

# Knowledge of human immunodeficiency virus post-exposure prophylaxis among doctors in a Nigerian tertiary hospital

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## Abstract

**Background:** The mainstay of prevention of occupationally-acquired HIV infection is compliance with universal precautions. Appropriate post-exposure prophylaxis is an integral part of prevention, control and workplace safety. This study was undertaken to assess the level of knowledge of post-exposure prophylaxis (PEP) against human immunodeficiency virus (HIV) among doctors in Federal Medical Centre, Gombe, Nigeria.

**Materials and Methods:** Ethical committee approval for the conduct of the study was obtained. Questionnaires were served to all cadres of doctors from house officers to consultants; it was completed and returned on anonymous basis.

**Results:** Sixty six (88.0%) of the 75 distributed questionnaires were returned completed and formed the basis of further analysis. The overall knowledge level of post-exposure prophylaxis against human immunodeficiency virus infection was very low. About 62.1% are aware of the existence of PEP policy in the hospital. The level of knowledge concerning the high-risk fluid and three drugs used in PEP is high. Over 90% are not aware of the risk of sero-conversion following significant needle-sticks injury and mucous membrane exposure. The study also revealed poor knowledge concerning actions to be taken, how soon to commence the PEP treatment and the duration of medication following needle stick injury. More than 50% of the surveyed doctors had experienced significant exposure to potentially infective materials and none reported or sought PEP advice.

**Conclusion:** There is the need to educate the doctors and other health workers about the PEP guideline policy, what to do in the event of injury, whom to contact and the importance of seeking urgent advice following injury or exposure.

**Key words:** HIV infection, post exposure prophylaxis, universal precautions, workplace safety

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## Introduction

Occupational exposure to human immunodeficiency virus (HIV) presents a low but measurable risk of infection to health care workers. The widespread adoption of universal precautions guidelines has led to significant reduction in needle-stick and other injuries.<sup>[1,2]</sup> Despite these precautions, occupational exposures still continue to occur and are under-reported.<sup>[1]</sup>

Appropriate post-exposure management following a

significant potential exposure is an important part of a program to prevent infection and an integral element of workplace safety. Many doctors have inadequate knowledge about post-exposure prophylaxis (PEP) despite being at risk of infection.<sup>[1-3]</sup> It is important that those with potential risk of exposure should know the procedures to follow and where their first point of contact should be in the event of an accidental injury or exposure to risk factors.

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This study endeavoured to assess the level of knowledge of PEP among doctors in a Nigerian tertiary hospital.

## Materials and Methods

Ethical committee approval for the conduct of the study was obtained. Questionnaires were served to all cadres of doctors, from house officers to consultants, to be administered on anonymous basis.

The data collected was collated and analyzed using SPSS version 14 software.

## Results

Sixty-six (88.0%) of the 75 questionnaires were completed, returned and analyzed. This comprised 24 (36.4%) consultants, 31 (47.0%) registrars, and 11 (16.7%) house-officers.

Only 41 (62.1%) of the respondents were aware of the existence of an HIV post-exposure prophylaxis policy in the hospital.

About 95% of the respondents were unaware of the relative risk of HIV infection following exposure to the different risk factors; however, majority (71.2%) were aware of the fact that other body fluid, presumably non-blood stained, may be considered as high risk for transmission of HIV.

Majority of the surveyed population do not know where and whom to report to in the case of an accidental exposure. Again, over one half of them could not state correctly the first-aid procedure following high-risk exposure; 30 (66) of the respondents, 13 (24) consultants, 13 (31) residents doctors and 4 (11) house officers were able to state the first-aid procedure correctly. There was no statistical significant correlation between the awareness of first-aid procedure and the cadre of the practitioner ( $P > 0.05$ ) [Table 1].

Almost three quarters of the practitioners wrongly believed that PEP could be delayed for 24 h or more after significant exposure and 83.4% of the doctors have no idea about the PEP drug regimen in use; however, about 75% of them were able to mention the few drugs in the different regimens even when majority (65.2%) could not correctly state the duration of the administration of the drugs.

Thirty four (51.51%) of the surveyed doctors had exposure to potentially infectious materials on one or more occasions during their clinical practices. These included 27 percutaneous injuries, three mucous membrane and four broken skin exposures to body fluid. It is worrisome that none of them reported or sought advice about post-exposure prophylaxis.

Some of the reasons advanced for not reporting or seek PEP advices are stated below:

- a. "No PEP policy in place"
- b. "Took it lightly by faith"
- c. "Occurred very late at night"
- d. "I was encouraged not to worry"
- e. "I do not know whom and where to report to"
- f. "Reluctant because I felt the chance is low"
- g. "Patient was screened and confirmed negative before surgery"

## Discussion

Although compliance with universal precautions guidelines remains the mainstay of preventing occupationally-acquired HIV infection, appropriate management of exposures has been unequivocally accepted as an integral element of prevention, control and workplace safety.

Doctors are at risk of needlestick injury and have potentials for exposure to infectious materials during the discharge of their clinical responsibilities. The prescription of antiretroviral as post-exposure prophylaxis following significant potential exposure to HIV has now become routine and it is important that those at risk should know what to do immediately following exposure and where to report to or seek advice.

This study demonstrated that overall, there was an inadequate knowledge about PEP among the surveyed doctors; and their perception of risk of HIV infection following high risk exposure is very low. Although up to 62.1% of the surveyed doctors were aware of the existence of PEP policy in the hospital, more than one half of them do not know the first aid procedure to do following needlestick injury which essentially include promoting active bleeding of the wound and thorough irrigation under running water.<sup>[1,6]</sup>

The general understanding of HIV transmission in terms of high risk body fluid and three specific drugs used in PEP was fairly commendable, in view of the general paucity of PEP knowledge among the respondents; however, the fact that 62 (93.93%) of the doctors are ignorant of the percentage risk of seroconversion following needlestick injury and mucous membrane contact was quite worrisome.

The ignorance of PEP guideline among the doctors was further confirmed when more than 50% of them were not aware that for optimal effect, PEP should be commenced within 1 h of injury and for a duration of four weeks.<sup>[1,5,6]</sup>

Under reporting of needlestick injuries and other potential occupational exposure by doctors has been widely reported

**Table 1: Responses to the different questions in the proforma**

Question items	Percentage of positive response
Is there an HIV post-exposure prophylaxis (PEP) policy in the hospital?	62.1
What percentage of high-risk exposure is likely to result in the transmission of HIV infection to the recipient in a) percutaneous exposure, b) mucous membrane exposure	6.1
Which of the following nine body fluids, presumably non-blood stained, may be considered as high-risk for the transmission of HIV? a) breast milk b) synovial fluid, c) saliva d) faeces e) urine f) peritoneal fluid g) plural fluid h) vomit i) cerebro-spinal fluid	71.2
Whom should be contacted in the event of needle stick-injury?	27.3
What two first-aid procedures should you perform to the needlestick site? **	45.5
How soon after a high-risk needle-stick injury, should PEP be commenced?	25.8
What types of PEP drug regimens are available?	16.6
Name three of the drugs used in PEP?	74.2
How long should the drug be administered?	34.8
Of those (51.5%) exposed to potentially infectious materials, how many reported for PEP?	0.0

\*\*  $P > 0.05$

in the literature.<sup>[1,4,5,7,8]</sup> More than 50% of the respondent doctors in the present survey had experienced exposure to potentially infective materials at one stage or another, in their practice, but none either reported or sought PEP advice; this finding further supports the previously observed trends.

In addition, this study revealed an unacceptable disconnect between the doctors and the existence of a durable PEP guideline policy in the hospital.

Since timely intervention with PEP after high risk needlestick injuries has been shown to reduce the risk of HIV seroconversion,<sup>[1,5,6]</sup> it is recommended that healthcare workers should be adequately educated about PEP guideline policy. This should include knowledge about the possible risk of occupational exposure, prevention of exposure, information about first-aid, importance of seeking urgent advice following injury/exposure and whom to contact. The hospital should have a written policy on PEP which is easily accessible and will include out-of-hour coverage. It is believed that with these measures in place, the risk of developing HIV from high risk needlestick injuries and other potential exposures would be minimized.

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