



## 4. Socio-Economic Burden of HIV/AIDS: Willingness-to-Pay for Prevention of Mother-to-Child Transmission in Ghana

*Emmanuel Ayifah*

*(Project Manager of iLiNS Project, University of Ghana)*

**Background:** The government of Ghana in 2002 launched a comprehensive program to prevent mother to child transmission (MTCT) of HIV/AIDS. The Prevention of Mother-to-Child Transmission (PMTCT) of HIV/AIDS program was first piloted in Atua government hospital and St Martin's de Porres Hospital, in the Yilo and Manya Krobo Districts. In Ghana PMTCT services are free. It is however worth noting that, with the ever increasing public health expenditure in recent years, the government cannot foot the bill on PMTCT all alone. There is therefore the need for individual contributions to ensure sustainability of HIV/AIDS and other health care interventions; hence the study to determine how much pregnant women will be willing-to-pay to prevent MTCT of HIV/AIDS.

**Materials and Methods:** The study used the open ended bid elicitation method to assess pregnant women's hypothetical Willingness-to-Pay (WTP) for PMTCT of HIV/AIDS. Respondents (n=200) were drawn from two antenatal clinics (Atua Government Hospital and St.Martins Deporres Hospital) in Ghana. The Ordinary Least Squares (OLS) regression was used to evaluate the determinants of WTP. Verbal informed consent was received from participants.

**Results:** About 84 and 94 percent of respondents from the Atua Government Hospital and St.Martin's de Porres Hospital respectively were WTP for PMTCT of AIDS. WTP amount ranged between GH¢0.5 - GH¢20 (\$0.4-\$14.3) with Mean WTP being GH¢3.2 and GH¢3.6 (\$2.3-\$2.6) for Atua government Hospital and St. Martin's de Porres Hospital respectively. Significant determinants of WTP for PMTCT of HIV/AIDS include Income, HIV/AIDS status and Level of education.

**Conclusions:** Pregnant women in the Yilo and Manya Krobo Districts of Ghana would be willing to participate in cost sharing schemes that target HIV/AIDS prevention if introduced, as indicated by their WTP for PMTCT of HIV/AIDS. Income is the most significant factor influencing WTP.



### **Facts about Ghana**

- Population: 24.3 million (2010 population census)
- Average life expectancy in 2008: 57 years
- Average per capita income: US\$1,320

### **HIV/AIDS Statistics – 2010**

- HIV/AIDS Prevalence rate – 1.5%
- Prevalence among pregnant women – 2.0%
- New Infections – 12,890
- PLWHAs – 254,270 (children, 12.7%)
- AIDS Death – 16,319 (children, 9.9%)

### **PMTCT indicators in 2009**

- PMTCT clients – 381,874
- No. of clients positive – 6,634 (1.7%)
- Clients on ART – 3,643
- Total no. of HIV infected pregnant women – 12,990
- Percentage of HIV+ pregnant women on ART – 28%

### **Unit Cost Estimated of HIV/AIDS clinical care, Ghana – (GAC, 2010)**

- Average yearly cost per client – US\$534
- Range – US\$ 473 and US\$ 563
- Pediatric clients – US\$582 (10% more than adults)



### Unit Costs of HIV/AIDS Clinical Care (one patient year) – Recent Studies

Study	Country Year	Unit Cost	Unit/Coment
HS2020, 2009	Cote D'ivoire 2009	119	Pre-ART care Co-trimoxazole prophylaxis and monitoring laboratory test
Rosen and asante 2010	Ghana 2009	534 (473-563)	Drugs and consumables, Laboratory services
Resch et al. 2009	Nigeria 2009	811-827 116-121	1 patient year of ART Pre ART monitoring
Sanders, 2009	Rwanda 2009	319	Drug, lab, OI prophylaxis, Pre-ARV, nutrition support
Dadri, 2006	South Africa 2004	964-1,513	Include both in-patient and out- patient cost

### Investigating Alternative Funding Options

#### The research agenda

Investigating pregnant women's willingness-to-pay to prevent Mother-to-child transmission in Ghana

#### Background

- Mother-to-child transmission (MTCT) of HIV/AIDS accounts for the highest single mode of infection in children (UNAIDS, 1998).
- In Ghana prevention of Mother-to-Child Transmission (PMTCT) of HIV/AIDS services are free and the true cost of service per person per year was estimated at US\$630.00 in 2003 (NACP).
- It is worth noting that, the government cannot meet the cost on PMTCT alone. There is therefore the need for individuals to contribute to ensure sustainability of HIV/AIDS and other health care interventions, hence the study to assess hypothetical willingness-to-pay (WTP) for PMTCT of HIV/AIDS in Ghana.



- WTP studies are used to measure the value individuals/households place on improving/preventing further deterioration in health due to diseases (Whittington *et al.* 1999; Kominami *et al.* 2007; Muko *et al.* 2004; Forsythe *et al.* 2002).



### **Objective of the study**

- Assess respondent's knowledge about HIV/AIDS, MTCT and PMTCT of AIDS
- Estimated respondents WTP for PMTCT of AIDS
- Examine relevant determinants WTP.
- Provide policy recommendations.

### **Study Population**

Randomly selected pregnant women attending antenatal care at Atua Government Hospital (Atua) and St. Martins Deporres Hospital (\*Agormanya) (February-March, 2008)

**Sample Size** – 200 pregnant women (100 per hospital)

**Consent** – verbal informed consent

### **Eliciting WTP – The Contingent Valuation Method**

- Realistic hypothetical scenario – PMTCT Fund
- Minimizing budget constraint bias – income and other expenses (food, clothing, and other needs)
- Payment Vehicle – Maximum out-of-pocket monthly voluntary contribution throughout pregnancy period
- Bid Elicitation – Open ended bid elicitation format.

**Determinants of WTP** – Ordinary Least Squares (OLS) Regression.



## HIV related knowledge and WTP for PMTCT

Variable	Aggregate Sample (N=200)	Atua Government Hospital Atua (N=100)	St. Martins Deporres Hospital (*Agormanya) (N=100)
<b>Heard about HIV/AIDS</b>	200	100	100
<b>HIV/AIDS test</b>			
Yes	158	80	78
No	42	20	22
<b>Results</b>			
Positive	64	37	27
Negative	94	43	51
<b>Knowledge of MTCT</b>			
Yes	198	99	99
No	2	1	1
<b>Knowledge of PMTCT</b>			
Yes***	154	83	71
No	46	17	29
<b>WTP for PMTCT of HIV/AIDS</b>			
Yes	178	84	94
No**	22	16	6
<b>Mean WTP</b>	*GH¢ 3.4 (\$2.4)	GH¢ 3.2 (\$2.3)	GH¢ 3.6 (\$2.6)
<b>Std. deviation</b>	2.9466	2.959	2.766
<b>WTP Range (Min, Max)</b>	GH¢ 0.5 - GH¢ 20 (\$0.4-\$14.3)	GH¢ 0.5 - GH¢ 20 (\$0.4-\$14.3)	GH¢ 0.5 - GH¢ 10 (\$0.4-\$7.1)
*Exchange rate of Gh 1.4 = \$1    **Unemployed=70.4%    ***63.4 resp. 1 <sup>st</sup> heard of PMTCT upon visiting the clinic			

## OLS Regression Results for WTP

Regressor	Aggregate Sample (N=200) Coefficients	Atua Government Hospital, Atua (N=100) Coefficients	St. Martins Deporres Hospital Agormanya (N=100) Coefficients
<b>Income</b>	2.2322 ***	3.1380 ***	3.6086 ***
<b>nchldn</b>	-0.1391	0.0437	-0.1829
<b>Education</b>	0.3423 *	0.2317	-0.1081
<b>mstatus</b>	0.1897	0.4027	-0.0471
<b>Age</b>	-0.1984	-0.5315	-0.0111



<b>Transport Cost</b>	-0.0026	-0.0335	0.6021 *
<b>PMTCT</b>	-0.7186	-0.7186	-0.4191
<b>HIV status</b>	-1.0182 **	-1.1506 **	-0.7267
***significant at 1%	R-squared = 0.5739	R-squared = 0.5058	R-squared = 0.6135
**significant at 5%			
*significant at 10%			

### Major conclusions

- Pregnant women place high value on PMTCT of HIV/AIDS as indicated by their WTP for PMTCT
- Significant determinants of WTP for PMTCT of HIV/AIDS include income, educational level, Age, Distance to antenatal clinic and HIV/AIDS Status.
- The result is consistent with theoretical construct that higher income is associated with higher WTP.
- HIV/AIDS positives are willing to pay less.

### Policy Recommendations

- PMTCT of HIV/AIDS sensitization campaigns should be intensified.
- Social Intervention schemes (e.g. LEAP, NYEP in Ghana) should give priority to the unemployed, especially HIV/AIDS patients.
- More community based HIV/AIDS clinical care centers should be established to ease the burden on clients having to travel far for treatment.
- PMTCT fund through out-of pocket voluntary contributions would accrue some economic benefits when introduced.

Organiser :



UNITED NATIONS  
UNIVERSITY

UNU-IIGH

International Institute For Global Health

