

# AIDS and its possible impact on the Pacific

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## Introduction

This paper examines the demographic background to the epidemic and the possible impact of HIV/AIDS in the Pacific. Exactly how many people will contract HIV and what impact this will have on individual countries or communities depends on a number of factors. No one can predict with certainty the full impact of the HIV/AIDS epidemic on fertility and mortality in any country. This

is because of differences in social and physical factors that are responsible for the spread of the virus. Even if present trends could be tracked with accuracy, the dynamic nature of the epidemic means that future patterns of transmission may be very different.

In this paper however, in the absence of information on current seroprevalence, efficiency of transmission and partner change, future prevalence of HIV/AIDS has been projected based on current trends. But any picture offered by a model must be treated with care, because it is not a prediction of what the future must be but only one possible scenario out of many.

## Population growth and HIV

The effect of AIDS on population growth and profile of Pacific countries is difficult to estimate because knowledge about HIV/AIDS is limited. The population of the region was estimated to be around 6.7 million in mid-1994 (South Pacific Commission, 1994a). This ranges from 4.1 million people for Papua New Guinea to 53 for Pitcairn. Although the Melanesian countries dominate the region in terms of population size (98%) and land area (84%), the two smaller sub-regions of Polynesia and Micronesia have higher population densities. Compared with 10 people/sq. km in Melanesia, Polynesia has a density of 70 people/sq. km, and Micronesia, 146 people/sq. km.

Over the past decade the population of the Pacific has been growing steadily at around 2.3% per year. Growth is highest in the Micronesian countries with an average of 3.5% and lowest in the Polynesian countries with an average of 1.5%. Melanesian countries average 2.3%. Population growth in Micronesia and Polynesia are heavily influenced by migration to and from the Pacific rim countries. The latter play an important role in increasing the potential for spread of HIV/AIDS to the region.

Although population growth throughout most of the region has been much higher in urban than rural areas, the bulk of the population is still rural, with about 75% of its people living in rural areas. Because of the

high population growth, the population structure shows a youthful one with about 40% of its population under 15 years of age. This youthful population has considerable potential for future population growth and consequently, HIV/AIDS.

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## Current status of the HIV epidemic

Available evidence suggests that the HIV epidemic in the Pacific is at an early stage, compared with other parts of the world. Few countries had reported significant numbers of AIDS cases or HIV diagnoses prior to 1987. Since then, the epidemic has gradually spread to many countries throughout the region. Nine of the 22 countries are yet to report any case of AIDS or HIV infection.

As of 1st July 1994, 177 cases of AIDS had been reported from countries in the region (Table 1). This table shows rates of AIDS per 100 000 population. Over 80% of AIDS cases have been reported from four countries: French Polynesia, Guam, New Caledonia and Papua New Guinea. Of the reported AIDS cases, the vast majority were men (74%) and about 4% were children under 13 years of age.

Reported cases of HIV infection or AIDS do not show the real prevalence of these conditions in any given population. In other parts of the world, estimates of the actual numbers of AIDS and HIV-positive cases range from 30 to 100 times the number of officially reported cases. In the Pacific region the low reporting could be due to several reasons:

- deficiencies of the reporting systems within each country;

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Table 1. HIV infection, AIDS, gonorrhoea and NSU : situation update in the Pacific countries, as at 1st July 1994

Countries	Gonorrhoea/NSU for 1993 (a)		HIV infection cumulative incidence **		AIDS cumulative incidence §	
	No. of reported cases	Incidence rate/10,000*	No. of reported cases	Rate per 100,000	No. of reported cases	Rate per 100,000
American Samoa	62	12	0	0	0	0
Cook Islands	24	13	0	0.0	0	0.0
Fiji	935	13	19	2.4	6	0.8
French Polynesia	139	7	135	61.9	35	16.1
Federated States of Micronesia	296	28	2	1.9	2	1.9
Guam	101	7	64	43.6	24	16.4
Kiribati	71	9	4	5.1	1	1.3
Marshall Islands	..	..	8	14.6	2	3.7
Nauru	..	..	0	0	0	0
New Caledonia	156	9	105	57.6	34	18.7
Niue	0	0	0	0	0	0
CNMI	82	15	7	12.4	4	7.1
Palau	25	15	1	6.1	1	6.1
Papua New Guinea	..	..	204	5.2	61	1.5
Pitcairn Island	0	0	0	0	0	0
Solomon Islands	787	22	0	0	0	0
Tokelau	0	0	0	0	0	0
Tonga	46	5	6	6.1	6	6.1
Tuvalu	4	4	0	0	0	0
Vanuatu	209	13	0	0	0	0
Wallis & Futuna	0	0	1	6.9	0	0.0
Western Samoa	149	9	1	0.6	1	0.6

(a) Provisional data

.. Data not available

\* Based on 1993 mid-year population estimates

\*\* AIDS cases included

§ Based on 1994 mid-year population estimates

Source: SPEHIS/PIASPP &amp; Population programme, South Pacific Commission

- medical professionals not reporting cases because of confidentiality and stigma associated with AIDS;
- some governments fear that disclosure of the number of AIDS/HIV cases might discourage tourism (an important growth industry for many Pacific islands);
- others do not report their AIDS/HIV cases because they have already been included in the statistics of the metropolitan countries (e.g. Australia, New Zealand, France) to which their citizens have ready access; and
- some people with HIV infection may die of other diseases and have not had the chance to be diagnosed as having AIDS.

Figure 1. Percentage of cumulative AIDS cases by exposure categories in PICs, as at 1 June 1994

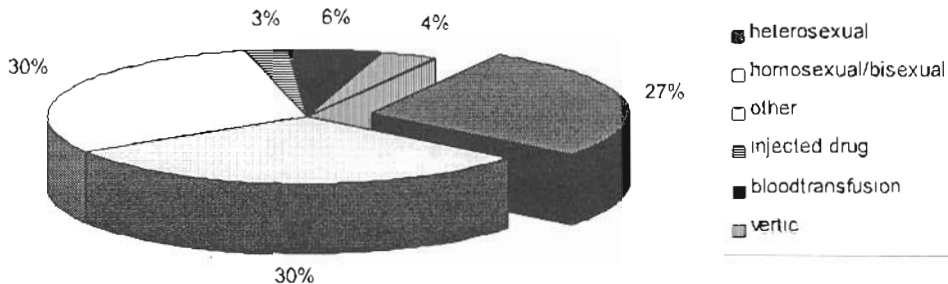
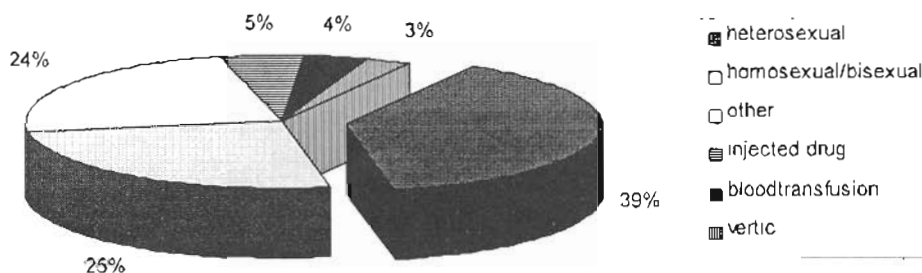


Figure 2. Percentage of cumulative HIV cases by exposure categories, in PICs, as at 1 June 1994



AIDS is only the tip of the iceberg. Many more people are infected with HIV, the virus that causes AIDS. In mid 1994, 557 persons were diagnosed as infected with HIV, of which one in every five is a child. Of the 22 countries in the region, 13 countries have reported cases of HIV infection. The 557 cases represents a rate of 8.3 per 100 000 population for the region. Reported rates vary from 62 per 100 000 in French Polynesia to 44 per 100 000 in Guam, to 5 per 100 000 in Papua New Guinea and 0.6 per 100 000 in Western Samoa. The actual number of HIV infected people is very difficult to estimate because the screening procedures differ from country to country. In PNG, WHO estimated that a further 6000 have been infected with HIV.

## Transmission categories

The distribution of transmission categories for AIDS is shown in Figure 1 and HIV infections in Figure 2. Comparing the two figures, the decreased proportion among homosexual/bisexual and blood transfusion categories, and the increased proportion among the heterosexual and injecting drug user categories should be noted. This indicates the more recent importance of the latter two risk categories in the transmission of HIV.

However, Table 2 shows that there are still great variations between countries e.g. heterosexual transmission appears to be prominent in PNG and increasing in Fiji. In French Polynesia, New Caledonia and Guam the homosexual route is still the leading one. By the end of 1993, only

a few cases of vertical (mother to infant) transmission had been reported. Intravenous drug use, although of increasing concern in the region, does not seem to play any major role at present in HIV transmission.

## Age and sex distribution of reported AIDS cases

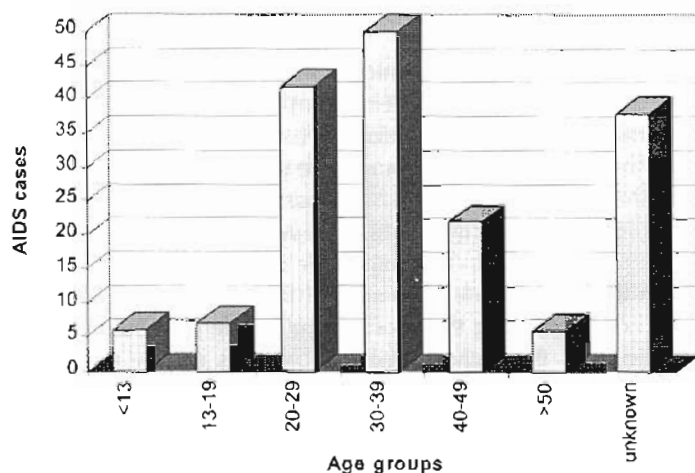
The age (Figure 3) and sex (Figure 4) distributions of AIDS illustrate some interesting features:

- Almost 70% of AIDS cases occur to young adults between the ages of 20 and 40 years, and peaks at ages 30 to 39. Since these ages constitute the bulk of the economically productive component of the population, these deaths have important economic implications. Furthermore at this age the returns to education, both in terms of private as well as social, are just beginning to be realized. The impact of these deaths on the children have important consequences because most people in this age group are raising young children. (This calculations excluded 38 cases with ages unknown).
- There is a significant sex differential. For every female case there are three male cases.

Table 2. HIV Transmission Categories, Western Pacific Region, cumulative to 30 November 1994

Country	Heterosexual	Homosexual/ bisexual	Injecting Drug User IDU	Transfusion	Mother to Infant	Other/ unknown
American Samoa	0	0	0	0	0	0
Cook Islands	0	0	0	0	0	0
Fiji	8	8	1	3	1	0
French Polynesia	43	51	14	13	5	12
Guam	15	31	2	5	0	11
Kiribati	0	0	0	0	0	2
CNMI	0	6	0	0	0	4
Marshall Islands	5	3	0	0	0	0
Federated States of Micronesia	0	1	0	0	0	1
Nauru	0	0	0	0	0	0
New Caledonia	21	40	14	1	1	34
Niue	0	0	0	0	0	0
Palau	0	1	0	0	0	0
Papua New Guinea	42	5	0	1	11	177
Solomon Islands	0	0	0	0	0	0
Tokelau	0	0	0	0	0	0
Tonga	2	3	0	0	0	1
Tuvalu	0	0	0	0	0	0
Vanuatu	0	0	0	0	0	0
Wallis and Futuna	1	1	0	0	0	0
Western Samoa	0	1	0	0	0	0

Figure 3. Cumulative AIDS cases, by age groups in PICs, as at 1 June 1994



## The role of STD

Since STD are important co-factors in the transmission of HIV, and experience from other parts of the world suggests that countries and areas with high STD prevalence will have a high HIV prevalence, should be a warning to countries where there already is a problem with STD. While the number of HIV and AIDS cases may be relatively low, in some island countries the STD rate is on the increase while in some it has reached epidemic proportions. The South Pacific Commission (SPC) reports high rates of gonorrhoea in the Cook Islands, French Polynesia, the Commonwealth of the Northern Mariana, Palau, and Papua New Guinea.

There are also high rates of syphilis in French Polynesia, the Marshall Islands, Nauru, New Caledonia and Papua New Guinea. Much of the rapid spread of HIV in the developing world can be attributed to high and rising rates of STD, which are themselves spreading because of inadequate health services, which means most STD remain untreated. The rate of infection among women, in particular, is difficult to document, since women with STD often have few or no symptoms.

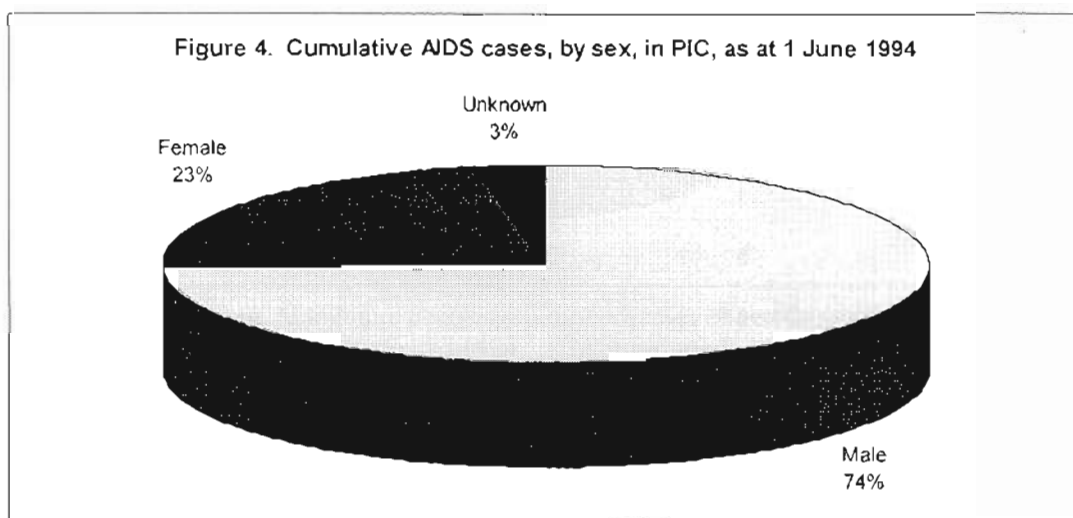
## Projected HIV prevalence

In order to plan, develop and implement programs, a representation of the actual magnitude of HIV infection is necessary. Estimates are often based on the number of reported cases, observed HIV prevalence and the assumed size of the population at risk.

In view of the complacency of some governments towards AIDS/HIV campaigns plus the fact that the numbers reported are but a small proportion of the actual numbers, the author calculates that the HIV infection will increase to around 15 per 100 000 population by 2000, and then stabilize at that level, as a result of expanded AIDS/STD control programs.

## Number of future HIV infections and AIDS cases

If the HIV increases at the rate of 15 per 100 000 population per annum, then the number of infected people in the population would increase from 557 in 1994 to 1100 by 2000. If however, HIV infection increases linearly to 20 per 100 000 population by 2000, then the number of infected people would increase to 1500 by 2000. Based on



Several factors which are unique to the Pacific makes reliable national and regional estimates difficult. The few reported cases in the majority of countries, the high mobility of the populations (there are in fact more Niueans and Cook Islanders in New Zealand than in their home countries and the relatively large numbers of Samoans, Tongans in New Zealand, Hawaii and the west coast of the USA), and the numbers of HIV infected people overseas who will return to their Pacific homes and the numbers who are already infected going overseas. Furthermore, as trade and tourism increase in the Pacific rim countries where the prevalence of HIV infections is already rising rapidly, the potential for spread also increases.

In order to project the number of new infections in the future, it is necessary to make an assumption about how rapidly HIV will continue to spread. Will the HIV prevalence increase above the prevailing level of 8 per 100 000 population? If it does, how high might it go in the absence of expanded AIDS control program and significant behavioral changes: 10 per 100 000 population, 25 per 100 000 population, 30 per 100 000 population?

the above estimates, the number of HIV infected people would increase from 557 in 1994 to between 1100 and 1500 by 2000 and new AIDS cases would increase from 26 in 1993 to between 30 and 60 by 2000.

## The socio-economic impacts of AIDS

**The economic impact of AIDS:** AIDS will impact the economic development of the Pacific in a number of ways. Because the epidemic is still in its early stage world wide, the hardest hit group is the young adults, educated, skilled and most mobile. The loss of young adults in their most productive years of life will certainly affect overall economic output. The magnitude of the effect could be large or small depending on several factors. If AIDS is more prevalent among the economic elite, the best educated people with the highest paying jobs, as is usually the case when the epidemic is in its early stage, then the impact could have a severe effect. For example, if the manager of a firm dies of AIDS, it could lead to the demise of the firm, and the subsequent loss of jobs and economic output, if there are no trained people to replace the manager.

The economic costs of HIV infection are substantial and include not only the direct, obvious costs of screening individuals and blood supplies, patient care costs, funeral costs, increased insurance premiums, health education, lost wages, and lowered productivity, but also indirect costs including loss of wages for sick individuals and also the loss of future earnings for permanently incapacitated persons, or who die prematurely. In terms of the private costs of AIDS, it is important to note how the medical expenditures are financed. If they are financed out of savings, then this would affect investment which would in turn, lead to reduction in economic growth.

The economic impacts are likely to be larger in some sectors than others. Health care and insurance will be significantly affected. Sectors that require a mobile work force may also be adversely affected, including transportation, military, police and tourist industry. Tourism may also decline as a result of the HIV epidemic.

**Employment and unemployment:** The impact of HIV/AIDS on the employment situation are likely to affect some sectors more than others. Sectors that rely on a few skilled labor can be adversely affected should they contract the virus. HIV and AIDS will have a negative effect on the available labor force, both for rural agricultural production and urban employment. These deaths will eventually alter the profile of the working population - which will be characterized by youth and vitality, but lack the skills and experience of the older population. In the short term, because of the current large numbers of unemployed and the small number of HIV/AIDS cases, the unemployment situation in the region will not be affected significantly because of HIV/AIDS.

**The impact of HIV on the skilled workforce:** As the epidemic advances, changes in the population profile will exacerbate existing skill shortages and create new ones, threatening productivity. Over time, as the young sexually active members of the labor force (20 to 40 years old) become infected, fewer will survive to form the older skilled and experienced segment (40 to 60 years old). HIV/AIDS also has implications for other aspects of employment such as training, sickness benefits, pensions and insurance. Absenteeism because of illness, caring for the sick and mourning the dead also affects productivity.

Moreover, if the potential losses in the informal sector (subsistence farming, small scale business and industry) and of women's unpaid labor are added to the losses in the cash economy, the impact on the national economy can be very severe. HIV/AIDS could have a drastic impact on countries

where industries are dependent on a few highly educated, skilled labour, and where overseas recruitment of their replacements would be financially impossible.

**Changing patterns of health and the economic impact on the health system:** Where there are large numbers of HIV-infected pregnant women, AIDS-related infant mortality will significantly increase. Babies born to infected mothers with HIV have a 25% to 40% chance of being infected before or during birth. Even with low levels of infection and AIDS-related mortality in the region, significant resources should be directed towards inducing behavioral changes to try to prevent a widely disseminated lethal epidemic in 10 to 20 years time.

AIDS care is very expensive and requires a considerable amount of resources from the health system. The average length of stay of hospital in-patients is considerably longer than most other diseases. As the number of cases grow, so will the hospital bed requirements. This would leave an insufficient number of beds for patients for all other causes. The Government of the Marshall Islands estimated that care of 50 AIDS patients would use up the entire health budget and that caring for 300, the entire government budget. Therefore, AIDS will seriously affect the provision of health services to all.

**Social costs:** AIDS has been regarded as a community crisis, not simply an individual problem. This is because AIDS/HIV, more than any other disease, has the potential to undermine both the social and economic fabric of affected communities. AIDS places a very heavy burden on patients and their families, who face anxiety, depression, despair, and grief.

One of the worst impacts of AIDS deaths to young adults is an increase in the number of orphans. An AIDS orphan is a child under the age of 15 who has lost the mother to AIDS. It is envisaged that the number of AIDS orphans will increase over time thereby imposing an enormous strain on social services to cope with them. These children may lack the proper care and supervision they need at this critical period of their lives.

- At the family level there will be increased burden and stress for the extended family which will try to care for these orphans. Many grandparents will take on these responsibilities. Some families may be headed by young children.
- At the community level and national level there will be an increased burden on society to provide services for

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these children, including orphanages, health care and school fees. Many children will go without adequate health and schooling, increasing the burden on society in future years.

## Conclusions

Any forecast of the future magnitude of HIV infection in the Pacific region are bound to include wide margins because there are many determinants of the infection and their significance to the region have not been thoroughly assessed. These estimates suggest a two- to three-fold increase in the prevalence of HIV infection for the region by the year 2000.

Up to the present time the reported number of HIV and AIDS cases in the region remains low in comparison with most other parts of the world. However, these small numbers can be misleading because the Pacific islands population are also quite small. Several countries for example, French Polynesia, Guam and New Caledonia have higher rates than New Zealand. Indications are that almost all countries in the region will be affected by the end of the century.

Although there are great variations between countries in the route of transmission, sexual contact is clearly predominant. Intravenous drug use and vertical transmission, although of increasing concern, do not seem to play any major role at present in HIV transmission. By age the majority of AIDS cases occur to young adults between the ages 20 and 40 while at least three out of every four cases occur to men. The expected increase in heterosexual transmission will mean that the male to female ratio will decrease over time. Based on current prevalence the estimated HIV infection will increase to between 1100 and 1500 by 2000 and new AIDS cases would increase to between 30 and 60 by 2000.

The economic impact of HIV/AIDS will be felt most if it is more prevalent among the economic elite, best educated and highest paying jobs. The economic costs of HIV infection are substantial and include not only the direct but also the indirect costs. High medical expenditures could eventually lead to a reduction in economic growth if they are financed out of savings. HIV/AIDS will exacerbate existing skill shortages and create new ones, threatening productivity. Furthermore, the potential losses in the informal sector and of women's unpaid labor can have a severe impact on the national economy.

The changing patterns of mortality rates will mean a change in focus towards young adults (20-39 year olds) and infants. Because the average length of stay of hospital in-patients is considerably longer than most other diseases, as the number of AIDS cases grow, there may be a need for the provision of home-based health care to avoid crowding out

hospital beds from other diseases. AIDS has been regarded as a community crisis, not simply an individual problem because it has the potential to undermine both the social and economic fabric of affected communities. The anticipated increase in the number of AIDS orphans will impose an enormous strain on the orphans themselves, the families, and the society to provide services for these children. Much is still to be learnt about HIV/AIDS in the Pacific region. However, the concerted efforts of all concerned should go a long way in preventing an epidemic in 10 to 20 years time.

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