

Healthcare workers in Sub-Saharan Africa and the risk of acquiring immunodeficiency virus: Let's build a better environment

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Abstract

Healthcare workers are at the forefront in the fight against human immunodeficiency virus (HIV) and confront the risk of acquiring accidental transmission of virus. Not only the professionals who are working in HIV-prevalent areas, but their entire families are at risk and need to get appropriate attention by the employers. The region most devastated by the HIV is sub-Saharan Africa. It accounts for two-thirds of the world's HIV cases and nearly 75 per cent of deaths due to acquired immunodeficiency syndrome (AIDS) despite the fact that the number of people in countries receiving antiretroviral treatment jumped ten-fold in five years to 4 million, and HIV infections dropped 17 per cent from 2001 to 2008. The epidemic continued to outpace the response, with five new infections reported for every two people receiving treatment.

This review is meant to highlight the responsibilities of professional bodies, societies and organisations which are either ignorant or have remained unaddressed. The recent 14-point recommendation by the World Health Organization (WHO) in collaboration with International Labour Organization (ILO) and United States Agency for International Development (USAID), has described the basic rights of healthcare workers (HCW) who are active at the cost of possible risk to their lives. The new vision is zero new infections; zero discrimination; zero immunodeficiency syndrome (AIDS)-related deaths is only possible if we keep all the HCWs safe and comfortable, so that they can deliver the best of what they can to fight this potentially deadly endemic.

Keywords: Health-care workers, International labour organisation, World Health Organisation, Human immunodeficiency virus.

Introduction

Healthcare workers (HCWs) are the fundamental part of

the team fighting against the HIV. However, majority of the HCWs are working in situations often deprived of appropriate attention by the relevant authorities. This article highlights not only the importance of the issue and current difficulties, but also raises voice to reinforce the responsibilities of authorities involved.

The overall rate of HIV transmission through percutaneous inoculation (i.e., by means of a needle or other instruments that pierce the skin) is widely reported to be 0.3%. Features of exposure that are associated with a higher rate of transmission include a needle that was used to cannulate a blood vessel in the source patient, advanced human immunodeficiency virus (HIV) disease in the affected patient, a deep needle stick injury, and visible blood on the surface of the instrument.¹ Theoretically, any exposure that involves piercing of the skin may transmit infection, but clinical judgment is required to assess the likelihood that the inoculum is sufficient to pose a credible threat of transmission; many clinicians use '...a puncture that draws blood, as a general threshold. Splashes of infectious material to mucous membranes (e.g., conjunctivae or oral mucosa) or broken skin also may transmit HIV infection (estimated risk per exposure, 0.09% [95% CI, 0.006 to 0.5]).² The average risk associated with exposure of non-intact skin and exposure to HIV-infected fluids and tissues other than blood or body fluid is too low to be estimated in prospective studies. In a retrospective study, the centre for disease control (CDC) found that the risk of transmission of HIV to HCWs was increased when the device causing the injury was visibly contaminated with blood; when the device had been used for insertion into a vein or artery; when the device caused a deep injury; or when the source patient died within two months after the exposure.^{2,3}

No matter how small the risk of transmission, the impact of this happening can lead to devastating implementations for the HCWs and their families.

Current Challenges to HCWs

HIV remains a major challenge for the patients and HCWs. Surgeons, internists and other medical practitioners, nurses, technicians; all are amongst the

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vital players fighting against this disease and, therefore, are a leading risk group for being inadvertently afflicted by the disease. The tragedy is that those who are vulnerable and working in the most highly prevalent areas are being most neglected in terms of their own safety and protection. Not only the professionals themselves, but their families are at risk and need to be taken care of. Such appropriate measures and specific steps have been described in detail recently by a joint document of the World Health Organization (WHO), International Labour Organization (ILO) and the United States Agency for International Development.⁴

Until now, health workers are often deprived of getting specific risk safety covers. For example, international insurance containing airlift or appropriate pre-and post-exposure prophylaxis cover can be arranged. In addition, there is no job safety or compensation benefits in case the HCWs accidentally acquire the infection. Moreover, their future benefits and financial compensations for looking after their families have no security at all.⁵ Employment contracts should clearly address these core issues vital for the HCWs in endemic zones. Attention is required from the professional bodies, societies and organisations in ensuring that every HCW is provided with optimal conditions and adequate legal assurances for safety. National health policies and organisations are deficient on matters related to HIV and risks for HCWs. Time has come for the HCWs to get their basic legal rights for the possible risks to their lives and potential impact on their families.⁶

Sub-Saharan Africa and the HIV Burden

A 2009 study noted that an estimated 22.5 million [20.9 million-24.2 million] people living with HIV were resident in sub-Saharan Africa, representing 68% of the global HIV burden. About 34% of all people living with HIV were in the 10 countries of southern Africa in 2009. With an estimated 5.6 million [5.4 million-5.8 million] HIV-positive people, according to a report, despite being the most developed country and having the most advanced economy in the continent, South Africa has the highest number of HIV infection in the world.^{7,8}

Swaziland has the highest adult HIV prevalence in the world, with an estimated 25.9% [24.9%-27.0%] of its population afflicted by HIV in 2009. This is an alarming situation and needs a critical review and effective plan for the future. Sustained efforts are needed and HCWs should be more empowered in order to play their important role

against this disease.^{9,10}

A study in the Mwanza region of Tanzania, reported the risk of occupational HIV transmission for HCWs at 0.27% per year. According to the sub-group analysis, surgeon's risk of acquiring HIV was twice than other workers; 0.7% per year. It recommended enhancement of knowledge and upgradation of healthcare facilities in order to ensure personal protective measures and the availability of standard equipment.¹¹

A cross-sectional questionnaire based study from Uganda, comprising 526 nurses and midwives, revealed high incidence of needle stick injuries; 4.2 per person-year. It reported that the major risk factor for needle stick injuries were lack of training, prolonged working hours, recapping of the needles, and not following the standard measures when handling needles.¹²

Another comparative study from Zambia reported the risk of sero-conversion due to parenteral blood exposure among the surgeons practising in tropical Africa versus their colleagues in the western world. The cumulative chance of seroconversion was 0.46% in tropical African surgeons against 0.1% in the West. This was due to a combination of high prevalence of HIV and high needle injuries in Africa. The study concluded that the risk was 15 times higher for surgeons practising in tropical Africa than in the west.¹³

The message highlighted by the data is clearly reflective of HCWs role in combating this disease. By taking our eyes off the HCWs, we run the risk of failure.

The new vision of Zero new infections, Zero discrimination, Zero AIDS-related deaths are achievable only if we ensure the safety of all the HCWs, by keeping them safe and psychologically secured.

Infection control practices, defined protocols for recruitment contracts, international insurance facilities, post-exposure care for individuals and families, teaching and training in safe practices can all make a huge difference. Despite the strict adherence to safety precautions such as laminar flow operating rooms, good-quality gloves, protective laboratory gowns, eye's protection by good quality eye-wear and proper decontamination of laboratories, there is likelihood of accidents leading to transmission of potentially dangerous diseases.¹⁴

The potential transmission modes of HIV are blood, semen, vaginal secretions, vomitus, breast milk or pus from a suspected person with HIV may cause infection.

The risk of acquiring HIV from a needle-stick injury is less than 1%; the Risk of exposure not involving a puncture or a cut (such as a splash of body fluid onto the skin or the mucous membrane) is less than 0.1%; the risk of HIV infection from a human bite is between 0.1% and 1%; while 'Clear' body fluids (tears, saliva, sweat and urine) contain little or no virus and do not transmit HIV unless they are contaminated with blood.^{15,16} Factors which increase the risk of occupational HIV exposure in developing countries, especially in Sub-Saharan East Africa, include less established safety procedures and standards due to financial factors and poor human resources, improper disposal facilities enhancing chances of accidents, limited resources and non-availability of post-exposure evaluation and treatment, high rates of undiagnosed HIV infection and high prevalence in population, and limited access to personal protective equipment for the HCWs.¹⁷

Post-exposure steps recommended after a needle-stick-body fluid exposure include washing the exposed area with soap and water thoroughly; rapid HIV testing; if positive, this must be taken as true positive; Provision of qualified medical evaluation as soon as possible to guide decisions on post-exposure treatment and testing; based on availability, consider beginning post-exposure prophylaxis (PEP) for HIV.¹⁸

Shortage of Human Resources

There is a severe shortage of human resource to cope with the basic needs of health provision. The irony is that despite this shortage, those who are available are not receiving adequate cover for the risks that they are exposed to. Until recently, health authorities, national policies and international health organisations ignored this important issue of health worker's rights and safety, especially for those working in endemic regions.

HIV infection is considered pandemic by the WHO.

The ranges define the boundaries within which the actual numbers lay, based on the best available information. Sub-Saharan Africa remains the hardest-hit region. HIV infection is becoming endemic in sub-Saharan Africa, which is home to just over 12% of the world's population, but two-thirds of all people infected with HIV. The adult HIV prevalence rate is 5.0%; between 21.6 million and 24.1 million people are affected. However, the actual prevalence varies between regions. Presently, Southern Africa is the hardest hit region, with adult prevalence rates exceeding 20% in most countries, and even higher in

Swaziland and Botswana. Eastern Africa also experiences relatively high levels of prevalence with estimates above 10% in some countries, although there are signs that the pandemic is declining in this region. West Africa on the other hand has been much less affected. Several countries reportedly have prevalence rates around 2 to 3%, and no country has rates above 10%. In Nigeria and Côte d'Ivoire, two of the region's most populous countries, between 5% and 7% of adults are reported to carry the virus.¹⁹

Enormous challenges lie ahead in the battle against HIV in Africa, and dictate the need for human resource as well as sustained efforts through optimal funding and improved morale of the care providers. The issues that need to be addressed include international insurance, job security and post-exposure legal protections, especially for those employed in vulnerable countries.²⁰⁻²²

The ILO, with its slogan of "Promoting jobs, protecting people", is the leading UN agency for HIV/AIDS policies and programmes in the world. The ILO Programme on HIV/AIDS and the World of Work (ILO/AIDS) plays a key role in the HIV/AIDS global response through the workplace. The ILO mobilises governments, employers' and workers' organizations through its tripartite structure and builds on its extensive experience in creating jobs, protecting the rights of the workers, opposing discrimination and improving social protection, occupational safety and health. According to the UNAIDS Global report on AIDS 2010, since 1999, the year in which it is thought that the epidemic peaked, globally the number of new infections has fallen by 19%.²³

The 'zero AIDS-related deaths' vision does pose a challenge, but it is not a hopeless challenge. Globally, mortality is on the decline; deaths among children less than 15 years of age who died from AIDS-related illnesses estimated 260,000 [150,000-360,000] in 2009 were 19% fewer than the estimated 320,000 [210,000-430,000] who died in 2004. The challenge now is to ensure that the survivors with positive status can have access to optimal care and knowledge to prevent them from becoming the source of new infections.^{24,25}

14-point just UNAIDS recommendation for the protection of HCWs in endemic zones of TB and HIV, addresses not only the collective responsibilities of all the stake-holders, but clearly mentions the rights of HCWs and their families to gain a protection while working in challenging zones.^{26,30}

Risk factors for HCWs

Shortage of human resources, overwork, long working hours, poor safety protocols, unavailability of proper protective stock, like surgical gloves, and unavailable disposal mechanisms are some of the leading causes which may increase the vulnerability of accidents. Logical result of the lack of human resource leads to further increase in the stress for HCWs, The situation in HIV-prevalent areas is a good example of this bad combination of work burden and long hours. According to a review study, work periods >8 hours carry an increased risk of accidents; at around 12 hours, this risk is twice as much as at 8 hours. Shift work, including nights carries a further substantial increased risk of accidents.³¹⁻³³ Stories related to the sleep deprivation leading to accidental prick is not uncommon for HCWs and one can easily imagine the additional stress caused by this phenomenon. Reduced working hours is another very basic right which HCWs can still dream in HIV-prevalent regions like Sub-Saharan Africa. In our opinion, the exploitation of HCWs in these regions is manifold and each amplifies the chances of accidents. Therefore, there must be legislation for the protection of HCWs to provide them safer and comfortable working conditions as recommended by the ILO charter.^{3,34}

The review does have its limitations because there is no reliable data published yet as an evidence of definite burden of this important issue. Moreover, HIV screening and keeping subsequent serial record is not practically possible due to ethical and social reasons. It is not possible to survey amongst the population of HCW about the prevalence of HIV. Finally, even the unexpected deaths and sufferings amongst the HCWs go undocumented because of stigma this deadly disease still carries. We tried to review the available observations and literature to connect the different dots to come up with some recommendations.

Conclusion

This time is ripe for the HCWs to get their due rights and protection. Responsibilities and challenges have been defined by the joint declaration which provides the way forward, and may eventually lead to the betterment of health workers who remain exposed to HIV risk. HCWs should endeavour to positively influence the relevant authorities to recognize that their role is indeed central to all efforts to control and reverse the HIV burden worldwide.

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