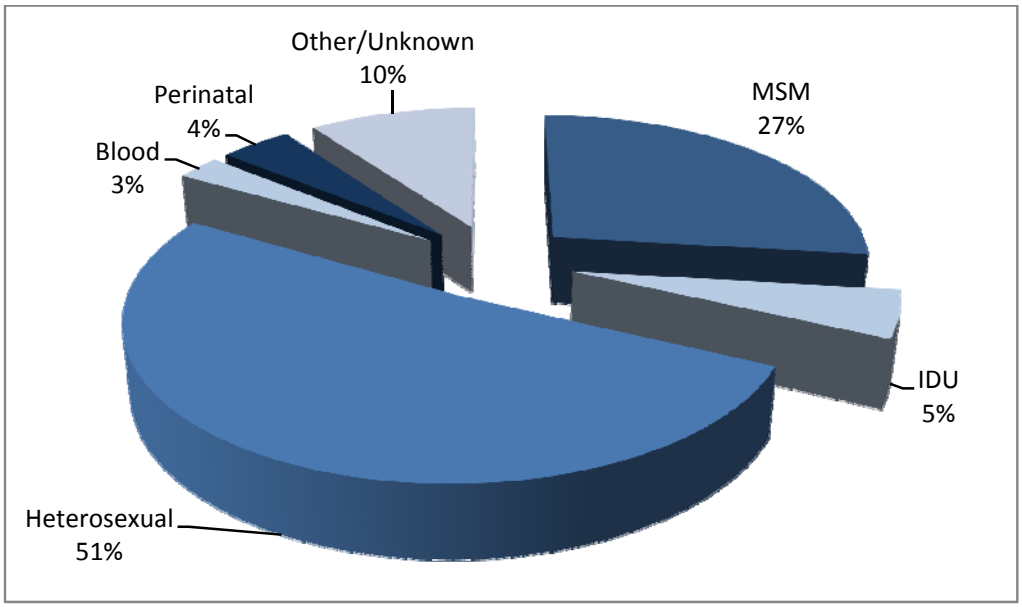
As the true incidence and prevalence of HIV are difficult to measure, particularly in low prevalence settings, cumulative incidence per 100,000 population is calculated to describe the rate at which HIV infections are occurring, and to make comparisons between PICTs. While Melanesia has had the highest number of annual reported HIV cases of the three sub regions since 1999, it also has the highest population, and the cumulative incidence per 100,000 population is actually the lowest in the region, if PNG is excluded. To December 2009, the cumulative incidence of HIV infection was 37.2 per 100,000 for Melanesia, 65.3 for Micronesia and 56.4 for Polynesia (compared with 134.5 for Australia and 437.4 for PNG, to December 2008).

Figure 4: Cumulative HIV Incidence per 100,000 Population, all PICTs 1981-2008/9



The primary mode of HIV transmission in PICTs is heterosexual contact, with just over half of all HIV infections attributed to this route. Over a quarter of HIV infections (27%) are attributed to male to male sex (MSM) and five percent to injecting drug use (IDU). Over time, heterosexual transmission has increased slightly and MSM transmission has decreased as a percentage of all infections.

Figure 5: Modes of HIV Transmission in PICTs excl. PNG

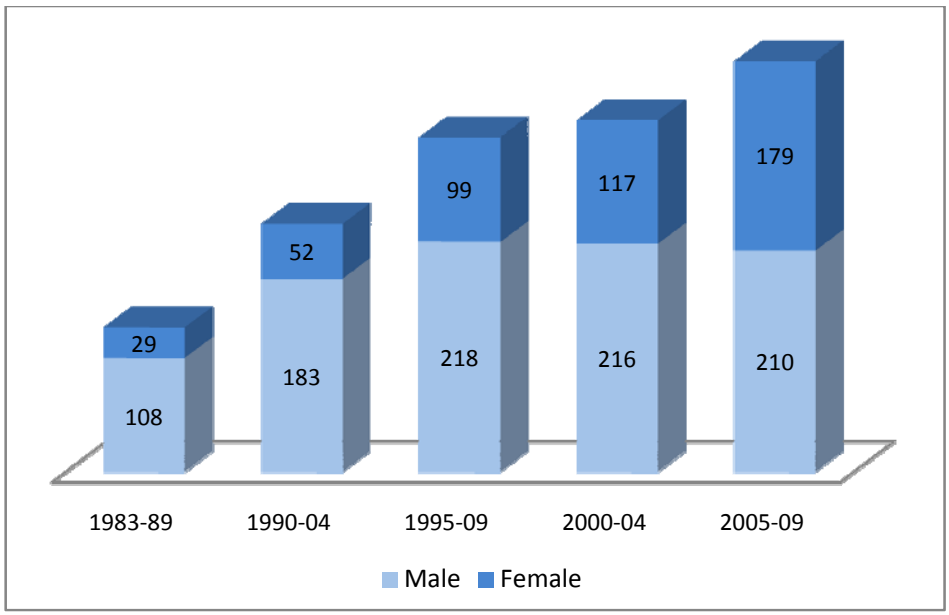


Transmission of HIV differs between the sub regions, however, with heterosexual transmission accounting for 63% of infections in Melanesia, but 43% in Micronesia and 41% in Polynesia. Less than 20% of HIV infections in Melanesia are attributed to male to male sex, compared with 34% in Micronesia and 37% in Polynesia. Almost ten percent of HIV infections in Polynesia are attributed to injecting drug use, compared with less than five percent in the other two sub regions.

There are sub regional differences in the sex ratios of HIV infected people, reflecting the different transmission routes. In Melanesia the ratio of reported HIV infected males to females was 1.5:1 by 2009, in Micronesia 2.9:1 and Polynesia 2.4:1, compared with 0.9:1 in PNG by 2008. In total more than twice as many males as females (935 males to 476 females) have been diagnosed with HIV in PICTs, whereas in PNG slightly more women then men are known to be infected with HIV (15,074 women compared with 13,367 men in 2008).

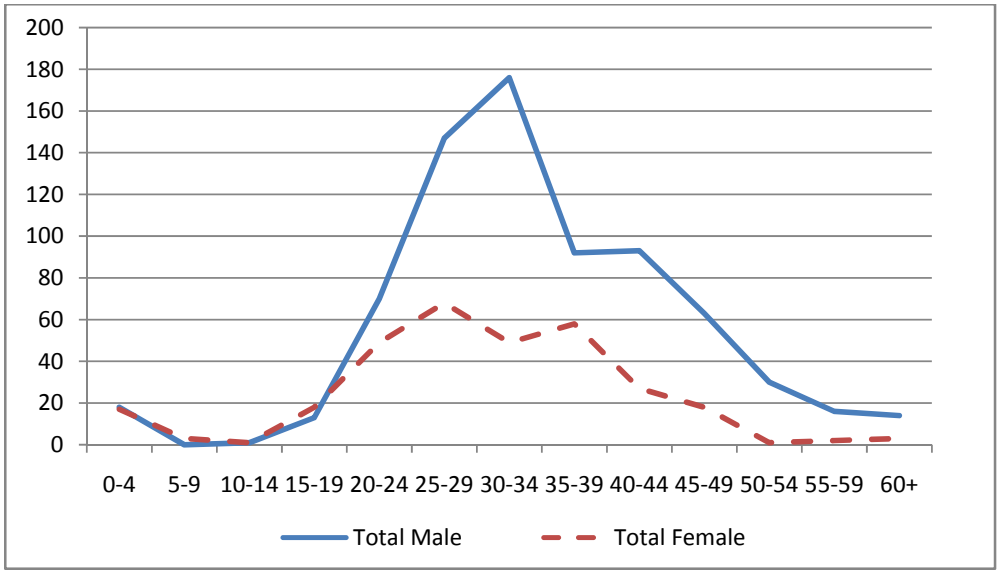
As Figure 6 shows, the number of females known to be infected with HIV has increased steadily, both in absolute numbers and as a proportion of total cases in the region between 1983 and 2009. In the years 1983-1989, the ratio of HIV infected males to females was 3.7:1, compared with 1.2:1 for the period 2005- 2009. This may be due in part to the recent increase in HIV testing of antenatal women, although women are biologically more susceptible to infection from heterosexual transmission of the virus than men.

Figure 6: Distribution of HIV cases between males and females in PICTs (excl PNG) reported 1983 - 2009



The age at HIV diagnosis, shown in Figure 7, also differs between the sexes. The peak age range at diagnosis for males is 30-34 years, whereas for females it is 25-29 years. (Fiji is excluded because age is reported in ten year age bands).

Figure 7: Age at HIV Diagnosis for males and females in PICTs (excl Fiji and PNG)



2009 is the first year that PICTs have reported the number of HIV tests conducted. While only eleven PICTs[2] reported the number of HIV tests conducted, and reporting was incomplete (not all tests conducted at all sites, or for the full year), this provides an opportunity to estimate the HIV prevalence in the populations tested. A total of 25,000 HIV tests were reported in 2009. Over 30% of these tests were on samples from antenatal women, 16% on blood donors, 9% for employment/immigration purposes and 3% from STI patients. The remaining 42% were from various other categories of patients, or unspecified.

Of the 25,870 HIV tests, only four were confirmed to be positive for HIV[3], which is equivalent to an overall prevalence of 0.015% in these eleven PICTs. As Table 1 shows, two of these cases were detected through the routine screening of antenatal women and two were from unspecified populations. In populations in which no HIV cases were found, the prevalence estimate represents the upper limit and actual prevalence is probably much lower.

Table 1: Estimated HIV prevalence in various populations tested in 11 PICTs 2009

	Total HIV tests*	**Confirmed HIV positive****	**Prevalence *****
Antenatal	8131	2	0.02%
Blood Donors	3985	0	<0.03%
Employment/immigration	2193	0	<0.05%
STI patients	893	0	<0.11%
Other	10,668	2	0.02%
Total	25870	4	0.015%

* *Reported tests do not include tests conducted at all testing sites or for the full year.*

*** Positive tests on known HIV cases (diagnosed off island) and contacts of index cases have been excluded for the purposes of calculating prevalence*

**** Where no confirmed HIV positive cases were detected, prevalence was estimated on the basis of less than one case in the population tested e.g.<1 per 3,985 blood donors is <0.03%*

In comparison, of the 120,939 HIV tests reported to have been conducted in PNG in 2008, 3,768 of which were confirmed positive, equivalent to an overall prevalence of 3.1%.[4] This rate is over two hundred times greater than the overall prevalence in ten PICTs reporting total test numbers in 2009. HIV prevalence in PNG in 2008 was 8.1% in STI patients, 3.5% in TB patients and 0.7% in antenatal women and blood donors.

[2] Cook Islands, FSM, Kiribati, Nauru, Niue, Palau, RMI, Samoa, Tonga, Tuvalu, Vanuatu

[3] Four additional HIV positive cases were identified in these PICTs in 2009, but had either been previously tested overseas or were contacts of index cases

[4] THE 2008 STI, HIV AND AIDS ANNUAL SURVEILLANCE REPORT National Department of Health STI, HIV and AIDS Surveillance Unit July 2009