

# ISID Small Grants Program Final Report

by Alex Owusu-Ofori, MB, ChB • Ghana

## Report on a study of the epidemiology of blood-borne pathogens and needlestick injuries among health workers in Ghana.

Since 1984, when the first report of a health care worker (HCW) being infected with the human immunodeficiency virus (HIV) through a needle stick was published, several other reports and publications have established that health care workers are at risk of infection with hepatitis B (HBV), hepatitis C (HCV), and HIV through such injuries.

Industrialized countries have made significant progress in reducing the transmission of blood-borne pathogens to health care workers. Policies like the implementation of universal precautions, vaccinations against hepatitis B, and the enactment of the federal Needlestick Safety and Prevention Act are in place in the US. However, very little has been done in less developed countries, despite the fact that workers in developing countries are at higher risk of contracting these infections. The problem has been overlooked both by policy makers and by healthcare workers, possibly because there is very little documentation.

This study was aimed at assessing the frequency of needle-stick injuries and exposure to blood/body fluid among HCWs. Though medical and nursing students were included in this survey, data from their responses have not been included in this report. The response rate was about 50%, with about 2000 questionnaires being evaluable.

### Blood/body fluid exposure and protection

Thirty-two percent of respondents reported having blood/body fluid spilled on their non-intact skin or mucous membrane within the past 12 months. The most common body fluid was blood, but urine, liquor/amniotic fluid, and vomitus were also common.

The most frequent procedure associated with blood/body fluid spills was setting up or disconnecting an IV line. Other events associated with a spill included patients who struggle, application of pressure to bleeding sites, and accidental spillage of specimen containers.

57.4% of HCW wore some form of protective clothing/equipment at the time of the last exposure.

### Needlestick/sharp object injuries

The prevalence of needlestick/sharp object injuries was 32.4%; 72.3% were performing the procedure and 13.1% were assisting. Cleaning up after the procedure (7.0%) and disposing medical waste (5.9%) were also opportunities for injury.

Needles on syringes were the most frequent cause of sharp object injuries (66.9%). Other common sharps include suture needles (9.3%) and butterfly needles (6.7%).

More than half (54.9%) of HCWs reported not recapping needles, while 31.3% frequently recap needles with only one hand. Only 13.8% frequently recap with two hands. Recapping is a high-risk procedure and should be strongly discouraged.

### Reporting of injuries

Only 20% of injured HCW reported their injury to a supervisor. However, there is no documentation of these injuries nor any plan for risk assessment. This low level of reporting may reflect the absence of any 'incentive'; in most cases nothing is done for these injured workers, and few had access to HIV post-exposure prophylaxis.

### Hepatitis B

Hepatitis B vaccination is 95% effective in preventing chronic infections. Elsewhere in the world, all health workers are required to be immunized against Hepatitis B and infants routinely receive the vaccine as well. In Ghana, however, there is no clear policy on hepatitis B vaccination, even though the Ministry of Health occasionally makes the vaccine available through the various health institutions.

A majority of HCWs in Ghana have had no vaccination at all. Forty percent (813 respondents) received some form of hepatitis B immunization. This includes 37% who have been fully immunized by receiving three full doses, with or without a booster dose. Most (84.5%) vaccinated HCW received the vaccine free from their employers through the Ministry of Health. Ten percent of the positive responders bought the vaccine themselves, while 2.9% received vaccine donated by the drug company.

A person who experiences one needle-stick injury from a needle used on a person infected with HBV, HCV, or HIV has 30%, 1.8%, and 0.3% risk of infection, respectively. If HCWs, whom a nation invests so much to train, are at such a high risk of being infected with these blood-borne pathogens, the implications are obvious. Care must be taken so that the near future will not see patients being cared for by chronically ill health care personnel. ❖

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