

# KNOWLEDGE, ATTITUDE AND PRACTICE UNIVERSAL BASIC PRECAUTIONS BY MEDICAL PERSONNEL IN A TEACHING HOSPITAL

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## SUMMARY

**Background:** Universal Basic Precautions (UBP) are not well understood nor implemented by health professionals, though crucial in HIV/AIDS prevention. As defined by Garner, UBP refers to “*the prevention of transmission of blood borne pathogens like HIV through strict respect by health workers of rules concerning care and nursing*”

**Objectives:** To find out knowledge and attitudes of medical personnel doctors in the Department of Surgery of the Korle Bu Teaching Hospital to HIV transmission and to find out their current practices of UBP in surgery.

**Methods** The study was carried out using a structured questionnaire which was self administered to fifty medical personnel after preliminary introduction at a plenary session.

**Results:** Results showed that alleged knowledge did not match actual tested knowledge (92% verses 71%). Knowledge of all the forms of HIV transmission was rather limited among medical personnel. Practice of UBP was also not universal as 44% preferred to rely on pre-op HIV testing of patients and knowledge of their status whilst 36% of respondents admitted reluctance to perform an invasive procedure on an HIV positive patient.

**Conclusion:** This study shows the need for the Ministry of Health, the Ghana Health Service and its institutions to develop and implement specific policies on the practice of UBP, training of health care providers and ensuring the consistent supply of protective materials.

**Keywords:** Universal Basic Precautions, HIV, knowledge, prevention and attitudes of doctors.

## INTRODUCTION

The HIV/AIDS epidemic is firmly rooted in every country all over the world today. Currently 33.3 million people worldwide are living with HIV. For the health professional, in addition to contact with

infected semen, blood and blood products, HIV infection can also be acquired through exposure to other contaminated body fluids such as CSF, pericardial/pleural fluids and amniotic fluids.

The risk of HIV infection may appear relatively low but this calls for worry as those infected got it through care of their patients<sup>1,2</sup>.

The term Universal Basic Precautions (UBP) was introduced in 1985 by Garner<sup>3</sup>. He defined it as: “*the prevention of transmission of blood borne pathogens like HIV through strict respect by health workers of rules concerning care and nursing*”. Gerberding et al<sup>4</sup> also defined Universal precaution: “*the routine use of appropriate barrier and techniques to reduce the likelihood of exposure to blood, other body fluids and tissues that may contain blood borne pathogens*”.

UBP assumes that anybody in a hospital, especially patients, is potentially a carrier of blood borne pathogens, therefore all patients are treated in the same way as though they were infected.

In practical terms it involves the use of gloves, aprons, goggles, suitable care of needles, sharps and other contaminated instruments, house keeping with appropriate cleaning policies and ensuring strict adherence to standard practices. This requires the sustained provision of protective materials, proper training of health care providers and adherence to sterilization and disinfection protocols.

One group of people at a relatively higher risk of exposure are health workers. This study aims at assessing the knowledge, awareness and practice of medical personnel of universal basic precautions.

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**Objectives of the study**

These were three fold:

- To find out the knowledge and attitude of medical personnel on HIV/AIDS transmission.
- To find out the practice of universal basic precautionary measures among medical personnel in the department of surgery, KBTH, with respect to HIV prevention.

**METHODOLOGY**

Structured questionnaires were administered to 50 health professionals ranging from medical students to consultants (Table 1). The questionnaires were self administered by respondents after they were introduced by the authors at a group meeting. All the medical students included in the study were final year students (sub-interns) who had been exposed widely to clinical practice. All the respondents handed in their filled questionnaires by the end of the session.

The data was analyzed manually and systematically for the various variables.

**RESULTS**

**Knowledge**

Forty six (92%) respondents claimed knowledge about universal precautions, 2 (4%) had no knowledge and 2(4%) others gave no response (Table 2). Between 23 (46%) and 48 (96%) of respondents understood the various constituents of UBP.

**Table 1** Breakdown of the range of respondents.

Category of Respondents	Number
Consultants	15
Specialists	1
M.O	1
Residents	19
House officers	3
Sub interns	10
No rank given	1
<b>Total</b>	<b>50</b>

**Knowledge on Mode of HIV Transmission**

Respondents were asked whether hollow and solid needle stick injuries carry the same risk of HIV transmission. Forty four respondents (88%) said hollow needles carry a greater risk than solid ones, 3 (6%) respondents disagreed. There was no response from 3 (6%) persons.

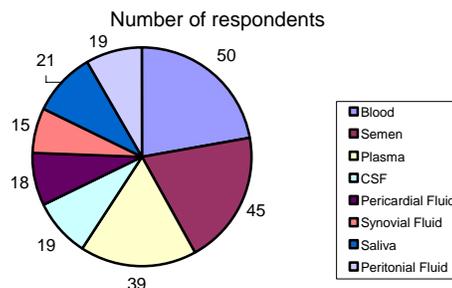
**Table 2** Respondents understanding of what constitutes Universal Basic Precautions

Forms of universal pre-cautions	Response		
	Yes	No	No response
Wearing of gloves	48 (96%)	0	2 (4%)
Wearing of face masks	38 (76%)	3 (6%)	9 (18%)
Wearing of boots	35 (70%)	7 (14%)	8 (16%)
Scrubbing for operations	23 (46%)	12 (24%)	15 (30%)
Wearing of goggles	44 (88%)	4 (8%)	2 (4%)
Wearing of aprons	40 (80%)	5 (10%)	5 (10%)

Twenty four (48%) of respondents said squeezing of blood from the site of a needle prick reduces the risk of HIV infection. An equal number disagreed and 2 (4%) did not respond.

On muco-cutaneous transmission of HIV, 16 (32%) indicated that contact by intact skin with infected blood or infected body fluids constitute exposure to HIV. Thirty-two (64%) respondents disagreed and 2 (4%) gave no answer. Asked which mucous membranes were at risk of exposure, 21 (42%) of the respondents mentioned the genital, oral and nasal mucosa; 13 (26%) mentioned the conjunctiva and the remaining 16 (32%) gave no examples.

When asked to give examples of body fluids through which HIV could be transmitted, most mentioned blood, semen and plasma followed by CSF, pericardial fluid, synovial fluid, saliva and peritoneal fluid. It is clear from the table that most respondents knew about HIV transmission through blood products and semen. Knowledge on other modes of transmission appeared rather limited. Figure 1 shows the relative proportions as mentioned above.



**Figure 1** Body fluids through which HIV transmission can occur

### Attitude

All respondents except one person said UBP reduce the risk of HIV transmission. Forty-eight (96%) of the respondents agreed that UBP should be practiced for all patients. One respondent (2%) said it should be so for only HIV positive patients and one person (2%) was silent on the issue.

Forty-seven (94%) of the respondents agreed that it is important to wear gloves when doing invasive procedures but 3 respondents (6%) disagreed. In spite of this, 22 (44%) persons said every patient going for surgery should be screened for HIV, 27 (54%) said no to this whilst 1 person (2%) did not give their opinion.

As many as 18 respondents (36%) admitted that they would be reluctant to perform an invasive procedure on an HIV positive patient but 31 (62%) had no problem with that. One (2%) respondent gave no answer.

### Actual Practice

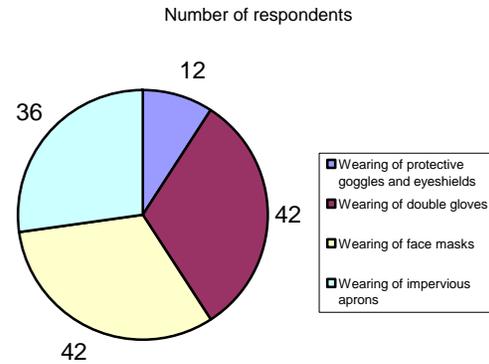
Forty-two (88%) of respondents indicated that they wore gloves routinely when performing invasive procedures on patients but 8 (16%) did not for the reasons that:

- they are careful when performing invasive procedures,
- there is no time to look for gloves in emergency situations
- that sometimes gloves are not readily available,
- they have better control over the IV canula without gloves and
- they can set intravenous lines without soiling themselves.

Respondents were also asked which precautionary measures they practise in surgical procedures.

In response to the use of other precautionary measures some respondents did not wear some of the protective gadgets. For example, goggles were not always used because they were not available in the theatre, were not routinely needed in every operation and the available ones did not fit or the respondents were not used to wearing goggles for operations.

On aprons, they stated that it is too warm to wear them or that they only wear them for potentially bloody surgery. The results are shown in Figure 2.



**Figure 2** Some current UBP practices

### DISCUSSION

In a study in China by Holtzman et al<sup>5</sup>, only 3% knew about the need for universal precautions. The risk of HIV infection would appear to be largely a perception as studies do not indicate a high transmission infection risk rate. A study by Marcus<sup>1</sup> showed that only 4 persons sero-converted out of 1,201 health care workers exposed to HIV infected blood.

Vlahov and Polk<sup>2</sup> found out that following a needle stick injury, the risk of HIV infection is less than 1% as opposed to Hepatitis B infection, which is 6-30%.

The level of knowledge of UBP among the respondents is high at 92% as compared to the practice. For instance only 84% of the respondents wear gloves for invasive procedures and an equal number wear face masks. The least practiced is the wearing of protective eye shields (24%). Most research indicates that, knowledge of universal precautions does not necessarily impact on compliance. Knight V suggests that not all practitioners are as knowledgeable as they could be<sup>6</sup>.

Hartley Troya S<sup>7</sup> suggested that practitioners tend to increase the level of protection when they think a client is a high risk. In a study in Thailand by Danchaivijitr S et al<sup>8</sup>, up to a quarter of doctors and nurses did not fully understand how to use protective barriers properly.

Recapping of used needles is reported as one way through which health workers sustain needle pricks and in this study as many as 78% of the respondents do that. This practice must be reviewed and other methods of needle disposal must be introduced in our institutions.

It is worrying to note that as many as 18 (36%) respondents expressed reluctance at attending to people living with HIV for the fear of getting infected. This buttresses the need for more education on the subject of Universal Basic Precautions especially from the level of training institutions and contrasts with the study in Thailand by Danchavijitr S *et al* where both doctors and nurses were willing to handle HIV positive patients<sup>8</sup>.

There are a few gaps in the knowledge of respondents regarding modes of HIV transmission. Some stated that contact of intact skin with HIV infected samples carries a risk of getting infected but this is not true. This suggests that there is the need for continuing professional development sessions to constantly remind even doctors of some facts about HIV.

This study has brought to the fore a wide gap between knowledge and practices that would protect health personnel against HIV.

The big task now is to work at improving on our practice as doctors so as to reduce risk of getting infected as we care for our patients and also be examples to our fellow health workers.

## RECOMMENDATIONS

The Ministry of Health, the Ghana Health Service and its institutions need to;

- Develop specific policies on the practice of Universal Basic Precautions
- Train health care providers in the implementation of UBP
- Ensure consistent supply of all protective materials at all times within institutions

## Limitations

This study has limitations but is also a good starting point for more extensive future research with the aim of giving our patients optimum care whilst being careful not to compromise our own health in the process.

1. The sampled population is small making it difficult to generalize the findings
2. A few of the respondents are medical students (sub-interns) with limited clinical experience

3. Respondents did not answer every question which limited comparisons of responses
4. There is limited literature available on previous studies involving doctors and nurses in similar developing countries.

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