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Conditional cash transfers improve retention in PMTCT services by mitigating the negative effect of not having money to come to the clinic

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Abstract

Objective—To elucidate the mechanisms by which a cash incentive intervention increases retention in prevention of mother-to-child transmission (PMTCT) services.

Methods—We used data from a randomized controlled trial in Kinshasa, Democratic Republic of Congo. Perceptual factors associated with loss-to-follow-up (LTFU) through six weeks postpartum were first identified. Then, binomial models were used to assess interactions between LTFU and identified factors, and the cash incentive intervention.

Results—Participants were less likely to be LTFU if they perceived HIV as a “very serious” health problem for their baby vs. not (risk difference [RD], −0.13; 95% confidence interval [CI], −0.30, 0.04), if they believed it would be “very likely” to pass HIV on to their baby if they did not take any HIV drug vs. not (RD, −0.15; 95% CI, −0.32, 0.02), and if they anticipated that not having money would make it difficult for them to come to clinic vs. not (RD, 0.12; 95% CI, −0.07, 0.30). The effect of each of the three factors on LTFU was antagonistic to that of receiving the cash incentive intervention. The excess risk due to interaction between the cash incentive

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CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

Contributors

MY, HT, FB, KEM, and AE designed the study. MY, EWO, BK, and LW implemented the study and collected data. MY analyzed the data. MY wrote the first draft of the report with input from HT, AE, KEM, FB. All authors contributed to the final report.

intervention and the anticipated difficulty of “not having money” to come to clinic was exactly equal to the effect of removing this perceived barrier (excess risk due to interaction, -0.12 ; 95% CI, -0.35 , 0.10).

Conclusions—Our analyses show that cash transfers improve retention in PMTCT services mainly by mitigating the negative effect of not having money to come to the clinic.

Keywords

Conditional cash transfers; PMTCT; retention in care; mechanism; DR Congo

INTRODUCTION

At the end of 2014, 77% of HIV-infected pregnant women in the 21 Global Plan priority countries in sub-Saharan Africa were receiving antiretrovirals for their own health or for the prevention of mother-to-child transmission (PMTCT).¹ Moreover, there has been a rapid shift to the 2013 WHO recommendations of lifelong antiretroviral therapy (ART) for all HIV-infected pregnant and breastfeeding women regardless of their clinical or immune status (Option B+).² If implemented optimally, these guidelines could lead to mother-to-child transmission (MTCT) rates below 5% in a breastfeeding population and below 2% in a non-breastfeeding population.³ Recent data from the Promise Study showed that with Option B+, a transmission rate as low as 0.5-0.6% can be achieved by age 14 days.⁴

To ensure maximum benefit from ART for themselves and for PMTCT, HIV-infected pregnant women have to adhere to a continuum of services often referred to as the “PMTCT cascade”.⁵ The cascade includes attendance of regular clinic visits (at a minimum for ART refills), delivery in a health facility, and testing of the HIV-exposed infant (HEI) at six weeks, at nine months, and at the end of breastfeeding (between 18-24 months). Yet, data from early implementation of Option B+ in Malawi showed that about one in six pregnant women initiated on ART at antenatal care (ANC) registration do not return to the clinic after their initial visit.⁶ In addition, a recent meta-analysis of women lost to follow-up (LTFU) across the “PMTCT cascade” found that 49% of HIV-infected pregnant women are LTFU between ANC registration and delivery, and 34% of mother-infant pairs are LTFU within three months of delivery.⁷ Although the MTCT rate was 5% at six weeks in the 21 priority countries in sub-Saharan Africa in 2014, as a result of high rate of LTFU, it rose to 14% by the end of breastfeeding when many of the mothers are no longer on ART.⁸

Identification of effective and scalable strategies to improve retention along the PMTCT cascade and improve uptake of HIV services is at the forefront of PMTCT optimization efforts. In a recent randomized controlled trial, we found that providing newly-diagnosed HIV-infected women with small and increasing cash incentives, on the condition that they attended scheduled clinic visits and received available PMTCT services, significantly increased the proportion of women who were retained in care and received available PMTCT services through six weeks postpartum.^{9,10} The intervention choice was informed by an important finding in the behavioral economics literature that many individuals have present-biased preferences, whereby they place disproportionate weight on present costs and benefits relative to those in the future.¹¹ Thus, consistent with the Health Belief Model's¹²

elements of “perceived risk,” “perceived benefit,” and “perceived barriers,” it was hypothesized that though there may be strong health incentives (e.g., desire to avoid MTCT) for HIV-infected pregnant women to engage in HIV care and treatment, women may place substantial weight on the immediate costs of PMTCT, which include the financial and opportunity costs of attending regular clinic visits, and heavily discount the delayed benefits.^{13,14} Verification of the mechanisms by which cash incentive interventions increase desired PMTCT outcomes would 1) enhance our understanding of how these interventions work and 2) improve our ability to design and scale up similar interventions for PMTCT and other health and social issues.

To elucidate the mechanisms by which a cash incentive intervention increases desired PMTCT outcomes using a modified Health Belief Model as conceptual framework (Figure 1), we examined the associations between perceptual factors (perceived severity of HIV, perceived MTCT susceptibility/risk, perceived PMTCT benefit, perceived barriers and self-efficacy to access and use PMTCT services) and retention in care. We also assessed the potential interactions between 1) perceptual factors found to be associated with retention in care and 2) the effect of a conditional cash incentive intervention on the same outcome.

METHODS

Study design and study population

This is an analysis of data from a randomized controlled trial that was conducted in Kinshasa, the Democratic Republic of Congo (DRC). Between April 2013 and August 2014, 433 newly-diagnosed HIV-infected women, 32 weeks pregnant, registering for ANC at one of 89 clinics during the enrollment period were recruited and randomized to receive either the standard of care or the standard of care plus small and increasing cash payments. These payments started at \$5 and increased by \$1 each month on the condition that the woman attended scheduled clinic visits and provided a blood sample for a CD4 count, accepted referral for ART if referred, delivered in a health facility, and at six weeks postpartum provided a blood sample for early infant HIV diagnosis. A detailed description of the intervention, and results of the analysis of primary outcomes showing that the intervention resulted in significantly higher retention along the PMTCT cascade and better uptake of available services, have been reported.

Perceptual factors and measurements

At enrollment into the study, which occurred between two to four weeks after registration for ANC and HIV diagnosis, participants were interviewed using a structured questionnaire to collect information on perceived HIV severity, perceived MTCT susceptibility/risk, perceived PMTCT benefits, perceived difficulties and barriers accessing PMTCT services, and perceived self-efficacy to access and adhere to clinic visits and PMTCT services (see Figure 1 for the conceptual model). All survey questions for the perceived factors had Likert-style scale response options (e.g., “very likely,” “somewhat likely,” “somewhat unlikely,” “very unlikely,” “don’t know,” and “refuse to answer”). The questions, response options and the final coding of those responses are summarized in Table 1.

Outcome variables

The main outcome considered in this analysis was LTFU – not in care at six weeks postpartum with unknown whereabouts (participants who were dead, or who did not return to the clinic because they experienced a poor pregnancy outcome but could still be reached, were classified as not in care but not as LTFU).

Statistical analysis

Identification of perceptual factors associated with LTFU—Using data from participants randomized to the control group (to avoid any mixing of effect), we examined the associations of the measured perceptual factors with LTFU by comparing the proportion of participants LTFU by six weeks postpartum across categories of perceptual variables. Multivariate logistic regression models including all of the perceptual factors were used to identify factors that were independently predictive of LTFU and to estimate odds ratios (OR) and 95% confidence intervals (CI) assessing the strength of their associations with the outcome. Perceptual variables found to be significantly associated ($\alpha=0.20$) with LTFU after adjustment for all other factors considered as well as wealth index were retained for the evaluation of interaction with the cash incentive intervention. Wealth index was included in the model because sub-group analysis of the primary trial outcomes showed that the effect of the cash intervention was particularly strong for poorer women.⁹ Wealth index was determined using principal component analysis. The model for this factor analysis included years of education, average number of household members per room (an indication of crowding), number of sleeping beds in the household, types of household water source (communal or private pipe), cooking fuel type (electrical stove, or wood/charcoal), and ownership status for several durable assets. The first component explained 27% of the variability in the data. The factor score was categorized into upper (two richest quintiles), middle (third quintile), and lower (two poorest quintiles) categories.

Modification of the effects of identified perceptual factors on LTFU by the cash incentive intervention—To assess potential synergism or antagonism between perceptual factors found to be significantly and independently associated with LTFU and the cash incentive intervention, log-linear risk models were used to estimate the risk difference (RD) measuring the individual and joint effects of the conditional cash incentive intervention and the perceptual factor on the outcome. The likelihood ratio test was used to assess RD modification, and excess risk due to interaction (interaction contrast [IC] and 95% CI) was used to assess for synergism or antagonism. IC is the difference between the observed RD comparing the doubly-exposed category with the doubly-unexposed category, and the expected RD comparing the same two groups assuming additivity (without the interaction term) should be equal to zero in the absence of RD modification. All analyses were completed using SAS 9.3 (SAS Institute Inc., Cary, NC). All tests were two-sided and used a 0.20 significance level unless otherwise indicated.

The study is approved by the Institutional Review Board of the Ohio State University and the Ethical Committee of the Kinshasa School of Public Health. This parent trial is registered at [ClinicalTrials.gov](https://clinicaltrials.gov), number NCT01838005.

RESULTS

Perceptual factors

Overall, most participants perceived HIV as a “very serious” health problem for themselves (78.5%, 340/433) and for their infants (84.3%, 365/433) (Table 2). The perception of MTCT susceptibility/risk was also high; 83.6% (362/433) of participants responded that it was “very likely” they will pass HIV on to their baby if they did not take any HIV drug. Similarly, the perceived benefit of PMTCT medication was also very high; 84.8% (367/433) of participants believed it would be “very unlikely” that they will pass HIV on to their baby if they take all their HIV drugs. Over 90% (391/433) of participants stated they were “very confident” to be able to come to clinic every month to collect their HIV drugs and get checked; accordingly, 83.8% (363/433) anticipated that it would be “very easy/not at all difficult” for them to come to clinic. The anticipated difficulties included “transportation” for 15.9% (69/433) and “not having money” for 11.6% (50/433) of respondents. Virtually all participants, 98.4% (426/433), stated that it was “very likely” they would take all of their medication every day without missing any doses.

Association between perceptual factors and LTFU

In bivariate analysis, perceived MTCT susceptibility/risk was the strongest predictor of LTFU; participants who perceived passing HIV on to their baby was “very likely” if they did not take their HIV drugs were strongly and statistically less likely to be LTFU at six weeks postpartum compared to those who did not perceive the risk of transmission as “very likely” (OR= 0.44; 95% CI, 0.19, 0.99) (Table 3). Participants who perceived HIV to be a serious health problem for their infants (OR, 0.50; 95% CI, 0.21, 1.14) were also less likely to be LTFU at six weeks postpartum compared to women who did not perceive HIV as a serious health problem. On the other hand, compared to participants who responded “nothing” to the question “what makes it difficult for you to come to the clinic to receive your treatment?” those who responded “not having money” were about twice as likely to be LTFU (OR, 1.90; 95% CI 0.75, 4.84).

In a multivariate logistic model, women who perceived it as “very likely” that they will transmit HIV to their baby if they did not take any HIV drug remained statistically less likely to be LTFU (adjusted OR [aOR], 0.39; 95% CI, 0.14, 1.08). Though not statistically significant, HIV-infected women who perceived HIV to be a serious health problem for their baby were also less likely to be LTFU at six weeks postpartum (aOR, 0.55; 95% CI, 0.18, 1.65). Accordingly, perceived lack of benefit of PMTCT medication was associated with LTFU. Women who responded that it was “very unlikely” that they will pass HIV to their baby if they take all their HIV drugs were twice as likely to be LTFU (aOR, 2.01 95% CI, 0.64, 6.30). Believing that “not having money” will make it difficult to come to the clinic was the only anticipated barrier associated with an increased tendency of LTFU (aOR, 1.83; 95% CI 0.67, 5.02).

Modification of the effects of identified perceptual factors on LTFU by the cash incentive intervention—Table 4 presents the RDs and 95% CIs for LTFU for each exposure (perceptual factors and cash incentives) individually and jointly, as well as the

excess RDs due to interaction (IC) and their 95% CIs. Perceiving HIV as a “very serious” health problem for their baby vs. not was associated with a 13% decrease in the proportion of women LTFU by six weeks postpartum (RD, -0.13; 95% CI, -0.30, 0.04) among women who did not receive the cash incentive intervention. Among women who did not perceive HIV as a “very serious” health problem for their baby, receiving the cash incentive was associated with a 23% (RD, -0.23; 95% CI, -0.41, -0.04) reduction in the proportion of participants LTFU. The effects of the two exposures were not additive for participants who perceived HIV as a “very serious” health problem and received the cash incentive (RD, -0.20; 95% CI, -0.37, -0.03). The antagonistic excess RD due to interaction (IC, 0.16; 95% CI, -0.04, 0.35). Similar antagonism was observed for the perception that it will be “very likely” to pass HIV on to the baby if one did not take any HIV drug.

Anticipating that “not having money” will make it difficult to come to clinic to receive treatment, though not statistically significant, was associated with a 12% (95% CI, -7%, 30%) increase in the proportion LTFU at six weeks postpartum among participants who did not receive the cash incentive (compared to participants who reported “nothing” when asked about barriers to clinic attendance). Providing women in this group with a cash incentive perfectly antagonized the negative effect of “not having money” on LTFU (IC, -0.12; 95% CI, -0.35, 0.10).

DISCUSSION

If ART is started at an early stage of pregnancy and continued uninterrupted throughout breastfeeding, the risk of HIV transmission from mother to child decreases to almost zero.⁴ But without novel strategies to increase retention in and adherence to PMTCT services, the goal of an AIDS-free generation is unlikely to be achieved. In this study, we examined the mechanisms through which a cash incentive intervention recently tested by our group in a randomized controlled study increases retention in care.

As hypothesized during design of the study, our analysis showed that HIV-infected pregnant women who perceived HIV as a “very serious” health problem for their baby (perceived severity of HIV), and perceived that they will “very likely” pass HIV on to their baby if they did not take their drugs (perceived benefit of PMTCT), were more likely to have been retained in care through six weeks postpartum. Our results are in agreement with previous studies showing that better PMTCT knowledge¹⁵ as well as greater understanding and belief in the effectiveness of ART¹⁶ are positively associated with higher adherence to PMTCT services. Interestingly, the observed antagonism between the cash incentive intervention and 1) the perception of HIV as a very serious health problem for the baby and 2) believing that it will be very likely that HIV will be transmitted to the baby if one does not take any HIV drugs suggests a competitive mechanism of action as represented in the conceptual framework. Consistent with the Prospect Theory,¹⁷ this observation suggests that interventions which combine 1) relatively short-term cash incentives to keep asymptomatic pregnant women who are likely to be LTFU and 2) an effective education program to improve women's understanding of HIV risk for themselves and for the baby may achieve meaningful and sustained retention.

Lack of financial support is a known risk factor for poor ART adherence among HIV-infected women¹⁸. Our finding that provision of a small cash incentive to those women completely reverses the negative effect of “not having money” on LTFU is a confirmation that there are real financial barriers to accessing HIV care, at least in maternal and child health clinics where PMTCT programs are implemented despite HIV care itself being provided free of charge. In fact, in most countries in sub-Saharan Africa, hospitals and clinics are funded on a fee-per-service basis, and HIV-infected women have to be able to pay for their antenatal visits registration and delivery costs, as well as register for the well-baby clinic visit in the postpartum period to be able to continue to have access to the clinic at each of those steps.¹⁹ The magnitude and structure of those fees varies by clinic and might explain why some women switch clinics during and after pregnancy.⁹

The observation of a negative effect of “not having money” on retention also has implications for determination of the magnitude of the cash incentive. It has been suggested that incentive magnitude be dependent on the opportunity cost incurred by the behavior change. A systematic review of the use of financial incentives in treatments for obese and overweight persons found evidence of very weak trends in favor of using amounts greater than 1.2% of personal disposable income.²⁰ However, while the optimal size and structure of incentive payments remain important questions to be addressed empirically, this finding suggests that in areas where fee for service is in place, they must be taken into account when determining the opportunity costs of attending clinic visits.

This is the first study to examine the mechanisms by which a cash incentive intervention achieves the desired outcomes of retention in care among newly-diagnosed HIV-infected pregnant women. The study used data from a randomized controlled trial to test hypotheses that informed the design of the intervention. Despite the potential risk of misreporting the perceptual factors considered in this analysis, the fact that interviews were conducted before participants were assigned to randomization groups eliminates any potential for differential misreporting by study group or outcome level. However, because the study was not powered for this specific analysis, some estimates are unstable with wide confidence intervals.

In conclusion, our analyses show that cash transfers improve retention in PMTCT services mainly by mitigating the negative effect of not having money to come to the clinic. In designing financial incentive interventions to improve retention in PMTC services, the minimum amount proposed should be at least equal to the cost of attending clinic visits.

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Figure 1. Conceptual model for conditional cash transfer intervention for retention in care and uptake of prevention of mother-to-child transmission services

The model is based on Health Belief Model ¹¹; MTCT = mother-to-child transmission of HIV, PMTCT = prevention of mother-to-child transmission of HIV

Table 1

Perceptual factors considered, questions used to measure perceptual factors, and final variable coding

Perceptual factors	Question	Response	coding
<i>Perceived Severity of HIV</i>	How serious a health problem is HIV for you personally? Would you say that it is:	Very serious	1 index
		Somewhat serious Not very serious Not at all serious Don't Know Refuse to answer	0 referent
	Now think about your baby. How serious a health problem would it be if your baby had HIV? Would you say it would be:	Very serious	1 index
		Somewhat serious Not very serious Not at all serious Don't Know Refuse to answer	0 referent
<i>Perceived MTCT susceptibility/risk</i>	How likely or unlikely do you think it is that you will pass HIV on to your baby if you do not take any HIV drug? Would you say it is:	Very likely	1 index
		Somewhat likely Somewhat unlikely Very unlikely Don't Know Refuse to answer	0 referent
<i>Perceived PMTCT benefits</i>	How likely or unlikely do you think it is that you will pass HIV on to your baby if you do take all your HIV drugs as indicated by the nurse? Would you say it is:	Very likely	1 index
		Somewhat likely Somewhat unlikely Very unlikely? Don't Know Refuse to	0 referent
<i>Perceived difficulties to accessing PMTCT services</i>	How difficult or easy will it be for you to come to the clinic to collect your HIV drugs and get check? Would it be:	Not at all difficult/very easy	1 index
		A little difficult, or Somewhat difficult Very difficult Don't Know Refuse to answer	0 referent
<i>Perceived barriers to accessing PMTCT services</i>	What makes it difficult for you to come to the clinic to receive your treatment? (<i>check all that apply</i>)	Transportation	Nothing (referent) Transportation Not having money Other
		No Childcare Takes too much time Husband/partner won't allow Other_____	
<i>Perceived self-efficacy to adhere to PMTCT medicines</i>	How confident are you that you will be able to come to the clinic every month to collect your HIV drug? Would you say you are:	Very confident	1 index
		Somewhat confident A little confident, or Not at all confident Don't Know Refuse to answer	0 referent
	How confident are you that you will be able to continue to come to this clinic to receive your HIV drugs after given birth? Would you say you are:	Very confident	1 index
		Somewhat confident A little confident, or Not at all confident Don't Know Refuse to answer	0 referent
	How likely is it that you will take your medication everyday without missing any doses? Is it:	Very likely	1 index
		Somewhat likely Somewhat unlikely Very unlikely? Don't Know	0 referent

Perceptual factors	Question	Response	coding
		Refuse to answer	
<i>Anticipated regret if baby infected</i>	Imagine that your baby contracted HIV during pregnancy or birth, and that you did not receive HIV treatment, which could have prevented your baby from contracting HIV. How much would you regret that you did not get HIV drug? Would you:	Regret it a great deal	1 index
		Regret it a moderate amount Regret it a little, or Not regret it all? Don't Know Refuse to answer	0 referent

Table 2

Perceptions of HIV and mother-to-child transmission risk among 433 newly-identified HIV-infected women in Kinshasa, Democratic Republic of Congo

	N (%)
How serious a health problem is HIV for you personally?	
Very serious	340 (78.5)
Other	93 (21.5)
Now think about your baby. How serious a health problem would it be if your baby had HIV?	
Very serious	365 (84.3)
Other	68 (15.7)
How likely or unlikely do you think it is that you will pass HIV on to your baby if you do not take any HIV drug?	
Very likely	362 (83.6)
Other	71 (16.4)
How likely or unlikely do you think it is that you will pass HIV on to your baby if you do take all your HIV drugs as indicated by the nurse?	
Very unlikely	367 (84.8)
Other	66 (15.2)
How difficult or easy will it be for you to come to the clinic to collect your HIV drugs and get checked?	
Not at all difficult/very easy	363 (83.8)
Other	70 (16.2)
How confident are you that you will be able to come to the clinic every month to collect your HIV drugs?	
Very confident	391 (90.3)
Other	42 (9.7)
How likely is it that you will take your medication every day without missing any doses?	
Very likely	426 (98.4)
Other	7 (1.6)
Imagine that your baby contracted HIV during pregnancy or birth, and that you did not receive HIV treatment, which could have prevented your baby from contracting HIV. How much would you regret that you did not get HIV drugs?	
Regret it a great deal	409 (94.5)
Other	24 (5.5)
What makes it difficult for you to come to the clinic to receive your treatment?	
Nothing	274 (63.3)
Transportation	69 (15.9)
Not having money	50 (11.6)
Other	40 (9.2)

Table 3

Association of perceptual variables and loss to follow-up among a cohort of 217 newly-identified HIV-infected pregnant women in Kinshasa, Democratic Republic of Congo (control group women only)

	Loss to follow-up		OR (95%CI) ¶	
	Yes: n (%)	No: n (%)	Crude	Adjusted
How serious a health problem is HIV for you personally?				
Very serious	32 (18.7)	139 (81.3)	0.65 (0.30, 1.40)	0.95 (0.34, 2.64)
Other	12 (26.1)	34 (73.9)		
Now think about your baby. How serious a health problem would it be if your baby had HIV?				
Very serious	34 (18.4)	151 (81.6)	0.50 (0.21, 1.14) *	0.55 (0.18, 1.65)
Other	10 (31.3)	22 (68.7)		
How likely or unlikely do you think it is that you will pass HIV on to your baby if you do not take any HIV drugs?				
Very likely	33 (17.9)	151 (82.1)	0.44 (0.19, 0.99) *	0.39 (0.14, 1.08) *
Other	11 (33.3)	22 (66.7)		
How likely or unlikely do you think it is that you will pass HIV on to your baby if you do take all your HIV drugs as indicated by the nurse?				
Very likely	37 (20.6)	143 (79.4)	1.11 (0.45, 2.72)	2.01 (0.64, 6.30)
Other	7 (18.9)	30 (81.1)		
How difficult or easy will it be for you to come to the clinic to collect your HIV drugs and get checked?				
Not at all difficult/very easy	35 (19.4)	145 (80.6)	0.75 (0.33, 1.73)	0.87 (0.33, 2.28)
Other	9 (24.3)	28 (75.7)		
How confident are you that you will be able to come to the clinic every month to collect your HIV drug?				
Very confident	39 (19.9)	157 (80.1)	0.79 (0.27, 2.30)	0.78 (0.23, 2.66)
Other	5 (23.8)	16 (76.2)		
What makes it difficult for you to come to the clinic to receive your treatment?				
Nothing	25 (18.1)	113 (81.9)		
Transportation	6 (18.8)	26 (81.2)	1.04 (0.39, 2.80)	0.95 (0.34, 2.68)
Not having money	8 (29.6)	19 (70.4)	1.90 (0.75, 4.84) *	1.83 (0.67, 5.02)
Other	5 (25.0)	15 (75.0)	1.51 (0.50, 4.53)	1.07 (0.33, 3.51)
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	Loss to follow-up		OR (95%CI)	
	Yes: n (%)	No: n (%)	Crude	Adjusted
Upper	27 (15.3)	149 (84.7)		
Middle	13 (14.9)	74 (85.1)	0.66 (0.24, 1.80)	0.72 (0.25, 2.03)
Lower	27 (15.88)	143 (84.12)	1.04 (0.51, 2.14)	0.91 (0.42, 1.99)

* significant at alpha = 0.20; OR = odds ratio, CI = confidence interval
adjusted for all the variables in the table

Table 4

Risk differences of the conditional cash incentive intervention, perceived HIV severity, and prevention of mother-to-child HIV transmission benefit on loss to follow-up, and interaction contrasts, among 433 newly-identified HIV-infected pregnant women in Kinshasa, Democratic Republic of Congo. [¶]

	Loss to follow-up		
	Intervention group		IC (95% CI)
	RD (95% CI)	RD (95% CI)	
Now think about your baby. How serious a health problem would it be if your baby had HIV?			
Very serious	-0.20 (-0.37, -0.03) *	-0.13 (-0.30, 0.04) *	0.16 (-0.04, 0.35) *
Other	-0.23 (-0.41, -0.04) *	1	
How likely or unlikely do you think it is that you will pass HIV on to your baby if you do not take any HIV drugs?			
Very likely	-0.22 (-0.39, -0.05) *	-0.15 (-0.32, 0.02) *	0.19 (-0.01, 0.38) *
Other	-0.25 (-0.44, -0.07) *	1	
What makes it difficult for you to come to the clinic to receive your treatment?			
Transportation	0.04 (-0.11, 0.18)	0.01 (-0.14, 0.16)	0.11 (-0.09, 0.32)
Not having money	-0.09 (-0.23, 0.04)	0.12 (-0.07, 0.30)	-0.12 (-0.35, 0.10)
Other	-0.18 (-0.62, 0.16)	0.07 (-0.13, 0.27)	-0.16 (-0.65, 0.32)
Nothing	-0.09 (-0.17 -0.00) *	1	

[¶] Stratified risk differences (RD), interaction contrasts (IC) and 95% confidence intervals (CI) were obtained using log-linear risk models. Only perceptual factors that were statistically associated with each outcome were considered for interaction assessment.

* significant at alpha = 0.20.