**Research Analysis**

This paper analyses the Centers for Disease Control and Prevention (CDC) `s article *"Guidelines for Preventing Transmission of Human Immunodeficiency Virus Through Transplantation of Human Tissue and Organs"* published in the MMWR in 1994.

**Purpose**

In this article, as the title suggests, the CDC (1994) purported to provide guidelines on how to reduce the risk of HIV transmissions through organ and human tissue transplants even further.

**Methodology**

A working group initially formed by the Public Health Service (PHS) in 1991 revised the recommendations for reducing the spread of HIV by seeking help from public health organizations, transplant representatives, and public as well as private health experts. These specialists sought to address issues like donor testing, timely detection, testing, exclusionary criteria, and the tracking of infected recipients, organs as well as tissues. The researchers first reviewed existing literature on the subject matter and then sought recommendations for reducing the spread of HIV via the transplantation of organs as well as human tissues. They also reviewed the state of organ and tissue transplants as of 1994, and the guidelines and recommendations to reduce transmissions as at that time.

**Data**

The data used in this study included the existing *"federal regulations, recommendations, and guidelines for blood and plasma"* (p.1-2) and also *"voluntary industry standards"* on the prevention of transmissions(p.4).

**Literature Review**

After reviewing the existing literature, the researchers determined that most of the HIV transmission to organ or tissue recipients happened before 1985. In 1983, the exclusion of blood donors with high-risk behaviors for HIV infection began. In 1985, the HIV antibody tests became available leading to the screening of blood donors, organs as well as tissues before transplants. These measures helped a lot minimize the spread of HIV through these routes. However, an investigation done in 1991 revealed that some recipients had still been infected with HIV through organ or tissue transplants despite screening done through the antibody tests. This happened as a result of HIV positive donors testing "*negative for HIV antibody*" during donation (p. 2). There were also identified cases of HIV transmission *"from infected semen during artificial insemination"* (p. 2). The reviewed literature also suggested that HIV can be spread via HIV infected mother's breast milk to her child. Specifically, the researchers revealed that *"breastfed infants are at a greater risk of acquiring HIV from their infected mothers than are bottle-fed infants"* (p. 2).

**Analysis**

Before the introduction of donor screening methods, there were a lot of HIV transmissions to the organ and tissue recipients. The researchers identified about 41 recipients whose organ donors had died 6 years prior to the testing. It was discovered that those who acquired HIV had acquired it from the allografts in either solid organs or fresh-frozen bone. In this article, the CDC (1994) acknowledged that organ transplants had gained popularity with the "*Organ Procurement and Transplantation Network*" comprising about 66 "*Organ Procurement Organizations*" and 260 "*organ transplant centers*" (p. 3). In 1990 alone, these centers recovered about 15,000 organs from about 4,500 donors. They also obtained tissues from 7,500 to 10,000 donors. They tested blood and screened the donated organs and tissues to make sure they are HIV free. With the increasing rate of organ donation, there was an undeniable need to come u with better guidelines to reduce the risk of HIV transmission through organ and tissue transplants.

**Results**

The researched determined that there are many ways to reduce HIV transmission through the organ and tissue donation process. To begin with, all donor should be screened. One of the notable guidelines to avoid transmission is the *"American Association of Blood Bank's standards for screening blood donors"* guideline that required donors of human milk need to be screened (p. 5). All the donated milk needs to be pasteurized except in cases where the condition of the recipient requires unprocessed or fresh-frozen milk. Undeniably, donor screening is by far the best way to reduce the spread of HIV during transplantation.

Additionally, recipient testing is also another way to minimize the spread of HIV. The HRSA recommends that the United Network for Organ Sharing (UNOS) should request the transplant centers to implement *"an interim voluntary HIV-testing policy for organ recipients"* (p. 6). These recipients should be screened for the HIV-1 antibody both prior to transplantation and after at various time intervals such as quarterly, half yearly and yearly after the transplantation. This would ensure early detection and, thus, early intervention in case of infection before the progression of signs and symptoms.

The risk of HIV transmission through tissue and organ transplants can also be reduced through the inactivation of the virus in tissues. The agents need to be sterilized to remove the virus and to maintain the tissue as well as organ functional integrity. There was, however, no conclusive evidence of this method of reducing risk as at the time the article was published.

**Discussion**

Several factors need to be considered when developing the guidelines for deterring the transmission of HIV from the donor's organ or tissue to recipient. Some of these factors include time constraints, the importance of transplants to recipients, and the differences between organ and tissue-procurement and distribution systems. Living donors need to be interviewed to assess potential high-risk behaviors. It is important to note that HIV transmission risk from an infected donor's organ is almost 100%. The developers of the guidelines need to consider that some of the transplants enhance life while others save a life. It is, therefore, important to ensure that the *"donor screening practices"* are at the highest safety levels (p. 9).

**Conclusion**

Considering the increasing popularity of organ and tissue donations, the researchers acknowledged the importance of reducing or even eliminating the risk of HIV transmission through the donation process. The PHS working group concluded that despite the effectiveness of existing guidelines on the prevention of transmission, *"further recommendations should be made to reduce the already low risk of HIV transmission by transplantation of organs and tissues"* (CDC, 1994, p.1).

**Intended Audience**

This study was intended for a wide audience to educate the general public on the possibility of HIV transmission through non-conventional ways such as organ and tissue transplants. On a more specific level, the study addresses policy-makers to encourage the implementation of stricter guidelines to help in the reduction of transmission through the organ/tissue-donation process. This study also addresses "*facilities that bank breast milk*" to educate them on the possibility of HIV transmission through breast milk from HIV-infected women. Another part of the targeted audience comprises both organ and tissue donors and recipients.

**Shortcomings of the Design**

The researchers failed to design the research in a way that is easy to understand. The article is also not organized using easily understandable sections such as methodology, data analysis, and the like.

**Opposing views**

One of the recommended guidelines suggests repeat testing for the HIV antibody. However, organ and tissue transplants are often critical and time-sensitive which presents a conflict for this recommendation in practice.

**Gaps in the Research**

The researchers argue factors such as time constraints, the screening practices effects, the importance of transplant and the differences in the organ or tissue procurement and distribution systems need to be considered when developing the HIV prevention guidelines. There is a need for further explanation about why these factors need to be considered when developing the HIV prevention guidelines.

**Relevance to the Field of Lactation**

The report is relevant to the field of lactation because it also addresses the risk of HIV transmission through the donation of breast milk to breast milk banks. Specifically, the study cautions breast milk banks against the risk of HIV transmission through infected mothers` milk. These facilities should ensure that they only bank milk that *"microbiologically screened, fresh-frozen"* and *"from suitable donors"* (p.5).

**References**

Centers for Disease Control and Prevention (CDC). (1994). Guidelines for Preventing Transmission of Human Immunodeficiency Virus Through Transplantation of Human Tissue and Organs. *Morbidity and Mortality Weekly Report (MMWR)*, *43*(RR-8), 1-15. Retrieved from <https://www.cdc.gov/mmwr/PDF/rr/rr4308.pdf>