

Case Report

# HIV Transmission through Unsafe Medical Injection in Rural Cambodia

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## ABSTRACT

**Objective:** While most of people in other parts of the world would do anything to avoid getting injected, but in Cambodia things are quite different, where people have the desire for injections and intravenous drips. This study tries to describe people's health-seeking behaviour toward medical injection in Cambodia.

**Method:** The study obtained with the investigation of The Cambodian National Center for HIV/AIDS (acquired immunodeficiency syndrome), Dermatology and Sexually Transmitted Diseases (NCHADS) investigated the outbreak in collaboration with the University of Health Sciences in Phnom Penh and the member of Roka cluster of the investigation team.

**Result:** 242 confirmed HIV cases were identified with HIV, including 22% was children aged <14 years, and 21% were adults aged >60 years, 62% were in females. 4 women aged >60 years and one girl aged 7 months died after their HIV diagnoses.

**Conclusion:** Unsafe injection left many people got HIV infected with unconscious the cause of infection. This problem will educate patients about the hazard of unsafe injection and seek to reduce their demand for injections, but knowledge alone may not be enough to break the habit. The principle of "first does no harm" should apply equally to health care worker and doctor.

**Key words:** Unsafe injection, HIV, Hepatitis B virus, Hepatitis C virus, unlicensed healthcare provider

## INTRODUCTION

In developing country, unsafe injection practices are widely prevalent which invites potential risk to them and to the community. Unsafe injection is a major concern in Cambodia and a high priority for the Ministry of Health. The unsafe use and inappropriate disposal of injection materials place patients, health care workers, and entire communities at increased risk for infection and injury. <sup>[1]</sup> According to Merriam-Webster, an injection is an act or process of forcing a liquid medicine or drug into someone or something by using a special needle. <sup>[2]</sup> Injections are one of the most frequently used medical procedures. Unsafe injection practice (especially needle

and syringes reuse) are commonplace in low-income country health settings and place both staff and patient at risk of infection with blood-borne viruses. Unsafe injection drug use has long been regarded as a serious public health issue worldwide. The World Health Organization estimates that about 12 billion injections are given each year. <sup>[3]</sup> Unfortunately, most of these injections are unnecessary and, if given in an unsafe manner, can actually pose a threat to health. <sup>[4]</sup> The transmission of hepatitis from patient to patient and human immunodeficiency virus (HIV) through the use of unsafe injection has been recorded for over half a century, and yes the problem persists on a substantial scale in many

countries. Cambodia is one of among the countries are getting the impact of unsafe injection. [5] Cambodia becomes a low middle-income country. Significant gains also have been made in there building of the health system through an extended process of health reform beginning in 1990. Health status has substantially improved since 1993. Cambodia had a long period of war so health care system still needs to reconstruct. Medical care in Cambodia is also a major problem; especially unsafe injection practice by unlicensed health careproviders everywhere in Country. [6]

In many places, injections are perceived as the optimal form of care, a symbol of the best that medicine has to offer and the most efficient and rapid way to find relief. A recent study found that 25% to 96% of outpatient visits in developing world countries resulted in an injection. The reuse of needles and syringes is all too common around the world. [4] Each year, 16 billion injections are given in the developing world and it is estimated that 6.7 billion are done with reused equipment. The region's most affected by needle reuse are Africa, Eastern Mediterranean Europe and Southeast Asia.

While many believe that this is an issue that only effects in developing countries, there are still 10,000 of people in the U.S. that have been put at risk as a result of needle reuse. In 2012, 8,000 people were contacted and urged to get tested for Hepatitis virus and HIV after and oral surgeon based in Denver, Colo., was accused of reusing needle/syringes on patients. The warning came from Colorado Department of Public Health and Environment stating that the dentist has been reusing needle and syringes for more than 10 years. To date, six people have contracted a disease as result of this situation. [7] In China also had the problem of unsafe injection, February 2017 there are 14people got positive of HIV and hepatitis B because of a staff member reused medical equipment that should have been discarded? 14 people had been sacked at Hangzhou's Zhejiang Provincial Hospital of Traditional

Chinese Medicine and eastern Shandong province. Two decades ago low safety standards and insufficient regulation helped spread HIV/Aids in China, and the news of the hospital incident sparked shock and criticism from social media users. [8]

For the case study in Cambodia, unsafe injection is a hot topic and has a big impact on people. In 2014 there is more than 242 villager test positive HIV according to The National AIDS Authority because of the unlicensed healthcare provider, Yam Chroem, including intentionally transmitting the HIV virus and running a clinic without permission from the Ministry of Health. [9] This is a bad news for health problem history in Cambodia, and the world also keeps wondering what were the problem causes many people testing positive HIV at the same time.

## METHOD

The study obtained with the investigation of The Cambodian National Center for HIV/AIDS (acquired immunodeficiency syndrome), Dermatology and Sexually Transmitted Diseases (NCHADS) investigated the outbreak in collaboration with the University of Health Sciences in Phnom Penh. And the member of Roka cluster of the investigation team. Primarily descriptive statistics were used for data analysis. [10] Where appropriate, data were disaggregated by different attributable characteristics of people health-seeking behaviour toward medical injection by using indicators likecross-national income per capita; life expectancy at birth; and health expenditure in Cambodia (table1). It was intended to explore the injection practices, knowledge about universal aseptic precautions (UAP), biomedical waste disposal, infections transmitted, etc. for the healthcare provider. For the community, information regarding numbers of injections received in the past one year, type of injection equipment and any hazards due to the injection was surveyed. Furthermore, the article also took data from National Aid Authority Cambodia (NAAC) for are port

on people who got HIV infected. Other methods of review are more limited when the aim, is to generate a conceptual frame for people concept on injection.

**Table.1. Health statistic in Cambodia**  
(Data from "World health statistics" by World Health Organization) [14]

Total population of Cambodian 2015	15,578,000
Life expectancy at birth (male/female) 2015	67/71
Probability of dying between 15 and 60 years m/f (per 1 000 population, 2015)	209/143
Gross National Income per capita (intl \$, 2015)	1,070
Total expenditure on health per capita (US\$) 2014	183
Total expenditure on health as % of GDP 2014	5.7

## RESULT

According to the investigation of The Cambodian National Center for HIV/AIDS (acquired immunodeficiency syndrome), Dermatology and Sexually Transmitted Diseases (NCHADS) during November 2014–February 2015, a total of 2,045 commune residents underwent HIV testing. Overall, 242 confirmed HIV cases were identified, including 52 (22%) in children aged <14 years, and 51 (21%) in adults aged >60 years. 150 cases (62%) were in females. 4 women aged >60 years and one girl aged 7 months died after their HIV diagnoses. [11] The case has shown a spotlight on the chronically underfunded healthcare system, which is many people, had to rely on self-taught or unlicensed medics to receive treatment. The poor standard of healthcare available to Cambodians was highlighted globally in 2014 when an unlicensed medical ‘provider’ in the commune caused people infected with HIV. This malpractice left 14 villagers dead and the rest of the community in fear. [12]

When the Cambodia National Assembly passed the 2016 national budget last December Cambodia’s public health system was not high on the list of additional resources, receiving a meagre 8% increase from the year prior, or \$275 million. Admirably education received a boost of 28 percent of the \$4.3 billion budget, or \$502 million, while the defence budget rose 17.3 percent to \$382 million. With Cambodia healthcare spending amounting to about \$18 per person, per year, Cambodians feel

hopeless when dealing with Cambodia’s public health system. [13]

Unsafe injection by reuse needle and syringes causes many people in Roka village got positive of HIV. Unsafe injection not only caused HIV but causes potentially deadly infections with hepatitis B virus (HBV), Hepatitis C virus (HCV) and chronic disease or death occurs after several years. Bloodborne pathogens are often contracted through the reuse of needles/syringes. These diseases can be contracted directly when a needle or a syringe is reused or indirectly when using a single-dose medication phial more than once.

A 2014 study sponsored by WHO, which focused on the most recent available data, estimated that in 2010, up to 1.7 million people were infected with hepatitis B virus (HBV), up to 315 000 with hepatitis C virus (HCV) and as many as 33 800 with HIV through an unsafe injection. [15] According to (Figure1) Eastern European, Central Asia, and South Asia are the highest area where injection given with equipment reused.

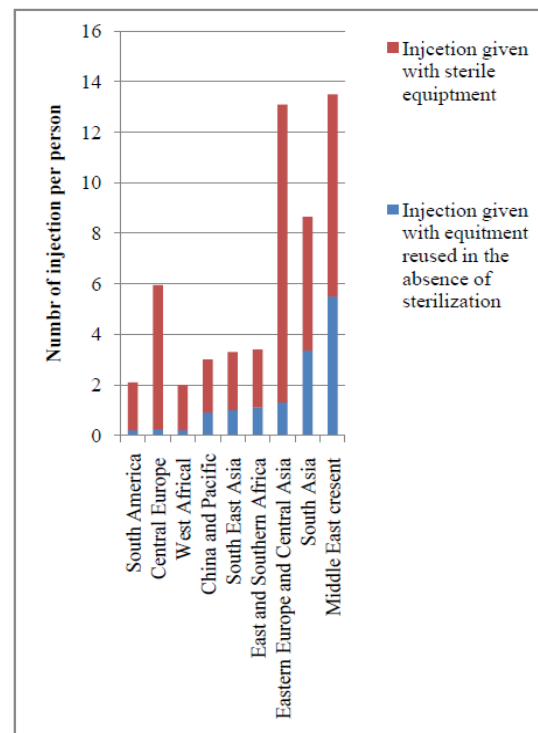


Figure1. Injection Given with Sterile and Reused equipment Worldwide

## DISCUSSION

The mass outbreak HIV transmission shocked a country which, with substantial help from foreign donors and NGOs, Cambodia has made good progress over the last decade in reducing HIV levels. It also prompted the Cambodian government to announce a clampdown on unlicensed health providers. But are the unlicensed healthcare providers, midwives and pharmacies really the problem? [16] A Westerner, who has worked in Cambodia's health sector for many years, says there is a general lack of knowledge about infection control throughout the country's healthcare system. December 2015 BBC article one year after Roka village broke into public view-report continue and common unsafe practices. [17] In that case, the study found 3 reasons causes many people had HIV infected. There are people unlicensed healthcare provider reuse needles and syringes, behaviour like injections, and people behaviour like to treat their sickness at the private sector.

### **Reuse needles and syringes by unlicensed Healthcare provider:**

Lack of knowledge is likely the main cause. The unauthorised practice of medicine occurs when someone gives medical advice or treatment without a professional license. The prohibition against the unauthorised practice of medicine is a precaution against people who would try to treat others without the proper training, or by using unproven methods which could harm or even kill their supposed patients. [18]

As a result, in Cambodia make the unauthorised practice of medicine become a criminal offence with potentially serious penalties. Unsafe healthcare is thought to have been behind the outbreak. Reuse of needle/syringes and other equipment by unlicensed healthcare providers who do not have the knowledge or skills cause people in danger. [19] The healthcare provider who has so far been the only scapegoat is unlikely to be the only person to practice healthcare unsafely. A mass action model developed by the World Health Organization (WHO)

estimates that the reuse of contaminated syringes for medical care accounted for 2.5% of HIV infections in sub-Saharan Africa in 2000. [20] So reuse needle, syringes and medical equipment is really a big concern for people health.

### **People behaviour like injections:**

In Cambodia, almost anyone who sees a doctor or goes to the hospital is given an injection or put on an intravenous drip. This is what patients want, and what medical staff give them - it has become part of the healthcare routine. [16] According to (figure2)(Data from National Institute of Statistics, Cambodia demographic and health survey 2010) demand for medical injections among Cambodian adults is high, averaging 2.6 injections per person per year, compared with countries such as Vietnam (1.5)injections per person per year, India (2.0) injections per person per year, and Nepal (1.2) injections per person per year. On average, women in Cambodia receive more injections (3.3) times per person per year, weighted 95% confidence than men 1.9 times but in some provinces, women receive as many as 5.9 injections per year on average. The proportion of injections administered with reused equipment in this cluster is unknown; however, a 2013 study estimated 5.5% reuse in the Western Pacific region. Analyses of Cambodia's 2005 Demographic Health Survey data indicate that 14,618 HIV-negative persons received an average of 2.0 medical injections per person per year, whereas 84 HIV-positive persons received an average of 7.2 medical injections per person per year. [21]

Despite this substantial difference, it is not known whether HIV infection resulted from medical injections, or whether persons living with HIV receive more medical injections because they are sicker. [11] According to the (figure 2), we can assume that Cambodia has higher injection than the Nepal, Vietnam, and India.

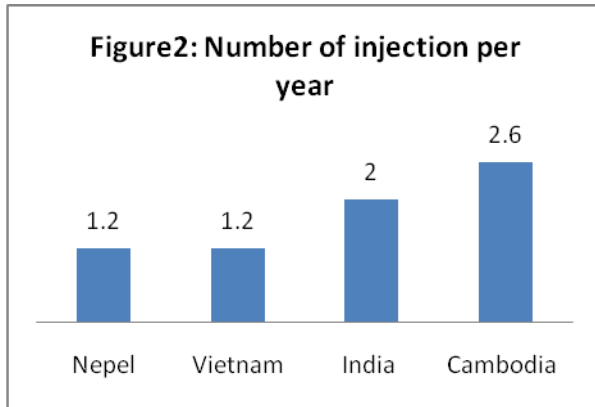


Figure2. Injection per year for developing country (Data from National Institute of Statistics, Cambodia demographic and health survey 2010) [21]

### People behaviour like to cure illness in private clinic:

People lost confident in the public sector. They are hopeless of the health system. When Cambodians fall sick, the vast majority seek medical care from the private sector. Some take their wounds, aches and illnesses to unlicensed clinics. Others seek out travelling medics wielding serum injections or pharmacies with a ready-made bag of pills. Private healthcare has overshadowed the public system for decades and remains beyond the regulatory grasp of the government.

For more than two out of every three patients, healthcare is synonymous with the private sector, according to the government's 2010 Demographic Health Survey. Most look to private clinics or hospitals, while another 20% head directly to pharmacies. [22] Patients say they are driven to the largely unregulated private providers because the facilities are closer, operate during more convenient hours, provide more open access to medicines, have shorter waiting times and offer one-on-one consultations with medical personnel.

### CONCLUSION

Reuse, needles and syringes is a very dangerous action that doctors give to people and cause many people in danger like the case in Roka village, Cambodia. Unsafe injection left many people Transmission HIV unconscious the cause of the problem. Many people in Roka, they are living in

poverty and plus with HIV, how the sorrowful of this careless of an unlicensed healthcare provider. This is a sad story ever for Cambodia. The main points of this sad story are unprofessional, poor knowledge of people, and careless healthcare provider so made more than 242 people in danger and facing with dying soon of HIV. After faced with this bad news, the government of Cambodia should take more attention on public health care, care people who poor of knowledge, people live in rural area, and strengthen the health care system in good standard. The government should promote safe injection practice to health worker and doctor in the country. The problem of unsafe injection is complex and therefore solution will not be straightforward. For example, efforts could be made to improve the education and supervision of health care workers with the aim of reducing unnecessary injections and promoting injection safely. But even so, in poorer Cambodia objects of value are not thrown away and thus the deeper incentives for recycling of syringes remain. Programs may educate patients about the hazard of unsafe injection and seek to reduce their demand for injections, but knowledge alone may not be enough to break the habit; the reason why injections are thought to have magic power must be addressed at a deeper level. After all, the principle of "first does no harm" should apply equally to health care worker and doctor.

### REFERENCES

1. Dr Arshad Altaf, Dr Nagwa Abdel Tawab Hasanin. Making all injection safe. [Internet]. 2015(update 2015, cited 2017, May 26). Available from: [http://www.tngmssh.tn.gov.in/news/WHO\\_std.pdf](http://www.tngmssh.tn.gov.in/news/WHO_std.pdf)
2. Merriam-Webster Dictionary. Injection. [Internet]. 2017 (update 2017, cited 2017 May, 26) Available from <https://www.merriam-webster.com/dictionary/injection>
3. Michelle K. Unsafe injections in low-income country health settings: the need for injection safety promotion to prevent the spread of

- blood-borne viruses. Health Promotion International. 2004; 19 (1): 95-103.
4. Anne V. Reeler, Lone Simonsen. Unsafe injection, Fatal Infections. Journal of Health Access International. 2000; 05(2): 1-2.
  5. M.A Miller, E. Pisani. The cost of unsafe injection. Bulletin of World Health Organization. WHO 1999; 10 (77): 1
  6. Petter L. Annear, John Grundy, Por Ir, Bart Jacobs. The Kingdom of Cambodia Health System Review. 1ed. Phnom Penh. Angkor Publish. 2015.
  7. Pharmajet. Needles reuse Global Problem, and still the major issue in the U.S. [Internet].2012(Update 2017, January 03; cited 2017, March 23). Available from: <http://pharmajet.com/needle-reuse-global-problem-still-major-issue-u-s/>
  8. Yahoo news. China: 14 infected with HIV and hepatitis B as medical staff use medical supply [Internet](Update 2017, February 09) Available from <https://sg.news.yahoo.com/china-14-infected-hiv-hepatitis-094532443.html>
  9. Cambodia: Partially reported outbreak in Roka Commune, but lots of other risks and unexplained infections [Internet]. 2015(Update 2015, December 27). Available from <https://dontgetstuck.org/2015/12/27/outbreak-in-roka-commune-cambodia/>
  10. Chhivun M. Join Press the release the Ministry of Health, HIV cases in Sangke district, Battambang. Phnom Penh; Press Release 2014, December 18. 1p.
  11. Vun, M. C. (2016). A cluster of HIV Infections Attributed to Unsafe Injection Practices. A cluster of HIV Infections Attributed to Unsafe Injection Practices — Cambodia, 2-6.
  12. Asia Pacific. Cambodian doctor guilty of infecting more than 200 patients with HIV [Internet]. 2014 (Update 2015, December 03). Available from <http://www.channelnewsasia.com/news/asiapacific/cambodian-doctor-guilty/2315304.html>
  13. VatVin. Untrained & unlicensed: a look at Cambodia's public health system. Open and develop of Cambodia [Internet]. 2016 (Update 2016, May 03). Available from: <https://opendevelopmentcambodia.net/news/untrained-unlicensed-a-look-at-cambodias-public-health-system/>
  14. Ji-Young Hwang. (2016). A Comparison of the Cambodian and the South Korean Health Care System. NCBI, 1-3.
  15. Judith Mandelbaum-Schmid, TarikJasarevic. WHO calls for the worldwide use of "smart" syringes. Press Release 2015, February 24.
  16. letter, B. N. (2015, December 15 ). A Country with love injections and drips. 2015(Update 2017, January 14) Available from BBC News : <http://www.bbc.com/news/magazine-35111566>
  17. Eng Sarath, Kehumile Mazibuko, Khy Sokunthy. Cambodia: Partially reported Outbreak in Roka commune, but lots of other risks and unexplained infection [Internet]. 2017 (Update 2015, December 27, cite 2015, December 27) Available from <https://dontgetstuck.org/2015/12/27/outbreak-in-roka-commune-cambodia/>
  18. reporter, T. P. (2015, January 12). Thai PBS broadcaster You Can Trust . Retrieved January 04, 2017, from Asian Headline : <http://englishnews.thaipbs.or.th/tainted-needles-blamed-hiv-outbreak/>
  19. E Gupta, M Bajpai, P Sharma, A Shan, and SK Sarin. Unsafe Injection Practices: A Potential Weapon for the Outbreak of Blood Borne Viruses in the Community. Pub Med.gov (NCBI). 2013 Apr-Jun; 3(2): 177–181.
  20. Reid S. Increase in clinical prevalence of AIDS implies an increase in unsafe medical injections. Pub Med.gov (NCBI) 2009 May;20(5):295-9
  21. National Institute of Statistics; Directorate General for Health; ICF Macro. Cambodia Demographic and health survey 2010. Phnom Penh, Cambodia: National Institute of Statistics, Directorate for General Health; Calverton, Maryland: ICF Macro;2011. <http://dhsprogram.com/pubs/pdf/FR249/FR249.pdf>
  22. Lawyers Collective HIV/AIDS Unit. Legal and Policy concerns related to IDU Harm reduction in SAARC countries. 2<sup>nd</sup> ed. Macro Graphics Pvt. Ltd. 2007

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