

# Policy suggestion of HIV/AIDS prevention for health and poverty problems in developing countries

: Suggestion of practical program with infant circumcision and total healthcare service for maternal and child to prevent HIV/AIDS and improve the health part of Post-MDGs

김주예<sup>ΦΨ</sup>  
Juye Kim  
juyekim0303@gmail.com  
010-3251-0685

송시완<sup>Φ</sup>  
Siwan Song  
ptswsong@gmail.com  
010-9181-2030

김진형<sup>Φ</sup>  
Jinhyeong Kim  
kijh3252@naver.com  
010-8515-6918

<sup>Φ</sup> Handong Global University, Pohang, South Korea

<sup>Ψ</sup> Correspondent author

## Contents

1. Introduction
2. The importance of MDGs and current evaluation.
  - 2.1. The importance of MDG
  - 2.2. Current evaluation of MDGs
3. The importance of Health part in developing countries
  - 3.1. The importance of Health Part
  - 3.2. Relationship between healthcare and economic development –OECD
  - 3.3. Importance of preventing HIV/AIDS
  - 3.4. Program introduction which is concerned to prevent HIV/AIDS expansion
    - 3.4.1. Project Malawi
    - 3.4.2. Gates and Melinda Foundation
4. Male Circumcision
  - 4.1. HIV/AID Prevention and its relation with male circumcision
  - 4.2. Current Circumcision Rate for Adults
  - 4.3. Problems and limitations of adult circumcision
    - 4.3.1. Medical Field
    - 4.3.2. Social Field
    - 4.3.3. Economic Field
5. Circumcision on Infants & HIV/AIDS
  - 5.1. Analysis of Circumcision on Infants
    - 5.1.1. Medical Field
    - 5.1.2. Social Field
    - 5.1.3. Economic Field
  - 5.2. Limitations of Circumcision on Infants
    - 5.2.1. Criticism and Alternatives
    - 5.2.2. Arrangement and Conclusion
  - 5.3. Circumcision of newborn infant Practical Program
    - 5.3.1. Process of the practical program
    - 5.3.2. Evaluation of the practical program
6. Health part Policy
  - 6.1. Key action plan
  - 6.2. MDG Health Part(Goal 4,5,6) Present condition, effects and analysis
7. Conclusion

**Abstract**

Millennium Development Goals (MDGs) is a revolutionary attempt by the international community to start a world-wide cooperation to eradicate poverty for the human race. There is an on-going discussion of Post-MDGs with two years left to accomplishing the goals. Great emphasis on the medical field focusing on the prevention of HIV/AIDS was focused on this paper. Recently in 2007 the WTO proposed circumcision as a solution to fight HIV/AIDS and in this paper we proposed newborn infant circumcision as a more efficient method.

Derive the medical, social and economic limitation of the existing male adult circumcision. At the same time facility to reduce the maternal mortality rate and to perform newborn infant circumcision with the consent of the mother.

Build a comprehensive medical system of newborn circumcision which improves the cost-effectiveness, accessibility which provides health and welfare service efficiency. Through this the difficulties during childbirth for pregnant woman can be resolved, and can contribute to reduce the infection of HIV/AIDS and nutrient supply to the newborn which can reduce the mortality rate. At the same time through the active cooperation of government agencies, hospitals and other organizations the mother, baby and family can benefit.

In conclusion with the proposal of “Key Action Plan” which tackles the problem of the prevention of HIV/AIDS of Africa, taking into account MDG’s HIV/AIDS centered Goal 6, infant mortality rate reduction Goal 4, maternal care improvement Goal 5 and poverty eradication is expected to make a significant contribution.

## 1. Introduction

With the Millennium Development Goals or MDGs as a common blueprint for the mankind, the world has participated in taking actions to establish the agendas in particular areas with practical plans. This elicited a groundbreaking difference between MDGs before and after. By settling detailed plans for 48 goals and assessment standards in 8 parts of MDGs, they are striving to cut the global famine by accomplishing MDGs.

To this date, as the interim appraisal analysis of the limitations and Post-2015 developing agendas proceed, UN has begun designing the preliminary report for the primary direction setting. With each area subjects involved and developing countries opinions in consideration, this suggested 4 main directions including MDGs analysis of limits, future obstacles, and SDGs.

As the development paradigm for the objective was modified and improved, Africa-the unexplored field of international development-attracted the world's attention. For this region, the global society has exerted significant efforts to accomplish the objective, but according to Global Monitoring Report (2008) on Sub-Saharan, African region, result to date has not only been minimal but also the prospect of achievement of the goals is dismal.<sup>1</sup>

The greatest problem in accomplishing MDGs in Africa is the shortage of doctors compared to its population and high growing rate. The World Health Organization advises one doctor per 10,000 people, but Africa is far from meeting that standard. Also, healthcare field takes greater priority, as it illuminated eventual resolution to poverty in developing countries.

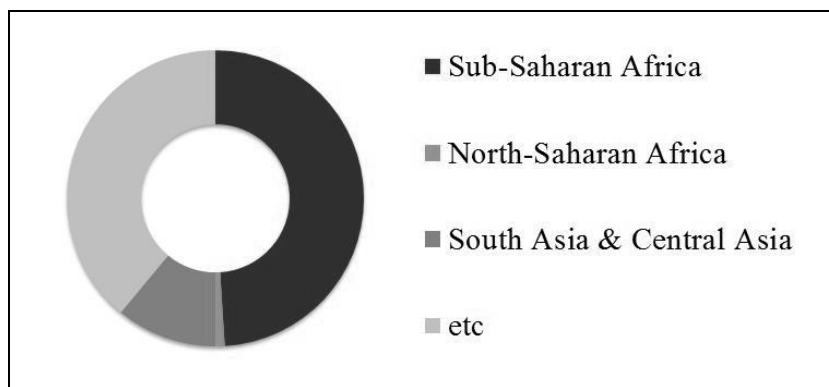
In 2007, in order to improve the effectiveness of aid in healthcare aid, International Health Partnership was constituted among related international organizations and groups. As a result of related organizations and initiatives donor and recipient countries' health are participating.

In fact, Africa has occupies the highest healthcare aid compared to other regional aid. From the

---

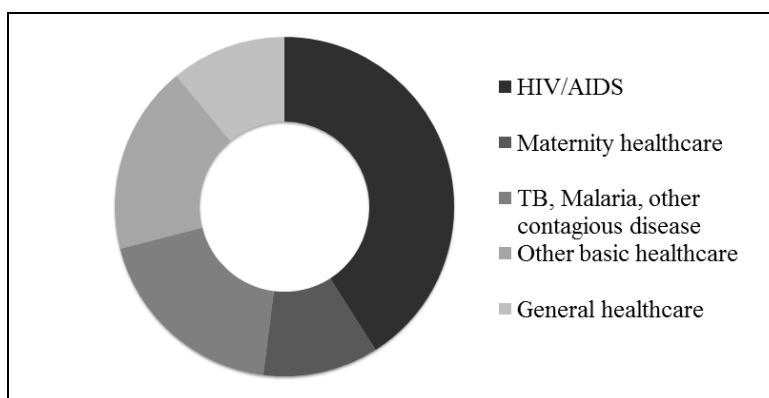
<sup>1</sup> UN.2008a.COMTRADE Database. 2008b. Global Monitoring Report

full resource, more than half of aid is spent for Africa; international community imprints that the improvement of general health state including health services are the objective of MDGs.



[The rate of health-related regional particular aid (2008~2009): 1. Sub-Saharan Africa(49%), 2. North-Sahara Africa(1%), 3. South Asia & Central Asia(11%), 4.Ets<sup>2</sup>]

While Health issue is ongoing in accordance of Goal 4, 5, 6, Africa's eradication of HIV/AIDS, malaria, and other disease is emerging as an important topic. In fact, this is so important that 71% of the all the resources available is allocated within international community aid in the distribution process.



[Distribution of aids by costs: HIV/AIDS (41%), Other maternity healthcare (11%), Tuberculosis,

---

<sup>2</sup> KOICA.2012.Understaning international development cooperation.

Malaria, other contagious disease (19%), Other basic healthcare (18%), General healthcare (11%)<sup>3]</sup>

From the 8 objectives, which are having organic relationship with MDG 4, 5, 6 maternal health enhancement, infant death reduction and HIV/AIDS, malaria, etc require management for contagious disease; unless other parts are improved, focusing at single part won't stop existing programs effectiveness from adultery. Therefore, demonstration of integrated approach and organic relationship is critical.

Especially, considering Africa was speculated to be the host of the 70% new HIV infection in the region, prevention is unanimously the utmost choice rather than cure or preventive vaccine development. It was claimed that amongst so many types of prevention methods, operation of phimosis and the reduction of sex partners are effective. In Africa operations of phimosis and AIDS related research operations of phimosis is said to reduce minimum 60% of the danger of AIDS<sup>4</sup>.

In addition they said the effectiveness of condom usage, HIV testing, sex infection cure, and other preventive methods that are heavily invested is gradually weakening, and thus those with high probability of the disease must focus on the operation of phimosis and sexual abstinence.

## 2. The importance of MDGs and current evaluation.

### 2.1. The importance of MDG

United Nations (UN) agreed with the 189 summits at 55<sup>th</sup> regular general assembly in September, 2000, and presented the Millennium Development Goals on cutting the global poverty to half by 2015. Focusing on the reduction of poverty and basic human development, MDGs established objectives as follows: 1) Eradication of Absolute poverty and famine, 2) Universal primary education,

---

<sup>3</sup> KOICA.2012.Understaning international development cooperation.

<sup>4</sup> Harvards Public Helath Univerisity professor Daniel Helperin and Berkeley Public Health University Professor Malcolm Fortz's policy forum of Science, Recommendation for circumcision was published in WHO, 2007

Sex equality, enhancement of women's rights, 4) reduction of infant deaths, 5) maternal health improvement, 6) eradication of HIV/AIDS, malaria, and other types of diseases, 7) sustainable development 8) structure of international network for development. 8 goals to accomplish these, sub-goals were made and diverse actors will participate to draw the global accord.

MDGs for last 10 years fulfilled its role as a guide to international development cooperation. But currently in the environments in which countries belong, limitations are found in developing beyond primary level by using existing method for sustainable development, paradigm's radical change is necessary.

Thereby after 2015, the last year for implementation for MDGs, the development agendas pursue meaningful, sustainable, and stable development by not only low-income countries but also by medium and high income countries. When analyzed, existing MDGs methodology hasn't considered local settings sufficiently, and developing countries had limits in driving to achieve the goal with owner spirit. Moreover, with the mention of objectives and particulars, methods or means weren't fully discussed. In order to supplement, while succeeding MDGs results, much fuller debate is ongoing in regards to Post-MDGs encompassing more realistic goals.

After the world has had the same stance at MDG, for 12 years each state as main actors strived for the development cooperation, and it expanded continuous subsidy and improvement for shortages in diverse areas. Poverty reduction objective for 2015 is estimated to be over-accomplished compared to previous objectives-existing objective of world poverty rate 23%. But it has been analyzed this trend was contributed by East Asia-especially India and China's growth.<sup>5</sup> Particularly in Africa, which is in the most serious state even amongst developing countries, the result is still inadequate. Rather than simple expansion of the business or investment, it completely needs new strategy<sup>6</sup>. Africa's development has limit action due to extensive poverty, famine, fragile economy structure, and other problems that are complex; and it is prospected that the accomplishment of MDGs is hardly

---

<sup>5</sup> 2012 UN MDG Report

<sup>6</sup> Young Ho Park, Millennium Development Goals and Africa: assessment and prospects medium

probable until 2015.

Looking deeper and separately into the current implementation of MDGs, in regards to the reduction of absolute poverty and famished population, the poverty rate is decreasing in average developing countries;<sup>7</sup> yet, Africa, Latin America, absolute poverty ratio hasn't undergone a drastic change. Implementation of compulsory primary education is over 90% in other parts of the world except Africa. It is rated that, 70% people view the accomplishment of the goal in Africa would hardly met.<sup>8</sup> Sex equality and women power enhancement elementary process have achieved relatively significant result. In some parts, there are countries that accomplished the targets. However, in regards to employment rate and the number of congressmen, the outcome is yet to accomplish. Infant death rate reduction depends as to regions that sub-Saharan Africa unlike other regions infant death rate is far from improvement, that Sanitation, nutrition, water pollution problems must be addressed ahead of other issues.<sup>9</sup> Improvements in health and death rate for women are generally viewed optimistically except in Africa, that sub-Saharan region doesn't have the prospect of meeting the goals. Amongst the objectives of eradication of HIV/AIDS, malaria, and other diseases, satisfactory gains could be spotted on HIV/AIDS cure, malaria, and other diseases. Still the number of HIV/AIDS patients is statistically increasing and the preventive measures are insufficient. Lastly, sustainable environment has reaped favorable result.

## 2.2. Current evaluation of MDGs

Looking at development aid results based on MDGs, developing countries haven't witnessed a noticeable change in spite of the massive scale aid. Especially in sub-Saharan Africa region the rate of the people in starvation is so high that the notion effectiveness of the objective being questionable is dominant.<sup>10</sup> But undoubtedly, the implementation of the MDGs led to the beginning of a structural

---

<sup>7</sup> 2012 UN MDG Report

<sup>8</sup> 2012 UN MDG Report

<sup>9</sup> Young Ho Park, Millennium Development Goals and Africa: assessment and prospects medium

<sup>10</sup> Jeon Seunghun, Development effectiveness and Comprehensive development strategy, Korea Institute for Development Strategy

administration about the famine and specific factors were quantized and developed result central management methods. Moreover, it is evaluated to have contributed largely to heighten development power by reinforcing expertise of international development cooperation of a nation or an institute. Also by setting the measurable goals, it contributed to development of developing countries' statistics and system so that statistics system be made and used in development implementation evaluation.<sup>11</sup> But whether these statistical accomplishments actually contributed to reduction of poverty in developing countries there remains still uncertainty. Analysis that having focused on too much in accomplishing goals set by MDGs, it impacted negatively to developing countries' structural problem or comprehensive development. Effectiveness of aid towards Developing countries' radical problems is posing questions towards the validity of the existing development agenda.

### 3. The importance of Health part in developing countries

#### 3.1. The importance of Health Part

Health related issues have become increasingly important worldwide. Especially, health issues regarding poverty are the prioritized concern for the global society. Due to inaccessibility of these people in poverty, the fatality rate of death from disease among mothers and infant is very high. Health care holds not only important value, but also directly linked to their lives. When the people in poverty become ill or injured, the family income significantly drops sequentially as their medical cost rises which leads to absolute poverty, leaving no chance for them to escape poverty.

With the same reason, healthcare benefits not only single generation, but generation to generations. Healthy family can nurture their children in health benefiting environment, which provides opportunity for children's healthy growth along with education. The high relevance between health and poverty is an issue recognized by the global society. To increase general healthcare and

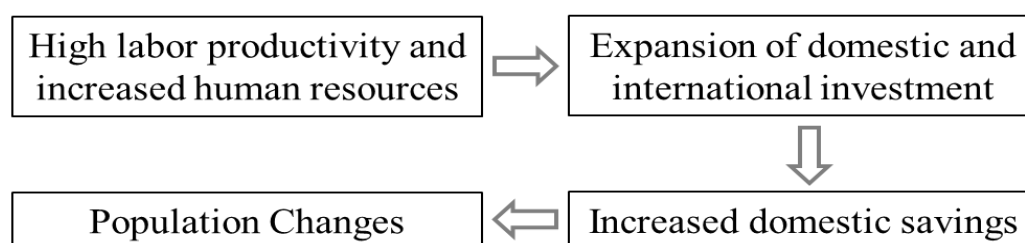
---

<sup>11</sup> Im Wonhyeok, The morals of MDGs and implications of Post MDG agenda, KDI, 2012

wellbeing of people, MDGs agreement objectives are proposed and related policies are in effect.

### 3.2. Relationship between healthcare and economic development –OECD<sup>12</sup>

The investment on healthcare holds great meaning in economic development. Announced from the Commission on Macroeconomics and Health, healthcare is the genuine issue that developing country must solve to escape from the cyclic reaction of poverty. Healthcare contributes in various aspects of development.



#### <Relation with healthcare and economic development<sup>13</sup>>

##### 1) High labor productivity and increased human resources

Healthy workforce is much more productive, which results in higher wages and low absenteeism in workplace, this increases the total production and reduces the cost on labor force. This ultimately enhances corporate income and agricultural productivity. Also, healthy children can acquire better education. Heightened health will results in low absenteeism, which leads to low dropout rate thus increasing human capital.

##### 2) Expansion of domestic and international investment

The increase in labor productivity is an incentive for incoming investment. By regulating endemic and epidemic disease such as HIV/AIDS lowers employee's health threats. This gradually increases awareness and expose much better opportunities for investors.

##### 3) Increased domestic savings

<sup>12</sup> OECD, 2003, Policy Brief, Poverty and Health in Developing Countries: Key Actions

<sup>13</sup> OECD, 2003, Policy Brief, Poverty and Health in Developing Countries: Key Actions

Healthy people will increase their savings to survive after retirement. These savings provide capital loans for various projects and investments.

#### 4) Population changes

Health and education contributes to birth rate and death rates. The mid to low income countries have high rate of fatality due to HIV/AIDS which leads to difficulty in population growth and population dependency. However, high income countries are facing aged population growth, which also increases dependency rate to this growing population.

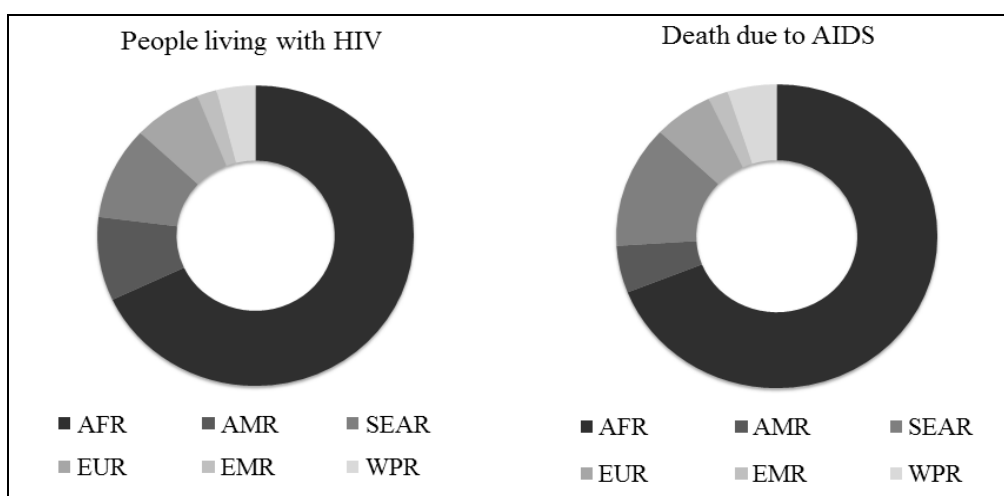
### 3.3. Importance of preventing HIV/AIDS

95% of the worldwide HIV/AIDS patients are focused in low development countries, and 80% of is located in regions below Sahara. Even today, 5000 AIDS orphans are developing every day, according to WHO statistics, in 2010, an estimated 68% (almost 23 million) of all HIV patients live in Africa<sup>14</sup>. Africa also shows highest rating in fatality rate from AIDS, showing some 69% (1.2 million) fatality rate among AIDS patients<sup>15</sup>. Because HIV/AIDS bases its character in sexual drive, which is one of the basic instincts in human being, its social aspect and magnitude is increasing. HIV/AIDS issue incorporates historical, economical, structural factor, making it a very complex social phenomena. This also increases the limitations to deal with such factors to eradicating poverty. Especially, to deal with the fundamental poverty issue from the lower Sahara region, HIV/AIDS infection reduction is necessary.

---

<sup>14</sup> UNAIDS 2011 pg. 20-30

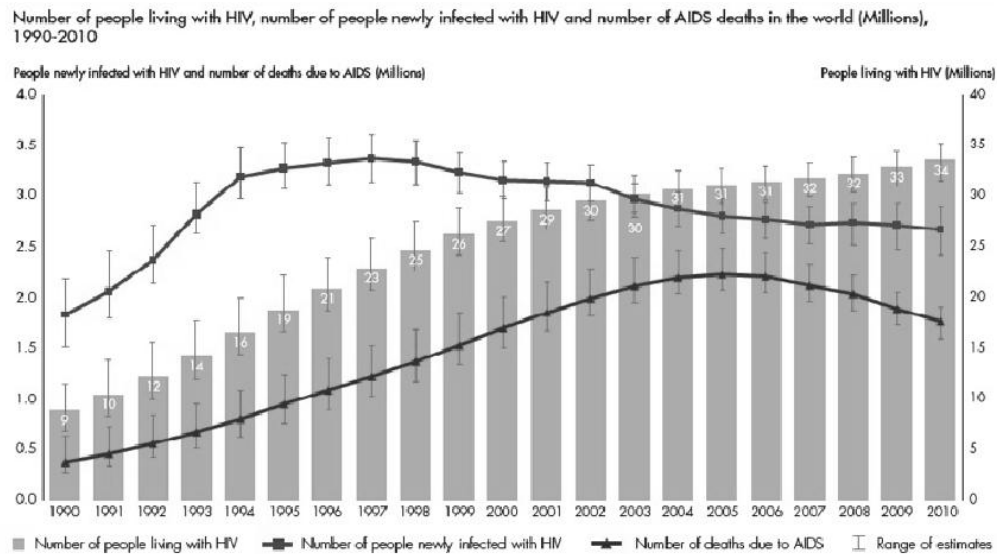
<sup>15</sup> UNAIDS 2011 pg. 20-30



**[More people than ever are living with HIV due to fewer AIDS-related deaths and the continued large number of new infections<sup>16</sup>]**

After the year 2000, numerous projects and business were conducted to promote prevention and vaccination of HIV/AIDS. MDG also set Goal 6 regarding HIV/AIDS. The specific goals are divided into HIV/AIDS prevention, vaccination, and other disease. Of these goals, HIV/AIDS vaccination statuses have been decreasing since year 2005, when MDGs initiated. However, the index ‘number of new HIV patients,’ which expresses HIV/AIDS prevention effect, shows no signs of clear results. This shows that compared to vaccination project on HIV/AIDS, prevention is not meeting its expectations. Worldwide HIV/AIDS businesses are processing through various form conducted by government, global institutions, professional institutes and NGOs. However, the prevention, sexual education methods and its effects are still showing its limitations.

<sup>16</sup> Number of people living with HIV and number of deaths due to AIDS by WHO region, 2011



**[Number of people living with HIV, number of people newly infected with HIV, and number of AIDS deaths worldwide, 1990-2010 (Millions)<sup>17</sup>]**

The most HIV/AIDS patients of developing countries live without knowing whether they are infected or not. Through AIDS, women and children are more severely damaged in these countries. The expansion of AIDS lowers the average life expectancy and also decreases economic development, which is a critical obstacle to national development. These diseases cause death to economically active population and family members, thus influencing economic factors. AIDS tends to spread among the poverty rather than wealthy population. The poor people don't have the financial capabilities to treat AIDS and due to their nutrient deficiency cause fatalities. In these cases, where the individual responsible for financial support for poor family is sick or dead, the children left behind become AIDS orphans. Most AIDS policies are focused on adult AIDS treatment and prevention, which indicates that orphan issues are neglected. The government neglected these orphans who are driven out into streets or join a military force within the disputed areas. As such, AIDS orphans are severely exposed to hunger, crime and social instability.

The result of AIDS expansion includes decrease in economic population, increased medical

<sup>17</sup> Lois Jensen (2010) *The Millennium Development Goals: Report 2010*, New York, N.Y.

expenses and labor force transfer cost etc. which ultimately affects the economy in negativity. Especially in case of medical expenses, African regions show significantly higher financial cost, which causes difficulties in developing AIDS eradication policies among African countries. Therefore, it is necessary for global society to aid cooperates and supports the third world countries to eradicate AIDS.

### 3.4. Program introduction which is concerned to prevent HIV/AIDS expansion

#### 3.4.1. Project Malawi<sup>18</sup>

The medical/healthcare program of Project Malawi initiated to lower the HIV/AIDS occurrences and lower fatality rate on mothers and newborns in Chimutu and Chitucula.

This program consists of several sectors; HIV/AIDS prevention, mother healthcare and local healthcare center. This program is actively supported by Daeyang Luke hospital and Malawi administration to enhance the local's health standards and furthermore, to elevate the quality of life. HIV/AIDS prevention sector involves 1) HIV/AIDS and sexual education, 2) HIV diagnosis and consultation, 3) male circumcision. Through education, people's behavior patterns can be changed to lower the infection and resolve social discrimination and stigmas. HIV diagnoses and consultation are the main prevention policy, providing information on personal sex life and HIV infection possibilities to prevent additional HIV infection. Male circumcision is strongly suggested by WHO and UNAIDS from 2007. Its effects are well known and can decrease HIV/AIDS infection rate by 60%. The ultimate objective of this program is to lower HIV/AIDS infection rate within the target regions and to lower the fatality rate on mothers and newborns.

#### 3.4.2. Gates and Melinda Foundation

Gates and Melinda Foundation have been heavily supporting the circumcision promotion in

---

<sup>18</sup> Project Malawi was founded in 2010 by a group of young people who envisioned a future of Malawi free from disease and, ultimately, from poverty. A creative approach will be undertaken in conjunction with various technologies of modern science, and a set of scientific evidences for the efficacy of other. Similar projects will be made available upon completion. [www.project-malawi.org](http://www.project-malawi.org)

developing countries including Africa under the recommendation of UN and WHO. The foundation proposes a roadmap which targets 90% decrease in HIV infected patients by year 2031. They propose, ‘cheap, effective, practical, and easy HIV prevention tool must be quickly expanded,’ which in this case, the prevention method refers to male circumcision. The program provides more than \$500 thousand to Uganda, Kenya, Swaziland and Zambia etc. In case of Swaziland and Zambia, it is projected that about 650 thousand men will be circumcised in the next 5 years. In case of suburban areas of Zimbabwe, large number of population is infected by HIV and is expected that in the next 20 years, about 700 thousand new patients will occur. If male circumcision and antiviral treatment program is expanded, the annual new patient rate can be reduced to 38% by year 2031<sup>19</sup>.

#### 4. Male Circumcision

##### 4.1. HIV/AIDS Prevention and its relation with male circumcision

Until recently, there was no evidence that support the effectiveness of circumcision in preventing HIV. Only simple comparative studies have been assuming its effectiveness; however, from 2005 to 2007, the trial method with highest reliability known as RCT (Randomized Controlled Trial) was conducted in South Africa, Kenya, and Uganda for three years, and its results confirmed that the surgery was quite effective in preventing the disease. As mentioned above, RCT was operated, and the HIV infection rate through sexual intercourse dropped by 60%<sup>20</sup>, 53%<sup>21</sup>, and 51%<sup>22</sup> in South Africa, Kenya, and Uganda respectively.

In 2007, based on the positive results from this study, WHO and UNAIDS strongly recommended males in countries with high risk of AIDS infection—of rate that exceeds 10%—

---

<sup>19</sup> <http://www.gatesfoundation.org/What-We-Do/Global-Health/HIV>

<sup>20</sup> Auvert B, Taljaard D, Lagarde E, Sobngwi-Tambekou J, Sitta R, Puren A, Randomized, Controlled intervention Trial of Male Circumcision for Reduction of HIV Infection Risk : the ANRS 1265 Trial, *PloS Med* 2005 ; 2 : e298

<sup>21</sup> Bailey RC, Kigozi G, Servadda D, et al. Male Circumcision for HIV Prevention in Men in Kisumu, Kenya : a Randomized Controlled Trial. *Lancet* 2007 ; 369: 643-656

<sup>22</sup> Gray RH, Kigozi G, Serwadda D, et al. Male Circumcision for HIV Prevention in Men in Rakai, Uganda : a Randomized Trial. *Lancet* 2007 ; 369: 657-666

undergo circumcision to drop the number of additional HIV patients. The operation will reduce male infection rate by 60%, thus leading to decreased risk among their female partners. Here, we can expect a picture of a “virtuous” cycle.

The study also supports that circumcision is the most effective prevention among any other generalized epidemics. All it requires is just a single operation to withdraw remarkable effect in HIV prevention, and without a doubt, it is the most cost-effective service in the field. Some statistics by WHO state that under the assumption of all males in Africa undergo circumcision, approximately 2 million cases of new HIV infection will be restrained for the next 10 years and 5.7 million for the next 20 years. It may also prevent 300,000 deaths caused by AIDS.

<p><b>Summary of the WHO &amp; UNAIDS recommendation for circumcision for protection against HIV (March 27, 2007)</b></p>
---

<p>In order to reduce the number of HIV positive patients increasing every year, WHO and UNAIDS have decided to encourage circumcision operation based on the professional advice and provided evidence. At the international conference held in Switzerland on March 6-8, 2007, Dr. Kevin De Cock, the director of HIV/AIDS Department in WHO, said, “Countries with high rates of heterosexual HIV infection and low rates of male circumcision now have an additional intervention which can reduce the risk of infection in heterosexual men. Scaling up male circumcision in such countries will result in immediate benefit to individuals.” According to the study conducted in Kenya, Uganda, and South Africa, circumcision reduced HIV infection rate by 60% supported this finding.</p>
--

<p>Thus, circumcision needs to be an essential part of a holistic HIV prevention program. HIV prevention program includes HIV testing and counseling service, STD treatment, sexual education, and provision of male/female condoms and promotion of their correct and consistent use. By including circumcision, HIV prevention program can be enhanced and decrease the prevalence rate. Moreover, circumcision can be used to provide an opportunity to address the frequently neglected sexual health needs of men.</p>
---

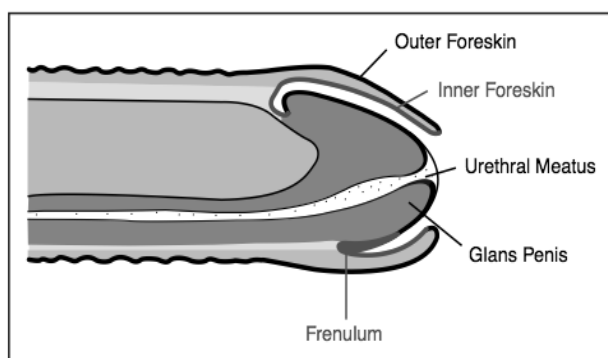
<p>The risks involved in male circumcision are generally low, but can be serious if circumcision is undertaken in unhygienic settings by poorly trained providers or with inadequate instruments. Wherever male circumcision services are offered, therefore, training and certification of providers, as well as careful monitoring and evaluation of programs, will be necessary to ensure that these meet their objectives and that quality services are provided safely in sanitary settings, with adequate equipment</p>
---

and with appropriate counseling and other services. Moreover, some countries many have strong cultural connotations regarding male circumcision, so it should be undertaken with full adherence with medical ethics and human rights principles.

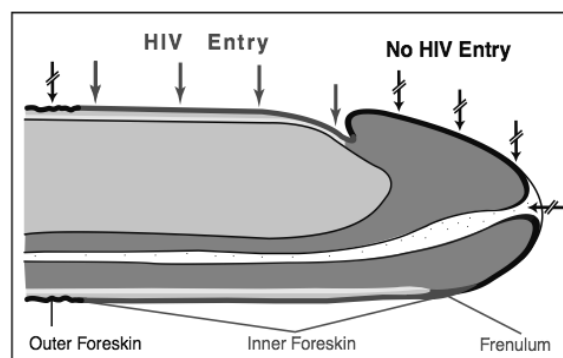
A significant public health impact is likely to occur most rapidly if male circumcision services are first provided where the incidence of heterosexually acquired HIV infection is high. It was therefore recommended that countries with high prevalence, generalized heterosexual HIV epidemics that currently have low rates of male circumcision consider urgently scaling up access to male circumcision services. A more rapid public health benefit will be achieved if age group at highest risk acquiring HIV is prioritized, although providing male circumcision services to younger age groups will also have public health impact over the longer term. Modeling studies suggest that male circumcision in sub-Saharan Africa could prevent 5.7 million new cases of HIV infection and 3 million deaths over 20 years.<sup>23 24</sup>

#### 4.2. Current Circumcision Rate for Adults

According to a report on male circumcision issued by UNAIDS and WHO in 2007, about 30~34% of the world's male population have undergone circumcision. Currently, the surgery is performed on almost all males who are 15 or older. Through Circumcision procedure, Frenulum of Glans Penis is amputated. Since the amputation leaves no Glans Penis. There are no chances for HIV intrusion. Especially, this surgical process would contribute to prevention of HIV/AIDS.



Flaccid uncircumcised penis



Erect uncircumcised penis with the foreskin retracted showing likely sites of HIV-1 entry<sup>25</sup>  
(Source: McCoombe and Short)

<sup>23</sup> World Health Organization, World Health Statistical 2009

<sup>24</sup> Project-Malawi.org

<sup>25</sup> McCoombe and Short, AIDS 2006 20:1491-1495

### 4.3. Problems and limitations of adult circumcision

#### 4.3.1. Medical Field

In case of adult circumcision for HIV prevention, our target is usually between the ages of 18 to 24. However, there is a pharmaceutical aspects opinion that adults who undergo circumcision are exposed to more risks and may be more vulnerable in developing complications than younger men. An HIV prevention study on circumcision which was conducted in Africa shows increasing percentage of developing complications from 2% to 8%, and the most prominent complications are ache, bleeding, and infection.<sup>26</sup> Moreover, the operation time and process tend to get longer and more complicated if the patient is older. Thus, risks will decrease when performed at the early age.

#### 4.3.2. Social Field

The later the surgery takes place men are less likely to be attentive about having healthy sexual affairs. If they become involved in indiscriminate sex—possibly with partners of the same sex—, certainly there will be higher risk of AIDS infection. Adulthood circumcision indicates absence of HIV education at an earlier age, and it appears to require more time for all adults to receive financial support for proper education and to have better understanding of current situation. In addition, low accessibility to a health center discourages patients to undergo the surgery when it is a challenge for them to receive more important medical checkups.

#### 4.3.3. Economic Field

Adults are prone to temporal and financial demand for they have relatively larger area for operation. Furthermore, if the surgery takes place at a later age, there is higher exposure rate of

---

<sup>26</sup> Auvert B, Taljaard D, Lagarde E, Sobngwi-Tambekou J, Sitta R, Puren A. Randomized, controlled intervention trial of male circumcision for reduction of HIV infection risk: the ANRS 1265 Trial. *PLoS Med.* 2005 Nov;2(11):e298. Erratum in: *PLoS Med.* 2006 May;3(5):e298.

horizontal HIV infection. Therefore, it is difficult to sustain the process in terms of expense without much effect on AIDS prevention.

## 5. Circumcision on Infants & HIV/AIDS

### 5.1. Analysis of Circumcision on Infants

#### 5.1.1. Medical Field

Infancy circumcision reduces probability in developing expected complications. Needless to say, risks for HIV are the highest when a child grows into an adult, but early operation prevents various potential problems from occurring. Yet, it is necessary to be aware of some medical issues that still exist in infancy surgery. Early circumcision does not cure complications but reduces its incidence rate.<sup>27</sup>

#### 5.1.2. Social Field

If an infant is circumcised near his birth, his parents will be given an opportunity to receive proper education about sex and its related issues. Educated parents will pass on their knowledge to their child along with an attentive attitude toward HIV. On the other hand, if a child undergoes the surgery during his adolescence, it is possible for him to gain wrong sense of freedom which may lead him to indiscriminate sexual activities and to higher risk of HIV infection. Therefore, the best suggestion for HIV prevention is to have a newborn circumcised as his mother is in postnatal care.

#### 5.1.3. Economic Field

The history of infancy circumcision lasted more than 6,000 years. Some medical research affirms that early circumcision is less complicated and dangerous to the one during adulthood.<sup>28</sup> In

---

<sup>27</sup> Ingrid T. Katz, M.D., M.H.S. and Alexi A. Wright, M.D., Circumcision — A Surgical Strategy for HIV Prevention in Africa, 2008 (A man who was circumcised at an early age and tested negative on HIV test showed only 0.2-2.0% of prevalence rate in developing complications.)

<sup>28</sup> WHO–UNAIDS. New data on male circumcision and HIV prevention: policy programme implications. Technical consultation male circumcision and HIV prevention. Montreux, 6-8

fact, there is a study which states that the cost can be ten times as much after infancy.<sup>29</sup>

In Rwanda, HIV prevention rate is 3% among adults and circumcision has not been a part of their tradition. In prior to introducing circumcision program nationwide, professionals pondered upon the most efficient and effective method for HIV prevention for this specific country; they concluded in performing circumcision on a newborn. The cost for an infant was US\$15 which appeared to be one fourth of the one for a male adult (US\$59).<sup>30</sup> Clearly, the study confirmed that the early circumcision has significant benefit in a long term, reduced HIV infection from an opposite sex, and also provided an opportunity to invest saved finances in other health services.

## 5.2. Limitations of Circumcision on Infants

### 5.2.1. Criticism and Alternatives

The RCTs conducted among the adults in Africa support the non-therapeutic circumcision yet claim that it should not be performed. Since the infants boys do not engage in sexual intercourse, they are not subject to sexually-transmitted HIV infection. Instead, they are subjected to various complication and deadly risks such as MRSA (Methicillin-resistant *Staphylococcus aureus*) and infection with various pathogens through an open circumcision. Moreover in the current developing countries, there are more cases of circumcision being performed by amateur than done under medical facilities. This should be solved through the expansion of infrastructure and medical professionals.

The high infant mortality rate in the African countries hit by the HIV epidemic means many children will die before they become sexually active, further vitiating any protective effect of infant circumcision. Because the children are minors, they cannot grant consent. Therefore any non-therapeutic circumcision of a child is a human right violations and ethically inappropriate. However,

---

March 2007. p. 7. Available from:

[http://data.unaids.org/pub/Report/2007/mc\\_recommendations\\_en.pdf](http://data.unaids.org/pub/Report/2007/mc_recommendations_en.pdf).

<sup>29</sup> Schoen EJ, Colby CJ, To TT. Cost analysis of neonatal circumcision in a large health maintenance organization. *J Urol* 2006;175:1111-5. Available from: [www.ncbi.nlm.nih.gov/pubmed/16469634](http://www.ncbi.nlm.nih.gov/pubmed/16469634).

<sup>30</sup> Binagwaho A, Pegurri E, Jane Muita J, Bertozzi S. Male circumcision at different ages in Rwanda. A cost-effectiveness study. *Plos Med* 2010 January. Available from: [www.plosmedicine.org/article/info:doi/10.1371/journal.pmed.1000211#s2](http://www.plosmedicine.org/article/info:doi/10.1371/journal.pmed.1000211#s2).

the infant mortality rate can decrease and at the same prevent HIV/AIDS by providing nutrition supply and vaccination program.

Newborn babies do feel pain. Actually there was a case reported of a newborn baby going into shock after having the circumcision. When proceeding with the surgery, it should be taken into consideration that the newborn babies feel the same level of pain of that of an adult.

### Comparison between adults circumcision and infant circumcision for preventing HIV/AIDS

	Medical	Social	Financial
Limitations of adult circumcision	Increase the cause of complication	Postponed Education	Cost increase



	Medical	Social	Financial
Advantages of infant circumcision	Decrease the cause of complication	Time of education is moved up	Cost reduction
Limitations of infant circumcision	Problem with the pain	Ethical problem	-

#### 5.2.2. Arrangement and Conclusion

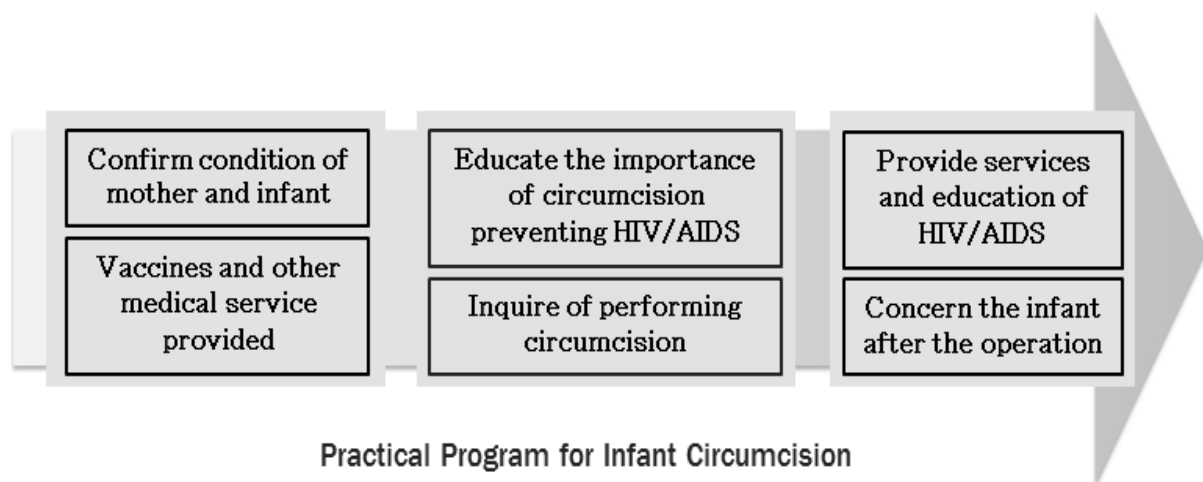
UN has officially acknowledged infant circumcision. The ethical issue came to the fore again; however, the circumcision of a baby boy is recommended as being the most effective way to decrease the mortality and rate of infection caused by the HIV/AIDS. Not only that, a medicine has been developed to relieve the pain of the infant baby. Its use is expected to reduce pain of the newborn baby and carry out safe surgery. In case of insufficient infrastructure, it is supported on a global scale. The rate of doctors is lower than developed country, and it is still difficult to find medical team with reliable skills. Nevertheless, the medical teams sent by the international organization, NGO etc. will reduce the side effect of infant circumcision.

### 5.3. Circumcision of newborn infant Practical Program

#### 5.3.1. Process of the practical program

We are to propose a systematic and comprehensive program through the direction of the Post-MDGs based on case studies conducted in Malawi and the effects circumcision on newborn infant.

The mother visits a hospital or health center the time for birth arrives, a systematic medical service is provided based on an existing policy or program. The condition of the mother and infant is checked after a smooth birth process; additional explanation of vaccines and other medical services essential for the infant is given to the mother or guardian. Through this process the gravity of HIV/AIDS, necessity of circumcision for the prevention of HIV/AIDS for the infant should be educated, and the education of effects and side-effects of circumcision should be made mandatory through a national policy through a standardized manual. Inquire whether to perform the operation while introducing the effects and service of the circumcision for the infant. Additional education and service is provided concerning the care of the newborn infant and the role circumcision plays in helping prevent HIV/AIDS while emphasizing the importance of sex education after the operation.



Emphasize the necessity of the medical services and HIV/AIDS prevention circumcision operation of the practical program that has been provided for developing countries, providing a program that minimizes the limitations.

To perform circumcision and vaccinations on a newborn infant allows the maximization in terms of cost-effectiveness. There is an advantage of being able to reduce the cost invested in the health service by integrating the two medical services into one which helps business progression effectiveness and through a medical perspective performing circumcision on a newborn infant compared to a teenager reduces the cost.<sup>31</sup>

In another aspect, to maximize the accessibility for the patients visiting the hospital by integrating birth and infant circumcision medical services into one providing efficiency for the mother by limiting the visit to one.

This comprehensive program is considered effective and very positive in terms of the effectiveness for the mother and infant. In the end, this program which put into consideration of the mother and infant's well-being also directly/indirectly affects Goal 4 and Goal 5 of the MDG health sector.

At the same time through the active cooperation of government agencies, hospitals and other organizations the mother, baby and family can benefit. Local hospitals should develop systematic programs and efficient education for the people. Local administration should have the networks among NGOs and other organizations as partners and the government should make the policy for promoting circumcision in the context of the country and also the policy for education and infrastructure of circumcision in qualified hospital and health centers.

<b>Hospital</b>	<b>Government Policy</b>	<b>Local Administration / Cooperation Organization</b>
<ul style="list-style-type: none"> <li>- Systematic Service Program</li> <li>- Education and campaign</li> <li>- Reinforce HIV/AIDS</li> </ul>	<ul style="list-style-type: none"> <li>- Government policy promoting circumcision</li> <li>- Policy for education and inquisition of circumcision in</li> </ul>	<ul style="list-style-type: none"> <li>- Promote community interest and awareness</li> <li>- Funding of essential medical services</li> </ul>

---

<sup>31</sup> Schoen EJ, Colby CJ, To TT. Cost analysis of neonatal circumcision in a large health maintenance organization. J Urol 2006;175:1111-5. Available from: [www.ncbi.nlm.nih.gov/pubmed/16469634](http://www.ncbi.nlm.nih.gov/pubmed/16469634).

prevention education	hospitals, health centers	- Mobile clinic services
----------------------	---------------------------	--------------------------



<b>Mother</b>	<b>Infant</b>	<b>Family</b>
<ul style="list-style-type: none"> <li>- Increase infant nurture training through a systematic education.</li> <li>- Reduce harm to infant due to insufficient information</li> </ul>	<ul style="list-style-type: none"> <li>- Early prevention of HIV/AIDS</li> <li>- Implementation of prevention education from infancy</li> <li>- Merit of receiving medical benefits</li> </ul>	<ul style="list-style-type: none"> <li>- HIV/AIDS prevention education for all family members</li> </ul>

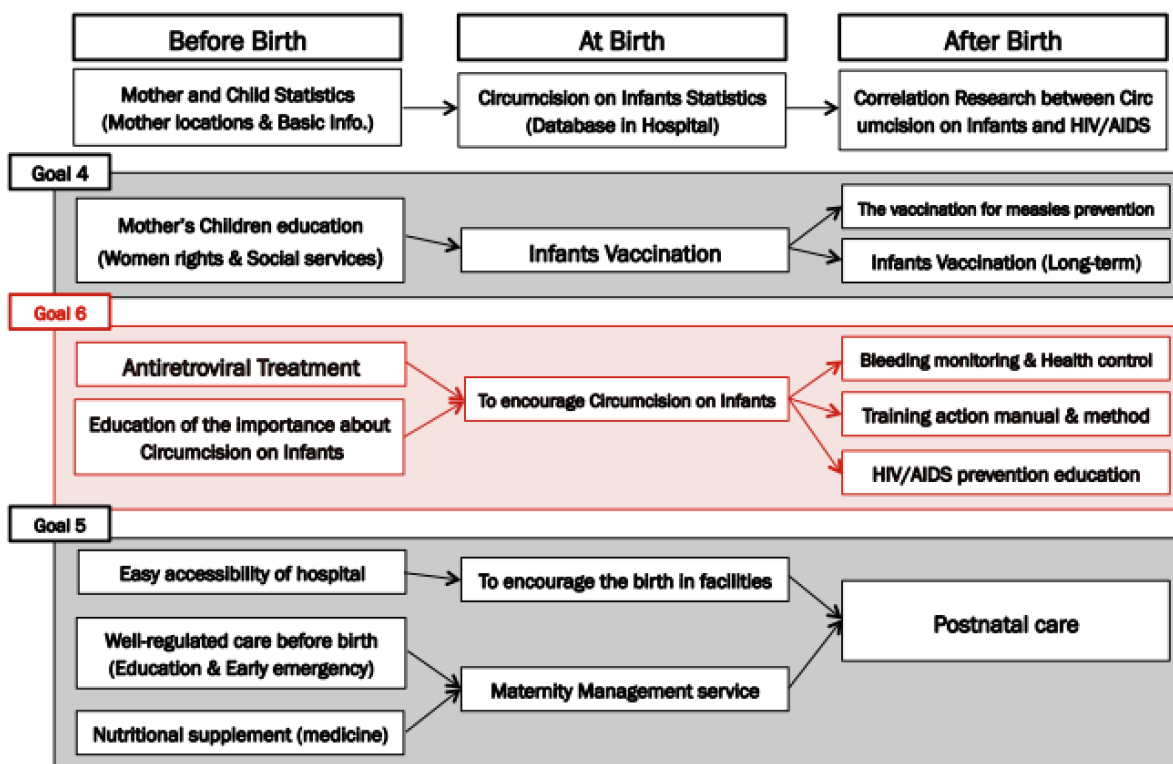
**<Tasks of supporting actors and Benefits of receivers>**

### 5.3.2. Evaluation of the practical program

Newborn circumcision is a standard childbirth process which is provided as a basic hospital medical service. In other words, an alternative is needed while putting into account the feasible cost and policy of the existing services. In this aspect there is a positive outlook of the feasibility of the alternative through the existing vaccines and postpartum care services. In addition it is not a temporary postpartum care but a step by step approach through a systematic management that allows organic access after circumcision. However, it is necessary to understand the relationship between the organic management of a systematic mother-son management, hospital infrastructure, medical and other government policies for systematic operation effectiveness. In order to obtain the performance of inadequate sanitation in developing countries, it is necessary to receive preferential harmonious cooperation with existing medical programs and policies.

## 6. Health part Policy

### 6.1. Key action plan



#### <Key Action Plan>

This key action plan is classified according to the phase of childbirth. To achieve each goal, the practical program should include those detailed services formulated in the well-organized hospital system.

For goal six, which is directly related to our practical program, expand the antiretroviral treatment at first. Then educate and inform the parents about the necessity and importance of circumcision and get their agreement. At birth, offer the infant circumcision program and educate the parents about HIV/AIDS prevention and give infant sanitary supervising and monitoring the circumcision after birth. Those three services provided in this process are implemented currently but in this plan, the main service is infant circumcision and it is integrated with other existing services for

efficiency and effectiveness for achieving the goal six.

The next effectiveness for MDGs is to decrease Children Mortality Rate. The mortality rate for children under age five has been declining however the mortality rate of infant less than one month old has increased. As a seasonal program for infant and mother, educate the maternity about the childhood education before birth and give infants vaccination at birth. After birth, give essential vaccination to infants like measles. All of these services are important to decrease the infant mortality rate.

The last expected effectiveness could be the decrease of maternity mortality rate. Before birth, expand accessibility for birth; provide well-regulated care, support nutritional supplement to maternity. At birth, encourage the birth in facilities and give the maternity management service. This can be extended to providing the postnatal care for maternal health.

Although those programs for achieving goal 4 and 5 of MDGs are not directly related to HIV/AIDS prevention and infant circumcision, those must be provided as a package for infant and mother's health. In this way, the practical program can maximize the effectiveness and minimize the cost for HIV/AIDS prevention with managing maternity, which makes maternity approach easily to the hospital.

6.2. MDG Health Part(Goal 4,5,6) Present condition, effects and analysis<sup>32</sup>

Goal 4.  Decrease Children Mortality Rate	<b>Reduction of the mortality rate of children under the age of 5 between 1990-2015</b>
	<b>Present condition</b>
	<p>The mortality rate of infant has decreased 35% during a period of 20 years for developing countries at 97 per 1000 in 1990 to 63 in 2010. The infant mortality rate in four countries of the nine developing countries fell by more than 50% between 1990-2010. Decline rate of Oceania and sub-Saharan Africa was under 30%, and South Asia at 44% far from set achievement goal level.</p>
	<p><b>Main Present condition</b></p> <p><u>The mortality rate for children under 5 has been declining however the mortality rate of infant less than a month old has increased.</u> As a result the mortality proportion of infants under one month old from the age of 5 rose from 37% in 1990 to 40% in 2010 prominent in sub-Saharan, Africa and East Asia.</p> <p><b>Solution</b></p> <p>Effective measures are need for the enchantment of <u>health of newborns</u>. In addition, the infant mortality rate in rural area in developing countries is higher than urban areas, morality are for infants of low-income under the age of 5 was two times higher than those of a high-income.</p> <p>It is understood <u>women's right and education</u> plays an important factor that affects infant mortality rate. Improvements of basic social services by eliminating social and finance barriers, strengthening of key social services for the poor, improved</p>

---

<sup>32</sup>KOICA.2012.Understaning international development cooperation.

	<p>responsibility of health system, improve the imbalance of education of mothers through a strong health system, prevent malnutrition and child mortality and the extension of major nutritional intervention and health foundation is expected to bring positive results.</p> <p>Mortality rate of measles-related death has been decreasing through the vaccination for the prevention of measles which contributed greatly to increase the survival rate of children. However children living in remote or poor areas are not benefited, in the case of South Asia and sub-Saharan Africa the vaccination rate is less than 90%.</p>
Goal 5.  Maternal Health Promotion	<b>Mortality rate decrease between 1990-2015</b>
	<p><b>Present condition</b></p> <p>The maternal mortality rate was reduced by 46% compared to in 1990. However the mat of developing countries is 15 times higher than those of a developed country, the goal of reducing maternal mortality rate by 3/4 by 2015 is deemed impossible.</p>
	<b>The expansion of universal birth sanitation access by 2015.</b>
	<p><b>Present condition</b></p> <p>The percentage of women who received prenatal health benefit has increased significantly in all region compared to 1990. For example, in all developing countries, the proportion of women who received a visit from a clinic at least once during pregnancy increased gradually up to 80% in 2010 from 63% in 1990 and 71% in 200. Especially the medical treatment proportion in North Africa, South Asia and Western Asia has increased in the last decade. However the increase is insignificant compared to the Southeast Asian, East Asian and Latin American countries that have achieved a high rate of medical care of 90%.</p>

	<p><b>Solution</b></p> <p>The WHO recommends <u>mothers to receive medical treatment at least four times</u> before birth. This is to prevent, early detect dangerous symptoms and control disease that can occur during pregnancy. Number of women to receive the recommended number of times of medical service has been steadily increasing. However in 2010 more than half have not received the recommended time of medical service in developing countries and in sub-Saharan Africa this percentage has decreased.</p> <p>In connection with the use of contraceptives, it has increased significantly until the year 2000 however the growth rate has slowed down. Related to this can be that the success rate of family planning has only increased from 83% in 2000 to 84% in 2010. Aids to family planning and birth related care has decreased over the past decade showing the growing need for this support.</p>
<p>Goal 6. HIV/AIDS, malaria, and</p>	<p><b>Halt the expansion and decrease AIDS by the year 2014 (Prevention)</b></p>
	<p><b>Present condition</b></p> <p>HIV is decreasing worldwide. The occurrence rate of HIV in Asia has greatly decreased compared to other regions. However, 70% of new HIV infections occurred in 2010 was in sub-Saharan Africa where 12% of the world population is living, but the situation differs greatly by region. The most serious region is South Africa, next is the Caribbean..</p> <p><b>Solution</b></p> <p>Education: Extensive knowledge of AIDS and HIV is an important factor when taking advantage of the treatment, resulting in behavior change. Among young people aged 15 to 25 year, only 26% of woman and 35% of men are well-informed; showing the overall level of understanding is low. Being behavior change to adolescents by</p>

other various disease elimination	targeting them with media promotions that bring knowledge of the prevention of HIV.
	<b>Universal treatment of HIV/AIDS by 2010 (Treatment)</b>
	<p><b>Present condition</b></p> <p>At the end of 2010 about 6.5 million people in developing countries received antiretroviral treatment for AIDS/HIV. Even though a record of 1.4 million people did receive treatment in a 1 year period starting from December 2009, the goal of bring treatment to all was not achieved. The opportunity of receiving antiretroviral treatment has expanded worldwide; the percentage of people in developing countries in East Asia has reached 38%, a notable progress. On the other hand the treatment progress was only 20% in sub-Saharan Africa. As a result of the 50% targeted for treatment are not receiving antiretroviral treatment in sub-Saharan Africa.</p> <p><b>Solution</b></p> <p>There was a difference according to age and gender of those receiving antiretroviral treatment, women (35%) and men (40%) received treatment in 2010 and treatment for children was lower than those of adults. In the case a pregnant woman infected with HIV is not treated, there is a 1/3 possibility of infection in the womb, when giving birth or breast-feeding. 48% of pregnant woman with HIV received antiretroviral treatment in 2010.</p>

## 7. Conclusion

Currently, various organizations are participating in developing countries to fight poverty. In particular, studies through international community and macro-policies and programs centered on UN are being applied. It is clear to solve poverty, in an integrated and thorough strategy is necessarily not a simple solution in principle. In other words personal health and lifestyle improvement is a basic

approach that can affect the community and even the country. The first step out of poverty will start when we pursue the effort to solve the problem of life and death.

Newborn infant circumcision is not a micro-strategy but important and significant in terms of that it is an approach to a new direction with a question of efficiency and effectiveness to existing international communities in fighting poverty. A change that is culturally and religiously denied may be the solution to the problem of survival. There is great expectation of the effects of a more developed program based circumcision and childbirth programs will bring in preventing HIV and AIDS.

However, it is clear research on circumcision is necessary to maximize its effectiveness and potential. Just like most solutions in fighting poverty have problems, there are questions concerning the necessity of this alternative method. However we are proposing circumcision to help with the question of survival concerning the HIV/AIDS problem is not a temporary or stepwise problem.

Policies to fight poverty is ideal, it is an area where not only macro-policies but details and practical solutions are needed. The good-will of trying to help them may plunge them into deeper chaos. They are experiment subjects. As intellectuals and human beings we have the responsibility and sense of duty in helping sustain the value of life.

## <References>

### 1. Introduction

1. UN.2008a.COMTRADE Database. 2008b. Global Monitoring Report

2. KOICA.2012.Understanding international development cooperation.

3. KOICA.2012.Understanding international development cooperation.

4. Harvard's Public Health University professor Daniel Helperin and Berkeley Public Health University Professor Malcolm Fortz's policy forum of Science, Recommendation for circumcision was published in WHO, 2007

### 2. The importance of MDGs and current evaluation.

5. 2012 UN MDG Report

6. Young Ho Park, Millennium Development Goals and Africa: assessment and prospects medium

7. 2012 UN MDG Report

8. 2012 UN MDG Report

9. Young Ho Park, Millennium Development Goals and Africa: assessment and prospects medium

10. Jeon Seunghun, Development effectiveness and Comprehensive development strategy, Korea Institute for Development Strategy

11. Im Wonhyeok, The morals of MDGs and implications of Post MDG agenda, KDI, 2012

### 3. The importance of Health part in developing countries

12. OECD, 2003, Policy Brief, Poverty and Health in Developing Countries: Key Actions

13. OECD, 2003, Policy Brief, Poverty and Health in Developing Countries: Key Actions

14. UNAIDS 2011 pg. 20-30

15. UNAIDS 2011 pg. 20-30

16. Number of people living with HIV and number of deaths due to AIDS by WHO region, 2011

17. Lois Jensen (2010) *The Millennium Development Goals: Report 2010*, New York, N.Y.

18. [www.project-malawi.org](http://www.project-malawi.org)

19. <http://www.gatesfoundation.org/What-We-Do/Global-Health/HIV>

### 4. Male Circumcision

20. Auvert B, Taljaard D, Lagarde E, Sobngwi-Tambekou J, Sitta R, Puren A, Randomized, Controlled intervention Trial of Male Circumcision for Reduction of HIV Infection Risk : the ANRS 1265 Trial, *PLoS Med* 2005 ; 2 : e298

21. Bailey RC, Kigozi G, Servadda D, et al. Male Circumcision for HIV Prevention in Men in Kisumu, Kenya : a Randomized Controlled Trial. *Lancet* 2007 ; 369: 643-656

22. Gray RH, Kigozi G, Serwadda D, et al. Male Circumcision for HIV Prevention in Men in Rakai, Uganda : a Randomized Trial. *Lancet* 2007 ; 369: 657-666
23. World Health Organization, World Health Statistical 2009
24. Project-Malaiw.org
25. McCoombe and Short, *AIDS* 2006 20:1491-1495
26. Auvert B, Taljaard D, Lagarde E, Sobngwi-Tambekou J, Sitta R, Puren A. Randomized, onrolled intervention trial of male circumcision for reduction of HIV infection risk: the ANRS 1265 Trial. *PLoS Med.* 2005 Nov;2(11):e298. Erratum in: *PLoS Med.* 2006 May;3(5):e298.
27. Ingrid T. Katz, M.D., M.H.S. and Alexi A. Wright, M.D., Circumcision — A Surgical Strategy for HIV Prevention in Africa, 2008(A man who was circumcised at an early age and tested negative on HIV test showed only 0.2-2.0% of prevalence rate in developing complications.)

## 5. Circumcision on Infants & HIV/AIDS

28. <sup>1</sup> WHO–UNAIDS. New data on male circumcision and HIV prevention: policy programme implications. Technical consultation male circumcision and HIV prevention. Montreux, 6-8 March 2007. p. 7. Available from: [http://data.unaids.org/pub/Report/2007/mc\\_recommendations\\_en.pdf](http://data.unaids.org/pub/Report/2007/mc_recommendations_en.pdf).
29. Schoen EJ, Colby CJ, To TT. Cost analysis of neonatal circumcision in a large health maintenance organization. *J Urol* 2006;175:1111-5. Available from: [www.ncbi.nlm.nih.gov/pubmed/16469634](http://www.ncbi.nlm.nih.gov/pubmed/16469634).
30. Binagwaho A, Pegurri E, Jane Muita J, Bertozzi S. Male circumcision at different ages in Rwanda. A cost-effectiveness study. *Plos Med* 2010 January. Available from: [www.plosmedicine.org/article/info:doi/10.1371/journal.pmed.1000211#s2](http://www.plosmedicine.org/article/info:doi/10.1371/journal.pmed.1000211#s2).
31. Schoen EJ, Colby CJ, To TT. Cost analysis of neonatal circumcision in a large health maintenance organization. *J Urol* 2006;175:1111-5. Available from: [www.ncbi.nlm.nih.gov/pubmed/16469634](http://www.ncbi.nlm.nih.gov/pubmed/16469634).

## 6. Health part Policy

32. KOICA.2012.Understaning international development cooperation.

## 7. Conclusion