

# HIV and AIDS knowledge among medical laboratory technologists in the Pacific

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## Abstract

The aim of the study was to determine AIDS/HIV knowledge of medical laboratory technologists in the Pacific region. An AIDS/HIV questionnaire testing for knowledge of HIV presence in biological fluids, methods for destroying HIV, risk categories for HIV transmittance, and general AIDS/HIV questions, was administered to 26 medical laboratory technologists from the Pacific region attending courses at the Pacific Paramedical Training Centre in Wellington, New Zealand. The mean overall score for correct answers was 59.8%, range: 22.7 - 80.3%.

Various deficiencies in AIDS/HIV knowledge were noted. The results from this study suggest that AIDS/HIV educational programs would be beneficial for medical laboratory technologists from the Pacific region.

## Introduction

Previous studies from us have shown that paramedical workers (laboratory and nursing) in New Zealand and Fiji are concerned about handling HIV positive biological samples.<sup>1,2,3,4</sup> These studies suggested that educational AIDS/HIV programs could be beneficial in allaying paramedical workers' fears, attitudes, and practices regarding AIDS/HIV.

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Indeed medical laboratory technologists in Fiji who had higher overall AIDS/HIV knowledge scores demonstrated better laboratory practices regarding handling of HIV positive biological samples, and had less fear and concerns regarding AIDS/HIV, than their colleagues who scored lower.<sup>3</sup> That study, and one done amongst medical laboratory science students and laboratory staff at two New Zealand universities and one hospital demonstrated that, although they had a reasonably adequate knowledge regarding AIDS/HIV, there were deficiencies in their knowledge.<sup>3,5</sup> Although the incidence of AIDS and HIV positivity in Pacific countries is low, there is a rising trend<sup>6</sup>, and laboratory workers there will be expected to have increased contact with HIV positive individuals and their biological samples. As it is that by documenting deficiencies in AIDS/HIV knowledge that effective educational programs can be developed, we studied AIDS/HIV knowledge of medical laboratory technologists from the Pacific region attending courses at the Pacific Paramedical Training Centre (PPTC) in Wellington, New Zealand.

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## Methods

From February 1996 to November 1997 an AIDS/HIV questionnaire was administered to 26 medical laboratory technologists (7 Female, 19 Male) from the Pacific (Cook Islands, Tonga, Federated States of Micronesia, Niue, Papua New Guinea, Solomons, Kiribati, Vanuatu, Fiji, Tuvalu, and Samoa) attending courses at the PPTC. Four technologists had previously attended lectures on AIDS/HIV, the other 22 had not.

The questionnaire on AIDS/HIV knowledge was essentially that by Robbins et al (Manual of the ELCAS questionnaire concerning HIV and AIDS) which has previously been statistically validated by the authors.<sup>7</sup> This questionnaire tests for knowledge of HIV presence in biological fluids, methods for destroying HIV, risk categories for HIV transmittance, and general AIDS/HIV questions.

Before any lectures on AIDS/HIV the participants voluntarily and anonymously answered the questionnaire in their own time, with no time limits set. They were told that if they were unsure of an answer to any question, not to try and guess the

**Table 1. In which of the following has HIV been detected?**

Medium	Yes	No	Correct response %
Vomit	X		11.5
Tap water		X	92.3
Blood/blood products	X		100
Sweat	X		19.2
Semen	X		84.6
Faeces	X		23.1
Saliva	X		23.1
Urine	X		23.1
Menstrual blood		X	84.6
Smoke	X		88.5
Vaginal fluid	X		80.8
Tears	X		15.4
Air		X	92.3

answer but to leave the answer space blank. The responses to the questions were marked, and double-checked by one of the authors (RS), and analysed with the StatsView™ statistical package on a Macintosh™ LC111 computer. Potential differences in scores between sexes and age groups were evaluated by analysis of variance, with a p value of <0.05 taken as statistically significant.

**Results**

The mean overall score from all participants (n=26) for correct answers was 59.8% with a range of 22.7% - 80.3%. The question regarding HIV presence in biological fluids provided a mean correct score of 55.0%, range: 23.1% - 100%, and is categorised in Table 1.

Table 2 shows the answers to the question regarding methods of destroying HIV outside the body, the mean correct score was 53.2%, range: 16.7% - 100%. Table 3 lists the correct responses for risk categories for HIV transmittance. The mean correct score for this question was 57.1%,

range: 4.2% - 83.3%. There were some interesting responses to this question. Although more than 85% of respondents correctly identified anal and vaginal intercourse, and sharing of hypodermic needles as being a high risk category of HIV transmittance from an affected person to another, there were three respondents who did not think these practices were a risk factor. Similarly more than 85% of respondents knew that sharing drinking glasses, or swimming in a public pool were not a risk factor. However 40% and 20% of respondents respectively thought that insect bites, or sitting on a lavatory seat was a possible to high risk factor for HIV transmittance. Interestingly 65% of respondents thought that by being a blood donor was a strong risk factor for acquiring HIV.

Table 4 lists the general AIDS/HIV knowledge questions, the correct answer, and the percentage correct responses from the participants. The mean correct score for these questions was 74.0%, range: 33.3% - 100%.

**Table 2. Which of the following will destroy HIV outside the body?**

	Yes	No	Correct response %
Boiling	X		61.5
Bleach	X		88.5
Soap	X		34.6
Freezing		X	61.5
Detergent	X		50.0

**Table 3. For each of the following tick (one only) risk category for HIV transmittance**

	High risk	Possible risk	No risk
Shaking hands			X
Spitting			X
Kissing on the cheek			X
Biting			X
Coughing			X
Needle-stick injury		X	
Being a blood donor			X
Anal intercourse	X		
Mouth-to-mouth resuscitation		X	
Hugging			X
Vaginal intercourse	X		
Sneezing			X
Sharing towels/ flannels			X
Sharing hypodermic needles	X		
Oral sex		X	
Being bitten by an insect			X
Receiving a blood transfusion		X	
Sharing drinking glasses/ cups			X
Swimming in a public pool			X
From a lavatory seat			X
Ear piercing		X	
Having a tattoo		X	
Sharing a toothbrush		X	
Sharing a razor		X	

For all of the questions there were no statistically significant differences in correct answers between females (n=7) and males (n=19), nor in age (20–25 yr, n=8; >25 yr, n=16).

## Discussion

This study has shown that, although medical laboratory technologists from the Pacific region had reasonable AIDS/HIV knowledge, various deficiencies in their knowledge were apparent. These deficiencies covered all areas of the questionnaire, i.e. HIV presence in biological fluids, methods for HIV destruction outside the body, risk categories of HIV transmittance, and general AIDS/HIV knowledge.

Similar deficiencies in AIDS/HIV knowledge have previously been demonstrated amongst New Zealand and Fiji

laboratory staff<sup>3,5</sup>. In those studies, where the same identical questionnaire was administered, the New Zealand and Fiji medical laboratory technologists had a mean overall score of 73.0% and 62.7% respectively, compared to 59.8% of the Pacific region medical laboratory technologists in the present study.

In Fiji, medical laboratory technologists who had previously attended AIDS/HIV lectures (45%) tended to have more AIDS/HIV knowledge compared to their colleagues who had not. In the present study only four out of 26 medical laboratory technologists had previously attended AIDS/HIV lectures.

Overseas studies have conclusively demonstrated that AIDS/HIV education of health professionals not only improves their knowledge, but also changes their attitudes to and tolerance of AIDS and HIV affected individuals<sup>8,9,10,11</sup>. Other studies have also suggested that unfounded fear, and a lack of AIDS/HIV knowledge, has contributed to medical laboratory technologists leaving the profession, or seriously considering this option<sup>2,12</sup>.

It is therefore reasonable to assume that raising medical laboratory technologists' AIDS/HIV knowledge in the Pacific region would be desirable and beneficial bringing about better laboratory practices in handling HIV positive biological sam-

ples, thus leading to lesser fear and concerns which would have a flow-on effect on their attitudes to AIDS and HIV affected individuals. Educational programs have to be targeted at medical laboratory technologists in their jobs, and have to focus not only on AIDS/HIV knowledge, but also on their attitudes and psychosocial issues<sup>4,8,13</sup>.

There are some limitations to our study. Firstly only 26 medical laboratory technologists participated in the study, thus the results obtained may not be totally representative of their other colleagues, or any specific country in the Pacific region. However the results obtained in this study closely mirror those of their Fiji colleagues where a participant rate of 76% was achieved<sup>3</sup>. Secondly, as English is not always the first language of the Pacific region, misunderstanding of some of the questions may have occurred resulting in incorrect

**Table 4. General AIDS/ HIV knowledge**

Question	Correct answer	Correct answer %
By which of the following is HIV usually detected in the body	Blood test	100
Can a person who is HIV positive be symptom free?	Yes	65.4
Can HIV be passed from a woman to a man during vaginal intercourse?	Yes	100
Can a person who has not had sexual intercourse for 5 years be HIV positive?	Yes	65.4
Can AIDS-related illnesses be treated?	Yes	42.3
Do all HIV positive people die of AIDS?	No	26.9
Which is more easily contracted - AIDS or Hepatitis B?	Hepatitis B	65.4
Is pregnancy a particular risk factor for an HIV positive woman?	Yes	76.9
Can HIV be transmitted to an unborn baby?	Yes	96.2
If a person has a negative HIV test, could they still be HIV positive?	Yes	53.8
Is there a vaccine against HIV in general use?	No	88.5
Can AIDS be cured?	No	84.6

responses. Thus with the question of whether being a blood donor is a risk category for acquiring HIV, the respondents may have focused on a single word, ie blood, and formulated their response accordingly.

In conclusion this study has demonstrated various deficiencies in AIDS/HIV knowledge of medical laboratory technologists from the Pacific region, and suggests that continuous educational programs be directed towards them and other health professionals in order to reduce unfounded fears and attitudes and to improve their work practices and attitudes in regard to the highly emotive issue of AIDS and HIV. As the philosopher Bertrand Russell stated in 1950 "Fear is the main source of superstition and one of the main sources of cruelty. To conquer fear is the beginning of wisdom."

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