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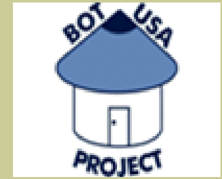

TCM Association with Knowledge, Attitude, Beliefs, and Behaviors from the 2003 Makgabaneng Listener Survey

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Introduction

TCM refers to the Total Community Mobilization program focused on HIV/AIDS in Botswana. The TCM program has been a part of the Botswana national response to HIV since 2001, and was developed by Humana People-to-People as a replication of their TCE (Total Control of the Epidemic) program which was launched at the National Summit on Africa in Washington on 17 February, 2000.[1] The TCE program functions in Zimbabwe and Mozambique, and is designed to mobilize the community in approximately three years.[2,3]

The TCM program is a door-to-door community mobilization campaign designed to deliver HIV prevention and treatment related information to individuals.[4] The TCM program was first implemented in Kasane, Tutume, and Gaborone.[5,6,7,8,9] Currently, the TCM program is located in 15 villages within 10 health districts. Since its inception, the program in Botswana has adjusted to local conditions and outreach situations. Initially a household level intervention geared to mobilizing individuals; today the TCM program includes group and community level interventions across a variety of venues to impact knowledge, attitudes, beliefs and behaviors. The household is no longer the sole portal to TCM program messages and interventions.

Summary Notes

- The TCM program contributes to Botswana's effort to increase knowledge about HIV, HIV prevention, and to reduce stigmatizing attitudes.
- TCM reached 22.8% of persons participating in the 2003 Listener Survey who were from districts where TCM operates.
- Bivariate comparison of 2003 Listener Survey data showed that TCM exposure may be associated with several indicators of correct knowledge regarding HIV and the prevention of HIV transmission, as well as attitudes and beliefs that support HIV prevention efforts. TCM was also associated with fewer stigmatizing attitudes.
- When controlling for the demographics of 2003 Listener Survey participants, TCM was found to be a predictor for knowledge that MTCT can be reduced, the willingness to allow children to attend school if the teacher was HIV+ but not ill, whether a person reported being tested for HIV and whether a person reported being tested for HIV with a partner.

In addition to customary program activities, the TCM program assists other public health efforts in the community to reduce HIV. Since 2002, the Makgabaneng Program, a Setswana language entertainment-educational radio drama, has relied on the TCM program to implement community based message reinforcement.[10] TCM activity has involved the encouragement and establishment of listening groups which are gatherings of persons in households, schools, work places, or other venues brought together to listen to the Makgabaneng radio drama. These listening groups may hold discussions following the radio program, or they may form a 'drama group' to enact role playing for reinforcement of messages. For example, in May of 2002, there were 23 radio drama groups involving 150 participants in the areas of Maun, Francistown, and Tutume.[11]
TCM listening groups were initiated during the last quarter of 2002. Several groups met on a regular basis,

while others met sporadically or disbanded due to lack of interest, expectation for participant compensation, or implementation issues such as broken radios, radio reception, or issues of language access.[12,13,14] According to the TCM program, there were sustained listening groups in Gaborone; with 16 groups in 2002 and 19 groups through May of 2003.[15]

This report is a review of findings from the 2003 Makgabaneng Listener Survey with focus on the potential association between TCM program exposure and select indicators of knowledge, attitude, belief, and behavior (KABB). While the TCM program assists the Makgabaneng HIV Program through listening groups, here TCM Program exposure is measured by reported participation in a TCM listening group and/or whether a person reports talking with someone from the TCM program. This approach is similar to past TCM evaluation efforts comparing selected knowledge and behavioral indicators with TCM exposure.[16,17] The difference with this report is that it is an externally conducted review of data collected by an organization other than the TCM program.

The purpose of this report is to provide information to program and policy leaders as they consider policy related to the TCM program in Botswana; and to provide information to the TCM program for program evaluation and development. Attribution of TCM impact on KABB indicators will be difficult from the data shared here, as there are no current means of distilling them from the contributions of other HIV prevention or treatment messaging programs that coexist with TCM. This evaluation challenge is not unique to the TCM program, as it is shared by all HIV related programs in Botswana seeking to distill program effects.

While a causal link between the TCM program and outcome indicators cannot be possible at this time, results from this review of Listener Survey data point to an association between the TCM program and correct knowledge about HIV, reported HIV testing, reported attitudes and beliefs which support behaviors that will reduce HIV infection and transmission, and reduced stigmatizing attitudes. District level information will be examined when statistically significant, and is reported in the appendix for the purposes of TCM program consideration.

Method

The Makgabaneng Listener Survey conducted between February and May 2003 provided the primary data for this study. The survey measured demographic characteristics of listeners, access to radio and television, exposure to Makgabaneng, Makgabaneng program listening patterns, knowledge of HIV prevention and transmission, psychosocial factors related to behaviors, and behavioral practices. The survey also measured exposure to the TCM program. Five of the seven participating Listener Survey districts hosted TCM program activities. The purpose of the Listener Survey was to assess the popularity, coverage, and impact of the Makgabaneng radio drama.

TCM program exposure was comprised of two measures from the survey: whether in the past 12 months, a person reported taking part in a TCM listening-discussion group, and/or whether in the past 12 months, a person talked with anyone from TCM other than in the context of a listening-discussion group. TCM exposure was defined as answering ‘yes’ to either situation. The limitation with this measurement for TCM exposure is that it does not capture TCM exposure through group or community level interventions such as a drama group, quiz show, or condom demonstration. In those and many other cases, persons may not have actually spoken with someone from the TCM program, yet they were participants in a TCM related intervention. Further, this measure does not differentiate among the expected variations of TCM exposure. Persons having participated only once in a Listening group or speaking to a representative of the TCM

program only once are grouped together with those who have actively and often participated in a Listening group, and/or held several discussions with a TCM program representative. The strength of this measure of TCM exposure is that talking with a TCM program field officer covers a variety of TCM interventions such as house to house mobilization, PMTCT interventions, individual risk reduction planning, and TCM-provided educational lessons.

Bivariate comparisons of Listener Survey data were examined using Chi-Square Test for Significance to understand knowledge, attitude, belief, and behavior indicators by reported TCM exposure. Multivariate analyses were conducted to control for all demographics and to examine whether TCM exposure was among the predictors for particular KABB indicators. Variables examined together included TCM exposure, gender, age group, education, marital status, major-urban/rural, radio access, and Makgabaneng listening. Results of statistical significance (p<=.05) are reported here. These analyses were conducted using the CROSSTAB procedure in SUDAAN. Finally, data from the TCM program were gathered and analyzed for comparison with the Listener Survey observations to provide context when possible. Primary data analysis was conducted by the BOTUSA Project, a collaboration between the Government of Botswana and the U.S. Centers for Disease Control and Prevention; with additional analysis and TCM program data integration by the U.S. based National Alliance of State and Territorial AIDS Directors (NASTAD).[18]

Data Strengths and Limitations

- The Listener Survey included a broad representation of Botswana; however, the sample is not generalizable as it was drawn from the 7 most populous districts.
- The Listener Survey data is a good source of evaluation information for TCM exposure, as the sample size was broadly representative, and data were gathered by persons who were not associated with the TCM program.
- The TCM exposure measure represents a minimum estimate of the reach of TCM in districts, as it measures only whether someone has participated in a Makgabaneng Listening group in the past year and/or whether they have spoken with a representative from the TCM program in the past year. Further, group level and community level intervention exposure is not included in the TCM exposure measure.
- Variability of TCM exposure is not expressed through the TCM exposure measure, so it is not possible to observe how TCM exposure variation impacts KABB outcomes.

Results

The Listener Survey was conducted among 807 persons across the following seven districts: Gaborone, Southern, Serowe-Palapye, Francistown, Selebi-Phikwe, Ngamiland East, and Kgatleng. TCM operated in all but Southern and Kgatleng districts. Men and women (405/402 respectively) equally participated in the Listener Survey; and 40% of respondents were between the ages of 15-24 years, while 60% were between the ages of 25-49 years.[19]

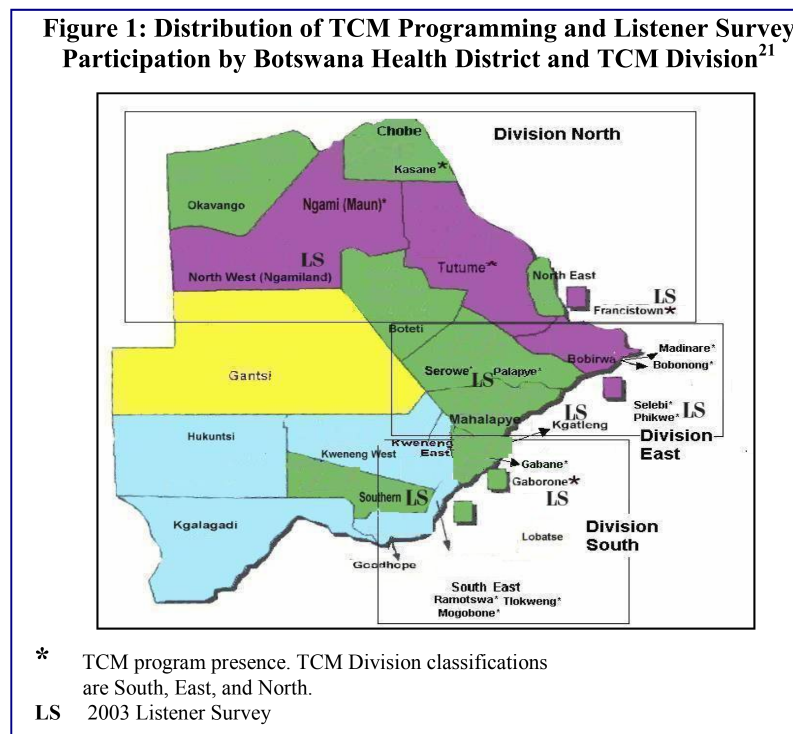
Among the entire Listener Survey sample (across the 7 participating districts), 17% reported exposure to TCM. As two of the seven districts were without TCM programming, an adjusted exposure to TCM of 22.8% was calculated. This means that 22.8% of persons from districts where TCM exists, or 129 persons out of a group of 566 individuals, reported that they participated in a TCM listening group and/or that they have spoken with someone from the TCM program.

The subgroup of persons exposed to the TCM program was similar to the Listener Survey sample. There were more women as a percentage of the subgroup as compared to the sample (56% vs. 44% men). The age distribution was almost exact with 39% of persons between the ages of 15-24 years.   Table 1 (next page) compares the district representation for those reporting TCM exposure with the Listener Survey sample.

Table 1: District Representation for TCM Exposure and Listener Survey[20]		
District	**Listener Survey (N=807)**	**TCM Exposure (n=133)**
Gaborone	23%	33.8%
Southern	22%	0.8%*
Serowe-Palapye	18%	23.3%
Francistown	10%	12.0%
Selebi-Phikwe	7%	16.5%
Ngamiland East	10%	11.3%
Kgatleng	10%	3.0%*
*District without TCM programming		

According to Listener Survey respondents, the TCM program had contact with 14.6% of the men (59 persons) and 18.4% of the women (74 persons). A similar reach to age group was observed, as 16% of persons 15-24 years of age (52 persons, n=322) and 17% (81 persons, n=485) between 25-49 years of age reported TCM contact. These reported data can be understood within the larger context of TCM presence in Botswana. Figure 1 shows the distribution of TCM programming and 2003 Listener Survey Participation by health district.

Figure 1: Distribution of TCM Programming and Listener Survey Participation by Botswana Health District and TCM Division[21]



* TCM program presence. TCM Division classifications are South, East, and North.
LS 2003 Listener Survey

Toward a Comparison Measure for TCM Program Contact

A measure of contact reported by the TCM program was constructed in order to serve as a comparison to findings from the Listener Survey. The comparison was felt to be important because it would provide a means of comparing TCM exposure based on Listener Survey participant report and TCM program reports in similar terms; therefore providing additional information to the TCM program for continued program development. As will be discussed, both the program contact as measured and the reported TCM exposure by Listener Survey participants understate exposure to the TCM program.

According to the 2002 annual report of the TCM program, TCM operated in 10 of the 22 health districts of Botswana covering a geographical area with 900,000 people.[22] While unduplicated measures of TCM program exposure were not readily available for this analysis, the number of persons registered by the TCM program served as a surrogate for unduplicated program contact. Presumably, and migration notwithstanding, households are registered only once by the TCM program.

A 2003 program report of the TCM program indicates that 394,592 persons have been visited and registered with the TCM program through June 2003.[23] The TCM program contact measure for 2003 was constructed from reported TCM registrations as a percent of 2001 Botswana population.[24] According to the adjusted Listener Survey data, 22.8% of respondents in TCM districts indicated exposure to the TCM program. As calculated, a comparable TCM program indicator through June of 2003 would be 43.8% for the districts covered by the TCM program. Only data for Gaborone were available for the construction of a district level TCM contact indicator. Based on the 2001 census, the TCM program contact indicator through June of 2003 for Gaborone was 33.9%. This is in contrast with the Listener Survey reported TCM exposure rate for Gaborone of 19.8%.

Limits to a comparison between reported Listener Survey TCM exposure and TCM program reported contact include the small number of persons sampled by the Listener Survey in particular districts, the age of the census data, and the conservative indicator of TCM program contact. Limitations aside, this comparative approach will create a more meaningful conversation between the findings of the Listener Survey related to the TCM program and reported TCM program activity across identical districts.

Association of TCM Program Exposure with Select KABB Indicators

Several indicators of knowledge, attitude, belief and behavior were measured by the Listener Survey. TCM program exposure was found to be associated with correct knowledge about HIV, beliefs and attitudes supporting health and HIV risk reduction, and behaviors that were preventative and health seeking. What follows is a brief summary of statistically significant differences, as determined through bivariate and multivariate analyses. Table 2 (next page) displays the statistically significant observations from the Listener Survey related to the association between TCM and KABB indicators.

Table 2: Summary of KABB Outcomes Associated with TCM Exposure Findings from Bivariate and Multivariate Analyses
Correct Knowledge
Condoms reduce risk of HIV
Abstinence reduces risk of HIV
Mothers can transmit HIV to their babies
MTCT can occur during delivery
MTCT can be reduced*
MTCT can be reduced with AZT
MTCT can be reduced by not breastfeeding
MTCT can be reduced by AZT and not breastfeeding
Beliefs and Attitudes Supporting Health and HIV Risk Reduction
Reject mosquito as means of transmission
Would allow children to play with someone who they suspected had HIV
Would allow children to attend school if a teacher had HIV but was not ill*
Would be willing to live with an extended family member if they were HIV+
Would be willing to care for an extended family member who had the AIDS virus
Behaviors Preventative and Health Seeking
Reported being tested for HIV*
Reported testing for HIV within the past year*
Tested at Tebelopele (out of entire sample)
Discussed testing with a partner before being tested*+
Tested with a partner*^
*When controlling for demographics, TCM exposure was found to be a predictor of this outcome ($p <= .05$). +Bivariate comparisons were significant only for men and for persons in Gaborone and Selebi-Phikwe. ^Bivariate comparisons were significant only for men and persons in Gaborone.

Knowledge Indicator Differences within the Overall Sample

Spontaneous Mention of Condoms as a Prevention Method: Those who had been exposed to TCM were more likely than those without TCM exposure to spontaneously mention that using a condom could protect someone from becoming infected with HIV (92% of exposed group vs. 75% of non exposed group). This was true for both men and women; and for people in the 15–24 year and 25–49 year age group.

Spontaneous Mention of Abstinence as a Prevention Method: Those with TCM exposure were also more likely than those without TCM exposure to mention abstinence (79% of TCM group vs. 61% of non-TCM exposed group). Significant differences in mention of abstinence were found for women, but not men; and among 25–49 year olds, but not those 15–24 years of age.

Mother to Child Transmission of HIV: Overall, those with TCM exposure were more likely than those

without TCM exposure to acknowledge correctly and identify maternal transmission of HIV as a method of becoming infected (97% vs. 88%). Both men and women showed significant differences between TCM-exposed and non-exposed groups, as did both age groups. When asked when maternal transmission can occur, TCM-exposed respondents were more likely to cite delivery than were non-TCM exposed respondents (46% vs. 33%). Within the subgroups, this difference was observed only among women, and only among 25–49 year olds. Those with TCM exposure were more likely know that mother to child transmission can be prevented (90% vs. 70%), and to spontaneously mention that medicine (e.g., AZT) reduces transmission. Both of these differences were found in both men and women, and within both age groups. Those with TCM exposure were also more likely to mention that refraining from breastfeeding also prevents transmission (mentioned by 40% of TCM exposed group and 29% of non exposed group). This difference was significant for 25–49 year olds only. Both medicine and breastfeeding were mentioned by 30% of those with TCM exposure, but only 18% of those without exposure. This difference was found for 25–49 year olds, but not with the younger group.

When controlling for all demographics of Listener Survey participants, gender, age, education, exposure to Makgabaneng, and exposure to TCM predicted whether persons knew that it was possible to prevent mother to child transmission of HIV. Those who were exposed to TCM were three times more likely than those who were not exposed to TCM to know that MTCT of HIV was possible (OR 2.83, $p<=.01$).

Belief and Attitude Indicator Differences within the Overall Sample

Respondents were asked to rate their agreement with a set of statements that presented common myths about HIV transmission. TCM exposure did not appear to affect endorsement of the idea that sex with a virgin will cure AIDS, that prayer will lead to cure of AIDS, and that healthy-looking people do not transmit HIV. However, people with TCM exposure were more likely than their non-exposed peers to reject the idea that HIV can be spread through mosquitoes (70% rejecting vs. 58% rejecting in non-TCM group). Bivariate differences were observed among men and those 25–49 years old, but not among women or those 15–24 years old. TCM-exposed men were more likely than their unexposed male peers to reject the virgin, mosquito and "healthy look" myth, and significant differences between exposed and non exposed groups were also seen in the 25–49 year old group.

The survey also contained a number of other questions related to attitudes towards HIV-infected individuals. Respondents were asked if they would be willing to send their children to school where a teacher was known to be HIV-infected, if they would be willing to care for an extended family member with HIV/AIDS, if they would let their child play with an infected child from another family, if they were not afraid to be around someone with HIV, and if they would buy food from an infected person. Two measures showed differences between TCM exposed and non-exposed groups on these measures of attitudes. Overall, those with TCM exposure were more likely than those without exposure to say they would allow send their children to a school with an infected teacher (97% agreeing in the TCM group vs. 88% agreeing in the non-TCM group). This difference was found among men and among 25–49 year olds, but not women or people in the younger age group. People with TCM exposure were also more likely to say that they would let an infected extended family member live with them (99% vs. 90%); this difference was significant in both men and women, and was found in both age groups. More fragmented differences were found on the other indicators. Men with TCM exposure were more likely than their non-exposed peers to say they would let their children play with an infected child (75% in the TCM group vs. 51% in the non-TCM group); this was also true of the 25–49 year olds (80% vs. 62%). Women and those 15 – 24 did not differ in their attitudes on this issue. When asked if they would not be afraid to

be around someone living with HIV/AIDS, only the 25–49 year olds showed a significant difference in response between those exposed to TCM and those who were not (87% not afraid in the TCM group vs. 77% in the non TCM group). This difference was not significant in the younger age group, and neither men nor women overall showed significant differences by TCM exposure. TCM exposure did not affect willingness to buy food from an HIV infected person.

When controlling for demographics in the Listener Survey sample, those reporting TCM exposure were more likely to be willing to let their children play with other children they knew to be HIV+ (OR=1.44, p=.05). While it was also observed that exposure to TCM was among the predictors of a willingness to allow children from their family to attend a school where a teacher was known to be HIV+, but not sick (OR=2.83, p<.05); findings here should be interpreted with caution due to small cell sizes.

Behavior Indicator Differences within the Overall Sample

Descriptions of HIV testing behavior appeared to differ between the TCM-exposed and non-exposed groups. When answers from all respondents in the sample are considered, those with TCM exposure were more likely to report having an HIV test in the past year (29% in the TCM group vs. 14% in the non-exposed group). Bivariate examination showed significant differences between exposed and non-exposed groups were found in men and those 25–49 years old, but not for women or those aged 15–24 years old. Respondents with TCM exposure were also more likely to report testing at a Tebelopele site (19% vs. 8% in the non-exposed group); this difference was observed in men, but not women. However, when analysis is restricted to only those testing in the past year, those with TCM exposure are no more likely than those without exposure to report testing at a Tebelopele site.

Among those reporting testing for HIV in the past year, men with TCM exposure were more likely than their non exposed peers to report discussing HIV testing with a sex partner before going for the test (91% vs. 65%); women did not differ by TCM exposure on this measure. Men with TCM contact were also more likely than their non-exposed peers to say they went for counseling and testing with a sex partner (38% vs. 28%). Again, TCM exposure did not differentiate between groups of women on this measure. TCM exposure did not affect receiving test results, nor did it effect whether people discussed their test results with their sex partners, or with someone other than a counselor or health professional.

TCM exposure did not appear to effect report of sexual activity. Among those respondents who were sexually active in the last year, those with TCM exposure were as likely as those without exposure to report having sex with a non-marital, non-cohabiting partner. Among respondents who did report such partners, TCM exposure did not appear to effect use of condoms in the last sex act with their non-marital, non-cohabiting partners. Those with TCM exposures were as likely as those without exposure to report concurrent sexual partners.

When controlling for demographics, TCM exposure remained among the significant predictors of ever testing for HIV (OR 1.96, p<0.1). Those exposed to TCM were twice as likely as those who were not exposed to TCM to report ever testing for HIV. Further, TCM exposure and educational level were found to be the only remaining predictors of whether a person tested in the past year. Those with TCM exposure were two times more likely to report testing for HIV in the past year than those who were not exposed to TCM (OR=2.17, p<.05). TCM exposure also remained among those predictors of discussing HIV testing with a partner prior to testing (OR=1.89, p<.05). Finally, after controlling for demographics, TCM exposure remained the only significant predictor of getting HIV tested with a partner (OR=2.41, p<.05).

A concerning finding was observed among persons with exposure to TCM. When controlling for demographics, persons reporting exposure to TCM were *less likely* than those who were not exposed to TCM to report that they *did not use a condom* during the last sex act (OR= .43, P<.01).

Discussion

Bivariate and multivariate examination of the 2003 Listener Survey point to TCM program association with several KABB outcome indicators. Correct knowledge, attitudes and beliefs which lead to healthy behaviors, and health seeking and preventive behaviors were reported more often for persons exposed to the TCM program than for those who were not exposed to TCM. These differences were reflected in several of the TCM districts participating in the Listener Survey.

A concerning finding was that those exposed to TCM were more likely than their non-TCM exposed peers to report the use of a condom during the last sexual encounter. While it is not clear why this finding was observed, it is recommended that the TCM program explore the disconnect between knowledge about the effectiveness of condoms in preventing HIV (higher for TCM exposed persons) and the behavior of using condoms.

The reported exposure to the TCM program was 22.8% when adjusted to reflect TCM districts. This reported exposure contrasts with the constructed program contact rate of 43.8%. Both measures of TCM exposure and program contact are constructed for initial comparison only. Both are limited in their construction; however, they suggest opportunities to develop future measures for the purpose of program evaluation.

Program evaluations can be used to make summary decisions about a program, funding decisions about particular programs, or they can be used to improve the implementation of a particular program. Since 2002, the TCM program in Botswana has implemented several evaluations to improve programming with the help of NACA and BOTUSA. Each evaluation attempted to distill program effects.

To further evaluation efforts, district level TCM program data will need to be gathered and reported if the goal is to focus upon the relationship between the TCM program activities and KABB outcome measures. This is a recommendation for the TCM program to consider, as it is clear from program reports that tremendous effort is made to collect local implementation data. The reporting of these data by district for an annual period may be a logical step for the TCM program. The authors acknowledge the tremendous amount of data already collected by the TCM program and recommend consideration of current data for extant indicators that may be improved upon and used for evaluation purposes.

Conclusion

While estimates of TCM exposure are conservative, they indicate that the TCM program is highly involved in efforts to increase knowledge about HIV, to change health seeking and preventive behaviors, and to reduce stigma in the 5 TCM districts participating in the 2003 Listener Survey. The review of data also indicate that the TCM program is making a positive contribution to Botswana HIV efforts.

If the establishment of causal linkage between intervention programs such as TCM and KABB outcome variables is an evaluation goal for policy and program planners in Botswana, it is also perhaps a goal for all HIV related programs. Distillation of program effects upon public health indicators is possible when confounding variables can be developed from program measures and statistically managed. At this writing, it is unclear whether there are extant measures allowing program planners and policy makers to differentiate among programs and their impact on knowledge, attitude, beliefs, and behaviors at district level; particularly for programs that operate concurrently.

To improve the ability to achieve such evaluation goals, we recommend the tracking of variability in program implementation across districts, and the development of intervention taxonomies which identify those program functioning in local areas, their intervention goals, and methods. Such tracking will allow for the distillation of program effects on KABB outcomes.

Notes

1. TCE: Total Control with the Epidemic: A partnership between Humana People to People and the Government of Botswana. Document date unknown (after 2000, before September 2000, see p.4).
2. Humana People to People (date unknown). Total Control of the Epidemic: A Humana People to People Award Winning Program to Fight AIDS in Southern Africa.
4. Draft Proposal for TOTAL COMMUNITY MOBILISATION (Presumed to be dated on or after July 2000).Draft Proposal for TOTAL COMMUNITY MOBILISATION (Presumed to be dated on or after July 2000).
5. Draft Proposal for TOTAL COMMUNITY MOBILISATION (Precise date unknown). Presumed to be dated on or after July 2000, p.1
6. NACA Project Memorandum “Annex A”, p. 5.
7. Draft Proposal for TOTAL COMMUNITY MOBILISATION (Presumed to be dated on or after July 2000).
8. NACA 20/42/2 II, 19 October 2001, p. 4 lists: Kasane/Tutume, Bobonong/Selebi Phikwe, and Gaborone South.
9. TCM Annual Report 2001 submitted by NACA.
10. Government of Botswana, BOTUSA Project, and CDC (2004). Makgabaneng Listener Survey Report. Draft dated September 2004.
11. Total Community Mobilization (2002). Minutes from the Makgabaneng Radio Program Meeting in Division North. 5 December 2002.
12. Total Community Mobilization (2002). Report TCM Field Officers Meeting 1. 25 April 2002.
13. Total Community Mobilization (2002). Minutes from the Makgabaneng Radio Program Meeting in Division North. 5 December 2002.
14. Total Community Mobilization (2003). TCM Makgabaneng Listening Groups. Program file.
15. Total Community Mobilization. Monthly Report from the TCM Division South. Reports from October-November 2002, February-March 2003, April 2003, and May 2003.
16. Total Community Mobilization, Impact Assessment. 25 July 2002, prepared by Joao Cardoso Charles, and Macarena Cecilia Garcia.
17. Government of Botswana Ministry of Health, National AIDS Coordinating Agency, Humana People to People, BOTUSA Project (2001). "Rapid Assessment of the Pilot Project in Tutume on Total Community Mobilization," Report, August.
18. NASTAD represents the chief state health agency staff who have programmatic responsibility for administering AIDS health care, prevention, education, and supportive services in the United States. This includes fifty U.S. states and 10 U.S. territories. NASTAD seeks to promote a more effective national, state, and local response to the HIV/AIDS epidemic. Programs administered by NASTAD members serve every population affected by and infected with HIV.
19. Government of Botswana, BOTUSA Project, and CDC (2004). Makgabaneng Listener Survey Report. Draft dated September 2004.
20. Government of Botswana, BOTUSA Project, and CDC (2004). Makgabaneng Listener Survey Report. Draft dated September 2004.
21. Figure compiled from TCM Program Annual Report 2003, and 2003 Makgabaneng Listener Survey.
22. TCM Annual report submitted to NACA, 2002.
23. Humana People to People (2003). Second Quarter Report to NACA, April-June 2003.
24. Government of Botswana, Central Statistics Office (2001). Table 1.1: Population by sex and census districts (1991 And 2001). [on-line]: http://www.cso.gov.bw/html/census/tab_cens1.1.html.

This report would not be possible without the guidance of National AIDS Coordinating Agency (NACA) and the Government of Botswana. We are grateful to the TCM Program in Botswana for sharing program documents for this report.

Appendix
Information to Assist TCM Program Development

District Level Differences Related to TCM Exposure

As reported from the Listener Survey data, persons who were exposed to the TCM program reported correct knowledge across several Listener Survey indicators, myths were correctly rejected more often by persons exposed to the TCM program, and persons exposed to the TCM program reported several health seeking prevention oriented behaviors when compared with their peers who were not exposed to the TCM program. Several of these differences were observed at district level. Given the local nature of the TCM program implementation, district level information is provided for those districts where differences were statistically significant (p<= .05). Contrasting program level information is provided where possible, and differences that are statistically significant were reported only when differences were observed and significant on the indicator for the overall sample.

All TCM districts showed evidence of the association between TCM exposure and increased knowledge about HIV, risk reduction, and mother to child transmission of HIV. The greatest difference in knowledge was observed in Serowe-Palapye, as differences in five knowledge indicators were found to be significant. The larges difference was observed with the knowledge that AZT could reduce MTCT, as 95% of respondents who were exposed to TCM reported this correctly, as compared with 54% of those were not exposed to the TCM program. These indicators point to an association between District TCM activities and greater knowledge about aspects of HIV transmission and risk reduction (See Table 3).

Table 3: Knowledge Indicators Associated with TCM Exposure by District

	Gaborone		Serowe-Palapye (TCM exposure n=30)		Francistown		Ngamiland East TCM exposure n=14)	
	TCM	Non	TCM	Non	TCM	Non	TCM	Non
Condoms reduce risk of HIV			94%***	65%			91%*	67%
Abstinence reduces risk of HIV			81%*	60%				
Mothers can infect their babies with HIV			97%**	84%				
MTCT can occur during delivery	57%*	39%						
MTCT can be reduced	91%**	75%	95%***	72%	96%*	84%		
MTCT can be reduced with AZT	81%**	64%	95%***	54%				

*p<=.05 **p<=.01 ***p<=p.001

Differences on several belief and attitude indicators were observed for persons who reported TCM exposure as compared with those who did not report TCM exposure for all districts except Francistown. In some cases, such as attitudes of acceptance for family members with HIV, persons generally held accepting views irrespective of TCM program exposure.

In Selebi-Phikwe, a large difference in belief rooted in myth about transmission and risk was observed between persons based on TCM exposure, as a 20% difference in belief about mosquito transmission was observed in this district (see Table 4).

Table 4: Belief and Attitude Indicators Associated with TCM Exposure by District

	Gaborone		Serowe-Palapye		Selebi-Phikwe (TCM exposure n=21)		Ngamiland East	
	TCM	Non	TCM	Non	TCM	Non	TCM	Non
Correctly rejected sex with a virgin as a cure for HIV	100%**	93%						
Correctly rejected mosquito transmission of HIV					81%**	55%		
Would allow children to play with someone who they suspected had HIV							83%***	53%
Would allow children to attend school if a teacher had HIV but was not ill			100%*	87%				
Would be willing to live with an extended family member if they were HIV+	99%**	87%	100%*	92%				
Would be willing to care for an extended family member who had the AIDS virus			100%*	92%				

*p<=.05 **p<=.01 ***p<=p.001

The most noted of differences associated with TCM program exposure at district level was in reported behaviors by Listener Survey participants. More persons exposed to TCM in Serowe-Palapye and Selebi-Phikwe reported testing for HIV than those in the district who were not exposed to TCM. Large differences were observed in Gaborone and Serowe-Palapye for persons who reported testing for HIV in the past 12 months. While TCM program exposure in Selebi-Phikwe was associated with testing at Tebelopele, the group size was less than 20 (See Table 5).

Table 5: Behavior Indicators Associated with TCM Exposure by District

	Gaborone		Serowe-Palapye		Francistown		Selebi-Phikwe	
	TCM	Non	TCM	Non	TCM	Non	TCM	Non
Tested for HIV			72%***	15%			26%*	9%
Tested for HIV in the past 12 months	31%*	16%	47%**	10%				
Tested at Tebelopele			33%*	5%				

*p<=.05 **p<=.01 ***p<=p.001