

# **HIV Surveillance in Pacific Island Countries and Territories**

## **2012 report**

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Public Health Division

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Noumea, New Caledonia, 2013  
Nouméa, Nouvelle-Calédonie, 2013

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Guam

Kiribati

Nauru

New Caledonia

Niue

Northern Mariana Islands

Palau

Papua New Guinea

Pitcairn

Republic of the Marshall Islands

Samoa

Solomon Islands

Tokelau

Tonga

Tuvalu

Vanuatu

Wallis and Futuna

## Abbreviations

|               |                                               |
|---------------|-----------------------------------------------|
| <b>ANC</b>    | antenatal clinic                              |
| <b>ART</b>    | antiretroviral treatment                      |
| <b>FSW</b>    | female sex worker                             |
| <b>GAPR</b>   | Global AIDS progress report                   |
| <b>HIV</b>    | human immunodeficiency virus                  |
| <b>IBBS</b>   | integrated biological and behavioural surveys |
| <b>MICS</b>   | multiple indicator cluster survey             |
| <b>MSM</b>    | men who have sex with men                     |
| <b>MTCT</b>   | mother to child transmission                  |
| <b>PICTs</b>  | Pacific Island countries and territories      |
| <b>PLHIV</b>  | people living with HIV                        |
| <b>PWID</b>   | people who inject drugs                       |
| <b>RDS</b>    | respondent driven sampling                    |
| <b>SPC</b>    | Secretariat of the Pacific Community          |
| <b>STI</b>    | sexually transmitted infection                |
| <b>UNAIDS</b> | Joint United Nations Programme on HIV/AIDS    |
| <b>UNICEF</b> | United Nations Children's Fund                |
| <b>VCT</b>    | voluntary counselling and testing             |
| <b>WHO</b>    | World Health Organization                     |





OCEAN  
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SAMOA AMERICAINES

COOK ISLANDS  
ILES COOK

FIJI  
ILES FIDJI

Suva

Nukualofa



## Preface

This report is the fifth annual review of available surveillance data on the occurrence of HIV infections across the 22 Pacific island countries and territories (PICTS). The 22 PICTs are listed in [Table 2](#). It is intended to be a reference document for organisations and professionals interested in the detection of HIV in the region. The report is available online at <http://www.spc.int/hiv>.

Unless specifically stated otherwise, all data provided in the report are to the end of 2012, as reported by 31 March 2013. All data in this report are provisional and subject to future revision. Data for this update were obtained from the summary reports provided by all 22 SPC PICTs, the UNAIDS 2012 Global AIDS progress reports (GAPR) [1] for ten countries<sup>1</sup> and country-specific annual reports.

For perspective, a broad regional overview of 21 PICTs is shown alongside Australia, New Zealand and Papua New Guinea (PNG) ([Figure 1](#)). Since data for PNG are not available after 2010, the rest of the report includes data from only the smaller 21 PICTs.<sup>2</sup> Recent, newly detected cases ([Figures 1 and 2](#)) are examined and best estimates obtained for those who are currently infected and living with HIV, as well as those currently on treatment.

## Summary

**HIV prevalence:** The Pacific (excluding PNG) is experiencing a low level HIV epidemic, across all 21 countries and subpopulation groups. A low-level epidemic is an epidemic where HIV prevalence has consistently not exceeded 1% in the general population nationally, nor 5% in any sub-population [2]. Five Pacific Island countries and territories (PICTs), (Cook Islands, Nauru, Niue, Pitcairn and Tokelau) had no people living with HIV at the end of 2012. The estimated prevalence among adults aged between 15 and 49 years in the 16 PICTs that reported people living with HIV at the end of December 2012 was less than 0.1%. Papua New Guinea (PNG) has not provided updated figures for 2011 or 2012; however, the estimated prevalence at the end of December 2010 at selected sentinel urban antenatal clinics (ANC) sites was 0.7% and 0.5% at selected rural ANC sites. Estimated prevalence was determined by dividing the known people living with HIV between 15 and 49 years old at the end of 2012 over the population of the same age group. In some countries, where all mothers at ANC are tested for HIV, the estimated prevalence is a good proxy and an approximation of the prevalence in the general population.

Most information on newly detected HIV cases in the Pacific has been obtained from routine HIV testing, with detection of very few HIV cases. Moreover, the calculated prevalence from targeted surveys among key populations has also been low. Two countries recently conducted surveys among key populations at high risk of HIV infection. Fiji's survey showed a prevalence of 0.5% among men having sex with men (MSM), and a prevalence of 0.7% among all sex workers and 1.8% among transgender sex workers. In Vanuatu's survey, no HIV cases were detected among the two key population groups (female sex workers and MSM) that were surveyed.

**Transmission modes:** The two most common modes of HIV transmission identified in the 21 PICTs (excluding PNG) are unprotected heterosexual sexual contact (52%) and male to male sexual contact (27%) ([Figure 4](#)). It should be noted that the main reported mode of transmission of HIV varies across countries. For example, in Guam, 53% of all the reported cases were by transmission through male to male sexual contact and, grouping data from Guam, New Caledonia and French Polynesia, the modes of transmission were similar: the main reported mode being male to male sexual contact, at 43%.

1 Fiji, FSM, Kiribati, Palau, Republic of Marshall Islands, Samoa, Solomon Islands, Tonga, Tuvalu, Vanuatu

2 Data for PNG go up to Dec 2010, Australia up to Dec. 2011. For the other PICTs, data go up to 31 December 2012.



## Summary of recommendations :

### 1. HIV testing

- extend testing to key populations: This could either take place through targeted surveys or through their routine testing and targeted outreach. A good example of this is in Guam where they conduct targeted HIV rapid tests among MSM and targeted outreach through MSM peer networks;
- extend HIV testing to outer islands: This could be either by training and expanding testing services to outer islands or by using mobile voluntary counselling and testing (VCT) facilities;
- extend HIV testing among women at ANCs;
- increase the proportion of TB patients who are tested for HIV;
- ascertain how many people living with HIV are tested for TB.

### 2. Antiretroviral treatment (ART) coverage

- review and update country policies to be in line with the new WHO recommendations;
- review patients who are not currently on ART to determine whether they need to be placed on ART, based on these new guidelines;
- keep track of who is on ART.

### 3. Strengthen surveillance systems

- improve case reporting, along with clear follow-up of suspected mode of transmission;
- in several countries, strengthen routine surveillance systems;
- in several countries, conduct targeted, integrated HIV biologic and behavioural surveillance, focusing on key populations at higher risk of HIV exposure;
- in Vanuatu and Solomon Islands, routinely test and report on HIV trends using sentinel sites;
- implement effective strategies to reach key populations at higher risk of HIV;
- support several countries to provide reliable size estimations of their key populations;
- replicate best practices and successful approaches used in the Pacific.

## HIV testing

In order to protect oneself and to prevent infecting others, it is important for individuals to know their HIV status. People reach HIV treatment, care, and the full range of prevention options through the gateway of HIV testing and counselling (HTC). Globally, most people with HIV do not know that they are infected and poor linkages between HTC and care result in some people starting antiretroviral therapy (ART) when they are already significantly immune compromised, resulting in poor health outcomes and the potential for ongoing transmission [3].

In countries where there is a lack of HIV testing capacity and limited testing conducted, the number of HIV cases is likely to be underreported. However, in countries where routine HIV tests are conducted – among ANC women (which provide estimates of whether the HIV epidemic is generalised) and among key populations – the positivity levels within these population groups provide stronger evidence of the real occurrence of HIV. This section and **Table 1** provide an overview of the level of HIV testing undertaken in some PICTs.

**Fiji:** Testing facilities are available in the major towns. An average of 35,153 tests per year were carried out between 2005 and 2011. Almost half (49%) of the tests were carried out on antenatal clinic clients and 31% were blood donors. The rapid HIV testing algorithm was rolled out in 2012 to four sub-divisional hospitals (Levuka, Savusavu, Sigatoka and Wainikoro) and there are plans to expand the roll-out to nine other sub-divisional hospitals in 2013.

**French Polynesia:** A well-established HIV testing programme has existed since 1985 and free VCT services have been in place since 1994. There were eight VCT sites in 2011. They conducted 1,045 tests, with slightly more women (51%) tested than men (46%) [4].

**Guam:** A well-established HIV testing programme has existed since 1987 and free VCT services have been in place since 1988. An average of 2,498 tests per year were carried out between 2005 and 2012. Between 2010 and 2012, 75% of the tests were carried out on women [5]. Over the past three years, efforts have been expanded to include targeted HIV rapid testing among MSM and targeted outreach through MSM peer networks. Efforts are also being made to expand testing among the Chuukese population living in Guam. Surveillance data for injection drug users and sex workers are limited. Strategies to address these key populations are being pursued [5].

**New Caledonia:** A well-established HIV testing programme has existed since 1986 and free VCT services have been in place since 1992. An average of 14,379 tests per year were carried out between 1986 and 2000 and an average of 17,750 tests per year were conducted between 2001 and 2011. In 2011 slightly more women (55%) were tested at the VCT sites than men (44%) [6].

**Pitcairn and Tokelau:** These two countries, with a total population of 66 and 1,162 respectively in 2011 [7] do not currently have the capacity to do in-country testing for HIV.

**Countries<sup>3</sup> supported by the Global Fund:** These twelve countries use the recommended HIV testing algorithm validated for the Pacific (a rapid screening test [Determine] with confirmation of reactive samples by two additional rapid tests [Insti and Unigold]). Overall testing has increased markedly since 2008 [8], when none of these countries had the capacity to conduct in-country testing. All now have the capacity to conduct in-country confirmatory tests. In Kiribati, Solomon Islands and Vanuatu, point-of-care HIV testing is also being rolled out to outer island sites. Some countries, such as Cook Islands, are using innovative strategies to expand testing to remote outer islands with the use of mobile VCT facilities.

The usefulness of the capacity to conduct in-country confirmatory testing was recently observed in Tuvalu, where two new cases of HIV were detected among visiting seafarers from Korea while they were docked in Tuvalu. They have since left the Pacific and are therefore not reported in Tuvalu's newly detected cases (Table 1). This is a good example of the necessity to routinely test key populations for HIV.

Testing of women attending antenatal clinics was high in seven of the 12 countries funded under the Global Fund (Cook Islands, Federated States of Micronesia [FSM], Niue, Palau, Samoa, Tonga and Tuvalu) where between 60% and 100% of expectant mothers were tested for HIV, but in five countries (Kiribati, Nauru, Marshall Islands, Solomon Islands and Vanuatu) less than 40% of expectant mothers were tested.



### Recommendations on HIV testing

- *Extend testing to key populations:* This could take place either through surveys or through routine testing and targeted outreach. A good example of this is happening in Guam, where they conduct targeted HIV rapid tests among MSM and targeted outreach through MSM peer networks.
- *Extend HIV testing to outer islands and remote settings:* This could be either through training and expansion of testing services or through the use of mobile VCT facilities.
- *Extend HIV testing among ANC women*

3 Cook Islands, Federated States of Micronesia, Kiribati, Marshall Islands, Nauru, Niue, Palau, Samoa, Solomon Islands, Tonga, Tuvalu, Vanuatu

**Table 1:** HIV testing across 21 Pacific Island countries and territories, 2005–2012

| Country/Territory              | Mid-year<br>Population<br>2011* | # of HIV<br>vtesting<br>sites | Mobile HIV<br>testing<br>conducted<br>in 2012 | Routine<br>HIV testing<br>of women<br>attending<br>ANC | # births/<br>year * | # women<br>attending<br>ANC tested<br>for HIV in<br>2012 | Approxi-<br>mate % of<br>ANC women<br>tested in<br>2012 ** | 2005   | 2006   | 2007   | 2008   | 2009   | 2010   | 2011   | 2012  |
|--------------------------------|---------------------------------|-------------------------------|-----------------------------------------------|--------------------------------------------------------|---------------------|----------------------------------------------------------|------------------------------------------------------------|--------|--------|--------|--------|--------|--------|--------|-------|
| Pitcairn Islands               | 66                              | -                             | -                                             | -                                                      | -                   | -                                                        | -                                                          | -      | -      | -      | -      | -      | -      | -      | -     |
| Tokelau Islands                | 1,162                           | -                             | -                                             | -                                                      | -                   | -                                                        | -                                                          | -      | -      | -      | -      | -      | -      | -      | -     |
| Niue                           | 1,446                           | 1                             | No                                            | Yes                                                    | 22                  | 33                                                       | 149%                                                       | na     | na     | na     | na     | na     | 28     | 53     | 131   |
| Nauru                          | 10,185                          | 1                             | No                                            | Yes                                                    | 294                 | na                                                       | na                                                         | na     | na     | na     | na     | na     | 574    | 221    | 171   |
| Tuvalu                         | 11,206                          | 1                             | Yes                                           | Yes                                                    | 255                 | 231                                                      | 91%                                                        | na     | na     | na     | na     | na     | 1,878  | 401    | 860   |
| Wallis and Futuna              | 13,193                          | 4                             | No                                            | Yes                                                    | 178                 | na                                                       | na                                                         | na     | na     | na     | na     | na     | na     | na     | 326   |
| Cook Islands                   | 15,576                          | 5                             | Yes                                           | Yes                                                    | 261                 | 316                                                      | 121%                                                       | na     | na     | na     | na     | na     | 791    | 4,020  | 1,377 |
| Palau                          | 20,643                          | 3                             | No                                            | Yes                                                    | 279                 | 295                                                      | 106%                                                       | na     | na     | na     | na     | na     | 1,738  | 978    | 1,535 |
| Marshall Islands               | 54,999                          | 6                             | No                                            | Yes                                                    | 1,689               | 345                                                      | 20%                                                        | na     | na     | na     | na     | na     | 5,662  | 2,284  | 5,528 |
| Northern Mariana Islands       | 63,517                          | 1                             | No                                            | No                                                     | 1,152               | na                                                       | na                                                         | na     | na     | na     | na     | na     | na     | na     | na    |
| American Samoa                 | 66,692                          | 1                             | No                                            | No                                                     | 1,542               | na                                                       | na                                                         | 200    | 463    | 1,528  | 2,398  | 1,500  | 1,527  | 1,010  | 191   |
| Federated States of Micronesia | 102,360                         | 12                            | No                                            | Yes                                                    | 2,701               | 2,144                                                    | 79%                                                        | 4,359  | 9,278  | 9,010  | 8,539  | 9,289  | 9,870  | 9,249  | 9,638 |
| Kiribati                       | 102,697                         | 13                            | Yes                                           | Yes                                                    | 2,774               | 988                                                      | 36%                                                        | na     | na     | na     | na     | na     | 1,711  | 1,279  | 3,730 |
| Tonga                          | 103,682                         | 13                            | No                                            | Yes                                                    | 2,735               | 1,700                                                    | 62%                                                        | na     | na     | na     | na     | na     | 1,752  | 3,205  | 6,069 |
| Samoa                          | 183,617                         | 1                             | No                                            | Yes                                                    | 4,529               | 3,498                                                    | 77%                                                        | na     | na     | na     | na     | na     | 3,765  | 5,023  | 9,265 |
| Guam                           | 192,090                         | 19                            | Yes                                           | Yes                                                    | 3,558               | 921                                                      | 26%                                                        | 2,631  | 2,397  | 2,311  | 2,536  | 2,348  | 2,331  | 2,529  | 2,680 |
| Vanuatu                        | 251,784                         | 20                            | No                                            | Yes                                                    | 7,719               | na                                                       | na                                                         | na     | na     | na     | na     | na     | 1,545  | 2,949  | 1,723 |
| New Caledonia                  | 252,331                         | na                            | No                                            | Yes                                                    | 3,859               | na                                                       | na                                                         | 16,197 | 18,309 | 18,331 | 19,270 | 18,822 | 18,281 | 19,939 | na    |
| French Polynesia               | 271,831                         | 8                             | No                                            | Yes                                                    | 4,580               | na                                                       | na                                                         | na     | na     | na     | na     | 12,500 | na     | na     | na    |
| Solomon Islands                | 553,254                         | 16                            | No                                            | Yes                                                    | 18,606              | na                                                       | na                                                         | na     | na     | na     | na     | na     | 5,157  | 2,997  | 707   |
| Fiji                           | 851,745                         | na                            | Yes                                           | Yes                                                    | 17,566              | na                                                       | na                                                         | 55,211 | 24,648 | 22,535 | 27,865 | 42,507 | 35,518 | 37,788 | na    |

Table last updated: 29 July 2013. Data subject to revision.

\* [http://www.spc.int/sdd/index.php/en/downloads/doc\\_download/344-2011-populations-a-demographic-indicators--nos-populations-et-indicateurs-demographiques-2011](http://www.spc.int/sdd/index.php/en/downloads/doc_download/344-2011-populations-a-demographic-indicators--nos-populations-et-indicateurs-demographiques-2011)

\*\* Note that % may be higher than 100 as some women attending ANC are tested more than once

na: Data not available

## Newly detected HIV cases in the Pacific region

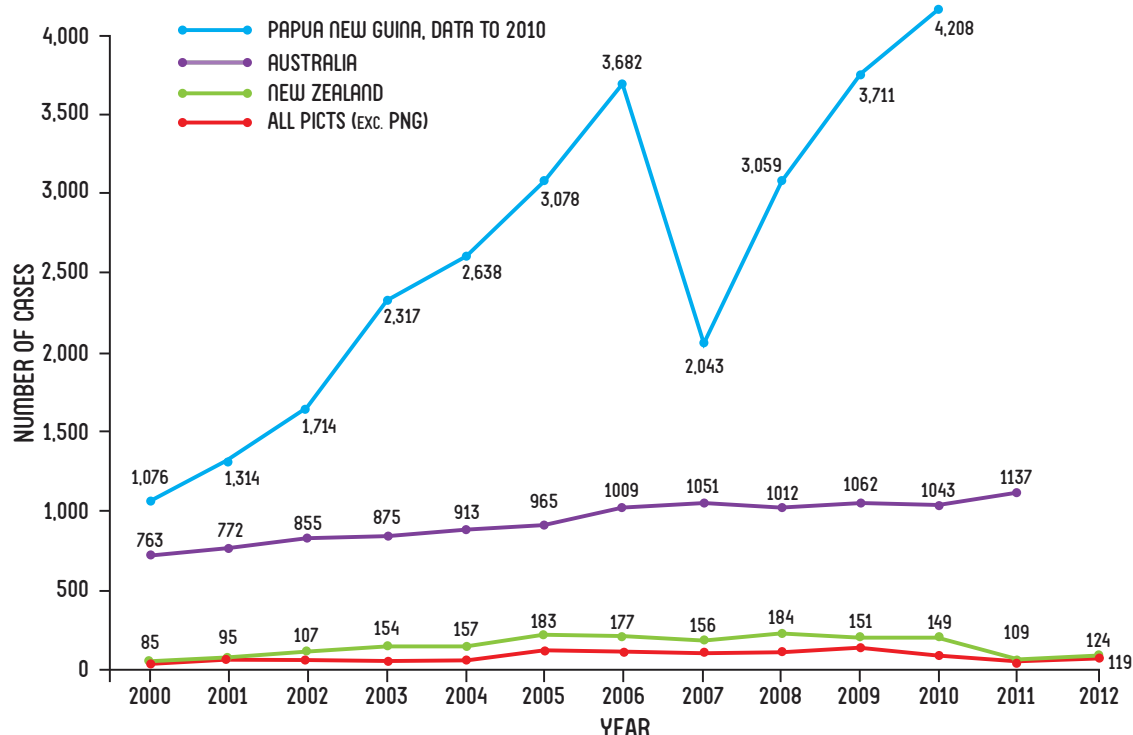


Figure 1: Newly detected HIV cases in the Pacific: 2000–2012

**22 Pacific Island countries and territories:** The number of new HIV diagnoses in 2010 was 4,276. Diagnoses in PNG accounted for 98.4%.

► **PNG:** The number of newly detected HIV cases in 2010 was 4,208. Details of PNG HIV trends can be obtained from *The 2010 STI, HIV and AIDS annual surveillance report* [9]. To date, an update has not been released.

► **21 PICTs:** Newly detected HIV cases are reported each year, and are detected primarily through the routine HIV testing activities that countries undertake. The number of newly detected cases was 68 in 2010, 98 in 2011 and 119 in 2012. Newly detected cases over the past 11 years ranges from 57 in 2003 to 119 in 2012 (Figure 2). 13 PICTs detected no new HIV cases in 2012 (Table 2).

**Australia:** The number of newly detected HIV cases was 1,043 in 2010 and 1,137 in 2011. The annual number of newly detected HIV cases has increased slightly over the past ten years. Details of their HIV trends can be obtained from their 2012 annual surveillance report of HIV, viral hepatitis and STIs [10].

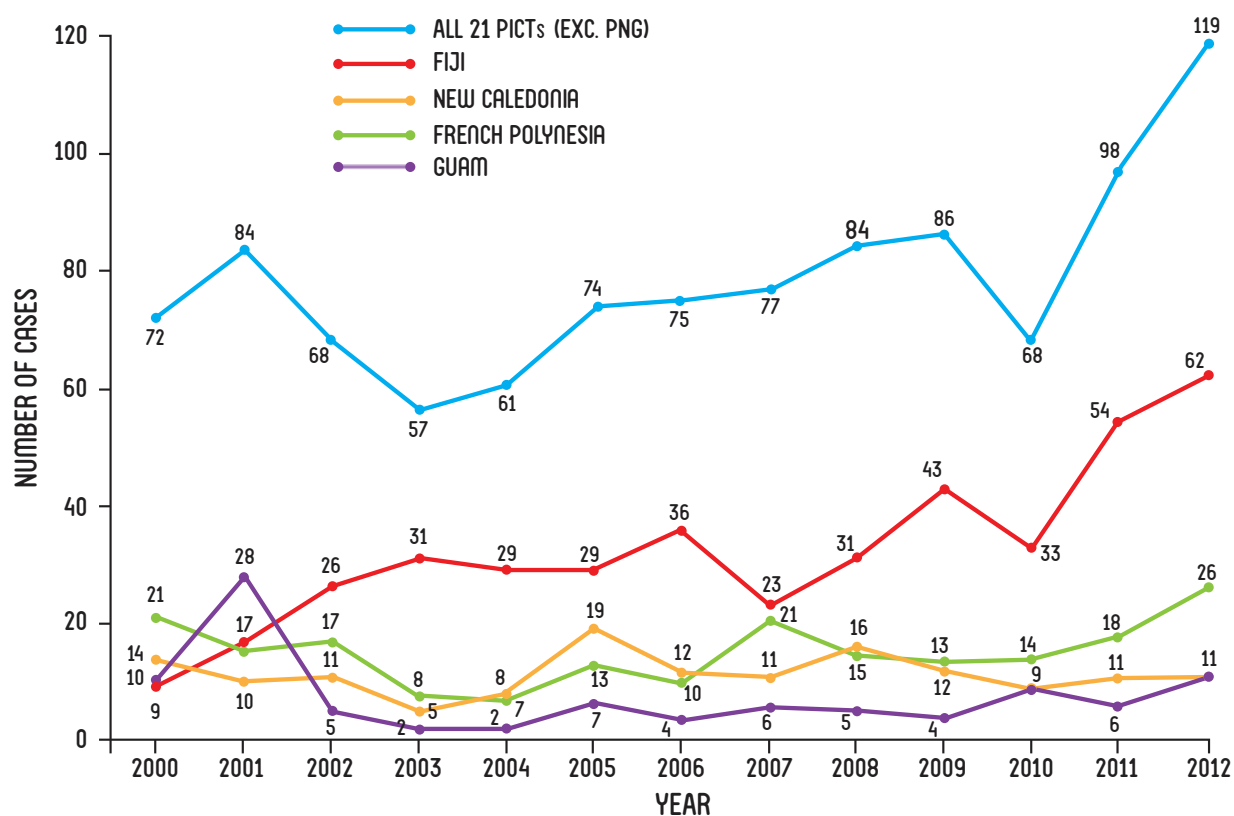
**New Zealand:** The number of newly detected HIV cases was 124 in 2012. Details of their HIV trends can be obtained from their 2013 AIDS newsletter [11].

## Newly detected HIV cases in 21 Pacific Island countries and territories (excluding PNG)

The increase in newly detected HIV cases across the 21 PICTs over the last two years from 68 in 2010 to 119 in 2012 was primarily driven by an increase in cases reported by Fiji and New Caledonia (Figure 2).

Out of the 21 PICTs, three PICTs (Niue, Pitcairn and Tokelau) have never diagnosed anyone with HIV. Six PICTs (American Samoa, Cook Islands, Nauru, Palau, Vanuatu, and Wallis and Futuna) have had ten or fewer cases ever reported.

In 2012, excluding cases from Fiji, French Polynesia, Guam and New Caledonia (all of which report more than ten newly detected HIV cases) there was a total of nine newly detected HIV cases detected across four countries (Samoa, Solomon Islands, Tonga and Vanuatu). In 2011, excluding Fiji, French Polynesia, Guam and New Caledonia, a total of nine newly detected HIV cases was detected across seven countries (FSM, Kiribati, Marshall Islands, Palau, Samoa, Solomon Islands and Vanuatu).



\* The four PICTs with more than ten newly detected cases in 2012 are explicit in the graph

**Figure 2:** Newly detected HIV cases in 21 Pacific Island countries and territories and four selected PICTs: 2000–2012



## People living with HIV in 21 Pacific Island countries and territories (excluding PNG)

The distribution of people living with HIV is useful for planning and resource allocation, as it reflects the number of people that may be in need of care and treatment services for HIV infection. From 1984 to December 2012, a total of 1,737 HIV cases was reported across the 21 PICTs. Cumulative HIV cases from four PICTs (Fiji [12], New Caledonia [13], French Polynesia and Guam[5]) represent 85% of all reported cases, with only 254 (15%) from the remaining 14 PICTs that have ever reported HIV cases (Table 2).

The distribution of the 668 people living with HIV as of 31 December 2012 is similar, with 605 (91%) cases living in four PICTs and 63 (9%) cases living in 12 PICTs (Figure 3).

At the end of December 2012, five countries (Cook Islands, Nauru, Niue, Pitcairn and Tokelau) had no reported cases of people living with HIV (Table 2).

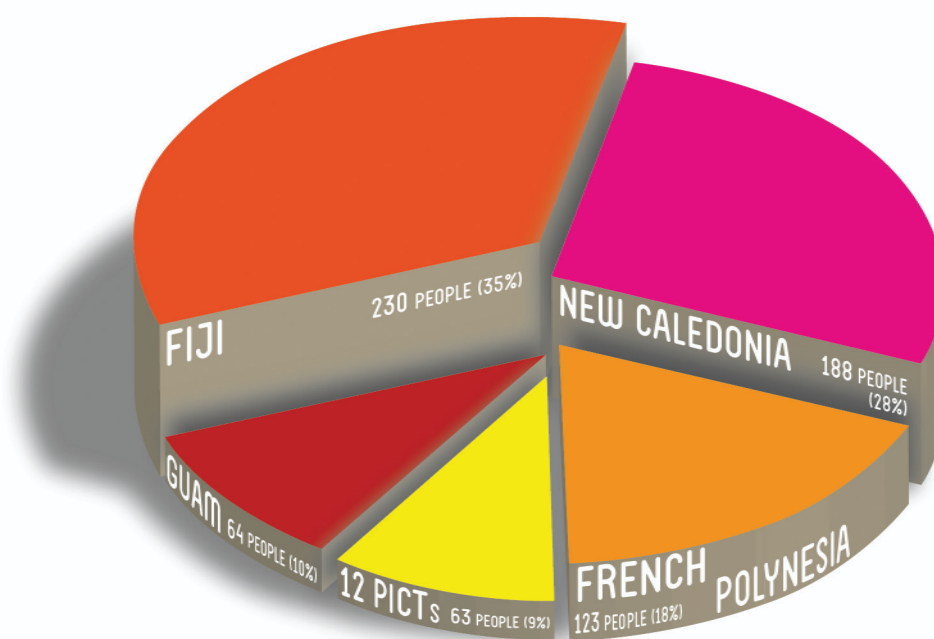


Figure 3: People living with HIV by PICT as of 31 December 2012

## Estimated prevalence of HIV

### Estimated prevalence based on routine surveillance data

The estimated prevalence among adults aged 15–49 years in the 16 PICTs that reported people living with HIV at the end of 2012 was less than 0.1%. This was calculated by dividing the number of people known to be living with HIV at the end of 2012 by the population aged 15–49 years. By comparison, prevalence in PNG at the end of December 2010 was estimated to be 0.9%, while in Australia at the end of 2011 it was estimated to be 0.15%. Women attending antenatal clinics are considered a good proxy for the general population [14]. In countries that have a large proportion of women attending antenatal clinics and testing for HIV, the prevalence within this population can be used as a good proxy for assessing the extent of HIV in the general population [14, 15].



## Estimated prevalence based on surveys among key populations

Integrated biological and behavioural surveys (IBBS) among key populations at risk show higher prevalence levels than the general population, but are still at levels considered to be low. The term 'low-level epidemic' is used for epidemics where HIV prevalence has not consistently exceeded 1% in the general population nationally, nor 5% in any subpopulation [2]. Prevalence among key populations at risk that have recently been surveyed is summarised below.

An IBBS among sex workers in Fiji [16] was conducted between June and August 2012. It also included a size estimation of the sex worker population using a non-standardised approach, thought to have been applied successfully in New Zealand but no peer-reviewed article applying the method, nor any evaluation or assessment of the method could be found. The population of sex workers in Fiji was estimated to be 857 but it should be noted that the method used has several important limitations and is not one of the recommended methods for hidden populations [17]. A combination of sex worker network-based direct sampling and snowballing techniques was successfully used to recruit participants. There were three positive HIV cases detected out of a sample of 293 with a prevalence of 0.7% among all sex workers and 1.8% among transgender sex workers. There were four non responders. This low prevalence indicates that, currently, sex workers in Fiji are not experiencing a concentrated HIV epidemic. Their prevalence figures are, however, higher than the general population. A concentrated HIV epidemic is characterised by rapid spread in one or more key populations but is not well established in the general population. Typically, the prevalence is over 5% in key populations while remaining under 1% in the general population [2].

The 2010/2011 MSM IBBS in Fiji [18] recruited 464 MSM through respondent-driven sampling [19, 20]. There were 26 non responders. Two positive HIV cases were detected among the 438 who were tested for HIV. Community engagement and support for the research, achieved through the partner NGO MENFiji and its constituents, was essential for achieving the high participant response. The unadjusted prevalence of HIV was calculated to be 0.5%.

The 2009/2010 IBBS in Kosrae State of FSM [21] detected no HIV positive cases out of a sample of 362 youth and young adults, with one person who declined to participate.

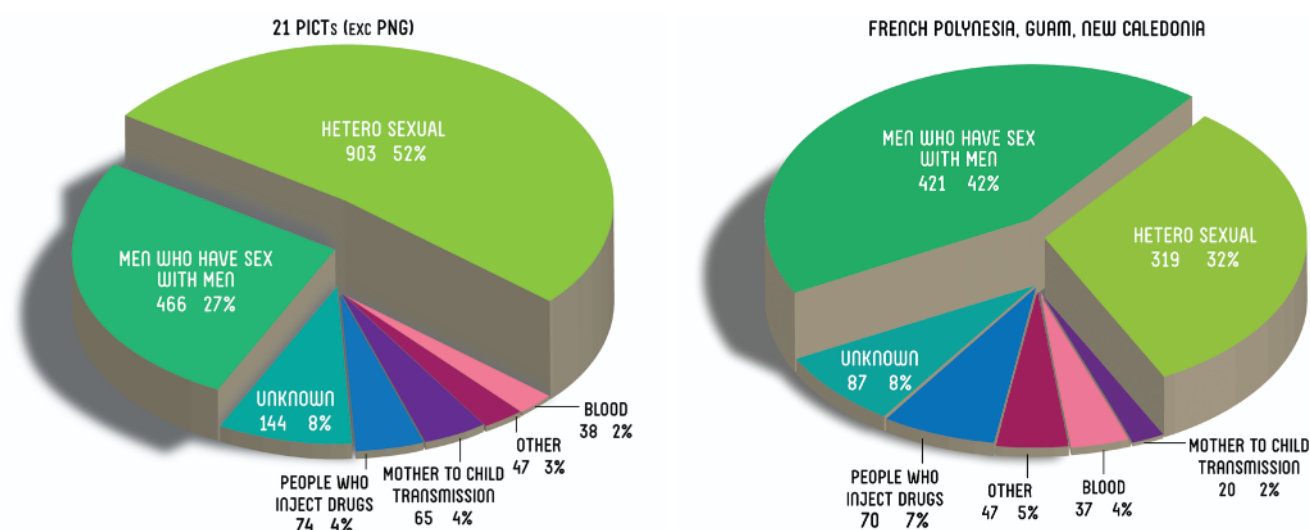
An IBBS among 149 female sex workers in Port Vila, the capital of Vanuatu [22] was conducted between September and November 2011. It also included a size estimation of the sex worker population, using the capture-recapture methodology [17, 23, 24]. The size of this population was estimated to be 1,398, with a 95% confidence interval of 764–2032. No HIV positive cases were detected among the 118 who provided biological specimens and received their results. Four sex workers did not provide any specimens for testing, eight provided a specimen but the results were lost. The reason the other 19 sex workers lacked HIV testing results was unclear.

An IBBS among MSM was conducted in Port Vila [25] between November 2011 and April 2012. It also included a size estimation of the MSM population in Port Vila, using capture-recapture methodology [17, 23, 24]. The size of the MSM and transgender population in Port Vila was estimated to be 327, with a 95% confidence interval of 239–415. This estimation should be treated with caution, however, as several of the assumptions required when using this method for population size estimation were violated [25]. A total of 50 MSM were recruited through respondent-driven sampling [19, 20] with 28 identifying themselves as male and 22 as transgender. Recruitment of MSM to participate was difficult and in spite of various strategies used (respondent driven sampling, incentives, conducting interviews at a site of their choice, not requiring biological specimens, and extending the timeframe of the project) the surveyors were unable to reach the target sample of 150. The reported reason for non-participation was fear that participation would disclose their MSM status. No HIV positive cases were detected among the 38 participants – 21 MSM and 17 transgender – who provided biological specimens and received their results. The reason for the lack of HIV testing results for the other 12 MSM was unclear.

## Mode of HIV transmission in 21 Pacific Island countries and territories

In most settings, key populations at higher risk of HIV exposure and infection include these subgroups: men who have sex with men, transgender persons, people who inject drugs, sex workers and their clients, and sero-negative partners in sero-discordant couples. A systematic review of data from 38 low- and middle-income countries found that men who have sex with men were, on average, 19 times more likely to have HIV than the general population [26]. A similar review of studies among female sex workers in low- and middle-income countries found that they were nearly 14 times more likely to be infected by HIV than were women of reproductive age [27].

Combined data from the 21 PICTs show that the primary mode of HIV transmission (Figure 4) has been heterosexual contact – just over half of all HIV infections – followed by sexual contact between males at 27%. It should be noted that the combined data are skewed by data from the larger countries, such as Fiji, and also that the main reported mode of transmission of HIV differs across countries. For example, when looking at the combined data from three territories (French Polynesia, Guam and New Caledonia) with relatively similar reported modes of transmission (Figure 4), the main mode of transmission was reported to be sexual contact between men (43%), followed by heterosexual contact (32%). This was in sharp contrast to Fiji, which cumulatively reported only 2.5% of cases being due to sexual contact between men, the main mode of transmission being heterosexual contact (86%). According to the 2012 Fiji Global AIDS progress report [1], community groups informing development of the 2012–2015 national strategic plan noted that the severe stigmatisation of sex work and sex between men may mean that people under-report their involvement in these behaviours.



**Figure 4: Modes of HIV transmission across 21 PICTs contrasted with 3 PICTs**

Timely access to good quality, life-saving antiretroviral drugs for pregnant women living with HIV and their children may stop new HIV infections among children and keep their mothers alive, which is the goal of UNAIDS' Global Plan [28]. In Fiji, 23 of the total reported 482 cases (4.8%) were due to mother-to-child transmission, with four reported in 2012. French Polynesia, Guam and New Caledonia have had a total of 1,001 HIV cases ever reported. The reported mode of transmission for 20 (2%) of these was mother-to-child transmission.

Several countries have been unable to properly characterise the reported mode of transmission for newly detected HIV cases, making it difficult to know what interventions are required to reduce transmission. Each country should make more effort to fully characterise and report on modes of transmission for new infections. This will assist in defining populations that are key to the epidemic in the country and will enable an informed response based on the epidemiological and social context [29].



### Recommendation on improved characterisation of mode of transmission

➡ Improve case reporting, along with clear follow-up of suspected mode of transmission.

## Gender and HIV

Globally, in 2010, 50% of those living with HIV were women [30]. However, the burden of HIV on women varies considerably by region and is heaviest in sub-Saharan Africa. In the Pacific, the burden varies by country. A look at the gender distribution by PICT indicates that the epidemic in three PICTs (Guam, New Caledonia and French Polynesia) is largely driven by males (Figure 5), even though more females than males are tested. In Fiji, approximately half of the diagnosed cases were women.

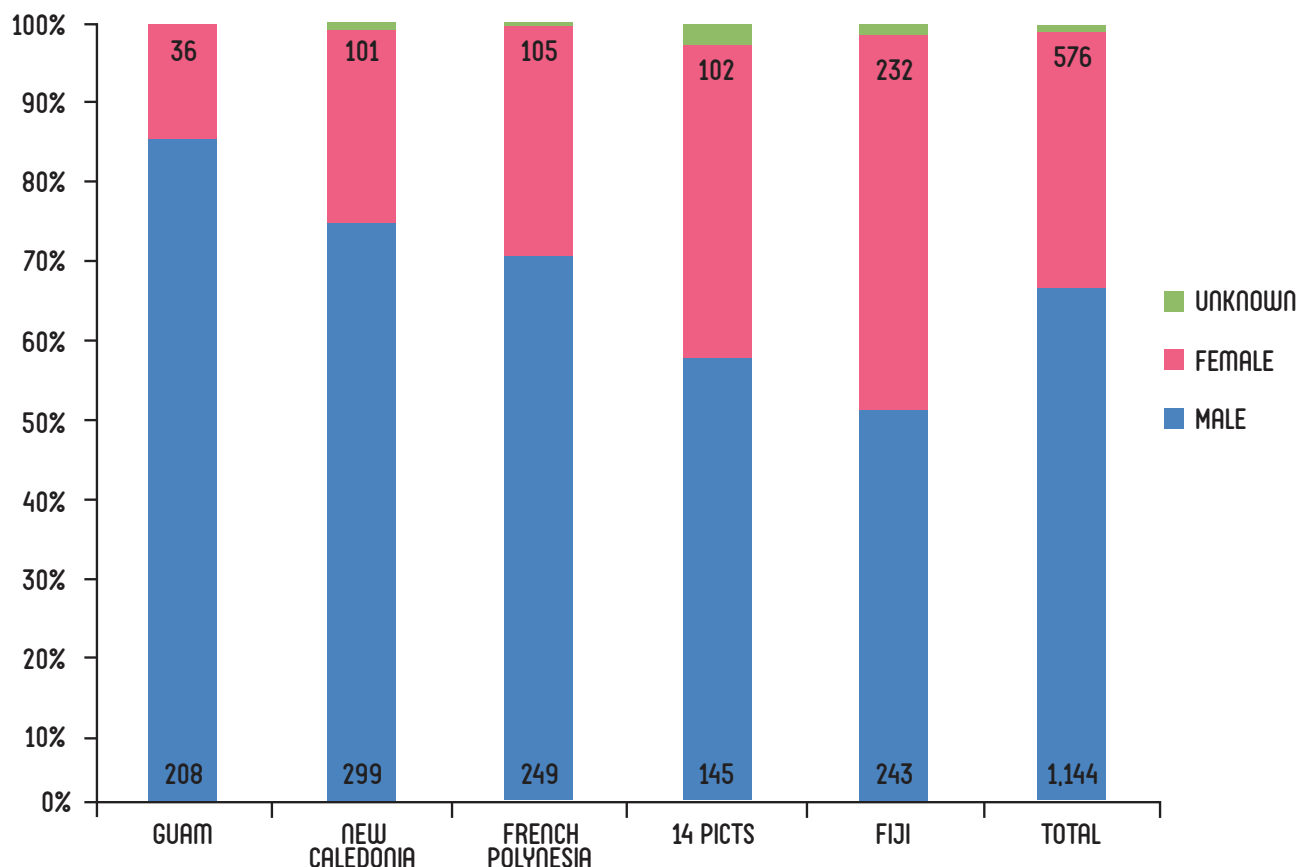
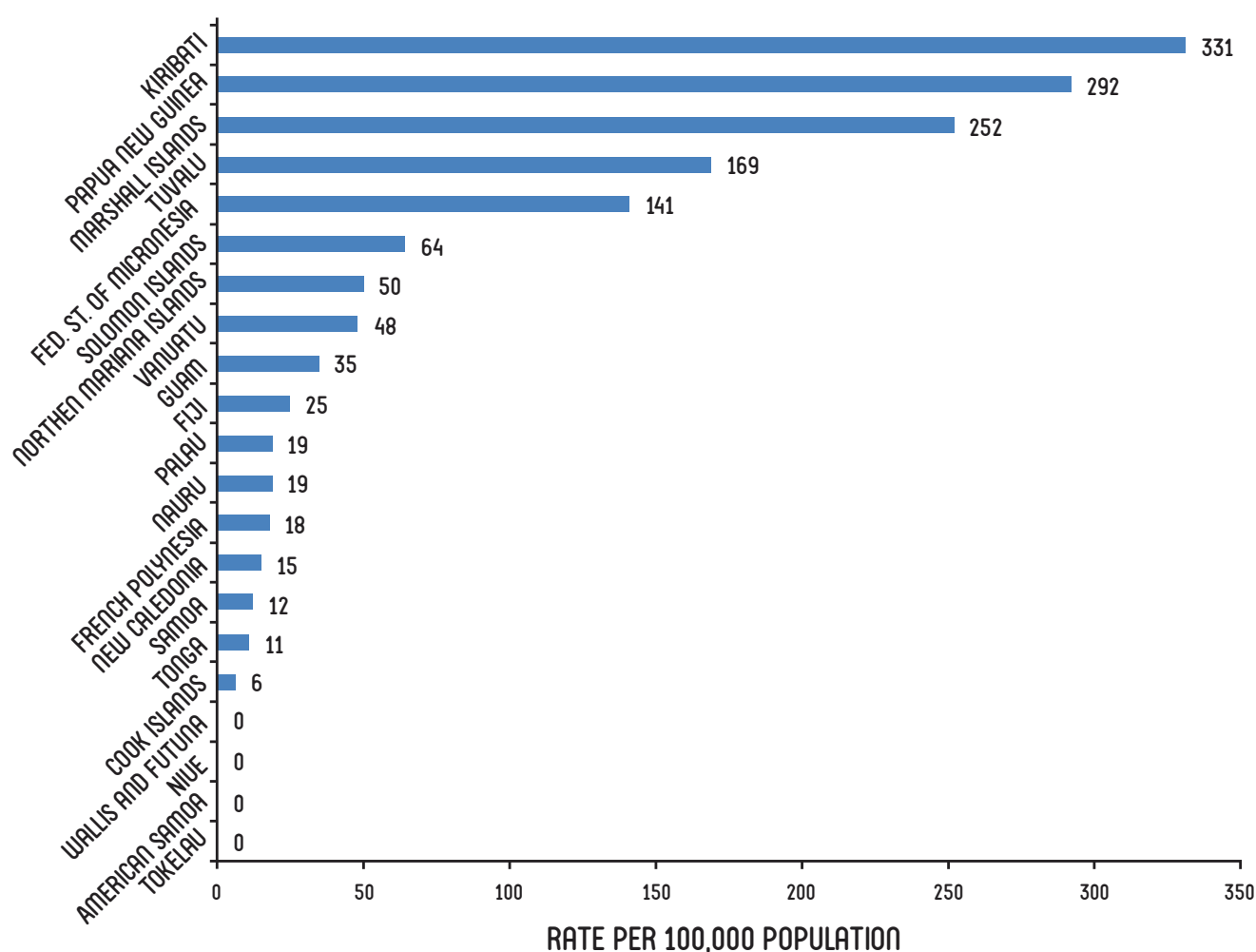


Figure 5: Number and percentage of female HIV cases 1984–2012

## HIV and TB

Approximately 20,000 cases of TB (new and relapse) are reported annually in the 22 PICTs. In 2012, a total of 22,130 TB cases were reported, 20,557 of them from PNG [31]. The remaining 1573 were reported from 21 PICTs, with just under half of these coming from Kiribati and Solomon Islands (707;45%) [31]. The number of people diagnosed with TB has increased by 86% since 2000. In the same time period, the combined TB case notification rate across the 22 PICTs has increased from 146.1 to 217.0 per 100,000 population. However, rates vary greatly across the countries, with the highest rates in Kiribati, PNG, Marshall Islands, and Tuvalu (Figure 6). The increase in TB case notification rates can probably be attributed to improved TB case finding (both passive and active).



**Figure 6:** TB case notification rates (new and relapse) per 100,000 population in Pacific Island countries and territories, 2012

HIV is a well-known risk factor for TB; the risk of developing TB is between 20 and 37 times greater for people living with HIV than for those who do not have HIV infection [32]. National TB programmes are urged to undertake TB-HIV collaborative activities, including screening TB patients for HIV infection [33]. To date, relatively low numbers of TB patients co-infected with HIV have been reported in the Pacific, except in Papua New Guinea. The data must be treated with caution, however, as the proportion of TB patients tested for HIV remains low for many countries, and available data on HIV prevalence among TB patients are incomplete. A low prevalence of TB-HIV co-infection can probably be attributed to the low burden of HIV in the general population and, for many countries, a low TB incidence.

In 2012, 18.5% of TB patients in 15 PICTs who reported data to WHO were tested for HIV and knew their HIV status [31]. A total of 370 TB patients were co-infected with HIV: 364 in PNG, five in Fiji, and one in Northern Mariana Islands [31]. The long-term trends of HIV testing for TB patients are difficult to assess due to differences in the definition of HIV testing and HIV status over time (i.e. HIV testing versus knowing HIV status). In order to assess HIV testing trends over time more comprehensively, SPC is currently reviewing the data on the epidemiology of TB in the Pacific; this information will be published in early 2014.

The *Revised framework to address TB-HIV co-infection in the Western Pacific Region* was endorsed by Pacific national TB programmes during the Fourth Regional Stop TB meeting in Brisbane in 2008, and ongoing implementation of TB-HIV collaborative activities (including HIV testing of TB patients) continues.



### Recommendations on TB and HIV

- *Increase the proportion of TB patients who are tested for HIV.*
- *Ascertain how many people living with HIV are tested for TB.*

## Antiretroviral treatment coverage

Antiretroviral treatment (ART) lowers the concentration of HIV (also known as viral load) in the bloodstream and in genital secretions. Since viral load is the single greatest risk factor for all modes of HIV transmission, ART decreases the risk of HIV transmission. Early treatment initiation is associated with clinical and HIV prevention benefits, improving survival and reducing the incidence of HIV infection at the community level [34-36]. The 2013 WHO guidelines recommend that national HIV programmes provide ART to all people with a confirmed HIV diagnosis and a CD4 count of 500 cells/mm<sup>3</sup> or less, giving priority to initiating ART among those with severe/advanced HIV infection or a CD4 count of 350 cells/mm<sup>3</sup> or less. WHO also recommends ART initiation in people with active TB infection and hepatitis B virus co-infection with severe liver disease; all pregnant and breastfeeding women with HIV; all children younger than five years living with HIV; and all individuals with HIV in sero-discordant relationships, regardless of CD4 cell count [35]. At the end of December 2012, there were 668 people living with HIV across 16 PICTs (Table 2) and 476 were known to be on ART.<sup>4</sup>



### Recommendations on ART coverage

- *Review and update country policies to be in line with the new WHO recommendations.*
- *Review patients who are not currently on ART to determine whether they need to be placed on ART, based on these new guidelines.*
- *Improve monitoring of patients on ART.*

<sup>4</sup> This is a best estimate; Guam does not keep track of total patients on ART as their patients receive ART from different funding streams.

**Table 2:** Summary of HIV cases by Pacific Island countries and territories, 1984–2012

| <i>Country/territory</i>       | <i>Mid-year population 2011</i> | <i>Cumulative incidence per 100,000</i> | <i>Newly detected HIV cases in 2012</i> | <i>Cumulative HIV cases</i> | <i>Male</i>   | <i>Female</i> | <i>Unknown</i> | <i>People living with HIV</i> | <i>Currently on ART</i> |
|--------------------------------|---------------------------------|-----------------------------------------|-----------------------------------------|-----------------------------|---------------|---------------|----------------|-------------------------------|-------------------------|
| Pitcairn Islands               | 66                              | 0                                       | 0                                       | 0                           | 0             | 0             | 0              | 0                             | 0                       |
| Tokelau Islands                | 1,162                           | 0                                       | 0                                       | 0                           | 0             | 0             | 0              | 0                             | 0                       |
| Niue                           | 1,446                           | 0                                       | 0                                       | 0                           | 0             | 0             | 0              | 0                             | 0                       |
| Nauru                          | 10,185                          | 20                                      | 0                                       | 2                           | 2             | 0             | 0              | 0                             | 0                       |
| Tuvalu                         | 11,206                          | 98                                      | 0                                       | 11                          | 9             | 1             | 1              | 1                             | 1                       |
| Wallis and Futuna              | 13,193                          | 15                                      | 0                                       | 2                           | 1             | 1             | 0              | 1                             | 1                       |
| Cook Islands                   | 15,576                          | 19                                      | 0                                       | 3                           | 2             | 1             | 0              | 0                             | 0                       |
| Palau                          | 20,643                          | 48                                      | 0                                       | 10                          | 5             | 4             | 1              | 2                             | 2                       |
| Marshall Islands               | 54,999                          | 45                                      | 0                                       | 25                          | 10            | 11            | 4              | 8                             | 7                       |
| Northern Mariana Islands       | 63,517                          | 54                                      | 0                                       | 34                          | 19            | 15            | 0              | 8                             | 8                       |
| American Samoa                 | 66,692                          | 4                                       | 0                                       | 3                           | 2             | 1             | 0              | 1                             | 1                       |
| Federated States of Micronesia | 102,360                         | 37                                      | 0                                       | 38                          | 24            | 14            | 0              | 6                             | 0                       |
| Kiribati                       | 102,697                         | 54                                      | 0                                       | 55                          | 34            | 21            | 0              | 5                             | 5                       |
| Tonga                          | 103,682                         | 18                                      | 1                                       | 19                          | 10            | 9             | 0              | 2                             | 1                       |
| Samoa                          | 183,167                         | 13                                      | 1                                       | 23                          | 15            | 7             | 1              | 11                            | 9                       |
| Guam *                         | 192,090                         | 127                                     | 11                                      | 244                         | 208           | 36            | 0              | 64                            | 41                      |
| Vanuatu                        | 251,784                         | 4                                       | 4                                       | 9                           | 4             | 5             | 0              | 6                             | 5                       |
| New Caledonia                  | 252,331                         | 159                                     | 26                                      | 402                         | 299           | 101           | 2              | 188                           | 156                     |
| French Polynesia               | 271,831                         | 131                                     | 11                                      | 355                         | 249           | 105           | 1              | 123                           | 106                     |
| Solomon Islands                | 553,254                         | 4                                       | 3                                       | 20                          | 8             | 12            | 0              | 12                            | 9                       |
| Fiji                           | 851,745                         | 57                                      | 62                                      | 482                         | 243           | 232           | 7              | 230                           | 124                     |
| Papua New Guinea **            | 6,888,297                       | 459                                     |                                         | 31,609                      | 13,503        | 16,785        | 1,321          |                               |                         |
| <b>All PICTs</b>               | <b>10,012,371</b>               | <b>333</b>                              |                                         | <b>33,346</b>               | <b>14,647</b> | <b>17,361</b> | <b>1,338</b>   |                               |                         |
| <b>All PICTs (exc. PNG)</b>    | <b>3,124,074</b>                | <b>56</b>                               | <b>119</b>                              | <b>1,737</b>                | <b>1,144</b>  | <b>576</b>    | <b>17</b>      | <b>668</b>                    | <b>476</b>              |
| New Zealand                    | 4,405,200                       | 86                                      | 124                                     | 3,778                       | 3,118         | 631           | 29             | 2,000                         | 1,603                   |
| Australia ***                  | 22,620,600                      | 135                                     | 1,137                                   | 30,486                      | 27,172        | 2,774         | 0              | 21,391                        |                         |

\* Guam: 23 Ryan White Program clients and 16 patients in private clinics. The # of private patients on ART is a best estimate, as they do not routinely track who is on ART.

\*\* PNG data up to Dec 2010, \*\*\* Australian data up to Dec 2011

**Table last updated: 15 July 2013. Data subject to revision.**

## Surveys and surveillance needs

Information on HIV trends in the Pacific comes from routine HIV case reporting of routine HIV testing activities countries undertake, as well as cross-sectional surveys. Table 3 lists the various behavioural and biological surveys that have been conducted. The majority were conducted before 2009 and there are, therefore, sub-groups and regions where updated surveys would provide a more complete understanding of current trends. A comprehensive review of the HIV surveillance system is being conducted in Fiji and Solomon Islands and the results from this review will guide future surveillance needs.

Recent behavioural and biological surveys in the region are listed below:

- ▶ **Cook Islands:** Conducted a behavioural survey in 2012 among youth using electronic tablets to help shorten the time between data collection and analysis [37].
- ▶ **Fiji:** Conducted an IBSS in 2012 among female sex workers. They also conducted an exercise to estimate the size of the sex worker population in Fiji. Conducted an IBSS in 2010/2011 among MSM.
- ▶ **FSM, Kosrae:** Conducted an IBSS among youth and adults in 2009/2010.
- ▶ **FSM, Chuuk:** Conducted a behavioural survey among female sex workers in 2010.
- ▶ **Vanuatu:** Conducted an IBSS in 2011 among female sex workers. They also conducted an exercise to estimate the size of the sex worker population in Port Vila. Conducted an IBSS in 2011/2012 among MSM. They also conducted an exercise to estimate the size of the MSM population in Port Vila.



**Table 3: Biological and behavioural surveys undertaken in the Pacific**

| PICT                   | Survey Population   | Year | Survey type    | Recommendations for 2013/2014                                                                                                                                                        |
|------------------------|---------------------|------|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Cook Islands</b>    | ANC                 | 2005 | IBBS           | Cook Islands has relatively good routine testing data from 2010-2012, across all population groups and islands. Strengthen the routine system and expand testing to key populations. |
|                        | Youth               | 2005 | Behavioural    |                                                                                                                                                                                      |
|                        | Akavaine            | 2009 | Behavioural    |                                                                                                                                                                                      |
|                        | Youth               | 2012 | Behavioural    |                                                                                                                                                                                      |
| <b>Fiji</b>            | ANC                 | 2004 | STI prevalence | A review of gaps and surveys done to date is being undertaken. The results of this review will guide Fiji's response.                                                                |
|                        | STI clients (male)  | 2004 | IBBS           |                                                                                                                                                                                      |
|                        | Military and Police | 2004 | Behavioural    | Strengthen the routine HIV surveillance system.                                                                                                                                      |
|                        | ANC                 | 2008 | STI prevalence |                                                                                                                                                                                      |
|                        | Youth               | 2008 | Behavioural    | Follow up on recommendations from the recent IBBS among MSM and sex workers.                                                                                                         |
|                        | STI clients         | 2008 | STI prevalence |                                                                                                                                                                                      |
|                        | Military and Police | 2008 | Behavioural    |                                                                                                                                                                                      |
|                        | Seafarers           | 2008 | Behavioural    |                                                                                                                                                                                      |
|                        | MSM                 | 2011 | IBBS           |                                                                                                                                                                                      |
|                        | Sex workers         | 2012 | IBBS           |                                                                                                                                                                                      |
| <b>Kiribati</b>        | ANC                 | 2003 | IBBS           | Kiribati has relatively good routine testing data from 2010-2012 primarily among ANC clients. It needs to improve on screening of youth and key population groups (FSW, seafarers).  |
|                        | Seafarers           | 2003 | IBBS           |                                                                                                                                                                                      |
|                        | ANC                 | 2005 | IBBS           |                                                                                                                                                                                      |
|                        | Seafarers           | 2005 | IBBS           | An IBBS among sex workers and seafarers would complement existing information.                                                                                                       |
|                        | Sex workers         | 2006 | IBBS           |                                                                                                                                                                                      |
|                        | ANC                 | 2008 | IBBS           |                                                                                                                                                                                      |
|                        | Youth               | 2008 | Behavioural    |                                                                                                                                                                                      |
|                        | Police              | 2008 | IBBS           |                                                                                                                                                                                      |
|                        | Seafarers           | 2008 | IBBS           |                                                                                                                                                                                      |
|                        | Youth               | 2009 | Behavioural    |                                                                                                                                                                                      |
|                        | Sex workers         | 2010 | Behavioural    |                                                                                                                                                                                      |
| <b>Nauru</b>           | Households          | 2007 | DHS            | Nauru has relatively good routine testing data from 2010-2012, across their local population. Continue to strengthen the routine system.                                             |
|                        |                     |      |                |                                                                                                                                                                                      |
| <b>Solomon Islands</b> | ANC                 | 2008 | IBBS           | Very limited routine testing information is available.                                                                                                                               |
|                        | Youth               | 2008 | Behavioural    | A review of gaps and surveys done to date is being undertaken. The results of this review will guide the response.                                                                   |
|                        | Households          | 2007 | DHS            |                                                                                                                                                                                      |
| <b>Tuvalu</b>          | ANC                 | 2005 | IBBS           | Tuvalu has relatively good routine testing data from 2010-2012, across all population groups and islands. Continue to strengthen the routine system.                                 |
|                        | Youth               | 2005 | IBBS           |                                                                                                                                                                                      |
|                        | Seafarers           | 2005 | IBBS           |                                                                                                                                                                                      |
|                        | Households          | 2007 | DHS            |                                                                                                                                                                                      |
| <b>Tokelau</b>         | Youth               | 2005 | Behavioural    | No testing is done. Strategies to be developed.                                                                                                                                      |
| <b>Tonga</b>           | ANC                 | 2005 | IBBS           | Tonga has relatively good routine testing data from 2010-2012, across all population groups.                                                                                         |
|                        | ANC                 | 2008 | IBBS           |                                                                                                                                                                                      |
|                        | Youth               | 2008 | Condom access  | Strengthen the routine system and expand testing to key populations.                                                                                                                 |
|                        | Youth               | 2008 | Behavioural    |                                                                                                                                                                                      |
|                        | MSM                 | 2008 | IBBS           |                                                                                                                                                                                      |
| <b>Samoa</b>           | ANC                 | 2008 | IBBS           | Samoa has relatively good routine testing data from 2010-2012, among ANC and youth. Strengthen the routine system and expand testing to key populations.                             |
|                        | Youth               | 2008 | IBBS           |                                                                                                                                                                                      |
|                        | Fa'afafine          | 2008 | Behavioural    |                                                                                                                                                                                      |



| PICT                            | Survey Population                | Year          | Survey type          | Recommendations for 2013/2014                                                                                                                                                                                                                                                                                                                                   |
|---------------------------------|----------------------------------|---------------|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Vanuatu</b>                  | ANC                              | 2000          | IBBS                 | Vanuatu has relatively good routine testing data primarily among ANC and youth (2010-2012) in Port Vila.                                                                                                                                                                                                                                                        |
|                                 | ANC                              | 2005          | IBBS                 |                                                                                                                                                                                                                                                                                                                                                                 |
|                                 | ANC                              | 2008          | IBBS                 |                                                                                                                                                                                                                                                                                                                                                                 |
|                                 | Youth                            | 2005          | Behavioural          | The previous surveys provide good information but were limited to Port Vila.                                                                                                                                                                                                                                                                                    |
|                                 | Youth                            | 2008          | Behavioural          |                                                                                                                                                                                                                                                                                                                                                                 |
|                                 | STI clients                      | 2005          | IBBS                 | From July 2012 Vanuatu was to expand testing to provinces and target key population groups.                                                                                                                                                                                                                                                                     |
|                                 | STI clients                      | 2008          | IBBS                 |                                                                                                                                                                                                                                                                                                                                                                 |
|                                 | Women and children               | 2007          | MICS                 | Strengthen the routine system and use of sentinel sites beyond Port Vila.                                                                                                                                                                                                                                                                                       |
|                                 | All in Mota Lava, Torba province | 2010          | Chlamydia prevalence |                                                                                                                                                                                                                                                                                                                                                                 |
|                                 | Sex workers                      | 2006          | Behavioural          |                                                                                                                                                                                                                                                                                                                                                                 |
|                                 | Sex workers                      | 2011          | IBBS                 |                                                                                                                                                                                                                                                                                                                                                                 |
|                                 | MSM                              | 2012          | IBBS                 |                                                                                                                                                                                                                                                                                                                                                                 |
| <b>American Samoa</b>           | ANC                              | 2006          | IBBS                 |                                                                                                                                                                                                                                                                                                                                                                 |
|                                 | Youth                            | 2006          | Behavioural          |                                                                                                                                                                                                                                                                                                                                                                 |
|                                 | Adult & Cannery workers          | 2006          | IBBS                 |                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Northern Mariana Islands</b> | ANC                              | 2006          | IBBS                 |                                                                                                                                                                                                                                                                                                                                                                 |
|                                 | Youth                            | 2006          | Behavioural          |                                                                                                                                                                                                                                                                                                                                                                 |
|                                 | MSM                              | 2006          | IBBS                 |                                                                                                                                                                                                                                                                                                                                                                 |
| <b>FSM, Pohnpei</b>             | ANC                              | 2007          | IBBS                 | FSM has relatively good routine testing data from 2005-2012, but needs a closer analysis and better targeting of population groups.                                                                                                                                                                                                                             |
|                                 | Youth                            | 2007          | Behavioural          |                                                                                                                                                                                                                                                                                                                                                                 |
|                                 | Police                           | 2007          | IBBS                 |                                                                                                                                                                                                                                                                                                                                                                 |
| <b>FSM, Chuuk</b>               | Sex workers                      | 2010          | IBBS                 | Continue to strengthen the routine system.                                                                                                                                                                                                                                                                                                                      |
| <b>FSM, Kosrae</b>              | Adults                           | 2009/<br>2010 | IBBS                 |                                                                                                                                                                                                                                                                                                                                                                 |
| <b>FSM, Yap</b>                 | Youth                            | 2007          | Behavioural          |                                                                                                                                                                                                                                                                                                                                                                 |
|                                 | Police                           | 2007          | Behavioural          |                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Guam</b>                     | Migrants                         | 2007          | Behavioural          | Guam has good routine testing data from 2005-2012 primarily among STI clients, but needs to improve on the surveillance among key populations. Programs currently focussing on MSM are ongoing. More effort is required, focussing on the massage parlour and shiatsu workers.<br>An IBBS among sex workers and migrants would complement existing information. |
|                                 | MSM                              | 2007          | Behavioural          |                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Palau</b>                    | ANC                              | 2006          | IBBS                 | Palau has relatively good routine testing data from 2010-2012, across their local population.<br>An IBBS among the sex workers (Chinese, Filipinos) would complement the existing information.                                                                                                                                                                  |
|                                 | Police                           | 2006          | IBBS                 |                                                                                                                                                                                                                                                                                                                                                                 |
|                                 | Youth                            | 2006          | Behavioural          |                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Marshall Islands</b>         | ANC                              | 2006          | IBBS                 | RMI has relatively good routine testing data from 2010-2012, among ANC and youth. RMI is beginning to improve testing of other populations.                                                                                                                                                                                                                     |
|                                 | Youth                            | 2006          | IBBS                 |                                                                                                                                                                                                                                                                                                                                                                 |
| <b>French Polynesia</b>         | Adults                           | 2005          | Behavioural          | An IBBS among women attending ANC clinics and youth would complement existing information.                                                                                                                                                                                                                                                                      |
| <b>New Caledonia</b>            | ANC                              | 2005          | IBBS                 | An IBBS among MSM and sex workers would complement existing information.                                                                                                                                                                                                                                                                                        |
|                                 | Youth                            | 2005          | Behavioural          |                                                                                                                                                                                                                                                                                                                                                                 |
|                                 | Sex workers                      | 2005          | IBBS                 |                                                                                                                                                                                                                                                                                                                                                                 |
|                                 | Population level                 | 2012          | STI prevalence       |                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Wallis &amp; Futuna</b>      | ANC                              | 2006          | IBBS                 | An analysis of routine STI trends would be a helpful.                                                                                                                                                                                                                                                                                                           |
|                                 | Youth                            | 2006          | Behavioural          |                                                                                                                                                                                                                                                                                                                                                                 |



## **Recommendation on strengthened surveillance**

- *Several countries need to work on strengthening their routine surveillance systems.*
- *In several countries, targeted, integrated HIV biologic and behavioural surveillance, focusing on key populations at higher risk of HIV exposure, is required.*
- *In Vanuatu and Solomon Islands, routinely test and report on HIV trends, using sentinel sites.*
- *Implement effective strategies to reach key populations at higher risk of HIV. Some countries are making good efforts to work with some of their key populations at risk; an example is Guam with the use of peer educators among the MSM community. However, other populations have not received as much attention; in Guam, Kiribati and Palau there is limited engagement of sex workers.*
- *Support several countries to provide reliable size estimations of their key populations.*

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