ASRH Strategic Plan Review

Commissioned by UNFPA
on behalf of the Steering Committee of
the National ASRH Strategy

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Terms and Concepts/ Acronyms and Abbreviations

Given the various definitions that are used to describe both adolescents and sexual and reproductive health, the table below highlights the concepts and other related terms that will be used for the purposes of this intervention review.

Table 1: Terms and Concepts

Terms	Concepts
Adolescents/young people	Defined by the World Health Organization (WHO) as the period between the ages of 10-19 years and young people as the period between the ages of 10-24 years. For the purposes of this review, adolescents and young people are used interchangeably.
ASRH interventions	Any program or project that targets adolescents/youth (defined above) and is designed to improve the sexual and reproductive health of adolescents
Gender	Socially constructed women and men's roles and responsibilities. It also refers to how people are perceived and expected to think and act as women and men because of the way in which is organized, and not because of biological difference (Ministry of Health and Child Welfare, 2001)
Sexual and Reproductive Health	The state of complete physical, mental, and social well-being of an individual in all matters relating to the reproductive system and its processes and functions but not merely the absence of disease or infirmity. It also includes sexual health, the purpose of which is the enhancement of life and personal relations and not merely counseling and care related to reproduction and sexually transmitted infections (ICPD Program of Action, paragraph 7.2)
Service provider	Any skilled worker who can provide or offer services according to the sexual and reproductive health needs of adolescents or young people. This term refers to both health and non-health workers.
Sexuality	The total expression of who we are as human beings. It encompasses one's whole psychological development, that is values, mental attitudes, physical appearances, beliefs, emotions, likes and dislikes, one's spiritual self and all the ways in which one has been socialized (ZNFPC, 1995).
Outreach services	Extending health services beyond facilities to community youth centers, youth clubs, schools, and churches through community outreach workers like teachers, peer educators/counselors, village health workers and community-based distributors.

Table 2: Acronyms and Abbreviations

Acronyms	Abbreviations
AIDS	Acquired Immune Deficiency Syndrome
ANC	Antenatal Care
ARV	Anti Retroviral
ASRH	Adolescent Sexual and Reproductive Health
BCC	Behavioral Change Communication
CE	Cost effectiveness
CEA	Cost effectiveness analysis
CHBC	Community Based Care
CHBC	Community and Home Based Care
CPC	Child Protection Committees
DALY	Disability-Adjusted Life Years
GBV	Gender Based Violence
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
GoZ	Government of Zimbabwe
HIV	Human Immunodeficiency Virus
HF	Health facilities
HPZ	HIV Prevention Project in Zimbabwe
HTC	HIV Testing and Counseling
ICPD	International Conference on Population Development
IEC	Information, Education and Communication
JCT	Justice for Children Trust
JHSPH	Johns Hopkins School of Public Health
JIC	Join In Circuit
MC	Male Circumcision
MOHCC	Ministry of Health and Child Care
MRDC	Mwenezi Rural District Council
MYIEE	Ministry of Youth Indigenization and Economic Empowerment
NAC	National AIDS Council
NACZ	National Arts Council of Zimbabwe
NCC	National Coordinating Committee
NGOs	Non-governmental Organizations
PLHIV	People Living With HIV
PLUS	Positive Living for US
PLWHA	People Living With HIV and AIDS
PMTCT	Prevention of Mother to Child Transmission
SAYC	Stand-alone youth center
SAYWHAT	Students And Youths Working on reproductive Health Action Team
SRA	Student Representative Assembly
SRC	Student Representative Council
SRH	Sexual and Reproductive Health
SRHR	Sexual and Reproductive Heath Rights

Acronyms	Abbreviations
STD	Sexually Transmitted Diseases
STI	Sexually Transmitted Infection
TOR	Terms of Reference
TOT	Training of Trainers
VCT	Voluntary Counseling and Testing
YFC	Youth Friendly Center
YPISA	Young People's Sexual and Reproductive Health Information Services and Advocacy
ZDHS	Zimbabwe Demographic and Health Survey
ZIMSTAT	Zimbabwe National Statistics Agency
ZNASP	Zimbabwe National HIV and AIDS Strategic Plan
ZNASP 11	Zimbabwe National HIV and AIDS Strategic Plan (2011-2015)
ZNFPC	Zimbabwe National Family Planning Council
ZUSA	Zimbabwe Universities Sports Association
ZYC	Zimbabwe Youth Council

EXECUTIVE SUMMARY

Introduction

In 2008 the Ministry of Health and partners recognized the need for establishing and strengthening sexual and reproductive health services in Zimbabwe for adolescents. At that time there was no standard package for the provision of comprehensive ASRH services. Additionally, while frequently discussed, there was no clear definition for what "youth friendly" health services entailed. The national strategy, adopted in 2009, aimed to address these issues. It identified four core objectives: 1) to promote adoption of safer sexual and reproductive health practices among young people; 2) to increase availability, access and utilization of friendly SRH services by young people; 3) to create a safe and supportive environment for addressing SRH issues for young people; and 4) to strengthen coordination and partnerships for evidence-based on ASRH programming.

To achieve these objectives four pillars of action were identified: service delivery; behavior change communication, life skills and livelihood; policy and advocacy; and networking and coordination.

In 2015, Johns Hopkins Bloomberg School of Public Health (JHSPH) was contracted to undertake a review of the 5-year strategy (2010-15). The original terms of reference included the following activities:

a) *Inception phase:* To identify all of the ASRH interventions implemented from 2009-14 in Zimbabwe using snowball identification. Identified programs were to be clustered by type and mapped by both geography and type of program. Subsequently, an intended outcomes analysis was to be done exploring both intended and unintended outcomes of the interventions. Program costs and cost per program participant were to be calculated; and the number of youth served by program and site were to be identified. Based on existing reports program planning and implementation strategies were to identify community and youth participation.
b) *Implementation and economic analysis:* To conduct an in-depth analysis among a subset of programs within each cluster, including both implementation research analyses and economic analyses that would measure costs and economic outcomes, return on investment, and cost effectiveness.
c) *Recommendations:* To summarize the key lessons learned and program elements and to provide a set of recommendations for the next 5-year strategic plan.

There were a number of factors that influenced the ability to achieve the initial scope of work. Specifically:

- *Information awareness*: It became clear to the JHSPH team early on that there was extremely limited awareness among both donors and implementation stakeholders; who each other was, what they did, the strategies they used, or how their work interrelated with each other.
- *Difficulty in obtaining information*: Throughout the entire consultation we were not provided data needed to undertake the original scope of work. At times data simply did not exist (e.g., utilization and cost data) and sometimes data were deliberately withheld.

- *Data are either not maintained or shared*: The lack of financial data at the implementation level precluded our ability to do any cost analysis or cost estimation of services provided. Thus, alternate strategies were employed.

Given the paucity of extant data that either exists or were made available, together with the Steering Committee the TOR was revised as follows:

a) *Inception phase:* To identify all of the ASRH interventions implemented from 2009-14 in Zimbabwe using snowball identification. Identified programs were clustered by type and mapped by both geography, type of program, and population served.
b) *Implementation and economic analysis* To conduct site visits on selected youth-friendly corner/centers and behavior change communication programs to examine service utilization trends and identify key program elements; to measure costs and economic threshold analyses on youth-friendly centers and corners; and to review global literature of both program and cost-effectiveness on program types currently implemented in Zimbabwe.
c) *Recommendations:* To summarize the key lessons learned, to provide a rationale for the need to monitor and evaluate programs, and to provide a set of recommendations for the next 5-year strategic plan

What follows is a ***summary of key findings*** paralleling the four pillars of action.

Health Service Delivery:

As part of its approach, the National ASRH strategy defined an essential set of adolescent sexual and reproductive health services to be delivered through three programming venues:

- Community-based (*youth centers* offering counseling, recreational activities and condoms);
- Health facility-based (onsite *youth-friendly corners* which were planned to offer voluntary counseling and testing as well as condoms and other family planning methods);
- School-based (life skills training and counseling).

For our site visits, we focused on five youth-friendly corners and centers. The corners and centers were pre-selected by either the Ministry of Health or ZNFPC, while the JHU team randomly selected one from the provided list of facilities. For the youth centers where data were available, it became clear they were predominately used by males for recreational purposes (ages 10-14 in Ngorima and ages 15-19 in Chindambuya). This is consistent with the global literature, which shows that *presence of older males at youth centers acts as a deterrent to younger adolescent females using the family planning services* that may be provided there.

Because youth center and corner-level data were generally not available, the JHSPH team undertook a financial analysis of YFHS using both local and national Zimbabwe data and then, using DALYs (or disability adjusted life years which is the WHO's measure for disease burden), we calculated the reduction in disease that would need to be achieved for each youth center or corner to be cost effective. *At the present cost of $19,800 per youth corner or $52,252 per youth center, the reduction of disease burden would need to be of a magnitude that has so far not been proven to be achievable. To be able to determine the cost effectiveness of the youth-friendly*

centers and corners, an impact evaluation with a cost effectiveness analysis would need to be conducted. Evidence from global data does suggest, however, that training providers in youth friendly approaches alone does not appear to increase adolescent utilization. *It appears that the central problem is not youth-friendliness, but rather the opposite-- barriers to youth services.* If adolescents are to utilize such services, the focus of service delivery programs should not only focus on making the center or clinic "youth friendly" but also on the identification and elimination of barriers (human and structural) that impede adolescent utilization of services. In fact, the evidence suggests that training of providers coupled with their self-assessment of comforts and issues of working with adolescents and a reduction of the systemic barriers to service utilization *do* increase adolescent use of services. Additionally, for youth-friendly health services to be effective they must, from the beginning, have strong community support. Without it, such services are not viable.

RECOMMENDATION: A large body of evidence does not support youth-friendly health services either as an efficient or cost-effective strategy for delivering ASHR services.

Other recommendations for youth-friendly health services:

- **Make ongoing funding contingent upon the provision of utilization and expenditure data on a regular basis;**
- **Require assurance and evidence of community stakeholder support for youth-friendly services prior to ongoing funding;**
- **Discontinue all but family planning and SRH counseling services;**
- **Avoid additional investments in the expansion of YFHS;**
- **Strengthen family planning and contraceptive service provision;**
- **Strengthen capacity of the broader health sector to provide family planning services to adolescents.**

Psychological Supports for People Living With and Affected by HIV: The review undertook an assessment of AFRICAID's Zvandiri Program, a program that specifically targets services for HIV positive individuals. In 2014, the Zvandiri Program reached 9274 contacts with youth through home visits in 28 communities. More than half were female and a third were 10-14 years of age and half were 15-19 years of age. Of those, 1215 participated in support groups and 2800 referrals were made to local health organizations and to the Department of Child Welfare and Protection Services. While there is no formal evaluation, discussions with staff reflect enthusiastic endorsement of the work. It is clear that there is a strong monitoring program in place (which, were there to be the interest, could be the basis for evaluation).

RECOMMENDATION: There is insufficient data to make a firm recommendation; however, anecdotal evidence would support the continuation of such psychological and referral services with improved data collection and reporting.

Behavior change and communication life skills and livelihood programs:

According to the National Strategy, within this intervention area, "*health systems and services available for the proper management of ASRH problems shall be effectively communicated to young people, parents/guardians, and communities. Social and behavior change communication messages shall also be developed, in a participatory and evidenced approach, to address harmful sexual and reproductive health practices, sexual violence, and child abuse*."

> *Life Skills Education* – Life skills education entails "*promoting and equipping young people with skills that encourage abstinence, delayed first sex, faithfulness in relationships and contraceptive use, and VCT. Broadly, the life skills sets include social skills (interpersonal relationships, communication, cooperation and team work, empathy), thinking skills (self-awareness, problem solving and decision making, critical and creating thinking, goal planning setting), and negotiation skills*."
>
> *Livelihoods* -- While the strategy didn't specifically outline what this entailed, there was a key sub-strategy that stated to "*conduct research to determine poverty*

For our analyses, these programs fall into five categories: social media, behavioral change, behavior/livelihood, peer education, and comprehensive sex education.

Social Media Programs: Four social media programs were reviewed. Again, none had any evaluation of their work and all indicated the difficulty of obtaining even utilization data given the nature of their programming. The primary goal of these programs is the dissemination of ASRH information and creating a network of adolescents across the country. Implementers indicated that the primary benefit of social media is to reach adolescents who are geographically isolated and are reluctant to ask questions to providers. The evidence does support their claim of geographic reach. Regarding the ability to provide confidential information, implementers indicated that this is limited because the primary platforms used are not sufficiently confidential to allow for that interaction. For this reason, platforms which allow adolescents to ask questions through more private platforms, such as Whatsapp or text messages, are increasingly being used by social media programs.

RECOMMENDATIONS: While data are too limited to make an evidence-based recommendation, social media appears to be a promising adjunct when coupled with other approaches.

Behavior Change Programs: The JHU team investigated the Join-In-Circuit (JIC) and the Sista2Sista programs. While there was no evaluation data on the Sista2Sita program, there was a recently completed randomized trial of the JIC tool. While the evaluation data have yet to be fully analyzed; there are some clear positive impacts, including increases in knowledge in family planning, HIV, condoms, and STIs. Importantly, those engaged in the intervention reported fewer sex partners than a control group; and so too they were more likely to be screened for HIV. There are also some mixed results, the meaning of which is less clear; and with further data analysis the findings will be more fully understood. Those analyses are in progress.

Meanwhile, monitoring data from the Sista2Sista program revealed that the program reached over 18,000 young people over an 18-month period with 130 mentors in 26 districts. It held weekly clubs for three age groups of young people and provided individual counseling to approximately 7,000 girls. Given that there still has yet to be an evaluation conducted, however, it is impossible to conclude the impact the program has had on changing ASRH behaviors.

The global evidence for behavior change programs suggest that when they are integrated into social marketing programs (e.g., of condoms) they have been shown to be cost effective; however, as a standalone strategy there is little evidence of cost effectiveness. Additionally, overall the evidence suggests that for both digital and print media behavior change, communication strategies effectively impacts knowledge, beliefs and attitudes. This is consistent with the findings of JIC but does not always result in behavior change for adolescents. If the JIC findings (e.g., reduction of partner numbers) are sustained with further analysis, this is certainly promising. More research is needed on behavior change approaches.

RECOMMENDATION: When coupled with social marketing approaches, behavior change programming appears to be a promising approach. We would recommend the continued exploration of using this approach in Zimbabwe collecting monitoring and evaluation data in the process.

*Behavior Change/Livelihood Program -- Conditional Cash Transfer Programs***:** While it was beyond the scope of this review to explore conditional cash transfer programs, there have been two randomized trials in Zimbabwe which have both shown very positive results. For example, a RCT on UNICEF's harmonized social cash transfer program showed a positive impact on delaying marriage and sexual debut, as well as decreasing the likelihood of early pregnancy among female youth in large households. The program also positively impacted condom use at first sex as well as the probability of lifetime reports of forced sex. Sample sizes were small, however, so conclusions about sexual behaviors should be taken with caution. Another RCT conducted by PIRE showed that school subsidies positively impacted on keeping orphaned girls in school and delaying marriage.

Additionally, the evidence from Kenya and Malawi show that reducing the cost of education (e.g., paying for uniforms) and using CCT ($10/month plus secondary school payment conditional upon satisfactory school attendance) increased school attendance and reduced teen marriage, childbearing and the onset of sexual activity.

Increasingly there is exploration of *unconditional* cash transfer programs; and UNICEF has recently released a report on such programs in Africa indicating their effectiveness and impact on ASRH outcomes in education as well.

RECOMMENDATION: Conditional and unconditional cash transfer programs are highly recommended especially for vulnerable adolescents who are economically disadvantaged, engaged in commercial sex, or orphaned.

Peer Education: There has been a substantial investment in peer education approaches in Zimbabwe during the first 5-year ASRH strategic plan. Peer education approaches were often used in combination with social media and the implementation of school-based education. No data were available on quantity of peer education services provided, the content of the information provided to learners or the impact of the services. Consistent with the global literature, in Zimbabwe peer education is often used in combination with other strategies such as advocacy, youth-friendly services. While it is commonly viewed to be an inexpensive means of reaching young people, the evidence does not support this. Rather, effective programs require intense and ongoing engagement of adults. Global literature suggests peer education increases ASRH knowledge but does not have a measureable impact on behavior change. The one exception to that statement is among the peer educators themselves. Evidence suggests that the primary beneficiaries of peer education are the peer educators.

RECOMMENDATION: Peer education approaches may be a useful adjunct to other approaches, but the evidence does not support significant investment in this area as a primary strategy to improve ASRH.

*Comprehensive Sex Education***:** At the present time, comprehensive sex education is not feasible in Zimbabwe due to restrictions imposed by the Ministry of Education. There is little evidence to support the focus on abstinence education has impacted adolescent sexual behaviors either in Zimbabwe or elsewhere in the world. On the other hand, comprehensive sex education (CSE) has been shown to reduce rates of STIs and unintended pregnancy especially when the programs address issues such as gender, power, and rights (UNFPA 2015). Additionally, research has shown that CSE is highly cost-effective.

RECOMMENDATIONS: There is little evidence that the school-based programs undertaken in Zimbabwe are effective in changing sexual practices and behaviors of adolescents. To be effective, the Ministries of Health and Education will need to agree that school-based sex education must include more than abstinence-only education. With such an agreement, CSE appears to be a promising approach worthy of serious consideration.

Adolescent Policy and Advocacy:

Within this intervention area, the national strategy outlined several key action items, including: "*developing and implementing a national advocacy plan, along with a set of tools; mobilize and strengthen the role of parliamentarians in promoting ASRH; advocating for the incorporation of ASRH training into standard pre-service training curricula of all health workers, teachers, and youth development practitioners; sensitize responsible authorities in the MoHCC and Ministry of Education, Sports, Arts, and Culture, for the establishment of youth friendly corners; and conduct a SRH needs assessment of the most vulnerable and at risk adolescent groups to ensure that policies and programs address their specific situations, which include*: *married adolescents, low-income young people, young people living in the streets, young people in conflict with the law within correctional/rehabilitation centers, and young people living with HIV*."

While policy and advocacy is a central pillar of the National ASRH Strategy, little explicitly appears to have been addressed over the past five years. We say explicitly because the National Strategy itself has had a strong advocacy impact. Without doubt it has raised the visibility of adolescent health issues in Zimbabwe.

What has not happened, however, is a deliberate strategy of first identifying the policies that are barriers to the provision of adolescent health services and then developing a strategy to address them in a systematic manner. For example, through this review we have identified barriers to include (though not limited to):

- The Ministry of Education requirement that only certified teachers can provide sex education in schools.
- The Ministry of Health requirement that anyone under the age of 16 obtain written parental consent for HIV testing.
- The Ministry of Education prohibition on all but abstinence education.
- The national constitution's lack of recognition of certain vulnerable groups who represent a disproportionate burden of disease within Zimbabwe.
- The legal definition of statutory rape that prohibits service providers to legally deliver ASRH services to those under16 years of age.

Additionally, as part of this action pillar, there was supposed to be an intentional assessment of the needs of the most vulnerable adolescents, including married adolescents, low income youth, youth living in the streets, etc. This has clearly not happened as programs still are largely targeting the general adolescent, school-going population.

RECOMMENDATION: There is a need for a clear identification of all important policies and high-level stakeholder engagement in discussing the reduction or elimination of barriers for ASRH services and populations. There is also a need to invest more in programs that target the most vulnerable adolescents.

Networking and Coordination:

Under this pillar of action, there was to be meaningful and active participation of young people in ASRH programming; and coordination between the MoHCC and other ministries, policy makers, ASRH serving organizations, research institutions, young people, parents, teachers, and communities.

While the National ASRH Strategy should be applauded for having established a National Steering Committee under the Ministry of Health, one of the key action items was to strengthen coordination and the sharing of information. Going forward we have the following recommendations:

RECOMMENDATIONS:

- **The Ministry of Education should be represented on the Steering Committee because of the close interconnections between health and education.**
- **The Steering Committee needs to identify and eliminate the barriers to information sharing at a national level.**
- **The Steering Committee should establish a single and agreed upon reporting system for all ASRH programs independent of source of funding, so as to assure monitoring.**
- **The Steering Committee should mandate an established frequency of reporting of data for all programs supported through the National ASRH Strategy and were such data not provided in a timely manner then the Steering Committee should be empowered to discontinue funding.**
- **The Steering Committee's leadership and structure needs to be clearly communicated at both a national and local level so all are aware of the structure.**
- **The National Steering Committee should convene meetings of the implementation stakeholders at least twice a year for the explicit purpose of sharing strategies and approaches so that each can benefit from the activities of others.**

GENERAL RECOMMENDATIONS FOR NEXT 5-YEAR STRATEGIC PLAN:

- **There is need to decide whether the strategy is for adolescent sexual and reproductive health (ASRH) or more broadly to support adolescent development.**
- **If it is for ASRH, then select one or two targeted objectives (e.g., reduction of unintended adolescent childbirths by 30% over the next five years). These objectives need to be SMART (specific, measurable, achievable, realistic and time-bound) and they need to be agreed upon by key stakeholders.**
- **While the needs are great, avoid trying to do more than what can be realistically achieved in a 5-year timespan. This will require making difficult choices for priorities.**
- **Do not confuse youth engagement with objective achievement. Engagement is a strategy for objective achievement.**
- **Establish a monitoring and evaluation system that works across funding streams.**
- **Realize that some of the most effective ASRH interventions have little or nothing to do specifically with sexual behaviors (e.g., conditional cash transfer programs that keep girls in school).**
- **Link interventions directly with key objectives. If they do not meet the key objectives, then they should not be part of the ASRH strategy even if they are worth doing.**

PROGRAMMATIC RECOMMENDATIONS FOR THE NEXT 5-YEAR STRATEGIC PLAN:

- **Focus on the most vulnerable youth population, not the general school-going youth population.**
- **Invest in provider capacity throughout the health system and outreach strategies to meet family planning needs of adolescent girls of all ages instead of youth centers and youth corners.**
- **While peer education is a useful adjunct to other services and providers, they should not be invested as an alone strategy.**
- **Continue to explore behavior change programs, but remember that it is often cheaper and more sustainable to invest in structural changes.**
- **Consider the scaling up of conditional and unconditional cash transfer programs.**

Finally, we would suggest as planning goes forward for the next 5-year ASRH Strategic Plan that there is a clear and agreed upon coordination structure with sufficient resources and capacity to assure effective monitoring of programmatic elements. We would strongly recommend that the National Strategy be built on global as well as local evidence, and strategies that are not proven effective be rejected. And finally, we would suggest articulating both the structural and programmatic elements for the National Strategy.

Respectfully Submitted,

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SECTION 1: INTRODUCTION AND BACKGROUND

1.1 Introduction

Zimbabwe is one of the countries with the highest proportion of adolescents in the world, with a third of the population between the ages of 10-24 years.[1] These young people face a myriad of challenges to their sexual and reproductive health, including unintended pregnancies, unsafe abortions, and sexually transmitted infections, and are further compounded by their limited access to information and services. To address these challenges, the government of Zimbabwe, through the Ministry of Health and Child Care (MoHCC), and the National Adolescent Sexual and Reproductive Coordination Forum developed the first ever National ASRH strategy for the period 2010-2015. The strategy defines an essential set of adolescent sexual and reproductive health services to be delivered through three different program approaches: community-based (youth centers offering counseling, recreational activities, and condoms), health facility based (on-site youth friendly corners, which are supposed to offer voluntary counseling and testing, as well as condoms and other family planning methods), and school-based (life skills training and counseling).

To date, while there have been numerous ASRH projects and programs developed as part of the National Strategy, there is limited information about whether ASRH programming has actually been *effective* in improving the sexual and reproductive health of adolescents in Zimbabwe.

1.1.1 Purpose and Scope of Work of the ASRH Intervention Review:

Given the present lack of systematic and comparative analysis and documentation of program effectiveness, there is need to review ASRH interventions implemented between 2009-2014 in Zimbabwe to foster evidence-based programming and effective use of resources. In 2015, Johns Hopkins Bloomberg School of Public Health was contracted to undertake a review of the 5-year National ASRH Strategy (2010-15). The original terms of reference (TOR) included the following activities:

a) *Inception phase:* To identify all of the ASRH interventions implemented from 2009-14 in Zimbabwe using snowball identification. Identified programs were to be clustered by type and mapped by both geography and type of program. Subsequently, an intended outcomes analysis was to be done exploring both intended and unintended outcomes of the interventions. Program costs and cost per program participant were to be calculated; and the number of youth served by program and site were to be identified. Based on existing reports program planning and implementation strategies were to identify community and youth participation.
b) *Implementation and economic analysis:* To conduct an in-depth analysis among a subset of programs within each cluster, including both implementation research analyses and economic analyses that would measure costs and economic outcomes, return on investment, and cost effectiveness.
c) *Recommendations:* To summarize the key lessons learned and program elements and to provide a set of recommendations for the next 5-year strategic plan.

[1] UNICEF (2012). Progress for Children: A Report Card on Adolescents. New York: UNICEF.

There were a number of factors that influenced the ability to achieve the initial scope of work. Specifically:

- *Information awareness*: It became clear to the JHSPH team early on that there was extremely limited awareness among both donors and implementation stakeholders; who each other was, what they did, the strategies they used, or how their work interrelated with each other.
- *Difficulty in obtaining information*: Throughout the entire consultation we were not provided data needed to undertake the original scope of work. At times data simply did not exist (e.g., utilization and cost data) and sometimes data were deliberately withheld. *It should be noted that even after the preliminary final report was presented in Harare on October 5 and 6 UNFPA issued multiple subsequent calls for additional materials and except for census data none were forthcoming as of 1 November when this report was finalized.*
- *Data are either not maintained or shared*: The lack of financial data at the implementation level precluded our ability to do any cost analysis or cost estimation of services provided. Thus, alternate strategies were employed.

Given the paucity of extant data that either exists or were made available, the TOR was revised as the following:

a) *Inception phase:* To identify all of the ASRH interventions implemented from 2009-14 in Zimbabwe using snowball identification. Identified programs were clustered by type and mapped by both geography, type of program, and population served.
b) *Implementation and economic analysis* To conduct site visits on selected youth-friendly corner/centers and behavior change communication programs to examine service utilization trends and identify key program elements; to measure costs and economic threshold analyses on youth-friendly centers and corners; and to review global literature of both program and cost-effectiveness on program types currently implemented in Zimbabwe.
c) *Recommendations:* To summarize the key lessons learned, to provide a rationale for the need to monitor and evaluate programs, and to provide a set of recommendations for the next 5-year strategic plan

The report that follows details what was done, what was learned, our assessment of the strengths and limitations of the programming done over the past 5 year strategy plan and our recommendations for the next 5 years.

1.2 Background

1.2.1 Review of the National ASRH Strategy

In 2008, Zimbabwe's Ministry of Health and Child Care (MoHCC) conducted an assessment of the provision of Adolescent Sexual and Reproductive Health (ASRH) services at selected health institutions across ten provinces. Among the key findings, the assessment revealed that: *1. there was no standard package for the provision of comprehensive ASRH services nor 2. was there a clear definition for what 'youth friendly' health services entailed.* In a context where young people frequently encounter numerous barriers to accessing sexual and reproductive health information and services, such as stigma discrimination and policies, the Government of Zimbabwe, along with the Zimbabwe National Family Planning Committee (ZNFPC), UN

agencies, and other partner organizations recognized a need to strengthen the health system to meet the sexual and reproductive health needs of adolescents in Zimbabwe. The focus was clearly on service delivery.

In response, a year later the government of Zimbabwe, through the Ministry of Health and Child Care (MoHCC), and the National Adolescent Sexual and Reproductive Coordination Forum developed the first ever National ASRH strategy for the period 2010-2015. The strategy defines *an essential set of adolescent sexual and reproductive health services* to be delivered through three different program venues: *community-based* (youth centers offering counseling, recreational activities, and condoms), *health facility based* (on-site youth friendly corners, which were planned to offer voluntary counseling and testing, as well as condoms and other family planning methods), and *school-based* (life skills training and counseling). There are four stated objectives of the strategy:

1. To promote adoption of safer sexual and reproductive health practices among young people;
2. To increase availability, access and utilization of friendly SRH services by young people;
3. To create a safe and supportive environment for addressing SRH issues for young people;
4. To strengthen coordination and partnerships for evidence based ASRH programming.

According to the strategy, these objectives were to be addressed through four main intervention areas:

a) Behavior Change Communication, Life Skills and Livelihoods,
b) Service Delivery,
c) Policy and Advocacy,
d) Networking and Coordination

It is important to note that each of the above four areas were conceptualized as interventions while in fact some (e.g., "Networking and Coordination" and "Policy and advocacy") may be underlying structural factors needed for the strategy as a whole to succeed. Below is a description of each intervention area as conceptualized in the strategic plan and the key action items within each intervention area as written in the National Strategy:

Social and Behavior Change Communication – According to the National Strategy, within this intervention area, "*health systems and services available for the proper management of ASRH problems shall be effectively communicated to young people, parents/guardians, and communities. Social and behavior change communication messages shall also be developed, in a participatory and evidenced approach, to address harmful sexual and reproductive health practices, sexual violence, and child abuse*."

> *Life Skills Education* **–** Life skills education entails "*promoting and equipping young people with skills that encourage abstinence, delayed first sex, faithfulness in relationships and contraceptive use, and VCT. Broadly, the life skills sets include social skills (interpersonal relationships, communication, cooperation and team work, empathy), thinking skills (self-awareness, problem solving and decision making, critical and creating thinking, goal planning setting), and negotiation skills*."

Livelihoods -- While the strategy didn't specifically outline what this entailed, there was a key sub-strategy that stated to "*conduct research to determine poverty levels and identify strategies for poverty reduction for young people*."

Service Delivery – In this intervention area, the strategy outlined three key approaches for providing 'friendly' ASRH services: health facility, community, and school-based. The *health facility approach* required that "*every facility establish and equip special rooms, called 'youth-friendly corners*.' The *community approach* generally refers to '*community youth centers', but also includes private pharmacies, SRH drop-in centers or clubs*. Finally, the *school-based approach* is essentially the *provision of life skills education and counseling by both teachers and peer educators in school*s.

While there is no standard definition of 'friendly' adolescent sexual and reproductive health services in Zimbabwe, the national strategy adopted WHO's definition as:

> *Services that are accessible and appropriate for adolescents. They are in the right place, at the right price (free where necessary), and delivered in the right style to be acceptable to young people. They are effective, safe, and affordable. They meet the individual needs of young people who return when they need to and recommend these services to friends.* (WHO, 2004)

Policy and Advocacy – Within this intervention area, the national strategy outlined several key action items, including: "*developing and implementing a national advocacy plan, along with a set of tools; mobilize and strengthen the role of parliamentarians in promoting ASRH; advocating for the incorporation of ASRH training into standard pre-service training curricula of all health workers, teachers, and youth development practitioners; sensitize responsible authorities in the MoHCC and Ministry of Education, Sports, Arts, and Culture, for the establishment of youth friendly corners; and conduct a SRH needs assessment of the most vulnerable and at risk adolescent groups to ensure that policies and programs address their specific situations, which include*: *married adolescents, low-income youth people, young people living in the streets, young people in conflict with the law within correctional/rehabilitation centers, and young people living with HIV*."

Networking and Coordination – This intervention area acknowledged the importance of the existing National Reproductive Health Steering Committee and the National ASRH Coordination Forum in facilitating coordination of the ASRH services. The key action items outlined in the strategy were to establish: 1) meaningful and active participation of young people in ASRH programming; and 2) coordination between the MoHCC and other ministries, policy makers, ASRH serving organizations, research institutions, young people, parents, teachers, and communities.

In addition to outlining key action items within each of the four intervention areas, the National Strategy recognized that there was no standard monitoring and evaluation system or framework for ASRH programming, and that that the National Health Management Information System was not sensitive to the adolescent age group (10-24 years). To address these gaps, the Strategy stated a set of key action items: 1) "*to improve the capacity of all ASRH stakeholders in social research methods, monitoring and evaluation and identify and prioritize research needs of ASRH, through*

training; 2) develop a standard monitoring and evaluation framework, together with data collection tools, to monitor national indicators on ASRH; and 3) conduct the ASRH strategy mid-term review in 2012 and an end of term evaluation in 2015."

1.2.2 What was learned from the Mid-term Review and SWOT Analysis?

Mid-term Review: In 2012, a mid-term review was conducted to determine the progress of the implementation of the National ASRH Strategy in relation to the four key intervention areas and to identify mid-course corrections that might be needed to achieve the objectives of the strategy. The main objectives of the midterm review were to: 1) assess the level of awareness and utilization of the National ASRH Strategy among ASRH organizations and institutions; 2) evaluate the extent to which progress has been made towards achieving the planned outcomes; 3) to document the key success factors, lessons learned, shortcomings, gaps, and challenges in the implementation of the strategy; 4) assess the extent to which implementation of the National ASRH Strategy has adhered to the guiding principles of the Strategy; and 5) evaluate the relevance and appropriateness of the ASRH Strategy is in line with new and current trends in ASRH programming. The report was released in December 2013—twelve months before the end of the strategic plan[2].

One of the key findings of the review reported limited awareness of the strategy. Specifically, while the majority of adolescent health programmers and donors were aware of the ASRH Strategy at the national level, at the local level there was a lack of awareness and knowledge. The review also reported the following among the four intervention areas (Marimo and Chituri, 2013):

a) *BCC, Life Skills, and Livelihoods*– currently delivered through the development and distribution of IEC materials; peer education; community awareness and mass media communication. The mid-term review revealed that although community awareness was ongoing, it was not reaching the scale required to affect behavior change. The peer education programme also suffered from inadequate funding for educators' allowances; *limited monitoring and supervision*[3]; and weak linkages between peer educators and other community-based workers.

b) *Service Delivery* – While the design of the service delivery allows the strategy to capture both in and out of school young people, a separate assessment of the different service delivery approaches (Chiroro, 2012) found that girls are not accessing the services; *the referral system was not working as envisioned; community ownership of the youth centers was weak; and the service providers were unaware of the minimum standards of service delivery.*

c) *Policy and advocacy* -- At the time of the mid-term review, there was *no explicit advocacy strategy* to guide ASRH stakeholders on advocacy issues and how they would achieve results.

d) *Networking and coordination – While there was a plan for decentralizing the coordination forum, at the time of the mid-term review, it still had not been implemented*

[2] There are two different five-year periods used when referencing the strategic plan the first of which is 2009-2014 and the second is 2010-2015. We use these interchangeable to refer to the same plan.
[3] Italics are ours and are used to highlight certain issues

due to lack of funding. Other networking and coordination limitations noted in the report included *weak accountability for results* in the coordination forum; ineffectiveness of thematic sector leads; and exclusion of some critical stakeholders including the Ministry of Science, Technology, and Higher and tertiary education in the Executive Committee, as well as donors in the coordination forum.

An overall issue described in the midterm review report was the lack of clarity regarding roles and responsibilities especially as they related to the MoHCC, ZNFPC, and ZYC.

The midterm review also highlighted specific adolescent groups that required more specific attention in the strategy, which included:

- Young people living with disabilities;
- Young people living with HIV
- Young people living on the street, and in prisons;
- Adolescent mothers

SWOT Analysis: A separate SWOT (strengths; weaknesses; opportunities; and threats) analysis was conducted in 2014 of existing networking and coordination mechanisms related to the ASRH National Strategy. This analysis found that *coordination of ASRH persisted* as a problem with coordination currently being undertaken by a number of institutions: MoHCC and the Zimbabwe National Family Planning Council (ZNFPC). Additionally, at the NGO-level the work was coordinated primarily through National AIDS Council (NAC)-led structures.

A primary weakness reported in the SWOT analyses was that there was *no clear authority on ASRH.* While MoHCC officials believed they should have the authority on all issues relating to ASRH, other institutions believed that they had the mandate to coordinate ASRH. The overall consequence was that the scarcity of resources was forcing the institutions to compete for resources and subsequently overstep boundaries. As noted in the SWOT report:

> *Those that hold the view that ZNFPC is supposed to coordinate all ASRH activities also believe that the role of MOHCC should be to monitor what ZNFPC does and also to help build their capacity. On the contrary, there are stakeholders who believe that even if ZNFPC has or is given the mandate to coordinate ASRH, it is practically impossible for them since this entails coordinating services provided by the parent ministry.* (pg. 9)

Another problem reported in the SWOT analysis was that *policies were noted to conflict with each other creating unintended barriers to service delivery*. For example, the HTC (HIV Testing and Counseling) policy requires that adolescents below the age of 16 years have parental consent before testing. This age restriction, however, created a barrier for accessing other critical ASRH services for the younger age group. *Another policy that was reported to create difficulties for NGOs was the MOPSE policy that required officers from partner organizations to address school children through the teachers*. NGO representatives noted that although teachers may be experts in communicating with children, they were not necessarily experts in all aspects of ASRH.

The SWOT analysis again raised concerns reflected in the mid-term review that there remained *no monitoring and evaluation (M & E) framework.* Thus, it was difficult to determine any impact of most ASRH initiatives.

Overarching these issues, the SWOT analysis reported two major weaknesses: 1) except at the national level, there was a lack of funding for the coordination of ASRH activities; and 2) there was a lack of clarity regarding the roles and responsibilities of ASRH coordination between the MoHCC and its related organizations.

For the present report we will not only build on the findings from the mid-term review and the SWOT analysis but will focus more specifically on the effectiveness of interventions in being able to achieve the objectives of the National ASRH Strategy.

To summarize, key issues identified in the mid-term and SWOT analyses were the lack of:

- *Monitoring and evaluation frameworks*
- *Coordination to assure national plan implementation*
- *Policy change strategy to guide achievement of policy goals*
- *Clarity (and perhaps conflicting perspectives) as to which group had coordinating responsibilities*
- *Accountability*
- *Standards of service and care*

1.3 Mapping of ASRH Interventions in Zimbabwe

As part of our inception phase, all identified ASRH programs in Zimbabwe were mapped and summarized three different ways. The first (Table 1) is tabular and summarizes by program type (e.g., Behavior Change Programs), the second (Table 2) summarizes programs by population(s) served and the third (Table 3) geographically maps where ASRH programs are located throughout Zimbabwe.

Table 1: ASRH Programs/Interventions – Zimbabwe 2009/2014 – by Program Type

Major Funding Agency or Source	National Coordinating Agency	Implementing Agency	Program Name	Setting
Behavior Change Communication (BCC) Livelihoods, Life Skills (3 sub-types: 1) BCC, 2) Comprehensive Sexuality Education 3) Cash Transfer				
		Behavior Change Communication		
European Union		SAfAIDS, SAYWHAT	FreshCom (formerly Young4Real)	Community (media)
UNESCO		SAYWHAT	One Touch SRH Campaign	Community (media)
DFID, USAID	Ministry of Health and Child Care		PSI National Behavior Change Communication Program	Community
The Global Fund	NAC		Zimbabwe's National Behavior Change Program (NBCP)	Community
German Ministry for Economic	GIZ	Zimbabwe AIDS Network, SAYWHAT, FACT	HIV and AIDS Prevention in Zimbabwe (HPZ)—uses Join in	Community, Schools

Major Funding Agency or Source	National Coordinating Agency	Implementing Agency	Program Name	Setting
Cooperation and Development (BMZ), GIZ			Circuit (JIC) tool	
SIDA, NORAD		Action IEHDC	Wize Up	Community (media)
		Population Services Zimbabwe (PSZ)	Social media platform	Community (media)
Cash Transfer				
DFID		Camfed	Girls Education Challenge Fund (GEC)	Secondary School
National Institute of Health (NIH); Eunice Kennedy Shriver National Institute of Child Health and Development		PIRE, University of Zimbabwe, Africa University	Randomized trial on school support (compared to data on orphans and nonorphans in the ZDHS)	Secondary School
Danish National Office		Plan Zimbabwe	Epworth Girls Empowerment Project (GEP)	Secondary School
World Bank, Partnership for Child Development, the Programme of Support for the National Action Plan for Orphans and Vulnerable Children, Catholic Relief Services		Manicaland HIV/STD Prevention Project	Cash transfer cluster randomized control trial	Community
DFID, Zimbabwe Government	UNICEF	Zimbabwe Ministry of Public Service, Labour, and Social Welfare (MPSLSW)	Social Harmonised Cash Transfer Program	Community
Comprehensive Sexuality Education (CSE)				
UNFPA		SAYWHAT	ASRH Program	Community
UNFPA		SAYWHAT	4Ps Campaign – GBV Program (Prevention, Protection, Participation, and Programs	Tertiary Institutions

Major Funding Agency or Source	National Coordinating Agency	Implementing Agency	Program Name	Setting
Oxfam		SAYWHAT	Disability Rights Project (DRP)	Tertiary Institutions
Oxfam		SAYWHAT	One Campus Project – Securing Rights Project	Tertiary Institutions
Bristol Myers Squib		SAYWHAT	PLUS Project	Tertiary Institutions
UN Women		SAYWHAT	Men to Men Campaign	Tertiary Institutions
National AIDS Council		SAYWHAT	National Youth Programme	Tertiary Institutions
SafAIDS		NdaiZiva Capacity Development	ASRH Interventions in Norton	Community
		Youth Alive Zimbabwe	Education for Life	Community
		Youth Alive Zimbabwe	Life Skills and Child Protection Programme	Primary and Secondary Schools
		Youth Alive Zimbabwe	Capacity Development Program	Community
		Youth Alive Zimbabwe	Girls and Young Women Empowerment	Community
USAID, Nike, Bill & Melinda Gates Foundation, Elton John AIDS Foundation, Barclays, Exxon Mobile		Ministry of Education, Ministry of Health, Zimbabwe Football Association, PSI and others	Grassroots Soccer	Community
SIDA		VSO Zimbabwe	Gender and Economic Empowerment to Enhance Rights (G.E.N.D.E.R)	Community
DFID		VSO Zimbabwe	The VSO Zimbabwe Bridging Programme (Pilot Phase)	Community
European Union, COSV		COSV	Sexual and Reproductive Health Awareness and Support for young people in and out school in Mashonaland West Province	Community, School
UNFPA	Ministry of Health and Child Care (MOHCC)		Integrated Support Program: 1) Peer Education, 2) Sista2Sista clubs	Community, Facility, School

Major Funding Agency or Source	National Coordinating Agency	Implementing Agency	Program Name	Setting
Plan USA USNO		Plan Zimbabwe	Support for AIDS orphans and those orphans living in difficult circumstances	Community
USAID, John Snow International		Africaid and others	"Children's First" (CF) Orphans and Vulnerable Children (OVC) Project	Community
GIZ, ISP	NAC	Center for Sexual Health and HIV/AIDS Research Zimbabwe (CeSSHAR)	Sisters with a Voice	Community
		Action IEHDC	SRHR for Mobile Population	Community
		SAYWHAT	Youth friendly Education on Sexual and reproductive health and rights (YES)	Tertiary Institutions
UNICEF		UNICEF, NAC	Young People We Care	Community
Youth Friendly Health Services				
	Ministry of Health and Child Care	Ministry of Health and Child Care	National ASRH Programme	Community, Facility
UNICEF, Child Protection Fund, Maruva Trust, Swiss AIDS Care International, SIDA, Southern Africa AIDS Trust, Bristol Myers Squibb Foundation, Merck Sharp and Dhome Pharmeceuticals, PEPFAR		Africaid	Zvandiri ("As I Am")	Community, Facility
Plan Denmark		Justice for Children (JCT)	Community Based Prevention of Teenage Pregnancies	Community, Facility
SIDA, Irish Aid, VSO		VSO Zimbabwe	UNIVERSAL ACCESS	Secondary School, Community
CIDA		Plan Zimbabwe, UNICEF	Women and their Children (WATCH)	Facility
SIDA, CIDA via UNFPA	ZNFPC, MoHCC	UNFPA	H4+	Facility

Major Funding Agency or Source	National Coordinating Agency	Implementing Agency	Program Name	Setting
USAID		Population Services Zimbabwe (PSZ)	SIFPO Voucher System	Community, Tertiary Institutions
	ZNFPC, MoHCC	ZNFPC, MoHCC	Youth Centers	Facility
	ZNFPC, MoHCC	MoHCC, ZNFPC	Youth Corners	Facility
		Population Services Zimbabwe (PSZ)	Youth Centers and Youth Outreach	Facility
Policy and Advocacy				
UNFPA		UNICEF	Zimbabwe Youth Council	Community
UNICEF, UNFPA, UNAIDS, WHO, CDC, USAID	Ministry of Women Affairs, Gender, and Community Development (Zimbabwe)	WHO	Together for Girls	Community
Plan Australia		Plan Zimbabwe, Musasa	PRAAC-Promoting Rights and Accountabilities in African Communities Program	Community
UNFPA, GPRHCS, SIDA, EU, Swiss Development Corporation Agency			SafeGuard Young People Program	Community, Facility, School
		SAYWHAT	Web for Life	Tertiary Institutions
UNFPA			Global Programme to Enhance Reproductive Health Commodity Security (GPRHCS)	Facility
Networking and Coordination				
Danish International Development Agency		Youth Engage, ZNNP+	Youth eNetwork	Community (media)

Table 2: ASRH Programs by Population of Adolescents Served

Funding Agency	National Coordinating Agency	Implementing Agency	Program Name	Additional Sub-Population	Setting
General Populations					
		General Adolescent Population (in and out of school)			
Plan Australia		Plan Zimbabwe, Musasa	PRAAC-Promoting Rights and Accountabilities in African Communities Program	Marginalized male and female youth, 10-24	Community
UNFPA		SAYWHAT	ASRH Program	Peer Educators + Young People – In and Out of School (10 – 24) + Students (17 – 35)	Community
European Union, COSV		COSV	Sexual and Reproductive Health Awareness and Support for young people in and out school in Mashonaland West Province	In and out of school young people aged 12-25 years	Community, School
UNICEF		UNICEF, NAC	Young People We Care	In and out of school youth	Community
	Ministry of Health and Child Care	Ministry of Health and Child Care	National ASRH Programme	adolescents + healthcare workers + policy makers and community members	Community, Facility
Plan Denmark		Justice for Children (JCT)	Community Based Prevention of Teenage Pregnancies	Adolescents (in and out of school) 10-19	Community, Facility

Funding Agency	National Coordinating Agency	Implementing Agency	Program Name	Additional Sub-Population	Setting
SIDA, Irish Aid, VSO		VSO Zimbabwe	UNIVERSAL ACCESS	In school (15 – 19) and out of school (10 – 24)	Secondary school, community
		ZNFPC, MoHCC	Youth Centers	In and out of school youth	Facility
		MoHCC, ZNFPC	Youth Corners	In and out of school	Facility
		Population Services Zimbabwe (PSZ)	Youth Centers and Youth Outreach	Adolescents	Facility
UNFPA, GPRHCS, SIDA, EU, Swiss Development Corporation Agency			SafeGuard Young People Program	youth	Mixed (Community, Facility, School)
UNFPA		UNFPA	Global Programme to Enhance Reproductive Health Commodity Security (GPRHCS)	Adolescents, health facilities, providers	Facility
SIDA		VSO Zimbabwe	Gender and Economic Empowerment to Enhance Rights (G.E.N.D.E.R)	In school (15 – 19) and out of school (10 – 24)	Community
USAID, Nike, Bill & Melinda Gates Foundation, Elton John AIDS Foundation , Barclays, Exxon		Ministry of Education, Ministry of Health, Zimbabwe Football Association, PSI and others	Grassroots Soccer	Youth 11-19, low SES, vulnerable, orphan	Community

Funding Agency	National Coordinating Agency	Implementing Agency	Program Name	Additional Sub-Population	Setting
Mobile					
German Ministry for Economic Cooperation and Development (BMZ), GIZ	GIZ	Zimbabwe AIDS Network, SAYWHAT, FACT	HIV and AIDS Prevention in Zimbabwe (HPZ)—uses Join in Circuit (JIC) tool	Youth aged 15-24	Community, Schools
		Youth Alive Zimbabwe	Education for Life	Aged 7-35, in and out of school youths, adults who work with youth	Community
SafAIDS		NdaiZiva Capacity Development	ASRH Interventions in Norton	Male and female 10-24	Community
CIDA		Plan Zimbabwe	Women and their Children (WATCH)	Adolescent, maternal, newborn	Facility
UNFPA		UNICEF	Zimbabwe Youth Council		Community
		Youth Alive Zimbabwe	Capacity Development Program		Community
SIDA, NORAD		Action IEHDC	Wize Up		Community (media)
USAID		Population Services Zimbabwe (PSZ)	SIFPO Voucher System	Adolescents ages 15-24; in and out of school (partner with SAYWHAT to recruit from tertiary institutions)	Community, Tertiary Institutions
UNFPA		Ministry of Health and Child Care (MOHCC)	Integrated Support Program: Peer Education		Community, Primary and Secondary School

Funding Agency	National Coordinating Agency	Implementing Agency	Program Name	Additional Sub-Population	Setting
		General Population (not adolescent-focused)			
The Global Fund		NAC	Zimbabwe's National Behavior Change Program (NBCP)		Community
		Population Services Zimbabwe (PSZ)	Social media platform		Community
DFID, USAID	Ministry of Health and Child Care		PSI National Behavior Change Communication Program		Community
		Students (Primary and Secondary)			
		Youth Alive Zimbabwe	Life Skills and Child Protection Programme		Primary and Secondary School
		Students (Tertiary)			
UN Women		SAYWHAT	Men to Men Campaign		Tertiary Institutions
		SAYWHAT	Web for Life		Tertiary Institutions
UNESCO		SAYWHAT	One Touch SRH Campaign		Community (media)
UNFPA		SAYWHAT	4Ps Campaign – GBV Program (Prevention, Protection, Participation, and Programs		Tertiary Institutions
Oxfam		SAYWHAT	Disability Rights Project (DRP)	Young people with disabilities	Tertiary Institutions
Oxfam		SAYWHAT	One Campus Project – Securing Rights Project		Tertiary Institutions
National AIDS		SAYWHAT	National Youth Programme		Tertiary Institutions

Funding Agency	National Coordinating Agency	Implementing Agency	Program Name	Additional Sub-Population	Setting
Council					
		SAYWHAT	Youth friendly Education on Sexual and reproductive health and rights (YES)		Tertiary Institutions
		Vulnerable Sub-Groups			
		Adolescents Living with HIV			
USAID, John Snow International		Africaid and others	"Children's First" (CF) Orphans and Vulnerable Children (OVC) Project		Community
Plan USA USNO		Plan Zimbabwe	Support for AIDS orphans and those orphans living in difficult circumstances		Community
		Youth Engage, ZNNP+	Youth eNetwork		Community (media)
UNICEF, Child Protection Fund, Maruva Trust, Swiss AIDS Care International, SIDA, Southern Africa AIDS Trust, Bristol Myers Squibb Foundation, Merck Sharp and Dhome Pharmeceuticals, PEPFAR		Africaid	Zvandiri ("As I Am")	Among HIV+ youth: young mothers young people in prisons, young people with disabilities	Community, Facility

Funding Agency	National Coordinating Agency	Implementing Agency	Program Name	Additional Sub-Population	Setting
Bristol Myers Squib, UN Women		SAYWHAT	PLUS Project		Tertiary Institutions
		VSO Zimbabwe	The VSO Zimbabwe Bridging Programme (Pilot Phase)		Community
		Women and Girls			
GIZ, ISP	NAC	Center for Sexual Health and HIV/AIDS Research Zimbabwe (CeSSHAR)	Sisters with a Voice	Sex workers	Community
UNICEF, UNFPA, UNAIDS, WHO, CDC, USAID	Ministry of Women Affairs, Gender, and Community Development (Zimbabwe)	WHO	Together for Girls		Community
UNFPA	Ministry of Health and Child Care (MOHCC)		Integrated Support Program: Sista2Sista clubs		Community
		Youth Alive Zimbabwe	Girls and Young Women Empowerment		Community
DFID		Camfed	Girls Education Challenge Fund (GEC)		Secondary School
National Institute of Health (NIH); Eunice Kennedy Shriver National Institute of Child Health and		PIRE	Randomized trial on school support (compared to data on orphans and nonorphans in the ZDHS)		Secondary School

Funding Agency	National Coordinating Agency	Implementing Agency	Program Name	Additional Sub-Population	Setting
Development					
Danish National Office		Plan Zimbabwe	Epworth Girls Empowerment Project (GEP)	OVC, young people with disabilities	Secondary School
		Other Vulnerable Young People			
		Action IEHDC	SRHR for Mobile Population		Community
SIDA, CIDA via UNFPA	ZNFPC, MoHCC	UNFPA	H4+	Vulnerable populations (children, mothers, young women, people with HIV/AIDS, rural areas)	Facilities
European Union		SAfAIDS, SAYWHAT	FreshCom (formerly Young4Real)	Young people in rural areas	Community (media)

Funding Agency	National Coordinating Agency	Implementing Agency	Program Name	Additional Sub-Population	Setting
		Poor Households			
World Bank, Partnership for Child Development, Programme of Support for the National Action Plan for Orphans and Vulnerable Children, Catholic Relief Services		Manicaland HIV/STD Prevention Project	Cash transfer cluster randomized control trial		Community
DFID, Zimbabwe Government	UNICEF	Zimbabwe Ministry of Public Service, Labour, and Social Welfare (MPSLSW)	Social Harmonised Cash Transfer Program		Community

Map of all ASRH by location in Zimbabwe coded for program type

Based on available information, we mapped the programs by province and at the national level according to their program type. Of the 53 programs identified, there are five programs for which more information is needed to determine geographic coverage. Of the 48 with geographic information, 17 focused on the national level and 30 focused on the provincial level. Programs were mapped by province and clustered to their program type. As indicated by the color density on the maps, certain regions have a greater number of adolescent sexual and reproductive health programs. Seventeen programs report a national level reach. Harare, Mashonaland West, and Manicaland have the greatest density of programs, while Mashonaland Central and Mashonaland East have the fewest ASRH programs implemented. Please note: The maps provided below are clustered by program type. To view the interactive map, please visit: https://www.google.com/maps/d/edit?mid=zRxVqOwd2eRY.kdQ-nz91fmEk&usp=sharing.

The maps below are organized by following program types: 1) Youth Friendly Health Services, 2) Behavior Change Communication, and 3) Policy and Advocacy. Only one program was identified as Networking and Communication and this program had a national focus, thus the map is not included. Shading reflects program density at the provincial level. National programs are indicated through border outlines, but are not included in the shading density on the map.

Map 1: *Geographic Coverage of Youth Friendly Health Services*

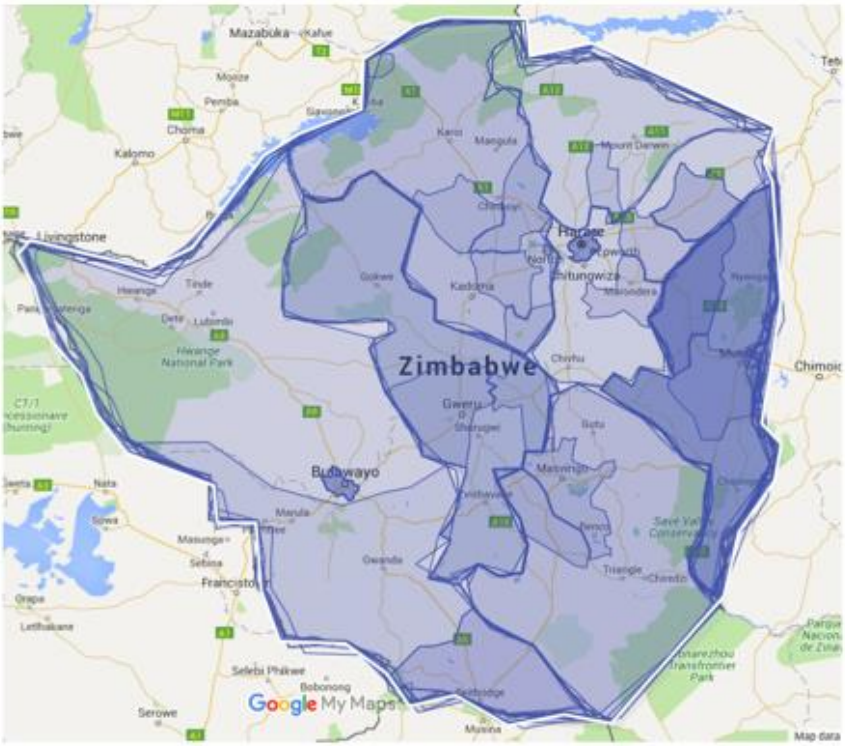
Key:

- Outline of Zimbabwe borders represent programs with national focus
- Shading represents program density at provincial level

High program density (provincial level)

Low program density (provincial level)

Map 2: Behavior Change Communication Programs



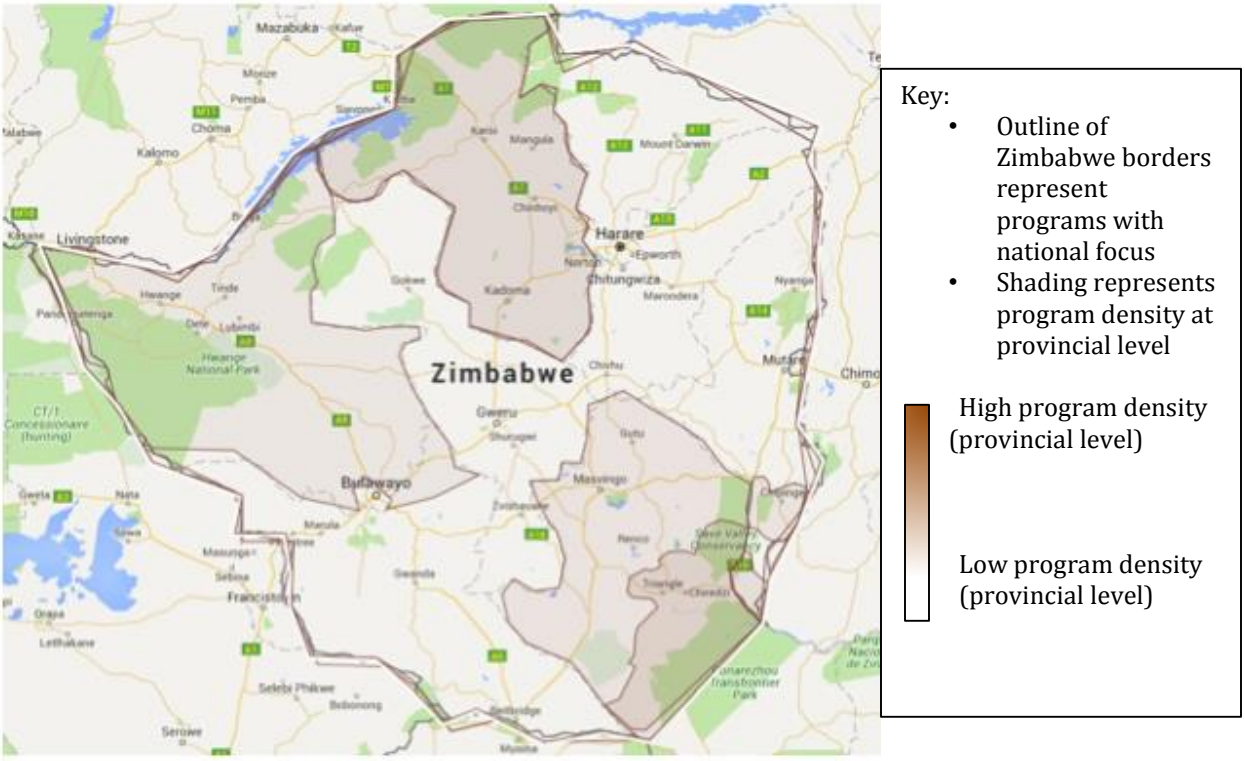
Key:

- Outline of Zimbabwe borders represent programs with national focus
- Shading represents program density at provincial level

High program density (provincial level)

Low program density (provincial level)

Map 3: Policy and Advocacy Programs



Program Concentration at the Provincial Level

Below please find a table outlining the 48 programs that were mapped geographically, including national programs and programs by province.

Table 3: Programs by Province

Program	Program Type	Implementing Agency	Setting
National Programs (17)			
National ASRH Program	YFHS	MoHCC	Community, Facility
National Youth Program	BCC, Livelihoods, Life Skills	SAYWHAT	Tertiary Institutions
4Ps Campaign	BCC, Livelihoods, Life Skills	SAYWHAT	Tertiary Institutions
Together for Girls	Policy and Advocacy	WHO	Community
Zimbabwe Youth Council	Policy and Advocacy	UNICEF	Community
One Touch Campaign	BCC, Livelihoods, Life Skills	SAYWHAT	Community (media)
National Behavior Change Program	BCC, Livelihoods, Life Skills		Community
FreshCom	BCC, Livelihoods, Life Skills	SafAIDS, SAYWHAT	Community (media)

PSI National Behavior Change Communication Program	BCC, Livelihoods, Life Skills		Community
Youth friendly Education on Sexual and reproductive health and rights (YES)	BCC, Livelihoods, Life Skills	SAYWHAT	Tertiary Institutions
ZNFPC/MoHCC Youth Corners	YFHS	ZNFPC, MoHCC	Facility
ZNFPC/MoHCC Youth Centers	YFHS	ZNFPC, MoHCC	Facility
Harmonised Social Cash Transfer	BCC, Livelihoods, Life Skills	Zimbabwe Ministry of Public Service, Labour, and Social Welfare (MPSLSW)	Community
SafeGuard Young People	Policy and Advocacy		Community, Facility, School
Youth eNetwork	Networking and Coordination		Community (media)
Young People We Care	BCC, Livelihoods, Life Skills	UNICEF, NAC	Community
PSZ Call Center and Social Media Platform	BCC, Livelihoods, Life Skills		
Bulawayo (7 programs)			
Disability Rights Project	BCC, Livelihoods, Life Skills	SAYWHAT	Tertiary Institutions
PLUS	BCC, Livelihoods, Life Skills	SAYWHAT	Tertiary Institutions
One Campus Project	BCC, Livelihoods, Life Skills	SAYWHAT	Tertiary Institutions
SIFPO Voucher System	YFHS	PSZ	Community, Tertiary Institutions
Grassroots Soccer	BCC, Livelihoods, Life Skills	Ministry of Education, Ministry of Health, Zimbabwe Football Association, PSI and others	Community
Support for AIDS orphans and those orphans living in difficult circumstances	BCC, Livelihoods, Life Skills	Plan Zimbabwe	Community
Wize Up	BCC, Livelihoods, Life Skills	Action IEHDC	Community (media)
Harare (8 programs)			
Community Based Prevention of Teenage Pregnancies	YFHS	Justice for Children (JCT)	Community, Facility
PLUS	BCC, Livelihoods, Life Skills	SAYWHAT	Tertiary Institutions

Wize Up	BCC, Livelihoods, Life Skills	Action IEHDC	Community (media)
Children First	BCC, Livelihoods, Life Skills	Africaid and others	Community
Grassroots Soccer	BCC, Livelihoods, Life Skills	Ministry of Education, Ministry of Health, Zimbabwe Football Association, PSI and others	Community
Support for AIDS orphans and those orphans living in difficult circumstances	BCC, Livelihoods, Life Skills	Plan Zimbabwe	Community
Epworth Girls Empowerment Project (GEP)	BCC, Livelihoods, Life Skills	Plan Zimbabwe	Secondary School
Zvandiri	YFHS	Africaid	Community, Facility
Manicaland (14 programs)			
G.E.N.D.E.R.	BCC, Livelihoods, Life Skills	VSO Zimbabwe	Community
PIRE's Randomized trial on school support	BCC, Livelihoods, Life Skills	PIRE, University of Zimbabwe, Africa University	Secondary School
Join In Circuit (JIC)/HPZ	BCC, Livelihoods, Life Skills	FACT	Community, School
Men to Men Campaign	BCC, Livelihoods, Life Skills	SAYWHAT	Tertiary Institutions
PRAAC	Policy and Advocacy	Plan Zimbabwe	Community
FreshCom	BCC, Livelihoods, Life Skills	SafAIDS, SAYWHAT	Community (media)
WATCH	YFHS	Plan Zimbabwe, UNICEF	Facility
Cash Transfer Cluster RCT	BCC, Livelihoods, Life Skills	Manicaland HIV/STD Prevention Project	Community
Education for Life	BCC, Livelihoods, Life Skills	Youth Alive Zimbabwe	Community
Life Skills and Child Protection Program	BCC, Livelihoods, Life Skills	Youth Alive Zimbabwe	Primary and Secondary Schools
Capacity Development Program	BCC, Livelihoods, Life Skills	Youth Alive Zimbabwe	Community
Girls and Young Women Empowerment	BCC, Livelihoods, Life Skills	Youth Alive Zimbabwe	Community
Integrated Support Program	BCC, Livelihoods, Life Skills		Community, Facility, School
Mashonaland Central (3 programs)			
Men to Men Campaign	BCC, Livelihoods, Life Skills	SAYWHAT	Tertiary Institutions
H4+	YFHS	UNFPA	Facility

Integrated Support Program	BCC, Livelihoods, Life Skills		Community, Facility, School
Mashonaland East (3 programs)			
G.E.N.D.E.R.	BCC, Livelihoods, Life Skills	VSO Zimbabwe	Community
Support for AIDS orphans and those orphans living in difficult circumstances	BCC, Livelihoods, Life Skills	COSV	Community, School
Integrated Support Program	BCC, Livelihoods, Life Skills		Community, Facility, School
Mashonaland West (8 programs)			
ASRH Program (SAYWHAT)	BCC, Livelihoods, Life Skills	SAYWHAT	Community
NdaiZiva ASRH interventions in Norton	BCC, Livelihoods, Life Skills	NdaiZiva Capacity Development	Community
Sexual and Reproductive Health Awareness and Support for young people in and out school in Mashonaland West Province (COSV)	BCC, Livelihoods, Life Skills	COSV	Community, School
HIV Prevention Project in Zimbabwe (HPZ)	BCC, Livelihoods, Life Skills	FACT	Community, School
H4+	YFHS	UNFPA	Facility
GPRHCS			Community, Facility, School
SRHR for Mobile Population	BCC, Livelihoods, Life Skills	Action IEHDC	Community
Integrated Support Program	BCC, Livelihoods, Life Skills		
Masvingo (7 programs)			
G.E.N.D.E.R.	BCC, Livelihoods, Life Skills	VSO Zimbabwe	Community
PRAAC	Policy and Advocacy	Plan Zimbabwe	Community
H4+	YFHS	UNFPA	Facility
ASRH Program (SAYWHAT)	BCC, Livelihoods, Life Skills	SAYWHAT	Community
SafeGuard Young People	Policy and Advocacy		Community, Facility, School
Wize Up	BCC, Livelihoods, Life Skills	Action IEHDC	Community (media)
Integrated Support Program	BCC, Livelihoods, Life Skills		Community, Facility, School
Matabeleland (North and South) (7 programs)			
Men to Men Campaign	BCC, Livelihoods, Life	SAYWHAT	Tertiary Institutions

	Skills		
SRHR for Mobile Population	BCC, Livelihoods, Life Skills	Action IEHDC	Community
Children First	BCC, Livelihoods, Life Skills	Africaid and others	Community
SIFPO Voucher Project	YFHS	PSZ	Community, Tertiary Institutions
H4+	YFHS	UNFPA	Facility
GPRHCS	Policy and Advocacy		Facility
Integrated Support Program	BCC, Livelihoods, Life Skills		Community, Facility, School
Midlands (7 programs)			
Disability Rights Project	BCC, Livelihoods, Life Skills	SAYWHAT	Tertiary Institutions
PLUS	BCC, Livelihoods, Life Skills	SAYWHAT	Tertiary Institutions
One Campus Project	BCC, Livelihoods, Life Skills	SAYWHAT	Tertiary Institutions
H4+	YFHS	UNFPA	Facility
VSO Zimbabwe Bridging Program	BCC, Livelihoods, Life Skills	VSO Zimbabwe	Community
Wize Up	BCC, Livelihoods, Life Skills	Action IEHDC	Community (media)
Integrated Support Program	BCC, Livelihoods, Life Skills		Community, Facility, School

SECTION 2: METHODOLOGY

2.1 Site Visits

There were two primary program types visited for our in-depth analyses: health service delivery programs (which included youth friendly health service programs and psychosocial support programs) and behavior change and communication programs (which included both behavior change and social media programs).

2.1.1 Health Service Delivery Programs:

Description: A total of five youth friendly health service programs were visited (three youth corners and two youth centers) as well as one psychosocial support program that targeted HIV positive adolescents (Zvandiri).

Data collection: Data were collected from the youth friendly service programs using interview tools from the *WHO Quality Assessment Guidebook: A guide to assessing adolescent health services for adolescent clients* (2009). For Peer Educators, the WHO 'Outreach Worker' interview tool was used and adapted to include a more thorough understanding of outreach activities at facilities. For Youth Friendly Nurses, the WHO 'Health Care Provider' interview tool was used to understand and assess the youth friendliness of the services provided. For Zvandiri, an interview guide was developed to frame a discussion on key program elements.

YFHS Site Selection: A total of five Youth Centers and Youth Friendly Corners were visited to offer a comparison of these two approaches. While randomization would have been preferable for the selection of YFHS sites, in all but one site, MoHCC and ZNFPC had pre-selected the sites. For specific selection process, please refer to the Table below that summarizes the five facilities visited. As noted in the table, there were differences in programming associated with implementing partners and sources of financial support. All facilities reportedly offered a similar set of standard programming that includes: health talks, counseling, indoor and outdoor games, and outreach in schools.

Table 4: Detailing Youth Corner and Center Selection and Key Program Differences

Facility	Selection Criteria	Implementing Partners	Coordinating and Funding Agencies	Unique Programming Elements **	Monitoring Data Available
Bota Clinic (Zaka, Masvingo)	Selected by MoHCC due to implementation of comprehensive package of youth friendly programming: social media outreach, multi-sectorial ASRH committees, and a facility-wide approach to health	SAYWHAT (provides tablets to peer educators, trainings on social media), Regai Dzive Shiri (capacity building, support for peer educators, support for youth day events)	Integrated Support Program (ISP), UNFPA	ISP Interventions (Facebook Clubs Sista2Sista) ASRH Committees Recipients of staff sensitization	Peer Educator Exposures No YFS clinical statistics provided or accessible

Facility	Selection Criteria	Implementing Partners	Coordinating and Funding Agencies	Unique Programming Elements **	Monitoring Data Available
	staff sensitization to YFHS (in addition to trained Youth Friendly Nurses)				
Gutu Rural Hospital (Gutu, Masvingo)	Selected by MoHCC; implementing comprehensive ASRH intervention (see above)	SAYWHAT, Regai Dzive Shiri	Integrated Support Program (ISP), UNFPA	ISP Interventions (Facebook Clubs Sista2Sista) ASRH Committees Recipients of staff sensitization Partnership with nearby school (YFC in School staffed by guidance counselors)	Peer Educator Exposures (Limited) No YFS clinical statistics provided or accessible
Marange Rural Hospital (Mutare Rural, Manicaland)	Selected by JHU team due to implementation of Join in Circuit (JIC) demand-generating behavior change communication (BCC) tool	Family AIDS Caring Trust (FACT)	GIZ	Join in Circuit (JIC) tool Monthly Support Group for HIV+ adolescents	YFS Clinic Statistics JIC Monitoring Data (GIZ)
Chiendembo ya Youth Center (Makoni, Manicaland)	Randomized from a list of Youth Centers in Masvingo and Manicaland	ZNFPC, MoHCC	National AIDS Council (NAC)		Peer Educator Exposures Youth Center Attendance YFS Clinic Statistics
Ngorima Youth Center (Chimanimani, Manicaland)	Selected by ZNFPC as a high performing Youth Center, based on monitoring data and field visits	ZNFPC, MoHCC	National AIDS Council (NAC)	Support group for HIV+ Adolescents Livelihood Projects for Peer Educators HIV Testing and Counseling Program	Peer Educator Exposures Youth Center Attendance YFS Clinic Statistics (Limited)

**Beyond counseling, Health Talks, and other 'standard' peer educator responsibilities.

Monitoring data on clinic utilization, center attendance, and peer education reach: Service utilization data was obtained from two youth centers and one youth corner (see Table 4); not being able to access similar data from Bota and Gutu limited our ability to compare utilization trends between youth corners and centers. Data on center attendance and service utilization was obtained by ZNFPC, based on the time period of January to September of 2014. At Ngorima, we were informed that the Youth Health Advisor / Youth Friendly Nurse was not present during the

year 2014 due to a midwifery course, thus the lack of a full-time nurse for 2014 may underrepresent the typical volume of adolescent clients at that Youth Center. In addition to data on youth center attendance and service utilization, data was obtained on peer educator reach. While Youth Friendly Corners measure adolescent reach by using both outreach and actual visit data, Youth Friendly Centers separate the two pieces of data, limiting our ability to compare directly to the Youth Friendly Corners. Peer education data available from ZNFPC was entered through copies of paper forms obtained during site visits. Because peer educator data was not obtained from Marange, it is difficult to draw comparisons between peer educator reach and service utilization for any Youth Corner. Data was collected from Bota and Gutu Youth Friendly Corners on the reach among peer educators for the year 2014.

At Zvandiri, monitoring data was requested based on conversations with Zvandiri's monitoring team on the type of data collected. The following information was provided by Zvandiri's monitoring team: 1) Support group reach by age group, sex, and community, 2) Monthly summaries of home visits conducted by age group and sex; 3) Referrals made by Zvandiri to other services or organizations by age group, sex, and type of referral; 4) Monthly reach of Zvandiri Centers (similar to Youth Corners) by age group and sex; 5) Community Adolescent Treatment Supporters by age, years of involvement in the program, and communities served.

Key informant interviews: At each Youth Corner and Youth Center, interviews were conducted with youth friendly nurses and/or peer educators. Please find a summary below of the interviews conducted at each of the five facilities visited. Note that only Youth Centers have staff members in the Youth Facilitator role, serving as counselors with experience or education in social service fields; therefore, "N/A" denotes that this role was not applicable to Youth Corners.

Table 5: Key informant interviews with Nurses and Peer Educators

Facility	# of Youth Friendly Nurse Interviews	# of Peer Educators Interviewed (often group interviews)	# Youth Facilitators Interviewed	Other Individuals Interviewed
Bota Youth Corner	1	1	N/A	1 ASRH Committee Member, 2 Staff Members from Regai Dzive Shiri
Gutu Youth Corner	1	3	N/A	1 Sista2Sista Mentor 1 Regai Dzive Shiri District Manager
Marange Youth Corner	2	3	N/A	2 JIC Facilitators

Chiendambuya Youth Center	None	0	1	
Ngorima Youth Center	1	1	1	

2.1.2 Behavior Change and Communication; Life Skills, and Livelihood Programs:

Description: A total of two behavior change and communication (BCC) programs were visited (Sista2Sista and Join in Circuit (JIC), as well as four different implementing organizations that were involved in social media approaches (Action Institute for Environment, Health and Development Communication's (IEHDC) Wize Up, a talk show on ASRH; Zvandiri; SAYWHAT; and Population Services Zimbabwe).

Data collection: For each organization visited, we conducted key informant interviews and collected monitoring data where available. The table below presents the details on how many interviews were conducted as well as who was interviewed at each organization. In total, approximately 44 individuals participated in these interviews.

Table 6: Summary of Interviews Conducted by Organization

Program	Roles of Interview Respondents	Total Interviews Conducted per Organization
Sista2Sista	Sista2Sista Mentor (1)	1
Join in Circuit	JIC Facilitators (2) (joint interview) Program Manager from FACT(1) Project Coordinator from HIV Prevention Project (1)	4
Zvandiri	Joint interview with Advocacy Officer (1)m Social Work Intern (1), and Counselor (1) Communications Officer (1) Focus groups with Community Adolescent Treatment Supports (CATS) (~30)	4 staff ~30 CATS
Action IEHDC/ Wize Up	Joint interview with Executive Director (1) and Research and Monitoring and Evaluation Officer (1)	2
SAYWHAT	Information and Advocacy Officer (1)	2
PSZ	Media Staff Member (1)	1

(All interviews conducted in person uncles noted otherwise)

Overall, monitoring data was quite limited and thus it is not possible to draw more than tentative observations. From SAYWHAT, monitoring data for the Facebook clubs component of their social media approach was extracted from Survey Monkey. From Action IEHDC, limited data were obtained on geographic reach, based on the provinces from which Facebook comments and other social media contacts were received. Additionally, Action IEHDC provided focus groups and in-depth interviews upon which an audience reception report was based.

In addition to monitoring data, Action IEHDC's formative research process provided qualitative data from focus groups and in-depth interviews from youth in different provinces, reported in an audience reception report (December, 2014).

2.2 Economic analysis

This study sought to estimate the returns on investment (ROI) from ASRH programs implemented in Zimbabwe between 2009 and 2014 and compare programs in a cost-effectiveness analysis (CEA). The aim of the analysis was to shed light on what programs improve adolescents' health outcomes at lower costs. However, given the lack of scientific evidence on programs' impact on health outcomes it was not possible to estimate ROI and compare programs in CEA.

Evidence on the cost-effectiveness (CE) of adolescent sexual and reproductive health (ASRH) interventions is essential for understanding what programs provide more health gains per dollar spent. The number and type of programs serving ASRH needs in Zimbabwe has increased, particularly after the 1994 International Conference on Population and Development convened by the United Nations in Cairo in which member countries committed to including youth in their national sexual and reproductive health (SRH) strategies (UNFPA, 1994). Concurrently, funding for SRH programs has increased steadily over the last decade. Estimates from 2011 show that global donor expenditure (excluding development bank loans) on population assistance programs (family planning, basic reproductive health services, sexual transmitted diseases and HIV/AIDS activities) was $11.6Millions U.S. dollars (UNFPA, 2013). This was a 612% increase in expenditures compared to the year 2001. However, the actual estimated cost for covering global SRH needs in 2011 was much larger, $67.8Millions, of which 40% and 35% of the cost was from Sub-Saharan Africa and Asia and the Pacific, respectively (UNFPA, 2013). In Zimbabwe alone, the total expenditure on population assistance was $US 151,891(UNFPA, 2013). However, like at the global level, the actual cost of covering the SRH needs in Zimbabwe is likely significantly higher. Scarcity of resources to cover SRH needs makes the selection of interventions implemented important so that Zimbabwe can reach the maximum ASRH gains possible. To achieve this, it is crucial that only the programs with most health improvements get funded.

There are significant economic gains from improving ASRH outcomes. Recent scientific evidence from Ghana, Bangladesh, and Navrongo showed that increased access to FP not only increased women's earnings, assets, and body-mass indexes, as well as, children's schooling and body-max indexes, but also enhanced economic growth as a result of reduced youth dependency and increased women in the paid labor force (Canning and Schultz, 2012). Overall, Zimbabwe could save an estimated $US 132M (1.23% of the 2012 National GDP) from better maternal health outcomes such as reduced maternal deaths, disabilities and unwanted pregnancies(UNZ, 2013). These economic gains result from improved female work productivity (women constitute 55% of the agricultural labor force, produce 80% of the food supply) and household (HH) income investment on family welfare (women spent 54% of their income on family needs) (UNZ, 2013).

Estimating the CE of interventions depends on the availability of scientific evidence on programs' causal effects. Evidence on ASRH impact data is limited, thus there are few economic evaluations. However, ASRH impact evidence, summarized elsewhere in various literature reviews, is increasing rapidly (Denno et al., 2014, Svanemyr et al., 2015, Chandra-Mouli et al., 2015, Michielsen et al., 2010, WHO, 2009). Based on a literature review between 2009 and 2015, eight ASRH programs evaluated programs' CE. Like most LMIC studies, these studies used the World Health Organization's (WHO) cost threshold, less than three times the gross domestic product (GDP) per capital, to determine programs that are CE (WHO, 2015). In Zimbabwe, the GDP per capita estimate in 2014 was US$1,031 (IMF, 2015). For CE analysis based on cost-utility measures such as DALYs, the threshold for LMICs is US$150 per DALY averted (IHME, 2010). Six of these studies were peer-reviewed articles (Miller et al., 2013. Remme et al., 2014. Hsu et al., 2012, Ladapo et al., 2013, Kivela et al., 2014, Kempers et al., 2014) and two were gray literature (Mackay et al., 2011, Nguyen, 2014). Most recent cost-effectiveness analyses (CEA) on ASRH originate from HIV prevention studies. Most are school-based interventions or programs focused on high-risk youth reached through peer-education or mass media communication (Remme et al., 2014, Hsu et al., 2012, Galárraga et al., 2009. Two of the CEA are from Zimbabwe including one school fees support and one behavioral change intervention.

Given the expansion of stand-along youth centers (SAYC) and health facilities' youth friendly corners (YFC) throughout Zimbabwe, as well as limited understanding on the investment needed for operating high-quality SAYCs and YFCs, the present economic analysis contributes by estimating what is the cost of operating a SAYC and YFC in Zimbabwe and estimating what i impact level would be needed for these programs to be cost-effective (CE). The impact level needed for these programs to be CE was estimated based on a threshold analysis. A threshold analysis estimates what are the minimum health gains (number of ASRH cases averted) needed for each programs' cost to break-even and become cost saving. Additionally, we estimate what is the cost per health outcome needed for the programs to be CE. The cost per disability-adjusted-life-year (DALY) averted needed for each program to be CE was estimated to allow for these programs' results to be compared with future health interventions. DALYs are the World Health Organization's measure for burden of diseases. DALYs are used to measure a nation's total burden of disease, compare the burden of disease from specific health conditions across regions, or to measure changes in the burden of disease due to health prevention interventions. Health interventions conducting CEA translate interventions' health outcome gains data obtained from impact evaluation into DALYs averted. CEA uses data on programs' cost and DALYs averted to determine programs' CE by estimating the incremental cost per incremental health gains between interventions being compared. This study uses a threshold that defines cost-effectiveness based on a cost per DALY averted less than $150 per DALY averted (WB, 1993; WHO, 1996; Shillcutt et al, 2009).

Costs were analyzed using ingredient-based costing from the public sector perspective, which includes both the program and health care sector costs. Societal costs such as participants' out-of-pocket transportation and service fees and unpaid volunteer work were excluded. Costs were separated into fixed costs (durable items) and variable costs. Fixed costs, such as trainings and equipment were annualized and discounted using a standard three percent discount rate. Variable

costs included rent, wages, supplies, mobilization, utilities, supervision and transportation. For a list of costs by major and sub-categories see the appendix.

The annual cost for operating a fully-equipped SAYC or YFC was estimated using program expenditures and a list of resources needed for operating these facilities collected during site visits and validated with program managers. Health facilities' (HF) cost for the diagnosis and treatment of SRH conditions was estimated based on data from the literature, government and donor expenditures collected during site visits from two public rural HFs and the municipal administrative office, providers' interviews on time allocation to SRH services, and count of health services collected from Zimbabwe's HF medical electronic records. The programs' break-even point estimate was calculated from the financial perspective of the health agency. To break even a program had to avert a sufficient number of cases and their associated costs so that the health care cost savings equaled the program cost. This is a conservative approach because even if an agency fails to break even people will have achieved better health and that alone might have been worth substantial resources.. Expenditure data was inflation adjusted to 2014 US dollars using Zimbabwe's average consumer price index (IMF, 2015). For details about data and methods see the appendix.

SECTION 3: RESULTS BY TYPE OF PROGRAM

3.1 Health Service Delivery Programs

A total of five youth friendly health service programs were visited (three youth friendly corners and two youth friendly centers) as well as one psychosocial support program that targeted HIV positive adolescents (Zvandiri).

3.1.1 Youth Friendly Health Service Programs:

3.1.1.1 Findings from Site Visits to Youth Friendly Corners and Centers

Training. Youth Friendly Corners and Centers are staffed by nurses and peer educators who complete a training conducted through a partnership between the Ministry of Health and Child Care (MoHCC) and the Zimbabwe National Family Planning Council (ZNFPC). A multi-disciplinary team facilitates separate trainings for the nurses and peer educators on topics such as nursing, social work, sociology, research, and monitoring and evaluation, following the National ASRH Standard Training Manual developed in 2012 by the National ASRH Coordination Forum. The District Health Executive and the Health Facility Management identify nurses to participate in the five-day trainings. For the peer educators, the training usually lasts seven days, with nurses primarily responsible for selecting the potential peer educators.

Differences between Corners and Centers. As of July 2015, there were 78 Youth Corners throughout Zimbabwe and 27 stand-alone Youth Centers. Differences between the Youth Friendly Corner and Youth Center approaches consist of their program structure, human resources and capacity for clinical services. Youth Friendly Corners consist of an identified space within health facilities, where adolescents can receive counseling, testing, and participate in recreational activities. Youth Friendly Corners are designed to have four peer educators, two male and two female, and two trained Youth Friendly Nurses.

Youth Centers are stand-alone facilities that provide adolescents with a space to receive basic ASRH clinical services in a setting separate from a health facility. Youth Centers have four peer educators and two staff members: one Youth Health Advisor, who is a nurse trained in clinical service provision and one Facilitator with a background in social services. For Youth Centers, service provision consists primarily of family planning and counseling; and youth are referred to nearby facilities for STI treatment and other services.

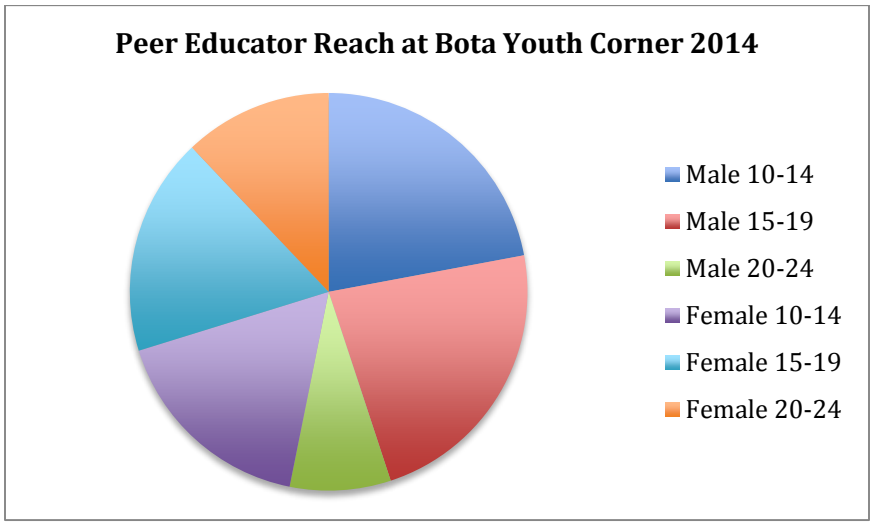
Unique elements in the Youth Friendly Corners: Both Bota Clinic and Gutu Rural Hospital's Youth Corners in Masvingo are recipients of a pilot Integrated Support Program (ISP) social media outreach intervention, a partnership between UNFPA and SAYWHAT. At both sites, SAYWHAT has provided tablets for peer educators to use as outreach tools, specifically for SAYWHAT's Facebook approach to bring rural adolescents into conversations on ASRH-issues.

Marange Rural Hospital receives technical support from Family AIDS Caring Trust (FACT), with funding support from GIZ. FACT has implemented the Join in Circuit (JIC) tool within the community that Marange Rural Hospital serves. Additionally, it was observed that FACT has

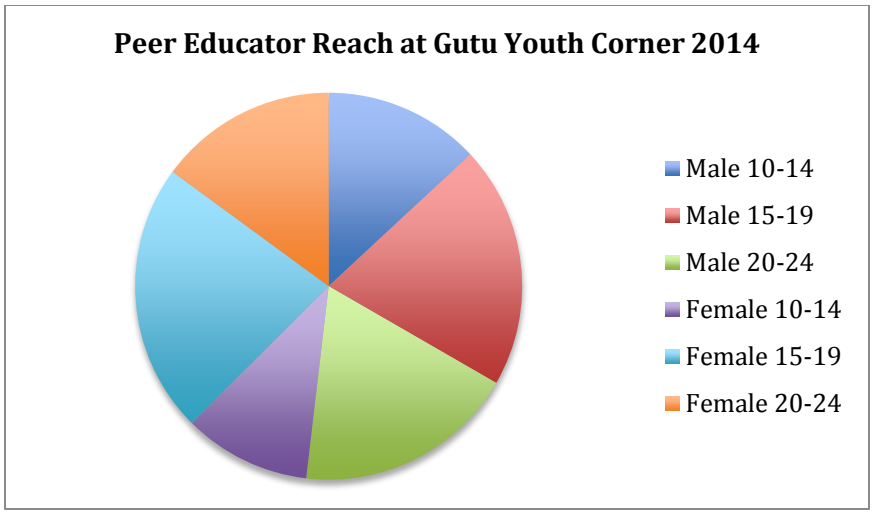
implemented a referral slip system in the Marange Youth Corner and maintains a strong monitoring system, including with regard to referrals. There was not comparable rigor in monitoring noted at other sites.

Service Utilization and Peer educator Data from Youth Friendly Corners: A total of 1,682 youth were reached by peer educators from Bota and 864 youth were reached from peer educators from Gutu. However, because peer educators each keep separate records of their outreach, it is possible that this data may not be complete. It should be noted that Bota's catchment area includes at total population of 19,319 relative Gutu's catchment area with a total population of 8,358.[4] Thus these counts include total population of all ages; population sizes by age are not reported in the census. For both Bota and Gutu Youth Corners, more adolescents ages 15-19 are reached by peer educators relative to other age groups. While there was a slightly greater proportion of 10-14 year olds visiting peer educators from Bota (39% compared to Gutu (24%), in Gutu, there was a slightly greater proportion of older adolescents between 20-24 years visiting peer educators in comparison to Bota (33% vs. 20%).

Graph 1: Gender, Age, and School Status in Peer Educator Reach at Youth Corners

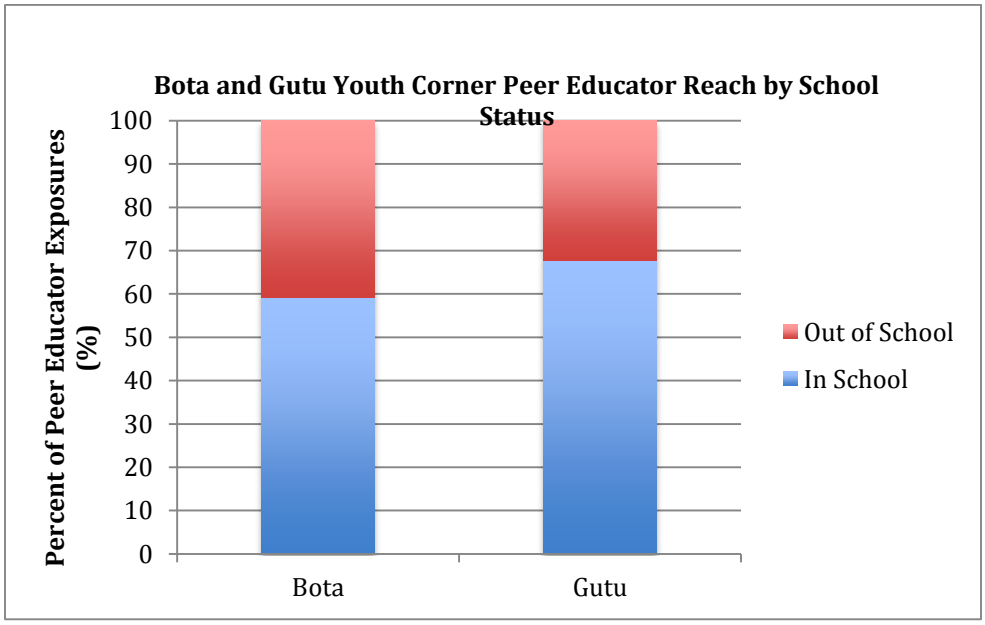


[4] Population size retrieved from 2012 Census report. Based on information provided during field visits, Bota's catchment area included Wards 28, 29, 30 and 32 in Zaka District, Masvingo. Gutu's catchment area included Wards 33 and 34 in Gutu District, Masvingo.



In terms of reach by school status for both Bota and Gutu, slightly more in-school youth are reached relative to out-of-school youth (given that school status was not disaggregated by either sex or age a more specified utilization analysis is not possible). Peer educators reported conducting health talks and other outreach at schools, perhaps explaining the higher percentage of in-school youth reached.

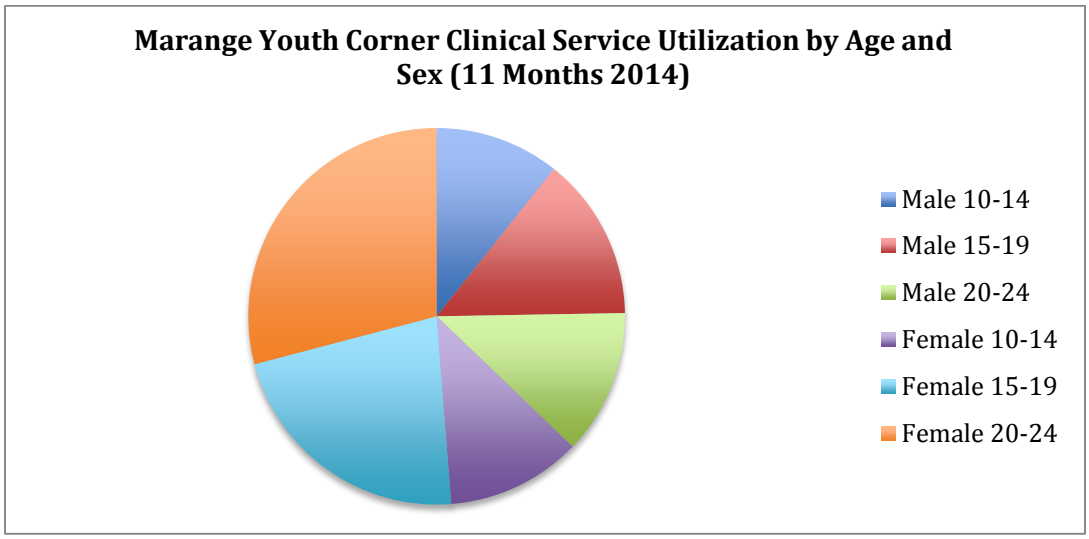
Graph 2: Peer Educator Reach by School Status at Youth Corners



While data on clinical service utilization was not obtained from Bota or Gutu, based on data from Marange Rural Hospital's Youth Corner, more females accessed youth friendly services than males, with females accounting for 63% of clinical services recorded. Among the adolescents ages 10-14, a gender difference in service utilization was not observed, however among the older adolescents females accounted for a greater percentage of service utilization.

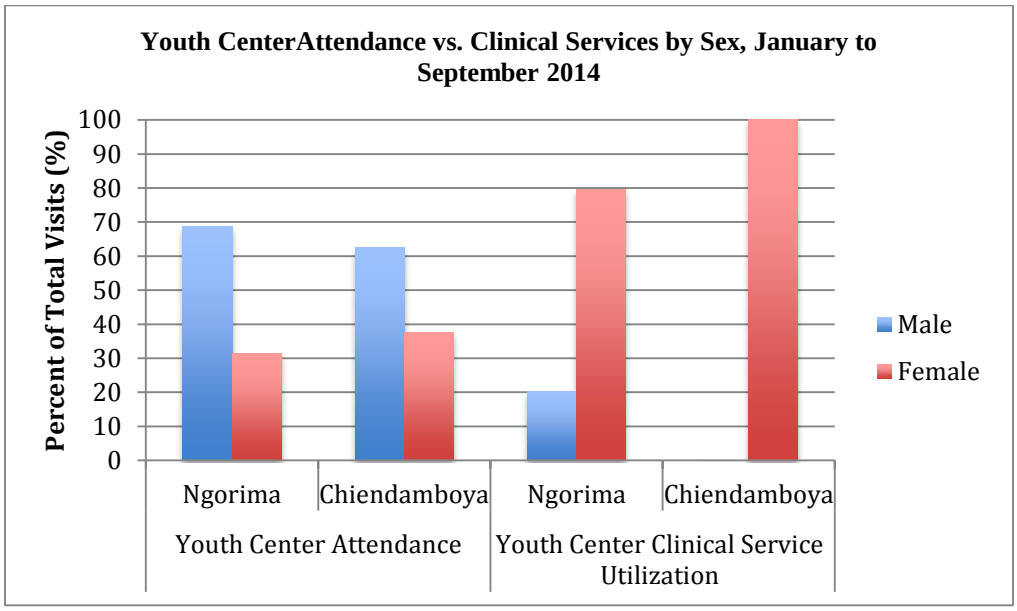
Females ages 20-24 represented the greatest percentage of service utilization (accounting for 29% of total clinical services recorded).

Graph 3: Marange Rural Hospital ASRH Clinical Services by Age and Gender



Service Utilization and Peer educator Data from Youth Friendly Centers: We see from Graph 4 below monthly summaries of clinic statistics by gender. While males were significantly more likely to *attend* Youth Centers for all reasons (including recreational reasons), females were significantly more likely to *access the clinical services* provided at the Youth Centers. Between January to September 2014, 639 adolescents utilized clinical services at Ngorima and 76 at Chiendambuya.

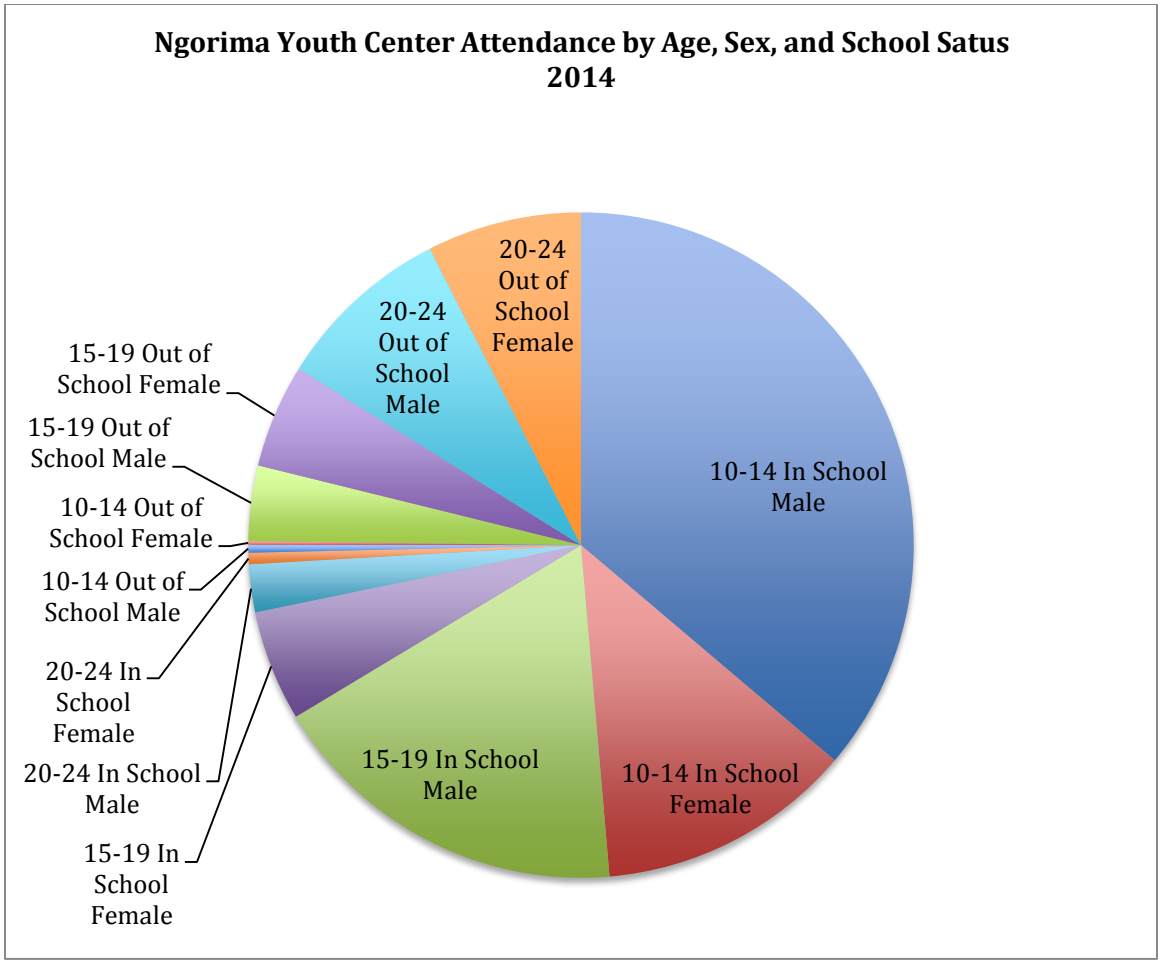
Graph 4: Gender and Age Patterns in Youth Center Attendance versus Youth Center Clinical Service Utilization

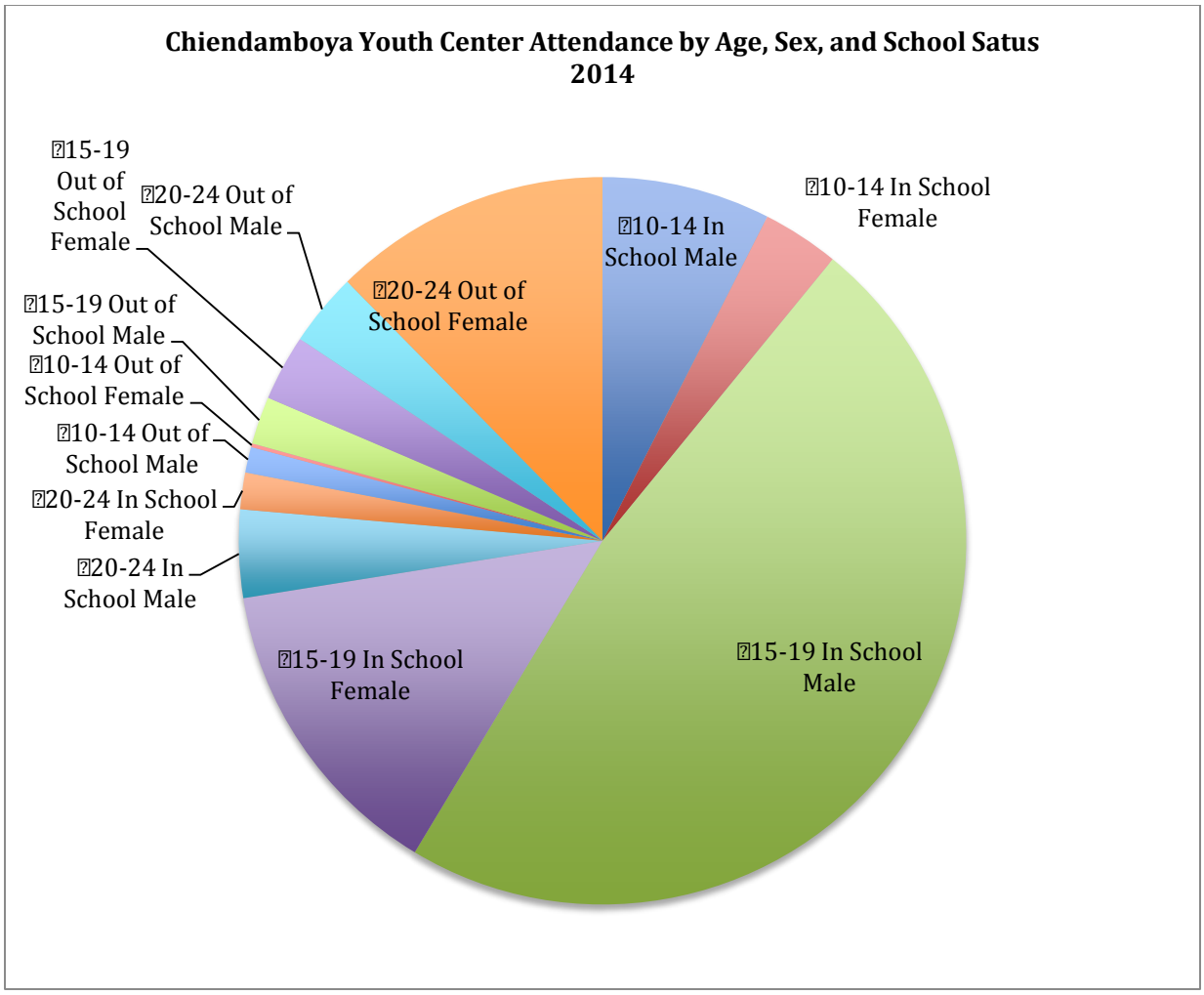


When we look at Youth Center utilization by age and school enrollment status we have available data from both of the Youth Centers visited: Ngorima and Chiendambuya. It is important to note that this information includes *all* reasons for youth center attendance, including both recreational and health-related visits. It is not possible to compare this attendance information with the Youth Corners due to separate data collection systems because at Youth Corners, attendance is combined with peer education outreach statistics. In both Youth Centers, in-school youth were significantly more likely to attend the Youth Centers than out-of-school peers. As reported in the monthly summary register records of Youth Center attendance, Chiendambuya had an older clientele as compared to Ngorima, with 10-14 year old in-school males most often visiting Ngorima and 15-19 year old in-school males most often visiting Ngorima. It is important to note that these visits *include* repeat visits and are not reflective of unique visits to the Youth Centers.[5]

[5] While first visits are collected on a monthly basis, based on information provided these are not unique visits; as collected, 'first visits' consist only of first visits among youth during the given month; an adolescents who visits in two consecutive months would have two first visits

Graph 5: Youth Center Attendance by Gender/Age Group and School Status



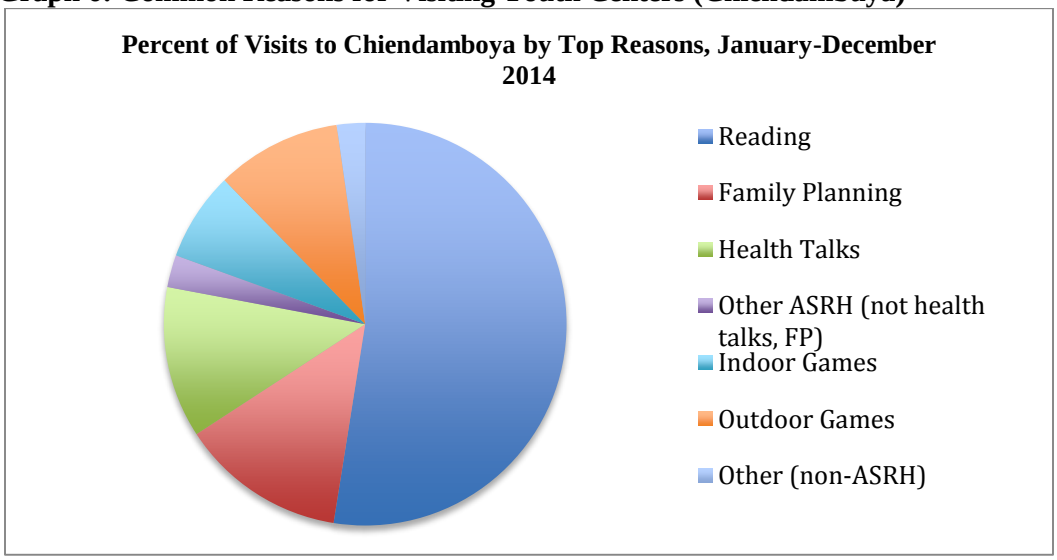


Finally, when we turn to the reasons for Youth Center utilization we see five primary functions of the Centers related to ASRH: Health Talks, Counseling, Family Planning and Reproductive Health Information, Family Planning Services, and Clinical Reproductive Health Services, and for Ngorima, Voluntary Counseling and Testing was also recorded. Again, data were available for only two of the Centers. For both Ngorima and Chiendambuya, the most common reason for youth center attendance were not ASRH services; rather for Ngorima the top reason was for recreation (e.g., television, video games) and for Chiendambuya it was for reading. It should be noted, however, that Chiendambuya, had fewer recreational options (no television), which may account for the higher ASRH related visits.

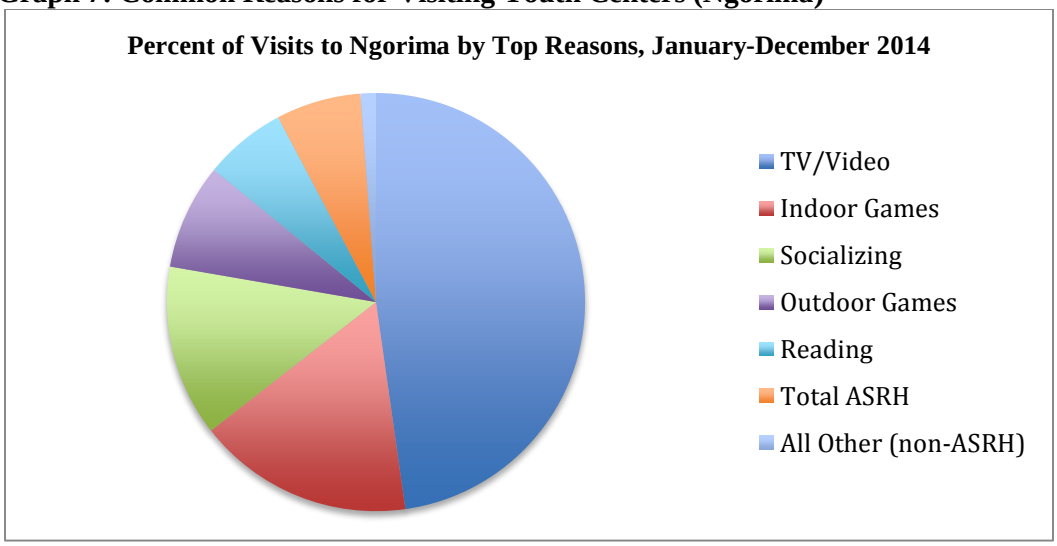
Overall, Youth Center attendance was much higher at Ngorima Youth Center compared to Chiendambuya; however, it should be emphasized that these counts include repeat visits. Further, while the adolescent population (ages 10-24) within each Youth Center's catchment areas are not known, it should be noted that total population of Ngorima's catchment area is about double the size of the population in Chiendambuya's catchment area. According to the 2012 census in Manicaland, the wards in Ngorima's catchment area have a total population of

25,264 compared to the catchment area of the ward covered by Chiendambuya, which has a total population of 12,449.[6] Between January and December 2014, 16,261 adolescent visits to Ngorima Youth Center, there were 614 adolescent visits to Chiendambuya, and it is important to note that this visits include repeat visits. Possible factors contributing to this discrepancy include Chiendambuya's limited recreational equipment, including no TV or computers. Further, it was noted by ZNFPC that Chiendambuya has experienced challenges garnering support from the surrounding community.

Graph 6: Common Reasons for Visiting Youth Centers (Chiendambuya)[7]



Graph 7: Common Reasons for Visiting Youth Centers (Ngorima)[6]

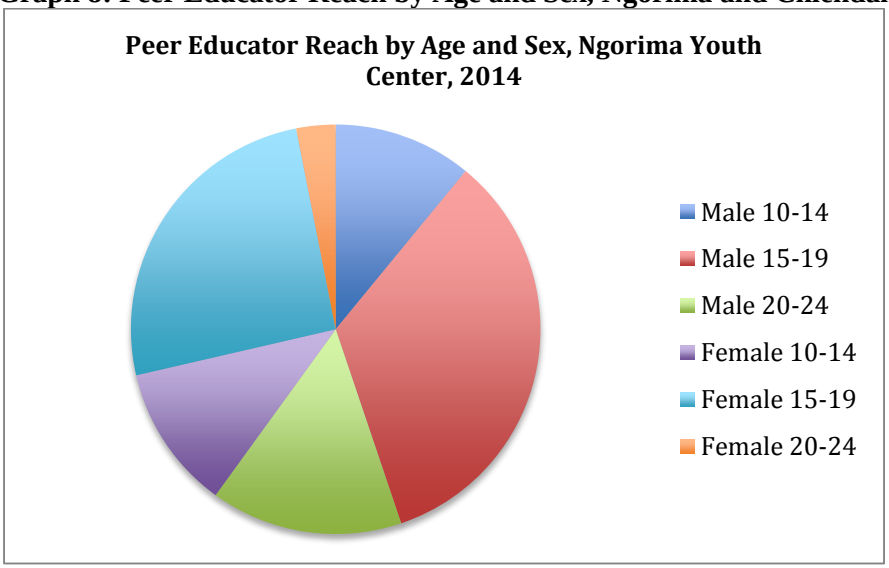


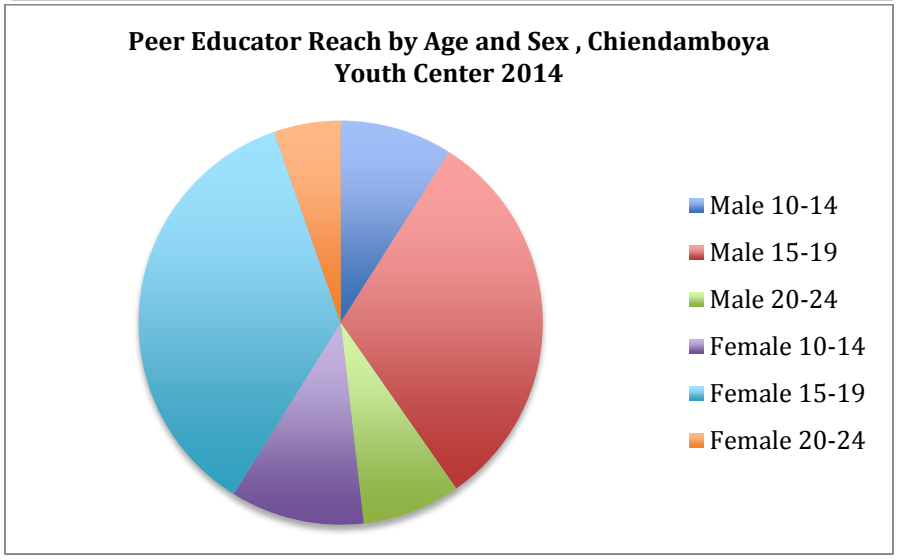
[6] Population size retrieved from 2012 Census report. Based on information provided during field visits, Chiendambuya's catchment area included Ward 5 in Makoni District, Manicaland. Ngorima's catchment area included Wards 9, 21, 22, and 23 in Chimanimani District, Manicaland.

[7-6] Charts show reasons that account for more than 5% of reasons coded.

Overall, peer educators from Chiendambuya reached 1,233 adolescents, whereas peer educators from Ngorima reached 1,709 adolescents. Like the Youth Corners, most adolescents who were reached by the peer educators were between 15-19 years of age. Ngorima peer educators reach a slightly larger percentage of adolescents aged 20-24 relative to Chiendambuya.

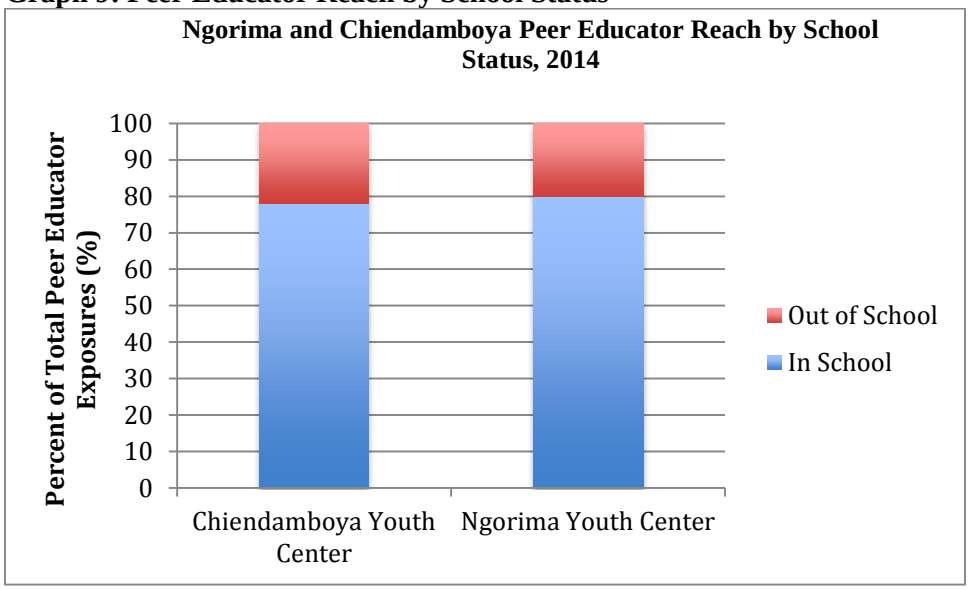
Graph 8: Peer Educator Reach by Age and Sex, Ngorima and Chiendambuya Youth Centers





Similar to the Youth Corners, peer educators from the Youth Centers saw a greater percentage of in school youth as compared to out of school youth, suggesting that perhaps most peer education activities occur in schools.

Graph 9: Peer Educator Reach by School Status



3.1.1.2 Overall Observations from Site Visits to Youth Friendly Corners and Centers

The data provided from both Youth Corners and Youth Centers highlight the following areas for improvement in monitoring systems:

- For the Youth Corners in particular, disaggregated summaries by age, sex, and type of service received would enable more specific monitoring of YFHS reach. Specifically, it would be valuable to maintain separate records for Youth Corner attendance and outreach activities, along with separate records of any other targeted programming, such as for psychosocial support groups for HIV+ youth.
- For Youth Corners, forms on peer educator reach changed over the course of 2014 on the type of information collected and on how topics were coded. Ensuring that monitoring forms remain consistent would allow for more interpretations from the data collected.
- Monitoring data is compiled by Youth Friendly Corner and Youth Center staff in paper form, and sent to multiple offices and agencies before reaching the ZNFPC national offices. For both Youth Corners and Youth Centers, a more streamlined flow, such as electronic monitoring through tablets, would ensure a more comprehensive record of monitoring data.

The following observations are based on interviews with Youth Center personnel:

- *Time and Skill Concerns:* At four of the five facilities visited, interviews were conducted with Youth Friendly Nurses (one at each of three sites, and two at the fourth). A common issue raised by nurses included shortages of time and staff. Four out of the five nurses interviewed had other responsibilities in the clinic leaving them with a shortage of time to treat their adolescent clients. In two out of the four facilities visited, nurses reported that they needed more knowledge and skills and would benefit from additional training.

- *Lack of needed resources:* Shortages or "stockouts" of supplies are common including: STI treatment medications (3 facilities), family planning, emergency contraception, and medications for post-abortion care. Shortages in supplies included: pregnancy tests, generators, gloves and materials for sterilization.
- *Variable attention to Confidentiality and Overall Youth Friendliness:* Youth Corners varied in their attention to adolescent privacy and confidentiality. For example, one well-intentioned Youth Friendly Corner would call health care providers into their space to treat adolescent clients so as to help the adolescents avoid having to walk through the clinic or to pass the queue to receive treatment. Then physical layout of other Youth Friendly Corners required adolescents to pass a queue of waiting clients. In addition, some facilities operate only during weekdays, making it difficult for in-school youth to access their services.
- *Variable attention to community involvement:* Community was in an important component in most sites: Bota and Gutu's Youth Friendly Corners had multi-sectorial ASRH committees consisting of various community members that met monthly; for Youth Days, families and local businesses would donate food and other supplies. Marange's Youth Friendly Corner work with village heads within their catchment area to encourage utilization of ASRH services at the Youth Friendly Corner. Among the Youth Centers, Ngorima reflected strong community involvement—e.g. the Youth Health Advisor commented on how the community donated bricks and participated in the construction of the Youth Center. For Chiendambuya, limited community involvement was clear: the Youth Center did not show signs of community involvement through committees or other activities, and the Provincial Manager for ZNFPC reflected on certain challenges faced in garnering community support and acceptance for the Youth Center.

3.1.1.3 Findings from Economic Analysis on SAYC and YFC

Stand-Alone Youth Center (SAYC):
Program cost: The annual cost for operating a SAYC was $52,252. This was a conservative estimate assuming the program had medicines and staff all year round. Program wages were 72% of the total cost. Expenditure on wages assumed SAYC had at least two full-time staff, a nurse and social worker, five peer-educators with allowances, and 10% of the provincial program administrators' time. Operations, including equipment, transportation, utilities and mobilization, made 25% of the total cost. Medical supplies only made 2% of the total cost. According to SAYC clinical visit records medical supplies, including HIV tests and contraceptives, were not offered every month. Discontinued medical supplies throughout the year were due to staff being on leave and limited funding. To estimate the cost of operating a fully-equipped center, expenditures on medicines assumed the monthly supply was equivalent to the average supply during months when this was not zero. Personnel training and information materials made 1% and 2% of the total cost respectively.

A recent analysis on the cost of operating a high-quality SAYC in the Republic of Moldova, which is also a LMIC, estimated that the percent of expenditures on personnel training and information materials was much higher, at 17% and 13%, respectively, of the total cost (Kampers et al, 2014). Similarly, medical supplies, while also described as insufficient, were higher at 4% of the total cost. Estimates for a SAYC in Zimbabwe with increased investment on

medical and information supplies and personnel training to the same percent level as the high-quality SAYC would equal an annual cost of $79,830.

SAYC's Impact Level for Program Costs to Break-Even and Become Cost Saving: The annual number of ASRH cases averted needed for current program costs ($52,252) to equal health care cost savings were 158 unwanted pregnancies, 6672 STI infections and 8 HIV infections. The number of ASRH cases averted from each health outcome may fluctuate depending on program's expenditure and or effort improving each outcome. The range of cases averted by health outcomes was tested in sensitivity analysis (SA). For SA results see the appendix.

If SAYC expenditures increased to provide the minimum high-quality package of services estimate ($79,830), the number of ASRH cases averted needed for program costs to equal health care cost savings were 272 unwanted pregnancies, 10,194 STI infections and 12 HIV infections.

SAYC Cost-Effectiveness (CE) Based on Cost per DALYs Averted: From a cost-utility perspective, using DALYs as the health utility measure and a threshold for CE recommended in LMICs of US$150 per DALY averted (WB, 1993; WHO, 1996; Shillcutt et al, 2009), SAYCs operating at the annual current cost ($52,252) would need to reduce the annual burden of disease by at least 348 DALYs for CE. If annual expenditures increased to the minimum high-quality package of services ($79,830), the program would need to reduce the annual health burden of disease by at least 523 DALYs for CE.

Youth Friendly Corner (YFC):
Program Cost: The annual cost for operating an YFC was $19,944. This was a conservative estimate assuming that the program had at least 3 peer educators coordinating activities, medicines and health care were provided by the adjoined HF and not the YFC, the HFs' head nurse was trained in YFHS and supervised the YFC, and the program needed 10% of provincial program administrators' time (same value as SAYC). For details of costs included, please see the appendix. Program wages were 72% of the total cost. Operations, training and information materials made 26%, 1% and 2% of the total cost, respectively. Operations included at least two annual youth open day mobilization events attended by an average of 1,500 youth and family members. Sensitivity analysis on YFCs' cost in Zimbabwe after increasing expenditure on information supplies and personnel training to the same percent level as the high-quality SAYC increased annual operation costs to $30,356.

YFC's Impact Level for Program Costs to Break-Even and Become Cost Saving: The number of ASRH cases averted needed for current program costs ($19,944) to equal health care cost savings were 96 unwanted pregnancies, 1475 STI infections and 4 HIV infections. Given that the number of ASRH cases averted from each health outcome may fluctuate depending on program's expenditure and or effort improving each outcome, the range of cases averted by health outcomes was tested in SA. See the appendix for SA results.

If the YFC operating costs increased to the minimum high-quality package of services estimate ($30,356), the number of ASRH cases averted needed for program costs to equal health care cost savings were 199 unwanted pregnancies, 2,212 STI infections and 5 HIV infections.

YFC Cost-Effectiveness (CE) Based on Cost per DALYs Averted: From a cost-utility perspective using DALYs as the health utility measure, at current annual operating cost ($19,944), the annual burden of disease would need to decrease by at least 133 DALYs for CE. If annual expenditure increased to the minimum high-quality package of services ($30,356), the program would need to reduce the annual burden of disease by at least 202 DALYs for CE.

3.1.1.4 Economic Evaluation Conclusions

The current annual cost of operating a SAYC ($52,252) and YFC ($19,944) with medical supplies and or information supplies as well as staffed all year around is significant. Sensitivity analysis increasing expenditure on supplies and trainings to a high-quality standard, as described earlier, showed that the annual operating cost of SAYCs and YFCs would increase by 53% ($79,830) and 52% ($30,356) respectively. Based on a thresholds analysis, for program costs to break-even and become cost saving a large number of ASRH cases would need to be averted annually per SAYC or YFC. The threshold analysis was limited by data available on the price for providing STI, maternal and reproductive health care services at health facilities (HFs) in Zimbabwe. The sources for estimating the cost of these health care services were Crown Agents' reimbursed amount per service plus the cost for personnel and administration obtained from local HFs administration records. Given that the reimbursed amount may not equal the total cost per each service we conducted SA testing the effect of changes in health care costs by ten percent increments on overall results. Results from these cost increments, shown in the appendix, did not change overall results significantly.

Evaluating CE based on a cost-utility analysis showed that for a SAYC and YFC to become CE these programs would each need to reduce the annual ASRH burden of disease by at least 348 and 133 DALYs respectively. If these programs increased expenditures to reach a high-quality standard, a SAYC and YFC would each need to reduce the annual ASRH burden of disease by 532 and 202 DALYs, respectively, for CE.

In 2010, Zimbabwe's annual burden of disease due to ASRH was about 612 thousand DALYs (IHME, 2010). The proportional average number of ASRH DALYs from the 5 districts visited (Gutu, Zaka, Chimanimani, Makoni and Mutare) ranged between 6 thousand to 12 thousand DALYs per district (See appendix for DALYs' calculations_. If each SAYC and YFC reduced DALYs by the level needed for these programs to be CE (348-532 and 133-202 DALYs, respectively), than these programs would help reduce Zimbabwe's ASRH burden of disease. These estimates provide a rough estimate of Zimbabwe's total burden of disease due to ASRH and how much each SAYC and YFC would contribute to reduce that burden if the programs were able to avert the minimum DALYs required for the programs to be cost-effective. These programs would need to undergo a rigorous scientific impact evaluation to prove that they can reduce the health gains needed for cost-effectiveness. While only an impact evaluation would prove if these programs can or cannot be cost-effective, SAYCs and YFCs struggle generating demand for new youth which obstructs their ability to improve ASRH outcomes. Without increasing annual demand for new youth this programs cannot reduce the burden of disease and there is a large body of literature that does not support YFHSs as a cost-effective strategy for delivering ASRH services. Resources are limited and should be invested on programs proving to improve health outcomes.

3.1.1.5 Review of global programmatic and cost effectiveness evidence

There is a range of programs that offer YFHS including those that are facility-based and mainly focus on training facility staff/providers to be more "friendly" to those which include components that focus on engaging the community to support SRH services for adolescents. From the broader research evidence, there is a relatively large body of literature that does NOT support youth centers as an effective or cost-effective strategy for delivering SRH services to adolescents (Denno et al., 2015). This conclusion is based on a number of study reviews, including a review conducted in 1997 (Senderowitz, 1997) and a more systematic literature review conducted in 2012 (Zuurmond, Geary, and Ross, 2012). In both of these reviews, research was primarily conducted in Sub Saharan African contexts. The most recent review also revealed that youth centers are overwhelmingly accessed by older male youth who are repeat visitors residing in close proximity to the centers, and largely use the centers for recreational purposes. Among the 18 youth center programs evaluated in the 2012 review, only two youth center programs in South Africa reported relatively high percentages of adolescents accessing ASRH services at the centers (27% for one, and 97% in the other (Elrukar et al., 2001). Across the other Sub-Saharan African contexts, the percentages were much lower ranging from 14% in Accra, Ghana (Glover et al., 1998) to less than 5% in other countries examined, including Zimbabwe (Elkrukar and Mensch, 1997; Moyo, Bond, and Wiliams, 2000; Solo, Pollard, and Mugambi, 2001).

Additionally, a very recent review of ASRH programs (Denno et al., 2015) found that there was also limited evidence to support the effectiveness of initiatives that simply provide adolescent friendliness training for health care providers. However, there is some evidence to suggest that programs that focus on both training health care providers and staff as well as making adjustments to facilities to make them more 'friendly' can make a difference in increasing service utilization and contraceptive use among adolescents (Mbonye et al., 2003; Lou et al., 2004; Pathfinder International Report on AYA, 2005). A study conducted in Zambia that evaluated the efficacy of providing emergency contraception (EC) prescriptions across four different provider groups (clinic-based providers; pharmacy staff; peer outreach counselors; and community sales agents found that among adolescents who actually completed a prescription, pharmacy staff were the most popular group for the receipt and filling of EC prescriptions (Skibiak et al., 2001). Also relevant was that those programs that focus on improving community buy-in of adolescent friendly health services are more likely to be effective in increasing service utilization among adolescents (Mmari and Magnani, 2003: Ross; Dick; and Ferguson, 2006).

In terms of cost effectiveness, the evidence is fairly consistent that YFHS programs are not CE (Zuurmond et al., 2012). This evidence is consistent with peer education interventions presented earlier as part of the BCC programs section which showed individual person-to-person programs were not CE unless targeting high-risk females to increase female condom use (Hsu et al., 2012).

However, literature reviews on YFHS highlight that CE assessment was based on the cost per new clinic visit rather than non-clinical service outcomes (Zuurmond et al., 2012). Other outcomes associated with improved ASRH include increased condom use, reduced sexual partners and onset of sexual activity. Likewise, other employment, educational attainment, and other social benefits have not been evaluated (Denno et al., 2015). Assessment of other outcomes has been difficult partially due to poor data collection and monitoring systems in the facilities

(Zuurmond et al., 2012). Nonetheless, the evidence suggests that even if more outcomes were included, CE results may not improve significantly due to the centers' limitations increasing demand for new users (Zuurmond et al., 2012). Centers are mostly visited by the same male youths residing in nearby areas. While females make up the least proportion of new users they make the largest portion of clinic service users and visit the center for vocational reasons (Denno et al., 2015). Reasons for low demand generation include distance to the centers and cost of transportation (Zuurmond et al., 2012).

Based on the most recent global data, the cost per clinic visit or contraceptive adopter was US$4 to $10 in South Africa, $5 to $13 in Tanzania, and $102 in Kenya (Zuurmond et al., 2012). Likewise, youth centers with more activities, such as recreation, education and vocational, may increase costs by up to 40% because staff allocate time to non-clinical activities which reduces the number of clinic visits (Denno et al., 2015, Zuurmond et al., 2012). Older data from the early 2000s, estimated center's costs between US$4 to $200 per clinic visit (Denno et al., 2015).

A recent CEA including four YFHS centers in the Republic of Moldova estimated that the average annual total cost in 2011 for a well performing center was US$26,000 (Kempers et al., 2014). Personnel salaries made the largest portion of costs, 47%. The analysis estimated the break-even point between annual program costs and saving per center at more than 364 STIs averted, 178 unwanted pregnancies averted and 0.65 new HIV infections averted. The analysis concluded that significant additional resources were required to make a good quality center and sustainability of the program is difficult given that programs' funding relies on multiply private donors (Kempers et al., 2014).

3.1.1.6 Conclusions:

For the youth centers where data were available, it became clear they were predominately used by males for recreational purposes (ages 10-14 in Ngorima; and ages 15-19 in Chindambuya). This is consistent with the global literature, which shows that the *presence of older males at youth centers act as a deterrent to younger adolescent females for using the family planning services* that may be provided there.

Because youth center and corner-level data were generally not available, the JHSPH team undertook a financial analysis of YFHS using national Zimbabwe data and then, using DALYs (or disability adjusted life years which is a measure the WHO developed for disease burden), we calculated the reduction in disease that would need to be achieved for each youth center to be cost effective. *At the present cost of $19,800 per youth corner or $52,252 per youth center, a reduction of disease burden would need to be of a magnitude that cannot be achieved. Thus, financial analyses indicate that it is not realistic for youth-friendly centers to become cost-neutral. This finding is consistent with global data.* Additionally, global data evidence suggests that training providers in youth friendly approaches alone does not appear to increase adolescent utilization. *It appears that the central problem is not youth-friendliness, but rather the opposite--barriers to youth services.* If adolescents are to utilize such services, the focus of service delivery programs should not only focus on making the center or clinic "youth friendly" but also on the identification and elimination of barriers (human and structural) that impede adolescent utilization of services. In fact, the evidence suggests that training of providers coupled with their self-assessment of comforts and issues of working with adolescents and a reduction of the

systemic barriers to service utilization *do* increase adolescent use of services. Additionally, for youth-friendly health services to be effective they must, from the beginning, have strong community support. Without it, such services are not viable.

RECOMMENDATION: A large body of evidence does not support youth-friendly health services either as an efficient or cost-effective strategy for delivering ASHR services.

Other recommendations for youth-friendly health services:

- **Make ongoing funding contingent upon the provision of utilization and expenditure data on a regular basis;**
- **Require assurance and evidence of community stakeholder support for youth-friendly services prior to ongoing funding;**
- **Discontinue all but family planning and SRH counseling services;**
- **Avoid additional investments in the expansion of YFHS;**
- **Strengthen family planning and contraceptive service provision;**
- **Strengthen capacity of health sector to provide family planning services to adolescents.**

3.1.2 Psychosocial Support Service Programs

3.1.2.1 Findings from the site visit to Zvandiri

The midterm review of the national ASRH strategy highlighted adolescents living with HIV as a group that needed more targeted interventions. During the present assessment a number of services that reach HIV+ adolescents were visited including: Ngorima Youth Center, Gutu Rural Hospital's Youth Corner, and Marange Rural Hospital's Youth Corner. Each of these corners and centers described their support groups for adolescents living with HIV.

For the present review Africaid's Zvandiri, a psychosocial support program for adolescents living with HIV, was selected by the JHU team for in-depth analysis because of its focus on the HIV-positive adolescents. Key interventions include: 1) Support groups, home visits, and one-on-one counseling facilitated by trained Community Adolescent Treatment Supporters (CATS), who are HIV-positive adolescents between 18 and 24; 2) Zvandiri Centers, which are Youth Corners in facilities staffed by CATS and provide peer education and support to all YFS clients, including but not limited to adolescents living with HIV; 3) Young mothers groups, for adolescent mothers living with HIV; 4) Grief counseling; 5) Training and capacity building on working with adolescents living with HIV in other provinces and among other organizations and agencies; and 6) A social media approach (detailed in the next section).

Utilization data from Zvandiri for the year 2014 indicates:

- Zvandiri reported 9,274 contacts with youth through home visits in 28 communities in Harare. While Zvandiri serves youth ages 6-24, the two largest groups includes adolescents ages 10-14 (36%) and 15-19 (52%). More than half (55%) of contacts are female.
- 1,215 youth benefited from Zvandiri support groups, with 55% of youth 15-19 and 28% between the ages of 10-14 participating.

- Zvandiri issued 2,807 referrals to other organizations; 84% of these referrals were to local health organizations, 13% were to the Department of Child Welfare & Protection Services, and the remaining 3% were to a range of other organizations.

While Zvandiri has not yet been evaluated, its work has received recognition both within and beyond Zimbabwe for its psychosocial support for HIV positive adolescents. During conversations with staff members on the outreach team and the CATS, several key elements were described that they associate with success:

- *Young People's Capacity:* The program builds on the capacity and resources of young people themselves and the involvement of young people in all components of the program, including advocacy.
- *Peer Support:* According to those interviewed, having peer-led support groups by CATS living with HIV allows HIV+ adolescents the opportunity to receive support and guidance from others who understand their experience.
- *Family Involvement:* For each young person registered into the Zvandiri database, a home visit is conducted so as to understand the child's family context and needs and to obtain family consent for the child's participation in Zvandiri's programs.
- *Zvandiri's Participation in Advocacy:* The advocacy that Zvandiri engages in, including their participation in the development of guidelines related to HIV counseling and testing and in the standards of care for HIV positive youth, and advocacy for HIV+ youth at the community level, are viewed as their key strengths.
- *Multi-sectoral coordination:* While not noted by staff, the JHU team observed strong collaboration and care coordination among organizations across different sectors. Zvandiri brings together different organizations and agencies for case conferences of complicated cases or for referral in cases of abuse.

In addition to the key program elements, staff mentioned several program gaps and barriers to sustainability:

- *Gaps Among HIV+ Sub-Groups:* Key populations that would benefit from further focus or support from Zvandiri include: rural adolescents, adolescents with disabilities, and the LGBT community. Zvandiri is already expanding programming in some of these areas through capacity building in rural areas and the development of programming for HIV positive youth with disabilities.
- *Staff Turnover:* While Zvandiri conducts training for nurses and clinic staff on the Zvandiri approach, clinic staff turnover is a challenge.
- *Resources:* Limited economic resources was cited as a barrier to adherence for many adolescents, as adolescents are required to pay user fees upon picking up their medications. An Assisted Medical Treatment Order by the Ministry of Health provides support to individuals with chronic illnesses to waive administrative fees for frequent visits, however adolescents with HIV are not always provided this financial support.

RECOMMENDATION: There is insufficient data to make a firm recommendation; however, anecdotal evidence would support the continuation of such psychological and referral services with improved data collection and reporting.

3.2 Behavior Change Communication; Life Skills and Livelihood Programs

For our analyses, these programs fall into five categories: social media, behavioral change, behavior/livelihood, peer education, and comprehensive sex education.

3.2.1 Social Media Programs

3.2.1.1 Findings from the Site Visits to Social Media Organizations:

Given the increase in connectivity among young people during recent years, four different implementing organizations with a presence on social media were included in key informant interviews for a social media comparison. They included:

- Action Institute for Environment, Health and Development Communication's (IEHDC) Wize Up, a talk show on ASRH
- Zvandiri
- SAYWHAT
- Population Services Zimbabwe (PSZ)

Key findings from these interviews revealed that all four organizations use multiple different social media platforms (including Facebook, Whatsapp, YouTube, and Twitter). Three out of the four organizations identified adolescents as their primary target population (Action IEHDC, Zvandiri, SAYWHAT), whereas PSZ targeted a broader adult population (18 and older). All key informants noted that the main reasons for using social media is that it allows them to reach adolescents who may not have geographic access to clinics and it provides anonymity to adolescents who may be reluctant to ask questions in-person. Despite interest in reaching rural adolescents, three organizations also reported limited connectivity and difficulty in reaching rural populations as a primary program weakness (Action IEHDC, SAYWHAT, Zvandiri).

All four organizations cited increasing awareness on ASRH or disseminating ASRH information as a primary goal of their social media approach. In addition, Zvandiri wanted to use social media to help reach HIV+ adolescents by answering questions related to HIV and providing adherence counseling though an online support group.

Two programs specified engagement of young people through 'shares' and 'likes' or through feedback in the form of messages or comments as key program elements (Zvandiri, SAYWHAT). In terms of program strengths, all four organizations referred to their approach's ability to create a space for youth to ask questions about sensitive topics, such as through confidential WhatsApp messages. Further, Action IEHDC and SAYWHAT referred to their work to raise public awareness and create space for dialogue. Table 7 on the following page provides more program-specific data.

Table 7: Social Media Approaches: A Comparative Review of Four Organizations and Stakeholder Perceptions of their Approach

Approach	Target Group (s)	Goals	Key Program Element	Perceptions of Strengths	Perceptions of Limitations
Action IEHDC: TV talk show Social media to market and follow up on talk show: Facebook Whatsapp	Young people ages 15-24 Secondary target population: parents	-Regional awareness among youth on ASRH -Social and behavior change communication -Fill a gap in focus on delaying sexual debut highlighted by formative research in 2011 -Specific goals: delay sexual debut, increase parent-child communication, increase service utilization	-Formative research process: creative brief, script, etc. -Selection of panelists for talk show who can provide accurate information -Technical support from producer, consultants yielded high quality recordings	-Platform for young people to engage -Provides children, parents, peers opportunity to discuss sex, otherwise sensitive topics ('taboo') -Participation of young people on the talk show -Emphasis on parent-child communication, where there was a previous gap -Opportunity for young people to advocate for different SRH issues -Involvement of rural areas in talk show	-Short implementation: only 13 episodes -Limited reach to rural areas with limited electricity (developing DVDs for these areas)

Approach	Target Group (s)	Goals	Key Program Element	Perceptions of Strengths	Perceptions of Limitations
Zvandiri: Facebook Twitter Whatsapp Website, blogging YouTube Skype	Beneficiaries of Zvandiri (ages: 6-24) Community at large (donors, community members, etc.)	1) Spread awareness, increase visibility on Zvandiri's work 2) Disseminate information to beneficiaries on SRH, HIV, and respond to questions	Program department as key strength for social media approach (CATS, advocacy, outreach team, etc.): measures level of engagement by the number of shares and likes on social media (?)	-Operates 24/7 in responding to questions -Respects confidentiality: password protected, photos not posted without consent, Whatsapp adherence counseling uses code words to remind adolescents to take medication -Information shared compiled through credible sources -Caters to many groups: adolescents, young people, adults, policy makers, etc.	-Limited connectivity, inconsistent internet connection -Challenges with certain types of questions asked and appropriateness for website -Content development: wanting to ensure information is accurate and credible
SAYWHAT: Facebook, Whatsapp, Twitter, Bulk SMSs, Android App, YouTube, Sound Cloud	Students in tertiary institutions, young people in rural communities	Improve access to information among young people on SRH, education, and promote dialogue (with ultimate objective to reduce STI, teen pregnancy, and other RH outcomes)	-Capacity building among peer educators for social media -Feedback from young people on social media platforms: comments, feedback is key in to know what captures young people's interest	-Ability to reach many young people at once -Enables dialogue on sensitive SRH topics -Interactivity -Allows for young people's participation in advocacy	-Monitoring: there is a need to come up with monitoring strategies -Importance of building capacity among peer educators on social media component -Access to gadgets, networks, and limited connectivity in rural areas
PSZ Free Call Center, Whatsapp	18 and older (through age 40)	Increase information dissemination on SRH through social media		-Disseminate information across the nation at low cost -Privacy, anonymity of asking questions over the phone and Whatsapp	-Perceived limits regarding the ages that can be targeted through social media and the types of information that can be shared

3.2.1.2 Overall Observations from Site Visits to Social Media Organizations

Based on the available data, it appears that engagement in conversations on Wize Up on Facebook, Twitter, and Whatsapp increased during the 13-week Wize Up season. Further, feedback from Wize Up came from a broad geographic area. For SAYWHAT's Facebook clubs partnership, data on Survey Monkey highlights data submitted on participation in Facebook clubs among the seven districts receiving this pilot intervention from UNFPA. While there were 173 data submissions to Survey Monkey on Facebook clubs, almost 80% of these responses were submitted by three districts (Hurungwe: 46%, Bikita: 13%, Gutu:19%).

In addition to monitoring data, Action IEHDC's formative research process provided qualitative data from focus groups and in-depth interviews from youth in different provinces, reported in an audience reception report (December, 2014). Among the many themes discussed in the audience reception report, youth reported that Wize Up provided an opportunity for those who might not have parents available or open to talking about ASRH. A common reason for not watching Wize Up was that there was poor reception or it was challenging to see repeat episodes. Further, this report highlighted the role of social media (such as Facebook, WhatsApp, and YouTube) in helping to spread awareness on Wize Up, noting the affordability of WhatsApp.

While the four social media approaches varied from each other, those involved with the programs indicated a few key challenges:

1. While youth are generally connected to social media in urban areas, organizations seek ways to address limited network connectivity and access to tablets and smart phones in rural areas.
2. Organizations cite challenges in monitoring reach on social media; given that organizations are limited by the way data are captured on websites, such as Facebook or Twitter.
3. While Facebook, YouTube, and Twitter provide opportunities for sharing information with large groups, Action IEHDC, Zvandiri, SAYWHAT, and PSZ all noted that Whatsapp provides a more private, confidential platform for adolescents with questions about ASRH.

3.2.1.3 Review of global programmatic and cost effectiveness evidence

While there have been no studies to date that have examined the CE of using social media in BCC programs, there have been a few evaluation studies to determine its impact. For example, a recent study of the effect of ASRH content delivered via Facebook between 2010 and 2011 found that condom use increased among the exposed group (68%) compared with the control group (56%) at two months follow-up, but that the difference was not maintained at six months follow-up (Bull et al., 2012). A systematic review of the literature surrounding new digital media (websites, text messaging, and social networking sites) found that of the ten studies included, seven influenced psychosocial outcomes such as condom use and abstinence self-efficacy, six increased knowledge of STI/HIV and pregnancy, and two delayed initiation of sex (Guse et al., 2012). Focus groups conducted in Australia suggest that ASRH messaging must be tailored to the population in order to be accepted (Byron et al., 2013). Youth in the study recommended using humor to convey a serious message, saying, "'If you kept things really simple, because no one wants to get a lecture whilst they are online and trying to be doing their social thing'

(Regional male, 18–22yrs)" (p. 38), "'You're not going to post anything too heavy on Facebook' (Urban male, 18–22yrs)" (p. 40), and "'It would probably make people more inclined to share if they made an ad that was funny but at the same time pulled off a message about getting checked out or whatever. Because people would be, like, oh this is funny you should watch it, and then they may post it on to people's walls and stuff...' (Regional female, 18–22yrs)" (p. 41). However, this strategy may not work in all geographic areas due to different cultural norms including types of humor. One of the most striking challenges that these youth indicated was the personal nature of social media where participants actively curate an attractive image. As the authors note, "The young people in our study were interested in sexual health information, but did not want to access it at the cost of their own sense of comfort and belonging in their social networks" (p. 42).

3.2.1.4 Conclusions

From the data collection and evidence reviewed, we found that social media is a potentially effective way for disseminating information. At the same time, however, it's important to realize that information alone does not change behaviors. From our site visits, we found that all four organizations used social media as an avenue to answer adolescents' questions and to provide information on where to access services.

In addition to using social media as a tool for disseminating information among young people, social media provides opportunities to increase collaboration and improve best practices among staff and peer educators. Two organizations that we visited used social media to increase connection and collaboration among peer educators, through Whatsapp groups among peer educators (SAYWHAT) and Skype conferences to discuss complex adolescent client cases (Zvandiri). Further, organizations reported collaborating with one another on their social media work. For example, Action IEHDC consulted Zvandiri on episodes of Wize Up that discussed HIV and SAYWHAT collaborated with UNFPA on incorporating social media into peer education.

Social media can also be a powerful tool for enhancing youth engagement in programming. Adolescent involvement in content development was highlighted by three organizations (Zvandiri, SAYWHAT, Action IEHDC). These organizations underscored the importance of including adolescents in conversations about topics and questions of interest to adolescent populations and ensuring the credibility of information shared. Indeed, the global evidence suggests the importance of understanding the cultural norms before implementing certain social media campaigns.

Finally, it is important to point out that real or perceived governmental restrictions on what can be said limits clear responses to questions. Two organizations referred to perceptions of restrictions from the Ministry of Health in terms of the types of information that can be shared and the populations that can be reached. Specifically, the challenge of sharing information to younger adolescents was discussed, as well as limitations on sharing information about condoms to in-school youth.

RECOMMENDATIONS: While data are too limited to make an evidence-based recommendation, social media appears to be a promising adjunct when coupled with other approaches.

3.2.2 Behavior Change and Communication Programs

For this review, we are defining Behavior Change Communication (BCC) as "the use of communication to change behaviors, including service utilization, by positively influencing knowledge, attitudes, and social norms" (JHU CCP infographic, 2015).

3.2.2.1 Findings from Site Visits

Sista2Sista: Sista2Sista is an intervention implemented through the Integrated Support Program. A total of 130 Sista2Sista mentors in 26 districts throughout Zimbabwe conduct support groups for vulnerable adolescent girls who are identified through a risk assessment tool. Clubs are held weekly and are organized by age, grouping girls ages 10-14, 15-19, and 20-24. In addition to group meetings, mentors can provide individual counseling to girls. Girls who complete 75% of the sessions are considered graduates of the program.

In the 21 months between September 2013 and June 2015, the program reached approximately 18,100 girls who attended at least one Sista2Sista club session. Of those, 37% were between 10-14 years, 56% between 15-19 years, and 6% between 20-24 years old. Individual counseling was provided to 40% of enrollees (or approximately 7,000 girls). However, graduation rates are low and overall only 10% (less than 2000 girls) completed 75% of the sessions and were thus considered graduates.

During an interview with a Sista2Sista mentor in Masvingo, she shared her perspectives on the strengths of the Sista2Sista program. First, she described giving adolescents a space or platform to express their challenges. Second, she described community and parent support for the program. Specifically, she shared that parents sometimes approach a Sista2Sista mentor to refer vulnerable girls. It was the mentor's belief that the program increased school retention of girls, reduced teenage pregnancy, and decreased other risk behaviors. The mentor shared stories of clinical encounters where young girls shared their experiences of sexual abuse and in one situation legal action was taken to address the issues raised. When asked about weaknesses or barriers to the Sista2Sista program, the mentor described limited follow-up by the child protection and legal systems on reported cases of child and sexual abuse. Additionally she indicated there is little clarity on why certain cases are not pursued. Given that it appears that sexual violence and abuse are significant concerns (at least as reflected by the individual mentor) there appears to be a need for greater multi-sectorial collaboration on ASRH issues then is currently available.

Join in Circuit (JIC): Join in Circuit (JIC), a BCC tool, is implemented as part of GIZ's HIV Prevention Project in Manicaland. Through JIC, up to 84 youth at one time receive interactive information on sexual and reproductive health. Youth rotate through stations in small groups to learn about topics including: HIV transmission, contraceptives and family planning, condoms, STIs, positive living with HIV, and body language. The goal of JIC is to generate demand for

ASRH services, specifically HIV testing and counseling. JIC's facilitators have observed an increase use in YFHS at the Youth Corner in Marange, Based on utilization data, since 2011, JIC has reached 29,572 young people aged between 15-24 years old. Of those, 7,034 received HIV tests following their participation (excluding repeat tests).

A field visit was conducted to a Youth Friendly Corner implementing JIC in Manicaland, during which interviews were conducted with JIC facilitators, a JIC Coordinator from Family AIDS Caring Trust (FACT), and a nurse familiar with JIC at. Marange Rural Hospital in Manicaland Province.

The key strengths were perceived to be:

- JIC's ability to provide comprehensive information on ASRH to large numbers of youth in a short span of time.
- JIC's emphasis on connecting youth to services, through the availability of HIV tests immediately following JIC runs and the referral system which refers youth to clinical services and Youth Corners. The referral system allows GIZ to monitor uptake of services. Further, pre-test and post-tests allow FACT to receive feedback on different elements of JIC and how the young people responded.
- The methodology of GIZ, which is referred to as *edutainment*, allows adolescents to learn in an interactive manner, through pictorial aids and interactive small group games and discussions.

At the same time, weaknesses were perceived to be:

- The need to involve husbands, parents, and other key individuals in BCC interventions, as many are highly influential to adolescents. For example, it was noted that at times parents are not supportive of providing information on family planning or condoms to youth.
- The inability of JIC to share information on condoms during their in-school programs (due to Ministry of Education prohibitions). ,
- The lack of focus on the10-14 year-olds who may be already sexually active.

Based on conversations with stakeholders, it should also be noted that JIC is a versatile tool that can be combined with other interventions or adapted to cover areas such as voluntary medical male circumcision (VMMC). Further, JIC can be adapted or combined with other BCC interventions.

3.2.2.2 Review of global programmatic and cost effectiveness evidence

Global evidence suggests that behavioral change (BCC) programs can prevent HIV infections, STIs, and unwanted pregnancies by promoting the adoption of safe sexual behavior as well as FP and SRH services use. BCC programs depend on strong health behavior theory and this is still developing for the ASRH field (Huebner et al., 2015). Recent ASRH BCC programs with CEAs include mass media campaigns, peer education, community-based activities, and parent work-site interventions.

In the context of HIV/AIDS prevention, BCC interventions integrated into social marketing programs have shown evidence of CE. A CEA in Benin compared five different BCC methods and found that both magazines and radio broadcasting were CE, and both the individual peer education and public outreach interventions were not CE (Hsu et al., 2012). This study used national survey data and conservative assumptions about the link between programs' exposure and behavioral change. This study did not focus on adolescents but both CE programs targeted youth. The cost per new condom user with the magazine program was US$22.24 and the incremental cost per new condom user with the radio broadcast program was US$40.58. While the peer education program was not CE, is possible that peer education targeting high-risk individuals or adolescent females may be CE in terms of increasing condom use, but no significant evidence on biological outcomes has been found (Speizer et al., 2003, Medley et al., 2009, Maticka-Tyndale, Barnett, 2010).

A non-peer reviewed SRH BCC program in Zimbabwe used social marketing focusing on high-risk areas such as border towns and sex-works with four different interventions: male condoms (MCo), female condoms (FCo), testing and counseling (TAC), and male circumcision (MC) (Mackay et al., 2011). While this report did not estimate the incremental cost-effectiveness ratio (ICER) to determine programs' effectiveness, cost and data on HIV infections and DALYs averted reported could be used to estimate the ICER from a program's perspective (only program and not societal or public sector costs included). All four programs were CE with ICERs in the following order: the MC program cost was US$111 per DALY averted, compared to the MC program the FCo's incremental cost was US$255 per additional DALY averted, compared to the FCo the TAC's incremental cost was US$78 per additional DALY averted, and lastly compared to TAC the MCo's incremental cost was US$0.20 per additional DALY averted. This report lacked information on the methods used to estimate impact effects, thus it is not possible to assess the confidence in results.

A recent BCC RCT in the U.S. used worksite-based parenting to help parents address ASRH with their adolescent children (Lapado et al., 2013). The program's BCC theory is based on global evidence, including Africa, showing that improved parent involvement in SRH education of children delays intercourse, increases use of contraception, and reduces risk-taking behavior and STIs (DiClemente et al., 2001, Stone, Ingham, 2002, Dilorio et al., 2003, Hutchinson et al., 2003). The program included eight 1-hour teaching sessions at lunchtime. Activities included games, discussions, role play, video-taped role plays about sex-related topics, teaching children assertiveness and decision making, and more effective child-parent communication skills. The program's total cost was US$543 per worksite in fixed costs and US$28 per parent enrolled in variable costs (Lapado et al., 2013). CE assessment was based on self-reported number of new SRH topics discussed between child and parent and adolescent condom use. CE results comparing the intervention and control group showed that the ICER was US$9.18 per new topic discussed or $94.47 per new adolescent condom user (Lapado et al., 2013).

As with other intervention types, it has been suggested that BCC is not best conceptualized as a stand-alone strategy. A program in Cameroon which used BCC as one part of a larger intervention involving peer educators showed much promise, increasing uptake of oral contraceptives and use of condoms for birth control (there was no impact on the use of condoms for STI prevention) (Van Rossem & Meekers, 2000).

Overall, the literature suggests, for both digital and print media (see James et al., 2005), that BCC effectively impacts knowledge, beliefs, and attitudes, but does not always result in behavior change for adolescents. However, the role of social media in youths' lives is constantly evolving and new opportunities for BCC constantly created.

3.2.2.3 Conclusions:

The global evidence for behavior change programs suggest that when they are integrated into social marketing programs (e.g., of condoms) they have been shown to be cost effective; however, as a standalone strategy there is little evidence of cost effectiveness. Additionally, overall the evidence suggests that for both digital and print media behavior change, communication strategies effectively impacts knowledge, beliefs and attitudes but more research is needed.

RECOMMENDATION: When coupled with social marketing approaches, behavior change programming appears to be a promising approach. We would recommend the continued exploration of using this approach in Zimbabwe collecting monitoring and evaluation data in the process.

3.2.3 Livelihood programs -- CCT and School Fees Support Programs

3.2.3.1 Review of global and Zimbabwe evidence

Conditional cash transfer (CCT) has been hailed as a "magic bullet" for public health and development in LMICs (Duggar, 2004). While it was beyond the scope of this review to explore conditional cash transfer programs, there have been two randomized trials in Zimbabwe that have both shown very positive results. For example, a RCT on UNICEF's harmonized social cash transfer program showed a positive impact on delaying marriage and sexual debut, as well as decreasing the likelihood of early pregnancy among female youth in large households. The program also positively impacted condom use at first sex as well as the probability of lifetime reports of forced sex. Sample sizes were small, however, so conclusions about sexual behaviors should be taken with caution[8]. Another RCT conducted by PIRE showed that school subsidies positively impacted on keeping orphaned girls in school and delaying marriage[9]. Given that this program was primarily focused on keeping orphaned girls in school, few ASRH outcomes were measured.

In the global literature, school based CCT and school fees support interventions have been shown to reduce HIV infections and modify risky sexual behavior in poor income settings through higher education attainment (Baird et al., 2009, Ranganathan, Lagarde, 2012, Duflo et al., 2006, Baird et al., 2012, Santelli et al., 2015). Evidence from Kenya and Malawi showed that reducing the cost of education (paying for uniforms) and using CCT (US$10/month plus secondary school payment conditional on satisfactory school attendance) increased school attendance and reduced teen marriage, childbearing and onset of sexual activity (Duflo et al., 2006, Baird et al., 2012).

Although not evaluated for its cost effectiveness, one of the earliest and most replicated programs is *Oportunidades*, which began in Mexico in 1990 and has been adapted in over 20 countries (Shibuya, 2008). In addition to cash incentive based on school attendance, *Oportunidades* also provides free medical care and requires attendance at sexuality educational sessions. Michaela Gulematova-Swan (2009) analyzed results from the 2002-2004 evaluation relating specifically to timing of first sex, first marriage, and first and second births among adolescents and found that the intervention significantly reduced pre-marital sex and delayed marriage and childbirth, and that effects were increased among girls who had been in the program from a young age. Blair Darney and colleagues (2013) analyzed *Oportunidades* data on young rural women aged 15-24 from 1992-2009 and found that adolescent contraception use increased and pregnancy decreased among intervention participants via education.

When using CCTs to reduce HIV infection, there can be significant economic benefits. Evidence from a RCT in Zimbabwe showed that using school fees support for 15-19 year old orphan females reduced teen marriage and HIV infections and suggested the effect was stronger among non-boarding school orphan girls (Miller et al., 2013, Birdthistle et al., 2008, Hallfors et al., 2015). This intervention yield 0.36 quality-adjusted-life-years (QALYs) per orphan supported and was CE with a cost of US$6 per QALY gained or on average US$973 per non-boarder orphan for three years (Miller et al., 2013). In Malawi, a gender based HIV prevention RCT with CCTs for school girls reduced HIV prevalence and was CE for a cost of US$212 per disability-adjusted-life-year (DALY) averted (Remme et al., 2014). In Kenya, a similar gender based HIV prevention RCT with school support for orphan girls delayed sexual debut and, while it could not estimate CE due to insufficient data, reported a cost per pregnancy averted of US$1,006 (Remme et al., 2014).

RECOMMENDATION: Conditional and unconditional cash transfer programs are highly recommended especially for vulnerable adolescents who are economically disadvantaged, engaged in commercial sex, or orphaned.

3.2.4 Peer Education

3.2.4.1 Review of global and Zimbabwe evidence

UNFPA defines youth peer education as "a process whereby well trained and motivated young people undertake informal or organized educational activities with their peers (those similar to themselves in age, background, or interests)" (UNFPA and FHI, 2005, p.13). All too often, however, there are substantial deviations from this definition including both the age differential between educator and learner as well as the quality of training. While peer education is "typically used in conjunction with other means of communication and information dissemination, such as media campaigns, advocacy by celebrity spokespersons, and youth-friendly services" (Adamchak, 2006, p. 5), it is important for researchers to understand to what extent this tool works. One of the advantages of using peer education is that it is thought to be inexpensive, as peer educators often work as volunteers; however, as Susan Adamchak writes, it does require extensive planning, training, and supervision, and may not be especially cost-effective.

In Zimbabwe, there has been a substantial investment in peer education approaches during the first 5-year ASRH strategic plan. Peer education approaches were often used in combination with social media and the implementation of school-based education. However, for our review, no data were available on quantity of peer education services provided, the content of the information provided to learners or the impact of the services. We did obtain data on the reach of peer educators that staff youth friendly centers and corners, and that is presented under the "Findings from Sites Visits to Youth Friendly Corners and Centers' on pages X-X.

Ultimately, peer education appears to be effective at moving some indicators (namely knowledge, attitudes, and intentions) but ineffective at moving others (condom use most prominently). Only three studies showed an impact on the number of sex partners (Denison et al., 2012), occurrence of sexual intercourse in the past year (DiClemente et al., 2004), and rate of STI infection (Aarons et al., 2000), but they are, for the most part, isolated.

In her (2006) summary of a literature review conducted by Eleanor Maticka-Tyndale, Adamchak reported that the vast majority of PE interventions (15 of the 17 that measured it) increase knowledge about SRH topics. The few studies that measured self-efficacy regarding condom use reported increased self-efficacy (5 of 7 studies), and those that measured contraception use found the same (2 of 2 studies). All three studies that measured the number of sexual partners saw a reduction in the number after the intervention. The review, however, found that peer education interventions had no impact on delaying sexual debut or STI symptoms. Changes were more likely to be positive for females, while non-existent or negative for males. In a separate study conducted in Zambia, youth who partook in a school-based peer education program (SHEP) were less likely than youth not exposed to SHEP to have had sex in the past year. However, condom use did not differ between the two groups, nor did number of partners among those who had had sex in the past year (Denison et al., 2012).

One of the difficulties in determining the effectiveness of PE is that it is deeply influenced by the context in which it occurs. For example, one study analyzed the effectiveness of a PE program by how connected participants felt to the peer educators and how engaged they were, finding that the intervention was more effective for youth who were more connected and similar to the educator, and who were more engaged in the lesson (Kernsmish & Hernandez-Jozefowicz, 2011). Christian Groes-Green also found that among male youth in Mozambique, PE promoting condom use was effective in middle class communities, but limited in working class communities (Groes-Green, 2009). The author attributes this to differences in ideas about masculinities, attitudes toward women, and degree of hopefulness about the future, and calls for enhanced educational and employment opportunities for working class youth.

In terms of cost effectiveness, there have been few studies conducted other than the one study presented earlier, which showed that individual peer to peer education was not cost effective (Hsu et al., 2012). To conclude, while PE *does* consistently increase knowledge and improve attitudes and intentions, as many studies have indicated, *it does not largely change behavior within the time period measured*.

RECOMMENDATION: Peer education approaches may be a useful adjunct to other approaches, but the evidence does not support significant investment in this area as a primary strategy to improve ASRH.

3.2.5 Comprehensive Sexuality Education (CSE) Programs

3.2.5.1 Review of global and Zimbabwe evidence

The literature shows that CSE can reduce rates of STIs and unintended pregnancies, especially if programs address gender, power, and rights issues (Haberland, Rogow, 2015). A recent quasi-experimental designed in Vietnam enrolled 11-17 year olds from secondary and high schools in one of three interventions: (a) control group, (b) school- and HF-based education activities, and (c) the same in addition to community-based education activities by peer educators, and promotion of gender equity among all three education sites (Nguyen, 2014). The intervention trained HF providers, teachers, and peer educators, provided curriculum and manuals for activities, and coordinated activities. The CEA modeled a 14-year horizon of societal costs (included program and health care costs) and health effects. The primary outcomes measured were increased condom use and decreased number of sexual partners. These outcomes were translated into health effects, including abortions, births, HIV infections, and STDs. Both interventions "b" and "c" were CE. Between the control and intervention "b" the ICER was US$ 3,152 and between interventions "b" and "c" the ICER was US$4,224 (Nguyen, 2014). However, intervention "c" for males only was not CE. Evidence from this intervention was presented in a PhD dissertation and is not published in a peer-reviewed article therefore care needs to be taken in using results from this analysis.

A multi-country study, including Nigeria, Kenya, Indonesia, India, Estonia and the Netherlands, implemented CSE program in schools by training teachers, providing teaching materials, support with operations, teachers' salaries, and advocacy activities (Kivela et al., 2014, United Nations Educational, 2011, Kivela et al., 2013). However, only the Estonia program conducted an impact evaluation and CEA, but given limitations in the impact evaluation methodology the program was unable to estimate causality effects on health gains and thus CE estimates were uncertain. Data on program costs showed that, in 2009 international dollars, the average cost per student in each country was: US$33 in Estonia and the Netherlands, US$7 Nigeria, US$14 in India, US$50 in Kenya and US$160 in Indonesia.

Examining the evaluation studies on CSE programs as a whole, it seems that there is more evidence to show that they can improve knowledge, attitudes, and beliefs, but more limited in terms of how they change behaviors, given the relatively lower numbers of studies that have examined behaviors. A study of the impact of a CSE program in Tanzania found that while increased knowledge remained significant three years after the intervention, there was little lasting impact on behavior (Doyle et al., 2010). Fonner and colleagues (2014) found in their meta-analysis that condom use, analyzed across 13 included studies, was significantly higher among those in the intervention arms of CSE programs (OR = 1.34, 95% CI: 1.18-1.52, $p<0.001$) (see p. 15). They also found a significant reduction in the odds of sexual debut during the follow-up period with the participants of the six included studies seeing a 34% reduction (OR = 0.66, CI 0.54-0.83, $p<0.001$) (see p. 16). They note, "the study showing the highest reduction in sexual debut (Ross et al., 2007) involved activities that took place beyond the classroom setting, including the provision of youth-friendly reproductive health services, condom distribution, and

community mobilization" (p. 16)." Similarly, other researchers have shown that CSE may be more effective with peer education (Amaugo et al., 2014; Ajuwon & Breiger, 2007) than alone, and also when parents are involved (Grossman et al., 2014).

RECOMMENDATIONS: There is little evidence that the school-based programs undertaken in Zimbabwe are effective in changing sexual practices and behaviors of adolescents. To be effective, the Ministries of Health and Education will need to agree that school-based sex education needs to include more than abstinence-only education. With such an agreement, CSE appears to be a promising approach worthy of serious consideration.

3.3 Adolescent Policy and Advocacy

Within this intervention area, the national strategy outlined several key action items, including: "*developing and implementing a national advocacy plan, along with a set of tools; mobilize and strengthen the role of parliamentarians in promoting ASRH; advocating for the incorporation of ASRH training into standard pre-service training curricula of all health workers, teachers, and youth development practitioners; sensitize responsible authorities in the MoHCC and Ministry of Education, Sports, Arts, and Culture, for the establishment of youth friendly corners; and conduct a SRH needs assessment of the most vulnerable and at risk adolescent groups to ensure that policies and programs address their specific situations, which include*: *married adolescents, low-income young people, young people living in the streets, young people in conflict with the law within correctional/rehabilitation centers, and young people living with HIV*."

While policy and advocacy is a central pillar of the National ASRH Strategy, little explicitly appears to have been addressed over the past five years. We say explicitly because the National Strategy itself has had a strong advocacy impact. Without doubt it has raised the visibility of adolescent health issues in Zimbabwe.

What has not happened, however, is a deliberate strategy of first identifying the policies that are barriers to the provision of adolescent health services and then developing a strategy to address them in a systematic manner. For example, through this review we have identified barriers to include (though not limited to):

- The Ministry of Education requirement that only certified teachers can provide sex education in schools.
- The Ministry of Health requirement that anyone under the age of 16 obtain written parental consent for HIV testing.
- The Ministry of Education prohibition on all but abstinence education.
- The national constitution's lack of recognition of certain vulnerable groups who represent a disproportionate burden of disease within Zimbabwe.
- The legal definition of statutory rape that prohibits service providers to legally deliver ASRH services to those under16 years of age.

Additionally, as part of this action pillar, there was supposed to be an intentional assessment of the needs of the most vulnerable adolescents, including married adolescents, low income youth, youth living in the streets, etc. This has clearly not happened as programs still are largely targeting the general adolescent, school-going population.

RECOMMENDATION: There is a need for a clear identification of all important policies and high-level stakeholder engagement in discussing the reduction or elimination of barriers for ASRH services and populations. There is also a need to invest more in programs that target the most vulnerable adolescents.

3.4 Networking and Coordination

Under this pillar of action, there was to be meaningful and active participation of young people in ASRH programming; and coordination between the MoHCC and other ministries, policy makers, ASRH serving organizations, research institutions, young people, parents, teachers, and communities.

While the National ASRH Strategy would be applauded for having established a National Steering Committee under the Ministry of Health, one of the key action items was to strengthen coordination and the sharing of information. Going forward we have the following recommendations:

RECOMMENDATIONS:

- **The Ministry of Education should be represented on the Steering Committee because of the close interconnections between health and education.**
- **The Steering Committee needs to identify and eliminate the barriers to information sharing at a national level.**
- **The Steering Committee should establish a single and agreed upon reporting system for all ASRH programs independent of source of funding, so as to assure monitoring.**
- **The Steering Committee should mandate an established frequency of reporting of data for all programs supported through the National ASRH Strategy and were such data not provided in a timely manner then the Steering Committee should be empowered to discontinue funding.**
- **The Steering Committee's leadership and structure needs to be clearly communicated at both a national and local level so all are aware of the structure.**
- **The National Steering Committee should convene meetings of the implementation stakeholders at least twice a year for the explicit purpose of sharing strategies and approaches so that each can benefit from the activities of others.**

SECTION 4: OVERALL CONCLUSIONS ON PROGRAMS

In summary, school financial support programs, particularly those focused on high-risk youth, such as orphan girls, were not only found to be cost effective (CE) but effective at changing ASRH behaviors. Likewise, BCC programs using radio broadcasting or magazines to target high-risk youth were CE; however, as a standalone strategy there is little evidence of cost effectiveness. Additionally, overall the evidence suggests that for both digital and print media behavior change, communication strategies effectively impacts knowledge, beliefs and attitudes. Evidence on comprehensive sex education and peer education programs are less robust thus CE results are uncertain. Lastly, YFHS from older CEAs showed these programs are not CE. However, YFHS have not included a variety of health outcomes in the assessment of health gains thus it is not possible to make strong recommendations on CE results. Nonetheless, YFHS would need substantial improvement in demand generation of new youth for CE as well as monitoring and evaluation of health outcomes' impact, using rigorous scientific methods, to assess CE. Comparing CE across the various ASRH programs is not possible because these do not measure the same outcome and the type of program expenditure items included as well as the perspective for costing differs across interventions.

SECTION 5: CHALLENGES FOR ASRH STRATEGY DEVELOPMENT

5.1 Challenges obtaining data and information: Throughout this consultancy and up until the final moment, the JHU team experienced repeated challenges in obtaining access to both data and information. Likewise, youth-friendly service utilization data were not provided in two of the five sites visited. Whether this is because those records were not maintained or were not shared is unknown. Similarly, the lack of financial data made available precluded our ability to do any cost analyses or cost estimation of services provided. Our impression, given the frequency of this experience, is that the impediments to obtaining important information were strategic rather than coincidental.

5.2 Information, knowledge and awareness are limited: Repeatedly we heard the comment, "*I didn't know that*," as we met with groups providing adolescent sexual and reproductive health services when we mentioned the work of another group. This lack of familiarity with what each other was doing was remarkable especially in a context where coordination and collaboration was one of the four pillars of the National Strategy. This lack of awareness became evident first at the convening of the ASRH stakeholders in May. At the conclusion of the session a few people commented to the JHU team leader, "*We are so glad you came. It gave us a chance to meet each other.*" Throughout the consultancy, we were repeatedly reminded that for both donors and implementers the lack of shared knowledge and information as well as familiarity with what each other is funding and doing impeded a coordinated national strategy.

5.3 Low expectations for monitoring and accountability: The original terms of reference of our consultancy had us selecting a subset of all identified programs where data were available for site visits and in-depth assessment. From that body of evidence we were then to examine program impact, efficacy, and costs. The TOR assumed that program evidence would be available. This assumption, however, proved false. Of the 53 programs identified, only nine had conducted any type of assessment and among those only three had undertaken rigorous

evaluation studies. Not only was there a paucity of evaluation data to review and analyze, but the monitoring and evaluation framework originally referenced in the National Strategy appears never to have been developed. The lack of those data precluded our ability to make any evidence-based judgment on program impact. This shortfall in monitoring and evaluation was noted in the mid-term review (December, 2013) where the reviewers recommended under monitoring and evaluation, "*…lobby for the acceleration of the development of the reproductive health M&E framework*." Parallel to this: "*strengthen use of the current M&E templates; streamline data flow for M&E; identify M&E coordinating agency; and expand quarterly joint monitoring and supportive supervision visits to other ASRH-serving organizations.*" It does not appear that this recommendation was implemented. We say that because again in 2014 the SWOT analysis stated: "*The study also showed that because there still was a lack of monitoring and evaluation framework, it was difficult to determine any impact of most ASRH initiatives*." That statement continues to apply.

5.4 Lack of awareness of global literature: At the time the national strategy was being developed (2008) there was already a body of research on a number of interventions that became central to the Strategy. For example, impact evaluations and cost assessments had already been done on interventions such as: school-based sex education, peer education, youth-friendly health services, conditional cash transfer programs and more. It does not appear that much or any of that knowledge was utilized in the development of the National Strategic Plan either broadly or as it relates to specific programs. For example, the National Strategy heavily focused on the provision of health services and within that on the provision of youth-friendly health services through either youth corners or youth centers. Even by 2009 the global evidence would not have supported a major investment in that area. And if there were to be such an investment, the research strongly indicated that community-level support was the cornerstone of any effective youth-friendly service. It is our impression that having that knowledge and awareness would have helped focus the interventions planned and services delivered.

5.5 Public statements and practice do not always align: The public statement on adolescent sexual and reproductive health services is that they are "free"; however, this does not always appear to be the case. Specifically, adolescents have free access to oral contraception, however should another form of contraception be needed (such as long-acting reversible contraception), the costs would be significant. A second hidden cost was the administrative and utilization fees that some programs (e.g., the CATS Program at Zvandiri) encountered when utilizing youth-friendly health services at facilities. The consequence is that a number of the costs are "hidden" precluding any accurate cost assessment.

5.6 Service gaps persist: While it has been pointed out previously in both the mid-term review and SWOT analysis, many of the ASRH programs are targeted to the general adolescent population rather than to especially vulnerable youth. Groups that appear to receive insufficient attention and services include: rural youth, hard to reach populations such as the apostolic sect, adolescents who have disabilities, adolescent mothers, and adolescents who live on the streets or are in prison. Clearly, there are political sensitivities involved with servicing some of these populations; however, the failure to meet the needs of these populations remains significant gaps in service.

5.7 Policy issues do not appear to have been addressed: While *policy* was one of the four pillars of the National Strategy, there was neither a framework for policy change ever developed, nor were the policies that impeded adolescent sexual and reproductive health services ever

identified. There are a number of policies that we would suggest limit access to information and adolescent sexual and reproductive health services:

- The Ministry of Education requirement that only certified teachers can provide sex education and information in schools.
- The Ministry of Education prohibition on providing contraceptive knowledge and information in schools.
- The Ministry of Health requirement that adolescents under the age of 16 have parental consent for HIV testing.
- The perceived or real restrictions on service providers in youth-friendly health services as to what can be provided to in-school adolescents compared to those who are out of school.

It is our impression that these and other policies create structural barriers to achieving some of the goals of the National Strategy.

5.8 Program coordination is limited: Similar to the monitoring and evaluation framework that was never developed from the original national strategy; a coordination strategy was likewise never developed. Additionally, there appears never to have been clarity as to who had authority for ASRH coordination. Throughout the consultancy we heard various stakeholders reference the Zimbabwe Family Planning Association as the key coordinating agency, while others said that the Ministry of Health had lead responsibility. The lack of coordination was noted both at the mid-term review and in the SWOT analysis where it was stated: "*Limited coordination has impacted negatively especially on service provision and how ASRH is reviewed in relation to other developmental issues… The lack of a clear authority on ASRH affects overall direction and reporting by organizations.*" Throughout the consultancy various stakeholders had hypothesized as to why coordination might be limited with some suggesting that there are political considerations that contribute to coordination problems. Whether that is the case or not we do not know, but it is clear that the lack of coordination impeded the achievement of the National Strategy goals.

5.9 Advocacy achievements are measured by process rather than outcome: Many organizations viewed that participation in the drafting of national guidelines and the development of training materials and plans were advocacy achievements. For example, Action IEHDC noted that it is possible that the Ministry/UNFPA's recent development of a parent/child communication guide was in part the result of their work to raise awareness on the topic. Similarly, Zvandiri indicated that their participation in the development of recent HIV testing and counseling guidelines was an advocacy achievement. While guidelines are indeed important, there were few individuals we spoke with that discussed how advocacy efforts changed policies or perspectives either at the national or community-level. As noted previously, community engagement and support appears to be a critical element for the success of youth-friendly services. While a number of implementation organizations indicated the importance of sensitizing various communities (e.g., parents, village leaders) they also indicated much more work needed to be done as parental and community leadership attitudes were inhibiting their work. For example, one provider in a youth center that appeared to have few, if any, adolescent clients discussed the challenges of community support limiting the impact of her work.

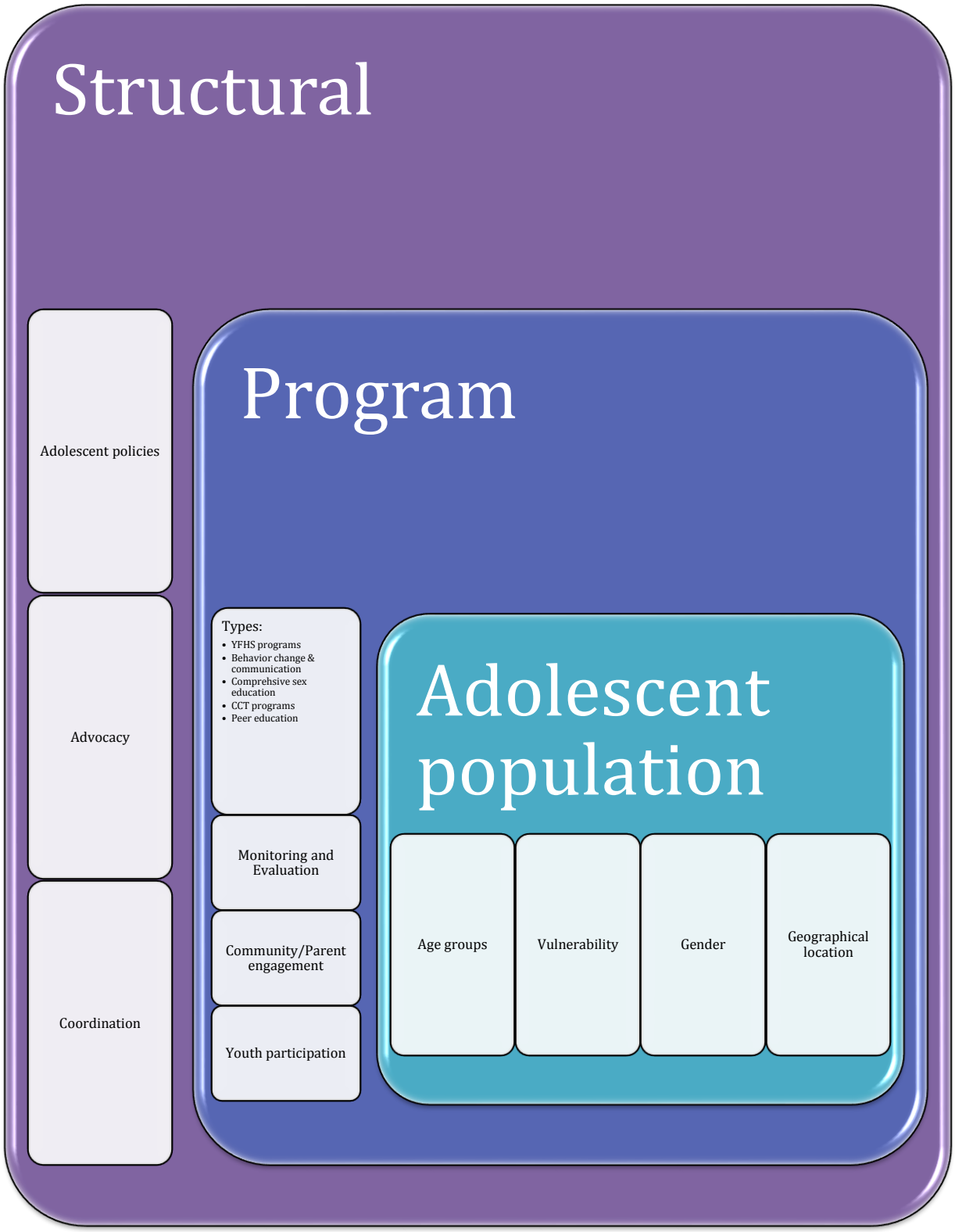
SECTION 6: RECOMMENDATIONS

6.1 Recommendation for a conceptual framework for designing future ASRH Strategic Plan

When reviewing the 2010—2015 National ASRH Strategic Plan, one of the first things we realized was how the four intervention areas had been originally conceptualized. While we agree that 'social and behavior change communication' and 'health service delivery' are indeed intervention areas – and have evidence from the global literature to demonstrate their impact – we are proposing a new way of thinking for the other two intervention areas: "policy and advocacy' and 'networking and coordination". Both of these are what we would think of as structural factors, since they 'structure' the context in which the ASRH programs are implemented. They also are critical and crosscutting to all program types, and therefore, in the figure below, we have essentially pulled out: 'policies", "advocacy", and "coordination" as three distinct structural factors that need to be in place, ideally before programs become implemented.

In the next level – the program level – we have outlined the main types of programs that are currently being implemented in Zimbabwe and for which we have global evidence—positively or negatively-- of their impact (BCC, CCT, CSE, YFHS, and peer education programs). Below the program types, we have 'monitoring and evaluation' which should be conceptualized at both the structural level and at the program level. At the structural level, a monitoring and evaluation framework for all ASRH programs should be designed and agreed upon by all stakeholders at the start of the program implementation. At the program level, data are actually gathered to measure both implementation and impact. Other factors listed at the program level, "community/parent engagement' and 'youth participation' are cross-cutting across the program types and ideally should be a component of most programs.

Finally, at the population-level, we have identified four distinct ways in which programs are targeted to adolescents in Zimbabwe, by: age group, vulnerability (which include groups such as HIV+ adolescents, adolescents with disabilities, adolescents in prison, etc.), gender, and geographic location.


Structural
Adolescent policies
Advocacy
Coordination
Program
Types:
YFHS programs
Behavior change & communication
Comprehsive sex education
CCT programs
Peer education
Monitoring and Evaluation
Community/Parent engagement
Youth participation
Adolescent population
Age groups
Vulnerability
Gender
Geographical location

6.2 General Recommendations for Developing Next ASRH Strategic Plan

As donors, implementing agencies and government ministries begin the planning process for the next 5-year ASRH Strategic Plan, we have a few recommendations that we would propose guide that effort:

- *Select one or two key objectives (e.g., reduction of unintended adolescent childbirths by 30% over the next five years).* These objectives need to be SMART (specific, measurable, achievable, realistic and time-bound) and they need to be agreed upon by key stakeholders.
- *While the needs are great, avoid trying to do more than what can be realistically achieved in a 5-year timespan.* This will require making difficult choices for priorities.
- *Do not confuse youth engagement with objective achievement.* Engagement is a strategy for objective achievement.
- *Establish a monitoring and evaluation system that works across funding streams.*
- *Assure consensus of objectives among key stakeholders.* This requires a clear delineation of who among all the stakeholders are essential for buy-in and success of the strategy. Additionally, it requires key stakeholder engagement at district as well as national levels.
- *Build the National Strategy on evidence.* This will require a) a well-defined logic model that articulates the pathways to achieving the goals and objectives of the National Strategy; b) a clear and articulated understanding of the pros, cons, and evidence for various intervention options; c) national and local discussions held on the acceptability of the various evidence-based options so as to assure that the interventions proposed are acceptable at the community level and among all the stakeholders involved; and d) a scientifically-based evaluation framework against which to measure impact.
- *Clearly articulate both the structural and programmatic elements of the national strategy.* By structural we are referring to the policy, advocacy, and coordination elements that are preconditions for success. A clear identification, for example, of the adolescent policies that impede achievement of the national strategy will be worthwhile coupled with a plan to address those policy barriers. Secondly, a clear community-level advocacy plan is needed to assure key stakeholder buy-in at the local level; and finally, as previously noted, a clear line of authority for program coordination is essential.

6.3 Programmatic Recommendations For The Next 5-Year Strategic Plan:

- *Focus on the most vulnerable populations of adolescents.* We would recommend shifting attention away from the "general adolescent population" to those who are at highest need because of either social isolation or behaviors or lifestyle or life circumstances. Here we would include HIV positive adolescents, commercial sex workers, adolescent mothers, adolescents with disabilities, LGBT populations, and those who are geographically isolated.

- *Realize that some of the most effective ASRH interventions have little or nothing to do specifically with sexual behaviors (e.g., conditional cash transfer programs that keep girls in school).*
- *Link interventions directly with key objectives.* If they do not meet the key objectives, then they should not be part of the ASRH strategy even if they are worth doing.
- *Invest in provider capacity and outreach to meet family planning needs of adolescent girls* instead of youth centers and youth corners.
- *While peer education is a useful adjunct to other services and providers, they should not be invested as an alone strategy.*
- *Continue to explore behavior change programs, but remember that it is often cheaper and more sustainable to invest in structural changes.*
- *Consider the scaling up of conditional and unconditional cash transfer programs.*

SECTION 7: GUIDELINES FOR MONITORING AND EVALUATION

Given the clear lack of monitoring and evaluation data available on ASRH programs, the following information is offered as a means of assisting the entire ASRH collaborative in Zimbabwe to agree on and develop a monitoring and evaluation strategic framework for their future endeavors.

7.1 The Role of Monitoring and Evaluation in ASRH Programming

Why should we monitor and evaluate programs?

As the present assessment was undertaken we were repeatedly questioned by implementers about the value of what we were doing. A prevailing—though not explicated stated-- sentiment was that there was not enough time nor resources to do any type of monitoring and evaluation. This is actually a common viewpoint, as many believe that the value lies in the program itself, and not necessarily in knowing whether it works. The challenge with this perspective is that money is often wasted on programs that don't do anything to improve health. Only by monitoring program activities and conducting evaluation studies is it possible to know whether the program activities have been implemented the way in which they were designed, and whether the program, as a whole, has any impact on ASRH.

There are many other functions that make monitoring and evaluation critical for ASRH program success. For example, the results of an evaluation can be used to make decisions about whether changes are needed to improve a program's effectiveness, efficiency, and/or overall impact on a given health outcome. The results can also tell us about the quality of activities and/or services and the extent to which the program is reaching its intended adolescent population. These types of results not only help program designers and implementers make needed improvements, but can also help donors and policy makers make decisions about identifying and supporting the replication or scaling up of particular program strategies. In short, monitoring and evaluation is an *essential* aspect of effective ASRH programming.

What are monitoring and evaluation?

Monitoring is the routine tracking of a program's activities, outputs, or outcomes by measuring and gathering data on a regular and ongoing basis.

Evaluation is the use of social research methods (i.e., surveys, interviews, focus groups) to systematically investigate the effectiveness and of a program. There are several different types of evaluations, but most common are process, outcome, and impact. *Process evaluations* collect information that measures how well program activities are implemented, in terms of quality, coverage, and the extent to which the intended target audience is using the services or materials. *Outcome* and *impact* evaluations measure the extent to which program outcomes are achieved and assess the impact of the program in the target population by measuring changes in knowledge, attitudes, behaviors, skills, community norms, utilization of health services and/or health status. *Outcome evaluation* determines whether the outcomes that the program is trying to influence are changing in the target population. *Impact evaluation* determines how much of the observed change in outcomes is due to the program's efforts (Adamchak et al., 2000).

What can you determine using the different types of evaluations?

Process evaluation	Outcome and Impact evaluations

• Whether the program is being implemented as planned (fidelity)
• The quality of the program or services
• The coverage or reach of the program
• The acceptability of the program
	• Changes in outcomes, such as:
	  ○ Changes in behavior
	  ○ Changes in knowledge and attitudes
	  ○ Changes in parent interactions
	  ○ Changes in cultural or community norms
	• Whether changes in outcomes are due to program efforts or other factors

7.2 How to develop an ASRH monitoring and evaluation plan

If a monitoring and evaluation plan has not yet been designed for a program or strategy, below are just a few of the key steps needed to put one in place. Keep in mind, however, that these steps are not comprehensive. If planning for an impact evaluation (which again determines whether a given program is responsible for making the observed changes in outcomes), there are several other steps to ensure that the evidence generated will be scientifically sound and accurate. Some of these steps include selecting a study design that not only has scientific rigor but represents the best design given the program's stage of development and ability to include a control group, designing and testing the data collection instruments to ensure measures are valid and reliable, and calculating a sample size with adequate statistical power to detect changes in outcomes between intervention and control groups.

1. *Identify and engage stakeholders*. It's important to include anyone who has some 'stake' in the program at the earliest stage of planning for monitoring and evaluation. This includes not only those who are involved in designing and/or implementing the program, but also the donors, the policy makers, parents, teachers, and even young people

themselves. Not all of these groups need to be at every stage of the evaluation, but there should be a plan for how input and feedback will be incorporated.

2. *Define the goals and objectives of the program*. A *goal* states the impact a program intends to have on a target population. Typically, ASRH programs have a general goal of improving the sexual and reproductive health of young people, but can be more specific depending on the program activities and the SRH needs of the adolescent population. *Objectives* are explicit, *measurable* statements of the program's outcomes. There are two types of objectives: population-level and program-level. *Population-level objectives* state the intended results in terms of the target population and are directly related to the outcomes identified by the program. An example would be: "to increase the percentage of adolescents ages 15-19 years in Harare who used a condom at last sex from 45% to 65% in two years." Program-level objectives state intended results in terms of the structure, management or implementation of a program. They essentially describe the activities that will be implemented. For example: "train 20 peer educators in Mutabeland every year." Program objectives are usually established to achieve the population level objectives. Rarely are they ends in themselves.

3. *Describe the activities that the program is implementing*. It's important to write down all of the activities associated with the program, whether it is a training, the development of a new curriculum, or airing a new radio message. Each of these activities should be reviewed to make sure they have a role in meeting the program's objectives. If all the activities are listed, it's also important to develop a 'logic model' that can illustrate how these activities will lead to changes in outcomes. For more information on creating a logic model, refer to these links:
   http://www.smartgivers.org/uploads/logicmodelguidepdf.pdf or
   http://www.innonet.org/client_docs/File/logic_model_workbook.pdf

4. *Determine the scope of your monitoring and evaluation.* Once you have defined your goals, objectives, and activities of the program, and have identified and engaged essential stakeholders for developing a monitoring and evaluation plan, it is reasonable to start determining the scope of the monitoring and evaluation efforts. The scope is determined by many factors including the stage of program development (i.e., whether or not the program has been implemented), the resources and capacity available to conduct an evaluation, and the requirements of the funding agency. If there are limited funds and resources available, the simplest task would be to establish a monitoring system to at least track the program's activities and ensure that they are being implemented according to plan. Additionally, if there are service statistics that you know are already being collected, you can develop a tracking sheet that could extract data specifically tailored to your program's objectives. For example, if your program was aimed at increasing contraceptive use among adolescents, you could develop a tool to gather data from health clinics and pharmacies that staff could complete to calculate the number of adolescents who were provided with a contraceptive method during a specified period of time. Tracking this number over time could then let you know whether the program is meeting its objectives. Such tracking information was rarely available at the service delivery sites.

5. *Collect or document baseline information of the target population*. If possible, it would also be important to collect baseline information from the target population. Baseline information describes the current status or situation in a population before a program is implemented. Baseline information is important because it provides points of comparison against which you can measure whether your objectives were met.

7.3 Assessing the Evidence on ASRH programs

We found that the data were too scant and the level of evidence too limited to assess whether ASRH programs in Zimbabwe were having the impacts desired. Below are criteria that we would propose using for assessing evidence in the future. Once the level of evidence has been strengthened in Zimbabwe, these criteria (see Table 8, page 85) can be used to help determine what programs should be scaled up, replicated, and discontinued.

Scientific rigor of the study. If the research is scientifically rigorous, it will confirm and quantify the causal relationship between the intervention and its effects where such a relation exists. For an intervention to show effectiveness, generally there must be strong evidence that the intervention results are the direct results of the activities of the program. This means that no major other factor or factors were major contributors to the outcomes or that changes did not happen by chance. To truly say that an intervention is effective, there must be a strong research design that tests the outcomes. The very best designs use an experimental/randomized control trial (RCT) or quasi-experimental methodology -- both of which can compare a group that received the intervention with another group that did not (often referred to as the control or comparison group). If a given study design does *not* have a control or comparison group to compare the results with, it is not possible to conclude that the health improvements observed would not have occurred despite the intervention. Ultimately, we want to answer the question 'compared to what?' (e.g., doing nothing) to determine whether a program is effective.

In public health, there is persisting controversy about the reliance on the study design as the main criterion of the credibility of evidence. The debate concentrates on the primacy of the RCT for evaluating public health interventions, with respect to: 1) the difficulty of conducting RCTs for complex programmatic interventions (i.e., interventions with multiple components); and 2) the difficulty in interpreting their results (i.e., study samples being small and relatively homogenous); and 3) the tendency to downgrade the contribution of quasi-experimental or non-experimental studies. While researchers in public health may attest to RCTs as the best (albeit impractical) study design for determining a causal relationship between an intervention and its outcomes, they argue that study design alone cannot suffice as the main criterion for the credibility of evidence (Prendergast, 2011).

To augment this criterion, there is also a need to assess: 1) the representativeness of the data (i.e., can the findings be assumed to apply to the entire adolescent population or just to the group that was studied in the evaluation); 2) the reliability and validity of outcome measures; and 3) the description about the response rates or differential attrition that may have been present.

Using these criteria as a first stage of 'assessing' the evidence, the table below can help score each of these as a means of ranking the program.

Table 8: Intervention Scoring System
Name of Intervention: _____

{3 point system: 3 – High; 2: Average; 1: Low}

	High	Average	Low
Study design: • RCT or Quasi-Experiment with before and after data collection (high) • Time series or before and after data collection with generic comparisons (average) • One group only (low)			
Sampling strategy (to measure representativeness of the sample): • Random, probability (high) • Snowball, non-probability (low) • Convenience, non-probability (low)			
Validity and reliability of outcome measures			
Response rate/attrition			

While the scientific rigor of the evaluation is important, it should not be the only set of criteria with which to assess the level of program effectiveness. There are other aspects – related to the program and the context within which the program was implemented – that also should be considered. Below are some of these aspects.

Information on the intervention. ASRH interventions are rarely a standard package. To assess an intervention's implementation and subsequent replicability and scalability, information is needed not only on the multiple components of an intervention, but also on the fidelity of the intervention. Fidelity is defined as the degree to which program implementers provide services or a program as designed by the developer or 'protocol'. It is usually measured by adherence to the program, dosage, quality of delivery, and participants' acceptance of the program (Rohrback et al., 2006). Frequently, however, during the design and/or implementation of an intervention, adaptations are made to make the program more acceptable to the local environment, and more often than not, implementers will jeopardize fidelity for sustainability of the program. The problem is that while the effects may be sustainable, the intervention may no longer be effective. This issue has led towards researching what the core components or critical elements are to any intervention. Core components are defined as the 'essential and indispensable' elements of a program needed in order to reach outcomes (Fixsen, 2005).

Intended and unintended effects. ASRH programs often combine biomedical, educational, social, and policy strategies that have many possible outcomes, include those at the individual level as well as those at the community level. These outcomes may be intended and unintended. Unintended effects may be as desirable as, or more desirable then the intended effects of the intervention. Conversely, they may result in worse outcomes than at the start (e.g., if the intervention results in a political backlash that results in a reduction of services for young people). Evaluation research that records only the intended outcomes of an intervention may fail to detect its other positive or negative consequences. To the extent possible, assessing both the intended and unintended effects on ASRH from an intervention is important to examine.

Information on the context. The social, organizational, and political setting in which an intervention is implemented usually influences the interventions' effectiveness. Contextual factors that influence the generalizability of evidence about interventions include literacy, income, cultural values and access to media and services. Contextual factors, however, may also operate at the intervention and organizational levels. For example, there are usually organizational attitudes and management styles, issues with financial and human resources, and organizational stress. Each of these can influence how well an intervention can be replicated and scaled up and thus need to be considered.

In the inception report (Blum et al., 2015), we proposed using the "Do not go, Steady, Ready, Go" classification system developed by WHO within the context of a 2006 adolescent HIV/AIDS systematic programmatic review (Dick et al., 2006). The criteria for the "Do not go, Steady, Ready, Go" classification was based on the strength of evidence (assessed by type and quality of study design) measured against predefined evidence thresholds for each type of intervention, taking into account factors such as feasibility, risk of adverse outcomes, and potential for wide-scale implementation. This same type of rating system can be used once more evidence is gathered. After the evaluation studies of a given program has been scored (using the framework above), and enough information about the intervention itself has been gathered to assess its fidelity, the 'core' elements, the unintended and intended effects, and how the context may have influenced both the results and implementation, the table below can be used to further classify programs.

Table 9: Intervention Rating System

Do not go	Steady	Ready	Go
• Strong enough evidence showing either lack of effectiveness or possibly even increasing negative outcomes	• Some promising evidence, but further development, pilot-testing, and evaluation are needed	• Evidence suggests intervention effectiveness but large-scale implementation must be accompanied by further research to clarify mechanisms and impact	• Sufficient evidence to recommend large scale implementation coupled with careful monitoring of coverage, quality, and cost and research to better understand mechanisms of action

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APPENDIX

ECONOMIC ANALYSIS APPENDIX

Introduction

This study estimates the annual cost of operating two types of youth friendly health services (YFHSs), including stand-alone youth centers (SAYCs) and youth friendly corners (YFCs), and what is the effect needed for these programs' cost to break-even and become cost-saving from the public sector perspective.

The first part of this appendix provides data on programs' cost data and calculations. The second part shows sensitivity analysis estimates on the effect of changes in program cost parameters, including the percent of YFHSs program costs or health care costs, on overall study results. The last part provides detail on Zimbabwe's adolescent sexual and reproductive health (ASRH) burden of disease calculations using disability-adjusted-life-years (DALYs).

Program Cost Data

Table 1 lists the cost and demographic parameters used in the thresholds analysis and their respective data source. Table 2 and 3 prove details on the cost items and prices included in the estimate of total program costs. These tables are organized by fixed and recurrent costs. Fixed costs were annualized using the items' life-time and discounted using a standard three percent discount rate.

Table 1. Economic evaluation demographic and cost parameters

Parameters	Value	Units	Max.	Min.	Source
Costs					
Current SAYC's annual program cost	$52,252	US$	-	-	Author's calculations
Current YFC's annual program cost	$19,944	US$	-	-	Author's calculations
High-quality SAYC's annual program cost	$79,830	US$	-	-	Author's calculations
High-quality YFC's annual program cost	$30,356	US$	-	-	Author's calculations
Health facility (HF) costs per pregnancy (normal delivery + 4 ANCs + 2 PNCs)	$66	US$	$50	$83	Author's calculations & Levin et al 2000
HF costs per STI test and treatment (min. 3 visits/case)	$3	US$	$2	$4	Author's calculations & Levin et al 2000
HF cost per HIV test and treatment per patient-year (ppy)	$208	US$	$136	$682	Tagar et al 2014
Net present value (NPV) HF costs per patient (remaining LE is 35 yrs., 3% discount rate)	$2,586	US$	-	-	Author's calculations & Tagar et al 2014
Demographic					
Demand for ASRH counselling (CO) at stand-alone youth center (SAYCs)					
Unwanted pregnancies (includes FP topics)	23%	%	-	-	Author's calculations
STI infections	38%	%	-	-	Author's calculations
HIV infections (includes	38%	%	-	-	Author's calculations
Youth reached by Youth friendly corner (YFC) peer educators' counseling topics					
Unwanted pregnancies (includes FP topics)	32%	%	-	-	Author's calculations
STI infections	22%	%	-	-	Author's calculations
HIV infections (includes	46%	%	-	-	Author's calculations
Zimbabwe's annual burden of disease due to SRH	2,826,000	DALYs	-	-	IHME, 2010 & author's calculations
Zimbabwe's annual burden of disease due to ASRH	612,382	DALYs	-	-	IHME, 2010 & author's calculations
Zimbabwe's adolescent population					
10-14 year olds	1,697,961	No.	-	-	2012 Census
15-19 year olds	1,410,614	No.	-	-	2012 Census
20-24 year olds	1,201,634	No.	-	-	2012 Census
Zimbabwe's 10-20 year olds average life expectancy (LE)	52	Yrs.	57	48	UN World Population Prospects 2015 Revisions
Zimbabwe's 10-20 year olds average remaining life expectancy (LE)	35	Yrs.	57	48	Author's calculations & UN World Population Prospects 2015 Revisions

Table 2. Stand-alone youth center (SAYC) annual operation cost estimate (2014 US$)

List of Program Items by Major Category	Unit Cost	Quantity	Total Cost	Life-time (Yrs.)	Net Present Value Cost
Fixed start-up Costs					
Training: Nurse allowance (5 days)	$600	1	$600	5	$131
Training: Social worker allowance (7 days)	$420	1	$420	5	$92
Training: Peer educator certificate	$75	5	$375	10	$44
Training	$1,095	-	$1,395	-	$267
TV	$807	1	$807	5	$176
DVD player	$66	1	$66	5	$14
Radio	$403	1	$403	5	$88
Desktop computer	$538	1	$538	5	$117
Small tablet	$302	1	$302	5	$66
Activities Table	$181	3	$543	10	$64
Chairs	$40	33	$1,334	10	$156
Bookshelves	$388	4	$1,551	10	$182
Desks	$404	2	$808	10	$95
Peer educator bike	$152	5	$758	5	$165
Other: backrest medical examination table, flip charts, projector, second hand book	$350	1	$350	10	$41
Equipment	$3,631	-	$7,461	-	$1,165
Renovations (have required substantial)	N/A	-	-	-	
Fixed sub-total	-	-	$8,856	-	$1,432
Recurrent Costs					
Rent (average with 4 rooms + outdoor area)	$300	12	$3,600	-	$3,600
Facilitators: nurse and social worker (2 total)	$1,052	12	$12,623	-	$12,623
Facilitator allowance (2 total)	$40	12	$480	-	$480
Peer educator allowance (target is 5/center)	$100	12	$1,200	-	$1,200
Youth center overhead (1 genitor + 3 security guards)	$1,552	12	$18,622		$18,622
Overhead central office administration (is 10% time allocation to Youth Center program: includes service delivery coordinator, communication officer, human resources, manager, accountant, MISO)	$383	12	$4,595	-	$4,595
Wages	$3,127	-	$37,520	-	$37,520
Game supplies (balls: soccer, volleyball, chest set, darts, other)	$148	1	$148		$148
Peer educator supplies (bag + t-shirts)	$146	1	$146	-	$146
Communication (DVD disks, paper, excludes internet/phone line/access)	$14	12	$172	-	$172
Supplies - information & games	$308	-	$466	-	$466
Medical supplies (family planning, HIV tests)	$90	12	$1,074	-	$1,074
Supervision transportation ($8/km, 200k/trip, quarterly trips per center)	$1,600	4	$6,400	-	$6,400
Utilities	$80	12	$960	-	$960
Mobilization (Assumes at least 2 galas per year)	$400	2	$800	-	$800
Recurrent sub-total	-	-	$50,820	-	$50,820
			TOTAL ANNUAL NET PRESENT VALUE		**$52,252**

Table 3. Youth friendly corner (YFC) annual operation cost estimate (2014 US$)

List of Program Items by Major Category	Unit Cost	Quantity	Total Cost	Life-time (Yrs.)	Net Present Value
Fixed start-up Costs					
Training: Nurse allowance (14 days)	$360	1	$360	5	$79
Training: Peer educator certificate (10 days)	$75	3	$225	10	$26
Training	$435	-	$585	-	$105
TV (<40")	$269	1	$269	5	$59
DVD player	$66	1	$66	5	$14
Radio	$403	1	$403	5	$88
Desktop computer	$538	1	$538	5	$117
Small tablet	$302	3	$906	5	$198
Activities Table	$181	3	$543	10	$64
Chairs	$40	10	$404	10	$47
Bookshelves	$388	2	$776	10	$91
Desks	$404	1	$404	10	$47
Peer educator bike	$152	3	$455	5	$99
Equipment	$350	1	$350	10	$41
Equipment	$3,093	-	$5,114	-	$866
Renovations	N/A	-	-	-	
Fixed sub-total	-	-	$5,699	-	$971
Recurrent Costs					
Rent (average with 4 rooms + outdoor area)	$50	12	$600	-	$600
Facilitators: head nurse (25%)	$746	12	$8,952	-	$8,952
Peer educator allowance (target is 3/center)	$60	12	$720	-	$720
Overhead central office administration (1% of time allocation to Youth Corner program (value from Youth Center's administration): includes service delivery coordinator, communication officer, human resources, manager, accountant, MISO)	$383	12	$4,595	-	$4,595
Wages	$1,189	-	$14,267	-	$14,267
Game supplies (balls: soccer, volleyball, chest set, darts, other)	$148	1	$148		$148
Peer educator supplies (bag + t-shirts)	$146	1	$146	-	$146
Communication (DVD disks, paper, excludes internet/phone line/access)	$14	12	$172	-	$172
Supplies - information & games	$308	-	$466	-	$466
Supervision transportation ($8/km, 200k/trip, 1 trip per corner	$1,600	1	$1,600	-	$1,600
Utilities (electricity)	$20	12	$240	-	$240
Mobilization (Assumes 2 annual Youth Open Days + organization committee mtgs.)	$900	2	$1,800	-	$1,800
Recurrent sub-total	-	-	$18,973	-	$18,973
			TOTAL ANNUAL NET PRESENT VALUE		**$19,944**

Sensitivity Analysis

Tables 4 to 7 show sensitivity analysis results. Tables 4 and 5 list the effect of incremental percent changes in program cost on overall results. Tables 6 and 7 list the effect of incremental percent changes in health care costs on overall results.

Table 4. Effect of changes in stand-alone youth center (SAYC) program costs on results

	Annual program cost (2014 US$)	Prgm. cost % change	No. of DALYs adverted needed for CE	Minimum No. of ASRH cases adverted needed for program costs to break-even and become cost savings					
				Assumes the No. of cases adverted by health outcome is proportional to the number of youth demanding counseling for that health outcome			Range of cases adverted assuming other health outcomes do not improve		
				Unwanted pregnancies	STI infections	HIV infections	Unwanted pregnancies	STI infections	HIV infections
	44414	-15%	296	157	5672	7	673	14805	17
	49639	-5%	331	176	6339	7	752	16546	19
	47027	-10%	314	167	6005	7	713	15676	18
	49639	-5%	331	176	6339	7	752	16546	19
Actual Cost	52252	0%	348	185	6672	8	792	17417	20
	54865	5%	366	194	7006	8	831	18288	21
	57477	10%	383	204	7340	9	871	19159	22
	60090	15%	401	213	7673	9	910	20030	23
	62702	20%	418	222	8007	9	950	20901	24
	65315	25%	435	231	8340	10	990	21772	25
	67927	30%	453	241	8674	10	1029	22642	26
	70540	35%	470	250	9008	10	1069	23513	27
	73153	40%	488	259	9341	11	1108	24384	28
	75765	45%	505	268	9675	11	1148	25255	29
High-quality level cost	78378	50%	523	278	10009	12	1188	26126	30
	80990	55%	540	287	10342	12	1227	26997	31
	83603	60%	557	296	10676	12	1267	27868	32

Table 5. Effect of changes in youth friendly corner (YFC) program costs on results

	Annual program cost (2014 US$)	Prgm. cost % change	No. of DALYs adverted needed for CE	Minimum No. of ASRH cases adverted needed for program costs to break-even and become cost savings					
				Assumes the No. of cases adverted by health outcome is proportional to the number of youth demanding counseling for that health outcome			Range of cases adverted assuming other health outcomes do not improve		
				Unwanted pregnancies	STI infections	HIV infections	Unwanted pregnancies	STI infections	HIV infections
	16953	-15%	113	82	1254	3	257	5651	7
	18947	-5%	126	92	1401	3	287	6316	7
	17950	-10%	120	87	1327	3	272	5983	7
	18947	-5%	126	92	1401	3	287	6316	7
Actual Cost	19944	0%	133	96	1475	4	302	6648	8
	20942	5%	140	101	1548	4	317	6981	8
	21939	10%	146	106	1622	4	332	7313	8
	22936	15%	153	111	1696	4	348	7645	9
	23933	20%	160	116	1770	4	363	7978	9
	24930	25%	166	120	1843	4	378	8310	10
	25928	30%	173	125	1917	5	393	8643	10
	26925	35%	179	130	1991	5	408	8975	10
	27922	40%	186	135	2065	5	423	9307	11
	28919	45%	193	140	2138	5	438	9640	11
High-quality level cost	29917	50%	199	145	2212	5	453	9972	12
	30914	55%	206	149	2286	5	468	10305	12
	31911	60%	213	154	2360	6	483	10637	12

Table 6. Effect of changes in health care costs on stand-alone youth center's (SAYC) break-even point to become cost saving

Annual program cost (2014 US$)		Health care cost % change	Minimum No. of ASRH cases adverted needed for program costs to break-even and become cost savings					
			Assumes the No. of cases adverted by health outcome is proportional to the number of youth demanding counseling for that health outcome			Range of cases adverted assuming other health outcomes do not improve		
			Unwanted pregnancies	STI infections	HIV infections	Unwanted pregnancies	STI infections	HIV infections
Actual Cost	$52,252	-20%	231	8340	10	990	21772	25
		-10%	206	7414	9	880	19353	22
		0%	185	6672	8	792	17417	20
		10%	168	6066	7	720	15834	18
		20%	154	5560	6	660	14514	17
		30%	142	5133	6	609	13398	16
		40%	132	4766	6	565	12441	14
		50%	123	4448	5	528	11612	13
		60%	116	4170	5	495	10886	13
		70%	109	3925	5	466	10245	12
		92%	97	3484	4	413	9095	11
		50%	123	4448	5	528	11612	13
		55%	119	4305	5	511	11237	13
		60%	116	4170	5	495	10886	13
High-quality level cost	$79,830	-20%	354	12742	15	1512	33263	39
		-10%	314	11327	13	1344	29567	34
		0%	283	10194	12	1210	26610	31
		10%	257	9267	11	1100	24191	28
		20%	236	8495	10	1008	22175	26
		30%	218	7842	9	930	20469	24
		40%	202	7281	8	864	19007	22
		50%	189	6796	8	806	17740	21
		60%	177	6371	7	756	16631	19
		70%	166	5996	7	711	15653	18
		92%	148	5323	6	632	13896	16
		50%	189	6796	8	806	17740	21
		55%	182	6577	8	780	17168	20
		60%	177	6371	7	756	16631	19

Table 7. Effect of changes in health care costs on youth friendly corner's (YFC) break-even point to become cost saving

Annual program cost (2014 US$)		Health care cost % change	Minimum No. of ASRH cases adverted needed for program costs to break-even and become cost savings					
			Assumes the No. of cases adverted by health outcome is proportional to the number of youth demanding counseling for that health outcome			Range of cases adverted assuming other health outcomes do not improve		
			Unwanted pregnancies	STI infections	HIV infections	Unwanted pregnancies	STI infections	HIV infections
Actual Cost	$19,944	-20%	120	1843	4	378	8310	10
		-10%	107	1639	4	336	7387	9
		0%	96	1475	4	302	6648	8
		10%	88	1341	3	275	6044	7
		20%	80	1229	3	252	5540	6
		30%	74	1134	3	232	5114	6
		40%	69	1053	3	216	4749	6
		50%	64	983	2	201	4432	5
		60%	60	922	2	189	4155	5
		70%	57	867	2	178	3911	5
		92%	50	770	2	158	3472	4
		50%	64	983	2	201	4432	5
		55%	62	951	2	195	4289	5
		60%	60	922	2	189	4155	5
High-quality level cost	$30,356	-20%	183	2806	7	575	12648	15
		-10%	163	2494	6	511	11243	13
		0%	147	2245	5	460	10119	12
		10%	133	2041	5	418	9199	11
		20%	122	1871	4	383	8432	10
		30%	113	1727	4	354	7784	9
		40%	105	1603	4	329	7228	8
		50%	98	1496	4	307	6746	8
		60%	92	1403	3	287	6324	7
		70%	86	1320	3	271	5952	7
		92%	77	1172	3	240	5284	6
		50%	98	1496	4	307	6746	8
		55%	95	1448	3	297	6528	8
		60%	92	1403	3	287	6324	7

DALYs Calculations

Table 8a. Zimbabwe's ASRH DALYs by age group

Zimbabwe's Disability-Adjusted Life Years (DALYs) due to Adolescent Sexual and Reproductive Health (SRH) Conditions: Estimates Based on Graphs and Data from the Global Burden of Disease (GBD)					
	Age grp.	**10-14**	**15-19**	**20-24**	**All ages**
Years lived with disability (YLDs)	HIV/AIDS & tuberculosis	10,000	5,000	4,000	136,000
Years of life lost (YLLs) (age specific YLLs estimates for each condition are all-ages total YLLs proportional to the percent distribution of YLDs among each age grp.)	HIV/AIDS	162,721	162,721	162,721	2,213,000
	Preterm birth complications	17,059	17,059	17,059	232000
	Maternal disorders	6,691	6,691	6,691	91000
	Neonatal sepsis	7,206	7,206	7,206	98000
	Syphilis	4,118	4,118	4,118	56000
Total SRH DALYs (YLDs + YLLs) =		**207,794**	**202,794**	**201,794**	**2,826,000**
		612,382			

Table 8b. Zimbabwe's ASRH DALYs by age group

Parameter	National			District Level														Data Source
				Gutu			Zaka			Chimanimani			Makoni			Mutare rural			
Age group	10-14	15-19	20-24	10-14	15-19	20-24	10-14	15-19	20-24	10-14	15-19	20-24	10-14	15-19	20-24	10-14	15-19	20-24	
Population	1,697,961	1,410,614	1,201,634	30,506	22,250	13,769	28,091	20,196	12,086	18,468	14,405	11,089	38,869	30,298	21,873	37,033	27,011	21,066	2012 Census
Annual SRH DALYs	207,794	202,794	201,794	3733	3199	2312	3438	2903	2030	2260	2071	1862	4757	4356	3673	4532	3883	3538	IHME (2010) & author's calculations
Total annual ASRH	612,382			9,244			8,371			6,193			12,786			11,953			Addition