THE COST OF INACTION

The cost of not realizing the sexual and reproductive health and rights (including HIV) of young people in Zimbabwe and South Africa

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TABLE OF CONTENTS

1 EXECUTIVE SUMMARY

INTRODUCTION

All policy choices—whether a choice for action or a choice not to act—have costs and benefits. It may seem that when we do nothing, there is no cost to be incurred or benefit to be reaped *(1)*. However, the fallacy of this argument becomes clear when looking at the cost, for example, of not providing food aid after a natural disaster, or emergency shelter after a hurricane. All too frequently, policy-makers make decisions based purely on financial costs when implementing a policy, weighing these costs against the expected benefits. In financial accounting terms, the assumption is that doing nothing incurs no costs or benefits. Therefore, decisions are made based only on the 'new' cost added. This is a simplistic and potentially dangerous view for both individuals and society. Policies do not operate in a vacuum and there is always a cost of keeping the status quo versus taking action. To make better policy decisions, therefore, also requires that a 'cost of inaction' approach be incorporated into any policy analysis.

Globally, UNAIDS has begun highlighting the 'cost of inaction' as an indicator of the negative impact on the lives of people and communities of not investing resources to end AIDS. This issue is particularly significant with regard to the provision of sexual and reproductive health and rights (SRHR) and HIV services for young people in East and southern Africa.

The cost of inaction for young people is especially significant as the impact extends through most of their life. As young women who have had a child during adolescence get older, their lifetime income is likely to be lower as they are less likely to complete secondary school and they are more likely to have a higher fertility rate, with more negative health outcomes. A delayed HIV diagnosis, for instance, results in the delayed start of antiretroviral therapy (ART), with negative impacts on a person's health.

Using a cost of inaction approach, this report calculates the current cost of the inadequate provision of SRHR and HIV services to young people aged 15–24 years old in East and southern Africa. This provides a foundation for alternative policies to be costed to address these gaps and a true cost–benefit analysis to be conducted. Suggestions for potential policies—based on existing evidence—are given in the discussion section, concluding with recommendations for action required to reduce this cost.

METHODOLOGY

To explore the cost of inaction, three areas currently adversely affecting young people are considered, based on the available data, due to their impact on the cost of inaction. They are:

- **Early pregnancy.** This refers to pregnancies under the age of 20, most of which are unintended *(2, 3)*.
- **HIV transmission.** Adolescent girls and young women (AGYW) (10–24 years old) are at particular risk and represented 26% of all new HIV infections in East and southern Africa in 2020 *(4)*. As a result, AIDS is the leading cause of adolescent mortality in 12 countries in these regions *(4)*.
- **Gender-based violence.** There are high rates of gender-based violence (GBV) against women and girls in East and southern Africa. GBV has serious consequences for the physical health of young women, as well as their sexual and reproductive health and mental health. It has adverse economic and social consequences for men, women, their children, families and communities *(5)*.

South Africa and Zimbabwe were chosen as focus countries from the region (Table 1). The following costs are included for each country and within each key area:

- **Individual costs.** Costs to an individual or their family to access services, for example the cost of travelling to a health facility to pick up antiretroviral treatment.
- **Financial costs.** Monetary expenditures to create a product or provide a service such as the cost of ART drugs and the cost to the health system of the health professional having a consultation to administer those drugs.
- **User costs.** Costs to an individual or their family to access services, for example the cost of travelling to a health facility to pick up antiretroviral treatment.
- **Opportunity costs.** The benefits foregone by either the individual, family, community, or society, such as potential earnings lost due to dropping out of school before graduation.

The costs sourced are either per client or per year and are transformed to per cohort costs in the analysis. The cohort cost is the cost per person affected in the cohort given—e.g. AGYW aged 15-19 based on the probability they will be affected during this age range. Demographic and epidemiological data were sourced from reliable governmental and international sources. Costing data were drawn from peer reviewed papers, and individual costing experts were referred by UNAIDS. The latest data were included in each instance. Costing data earlier than 2011 were excluded as they were considered to be out of date. All costing data were converted to 2021 US dollar prices. Where data were not available, reasonable assumptions or proxy figures were used. Where data were insufficient to make a reasonable assumption, they were excluded. Sources, assumptions and a full explanation for the calculation of costs are included in the methodology in the full report.

RESULTS

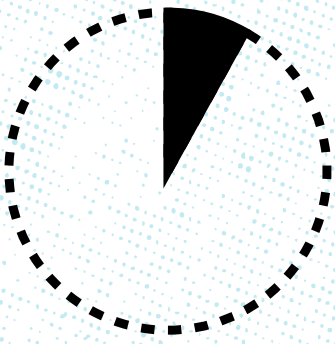
To put the total cost of inaction figures into context, it is instructive to compare the values with the latest national gross domestic product (GDP) and government spending figures on core services.

The total cohort lifelong cost of inaction on youth SRHR in South Africa is equivalent to 8.1% of annual GDP. In other words, for every $100 spent in the country over the course of a year, the cost of inaction on youth SRHR is equivalent to $8.00 in financial outlays paying for the effects of the lack of SRHR services, or opportunity costs of future value and income foregone due to the consequences of these actions. In Zimbabwe, the total cohort lifelong cost of inaction is the equivalent of 12.9% of GDP, driven mainly by the cost to society of early pregnancy. While the absolute cost of inaction on youth SRHR is smaller in Zimbabwe, given the smaller size of the economy, the cost is a higher percentage of GDP, in other words, higher relative to the size of the economy.

To put the magnitude of these figures further into context, the total cost of inaction in South Africa is larger than the annual education budget, and more than double the annual health budget. In Zimbabwe, the cost of inaction is higher than social development, health and education spending combined. In fact, the cost of inaction totals 92.5% of the total Zimbabwean Government budget for 2021.

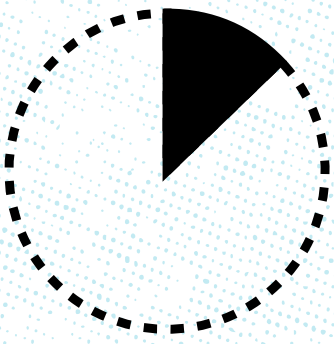
COST OF INACTION OF LIFETIME OF COHORT

SOUTH AFRICA



8.1%
OF ANNUAL GDP

ZIMBABWE



12.9%
OF ANNUAL GDP

[a] Elimination of mother-to-child transmission (eMTCT).

TABLE 1. COST OF INACTION IN EACH OF THE KEY AREAS

AREA	COST CATEGORY	COST (US$ 2021)— SOUTH AFRICA	COST (US$ 2021) — ZIMBABWE
EARLY PREGNANCY AMONG 15–19 YEAR OLDS	Financial costs—financial costs to the health system for cohort	180 494 968	18 293 940
	Individual costs—financial cost to the patient for cohort	16 904 817	15 132 441
	Opportunity costs—loss of lifetime earnings for adolescent mothers due to dropping out of school	8 362 036 864	2 430 498 047
	Opportunity costs—loss of lifetime earnings for adolescent fathers due to dropping out of school	1 675 463 264	482 143 181
	Second generation costs—especially poorer outcomes faced by children of teenage mothers	Unable to quantify	Unable to quantify
	TOTAL EARLY PREGNANCY COSTS	**10 319 420 834**	**2 946 101 425**
HIV AMONG YOUNG PEOPLE (15–24 YEAR OLDS)	*Young women living with HIV*		
	Lifetime cost of HIV for cohort to the health system	6 945 838 200	423 854 600
	Lifetime cost of HIV for cohort to the patient	1 314 553 722	78 364 523
	eMTCT[a] cost per mother/baby pair	1 703 787	143 624
	Lifetime HIV related costs for children born living with HIV	115 277	19 590
	Young men living with HIV		
	Lifetime cost of HIV for cohort to the health system	2 396 236 869	175 329 732
	Lifetime cost of HIV for cohort to the patient	340 129 802	32 535 965
	Young women and young men living with HIV		
	Costs associated with onward transmission of HIV to sexual partners throughout lifetime	Unable to quantify	Unable to quantify
	Financial costs due to higher incidence of opportunistic infections and chronic comorbidities	Unable to quantify	Unable to quantify
	Opportunity cost of living with HIV	Unable to quantify	Unable to quantify
	TOTAL HIV COSTS	**10 998 577 657**	**710 248 034**
GENDER BASED VIOLENCE AMONG YOUNG PEOPLE (15–24 YEARS OLD)	Cost to GBV survivor	11 002 968 691	Unable to quantify
	Cost of GBV to government	224 186 835	Unable to quantify
	Cost of GBV to civil society	386 595 665	Unable to quantify
	Cost of GBV to business	795 919 916	Unable to quantify
	Second generation costs of GBV	Unable to quantify	Unable to quantify
	Costs to male perpetrators of violence	Unable to quantify	Unable to quantify
	TOTAL GBV COSTS	**12 409 671 106**	Unable to quantify
	TOTAL COST OF INACTION	**33 727 669 597**	**3 656 349 459**

DISCUSSION

The cost of inaction for youth SRHR is clear. Inaction in the provision of effective, youth friendly SRHR services is placing a huge burden on young people in Zimbabwe and South Africa. Teenage pregnancy is high, leading to school dropouts, HIV transmission remains high, especially among AGYW, and GBV continues to be pervasive. These costs of inaction provide a lifelong burden for those directly affected and the ripple effects of this burden affect families, communities and the country as a whole. With the cost of inaction apparent, it is clear that these costs need to be compared with the cost of different policy options for supporting youth SRHR. The scope of this report does not go as far as outlining and costing specific interventions. However, based on current best practice and evidence, urgent action is needed in the following five interlinked areas.

1. REMOVING THE DIVIDE between the health and education sectors to enhance comprehensive sexuality education. This divide needs to be overcome so high quality, evidence-based comprehensive sexuality education (CSE) can be provided both in and out of school to young people.

2. PROVIDING YOUTH FRIENDLY SRHR SERVICES for young people. Youth friendly SRHR services are essential for ensuring the health of adolescents, especially in preventing unintended pregnancies and HIV *(6)*.

3. KEEPING GIRLS IN SCHOOL and helping them return after pregnancy. Adolescent girls bear a disproportionate burden of teenage pregnancies *(7, 8)* and, as this study shows, the lifetime economic and health costs of adolescent girls dropping out of school are enormous. A concerted effort is needed to stop girls from dropping out of school for whatever reason, whether economic, family pressure, child marriage or early pregnancy.

4. REDUCING GBV South Africa and Zimbabwe have endemic rates of GBV which are higher among those with lower levels of education and those who are poorer *(9)*. It is also closely linked to higher HIV transmission *(10)*. A comprehensive approach tied closely to gender equality goals is needed. This will require going far beyond the measures discussed above, but urgently addressing and implementing these three approaches is a step in the right direction.

5. PREVENTING HIV A common thread in the discussion so far is activities to ensure that young people stay HIV negative. A combination HIV prevention approach remains important to meet the specific needs of adolescents and young people and focuses on a combination of biomedical, behavioural and structural interventions. It is important to also remove legal and policy barriers to accessing services and support peer led education approaches as part of the prevention package.

THE WAY FORWARD

The cost of inaction related to the SRHR of young men and women in Zimbabwe and South Africa paints a stark picture of the usually unseen impact of current policies. The results presented in this report provide a rallying call for political leaders and government officials that action to improve the SRHR of young people is urgently needed. Real change requires a proactive, prevention based response rather than a reactive one. This is at the crux of looking at the cost of inaction—i.e. taking action early, before the 'damage' has been done, or things have become much worse.

Taking urgent action in the five interlinked areas outlined in the discussion above requires a multisectoral response that includes joint work by the health, education, social, community and economic development sectors, as well as involvement from the Ministry of Finance/ Treasury and budget committees in Parliament. Including the cost of inaction in any cost–benefit analysis will facilitate appropriate investment decisions in activities that will provide real change, both now and also in the health and economic livelihoods of the next generations.

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CONCLUSION

The current cost of inaction related to SRHR, including HIV, of young men and women in Zimbabwe and South Africa is high – US$ 33.7 billion for South Africa for cohort's lifetime (equivalent to 8.1% of annual GDP) and US$ 3.6 billion for Zimbabwe for cohort's lifetime (equivalent to 12.9% of annual GDP). Policy-makers need to be aware of the impact of cost of inaction and the huge costs it is bringing to young people. Urgent action is needed to: improve support and services that promote the SRHR, including HIV, needs of young people, including effective CSE; greater access to youth friendly SRHR services; and easy access to condoms and a wide choice of contraceptive methods. Comprehensive HIV and GBV prevention efforts are needed and girls who do become pregnant need support to return and stay in school. Meaningfully involving young people in bringing about this change and building youth leadership and the capacity of youth-led organizations are key parts of these efforts. Ultimately, to care for children and their future, this is an investment we have no choice but to make. The next steps are now working on the exact package of interventions that will provide the biggest return on investment and highest impact on the lives of young men and women *(11, 12, 13, 14)*.

2 INTRODUCTION

All policy choices—whether a choice for action or a choice not to act—have costs and benefits. It may seem that when we do nothing, there is no cost to be incurred or benefit to be reaped *(1)*. However, the fallacy of this argument becomes clear when looking at the cost, for example, of not providing food aid after a natural disaster, or emergency shelter after a hurricane. All too frequently, policy-makers make decisions based purely on financial costs when implementing a policy, weighing these costs against the expected benefits. In financial accounting terms, the assumption is that doing nothing incurs no costs or benefits. Therefore, decisions are made based on the 'new' cost added. This is a simplistic and potentially dangerous view for both individuals and society. Policies do not operate in a vacuum and there is always a cost of keeping the status quo versus taking action. To make better policy decisions, therefore, also requires a 'cost of inaction' approach be incorp rated into any policy analysis.

POLICIES DO NOT OPERATE IN A VACUUM

and there is always a cost of keeping the status quo versus taking action.

Globally, UNAIDS has increasingly highlighted the relevance of the 'cost of inaction' as an indicator of the negative impact on the lives of people and communities of not investing to ending the AIDS epidemic as a public health threat. This is particularly the case with SRHR, including HIV, and the provision of services for young people in East and southern Africa. The Eastern and Southern Africa (ESA) Ministerial Commitment on Sexuality Education and Sexual and Reproductive Health Services for Adolescents and Young People (the ESA Commitment) to deliver CSE and SRHR services for young people has been endorsed by ministers of health and education from 20 ESA countries *(15)*. However, across the region, services for young people are still not available, easily accessible, or designed to be appealing to, or easily accepted by, young people. This has short and long term implications that come with associated costs for the individual, government and society as a whole.

In the short run, the cost of inaction may be perceived as more of a social cost (e.g. lack of access to contraception leads to high teenage pregnancy rates, which causes girls to drop out of high school). However, there are also increased health service costs due to a higher incidence of pregnancy and delivery related complications among adolescent girls, as well as HIV infection and long term costs of HIV treatment.

The cost of inaction among young people is particularly acute as their lifetimes can magnify the impact. As those young women who have had a child during adolescence get older, their lifetime income is likely to be lower as they are less likely to complete secondary school. They are also more likely to adopt risky behaviours because of poor economic outcomes and have a higher fertility rate which comes with more negative health outcomes. A delayed HIV diagnosis, for instance, results in a delay in the initiation of antiretroviral therapy (ART), with negative impacts on a person's health.

Using this approach, this report calculates the current cost of the inadequate provision of SRHR services, including HIV, to young people aged 15–24 years old in East and southern Africa. This region a high cost of inaction which currently is being ignored. An integrative

approach is used that includes mental health and gender-based violence (GBV) prevention, among other health services. This provides a foundation for alternative policies to address these gaps to be costed and a true cost–benefit analysis to be conducted. Suggestions for potential policies—based on existing evidence—are given in the discussion section, concluding with recommendations for action required to reduce this cost.

1 BOX
WHAT THE COST OF INACTION CAN AND CANNOT TELL

The cost of inaction is the 'cost' of maintaining the status quo. It considers the financial, economic and social costs, or unforeseen consequences of policy gaps as compared with alternative policy choices. The cost of inaction is most acute among young people as longer lifespans can magnify the impact.

For example, a lack of effective CSE and access to youth friendly contraception services is leading to high rates of early pregnancy. This has a cost to the health system in terms of: the pregnancy itself; the adolescent mother in terms of a higher chance of dropping out of school and an impact on income across the lifetime; the adolescent father in terms of poorer schooling outcomes; the child who is likely to perform poorly on a range of outcomes; and the communities and countries of these young people.

The cost of inaction approach can be used to make better policy decisions as the true cost of current policies (or the lack of them) can be estimated. This approach is *not* a cost–benefit analysis. This is a separate step in the policy-making process, where the costs of different solutions to current problems are costed and the relative benefits assessed. Also, the cost calculated is the cost per cohort and not cost per year. For example, in the case of early pregnancy, the likelihood of the mother having a baby when she is between the ages of 15 and 19 is calculated and converted to the total number of babies born for that cohort while they are in that five-year age bracket. For other calculations, the total number in the cohort is taken and the cost calculated accordingly: for example, the total number of young women aged 15–24 living with HIV and then applying the cost per person.

The cost of inaction is not necessarily where money can be 'saved' by the government. In some areas, there are costs being incurred by the government that can be reduced—for example, lower costs to the health service by reducing the number of early pregnancies. Other costs are those borne by the individual—for example, travel to health facilities—and often these people are among the poorest and most vulnerable in society who are least able to afford these costs. Thus, reducing these costs would improve the quality of life due to an increased ability to spend money on other things. Finally, many of the costs are opportunities foregone, for example, lower projected lifetime earnings as a result of dropping out of school early. These are hidden costs, but they can lead to individuals, communities and even nations being worse off than they could have been due to lower monthly incomes, less money spent per month and ultimately lower national growth.

3 METHODOLOGY

To calculate the cost of inaction due to the inadequate provision of SRHR and HIV services to young people, it is necessary to determine the nature of the inaction and the costs that need to be included.

NATURE OF THE INACTION AND THE COSTS

Inaction can take place at a variety of levels, including individual, community, service provider or government *(16)*. As UNAIDS has some influence on policy-making, the focus of this study is on government and service providers. It is clear that individuals are influenced by policy, but not always directly and it is the external agents that reach out to individuals and communities if they are to meaningfully address impacts. Therefore, this study examines the action or inaction of policy-makers and governments.

There are a variety of costs that can be included, and hence the choice of cost is important. Costs have two dimensions *(17)*:

DIMENSION 1:
INDIVIDUAL VS SOCIAL COSTS.

Individual costs are those paid by the person and social costs are those paid by society. For example, the individual cost of dropping out of school early is foregone earnings from having only a limited amount of schooling. Social costs are lower tax contributions that school dropouts will make due to lower incomes and increased chances of unemployment.

DIMENSION 2:
FINANCIAL VERSUS OPPORTUNITY COSTS.

Financial costs are monetary costs for paying for, or providing, a service. Economic costs are those paid by either the individual or society in foregone value or investment. For example, a financial cost is the cost to the government of providing ART for a person living with HIV, or the cost to the individual to travel to a health facility to receive ART. An economic cost could be a day's lost earnings for the individual attending the health facility, or lower labour productivity from a governmental perspective.

To explore the cost of providing inadequate SRHR, including HIV, service to young people aged 15–24 years in East and southern Africa, three areas that are currently adversely affecting young people are explored—using available data—due to their impact on the cost of inaction:

1. EARLY PREGNANCY

Early pregnancy is pregnancy under the age of 20. This study focuses on the age group of 15–19 years due to the better availability of reliable data *(2)*. The majority of early pregnancies at this age are unintended *(2)*. The percentage of young women aged 15–19 years who had been pregnant was high in all countries in East and southern Africa—at least 15% according to Demographic and Health Survey (DHS) data, and more than 25% in Malawi, United Republic of Tanzania, Uganda and Zambia *(3)*. Furthermore, there is evidence that teenage pregnancy has not decreased over time; rates have either stabilized or increased *(3)*. Early pregnancies are driven by multiple factors, including poverty, lack of information and access to reproductive health services, cultural norms, peer pressure, and sexual coercion and abuse. Negative pregnancy related issues that particularly affect this age group are low birth weight or eclampsia, which leads to increased risk of maternal or neonatal mortality. Other pregnancy issues include lower educational attainment due to dropping out of school for both young mothers and young fathers *(3)*. All of these factors show a wider cost of inaction beyond a traditional financial approach.

2. HIV TRANSMISSION

East and southern Africa are home to 60% of the world total of adolescents (10–19 year olds) living with HIV—an estimated 1.74 million *(18)*. Although new HIV infections among young people have fallen by 46% over the past ten years, this is still far off-target *(19)*. Adolescent girls and young women (10–24 years old) are at particular risk and represented 26% of all new HIV infections in the region in 2020 *(4)*. Tens of thousands of young men 15–24 years old are also living with HIV in each country *(4)*. As a result, AIDS is the leading cause of adolescent mortality in 12 East and southern African countries *(4)*.

3. GENDER-BASED VIOLENCE

There are high rates of GBV against women and girls in East and southern Africa. For example, in seven countries, approximately one in five young women aged 15–24 years had experienced sexual violence from an intimate partner *(5)*. GBV has serious consequences for the physical health of young women, as well as their sexual and reproductive health and mental health. Partner violence and the fear of abuse prevent girls from refusing sex, and jeopardize their ability to negotiate condom use, increasing the risk of unintended pregnancy and HIV transmission. Additionally, it is a fundamental violation of women's human rights and has adverse economic and social consequences for men, women, their children, families and communities *(5)*.

While other areas, such as sexually transmitted infections and contraceptive use, could have been chosen, there was a focus on the above areas because data on prevalence and costs were available, and they focused on the outcome of a lack of SRHR services—for example, improved contraception will prevent unintended pregnancies and if the contraception method is condoms, this will also prevent HIV. Due to demographic shifts, the urgency to focus on adolescents and young people in East and southern Africa is particularly pressing. A 'youth bulge' is predicted to increase the number of adolescents in the region by 23% by 2030 *(18, 20)*. Unless urgent action is taken to dramatically reduce the incidence of high levels of early pregnancies, HIV infections and incidents of GBV, there will be severe pressure on health services and serious consequences to society.

COUNTRY SELECTION

To make the scope of the study manageable, two focus countries were chosen from the region. South Africa was chosen as there are a variety of costing data available in the areas of reproductive health, HIV and GBV, ensuring that the study could be as wide ranging as possible. Zimbabwe was selected as a comparison country as there were also enough data available for reproductive health and HIV and the country provided a good comparison with South Africa. There were similarities in the high rates of teenage pregnancies, incidence of HIV among young people and GBV, and differences in population size, per capita income, health system resources and legal environment allowed depth in the analysis and discussion of the study findings.

GENERAL APPROACH TO COSTING

Demographic and epidemiological data were sourced from reliable governmental and international sources. Governmental sources included StatsSA (South Africa) and ZimStats (Zimbabwe). International sources included Statcompiler (DHS statistics), World Bank, WHO, UNAIDS, UNICEF and UNESCO data sets. The latest data were included in each instance.

Costing data were drawn from peer reviewed papers, and individual costing experts were consulted by UNAIDS, for example the Health Economics and Epidemiology Research Office (HE2RO) at the University of Witwatersrand in Johannesburg. Wherever possible, national costing data were used, but in a few instances average regional data for sub-Saharan Africa were used. This was not ideal, given the natural costing variation between countries, but it allowed a reasonable estimate to be included in the broader calculations.

Costing data earlier than 2011 were excluded as they were deemed too old for inclusion. All costing data were converted to 2021 US dollar prices. Base year costs in South African Rand were first converted to US dollars using the average exchange rate for that year *(21)*, before adjusting to 2021 US dollars using the US Consumer Price Index *(22)*. Zimbabwean costing data were already expressed in US dollars and were adjusted to 2021 US dollars in the same manner.

ISSUES FOR CONSIDERATION

As with all costing studies, there are a number of points to be aware of when interpreting the study findings. These include:

- The cost calculated is cost per cohort and *not* cost per year. For example, for early pregnancy, the likelihood of having a baby between 15 and 19 years of age is calculated and converted to the total number of babies born for that cohort while they are in that five year age bracket. For other calculations, the total number in the cohort is taken and the cost calculated accordingly. For example, the total number of young women aged 15–24 living with HIV is calculated and then the cost per person is applied.

- Not all costing or demographic data were available so assumptions had to be made in the process and a proxy used instead. The assumptions and proxy costs/figures used are explained under each of the cost calculations in the next section.

- Where it was difficult to generate a reliable cost estimate due to a lack of data or a suitable proxy, the costs have been excluded from the analysis. For example, the additional costs to the health system and individual due to the increased incidence of noncommunicable diseases among people living with HIV. This means that the costs displayed are a minimum cost and the true cost of inaction will actually be higher. Table 2 provides an overview of the costs included and those not included in the study.

- No cost–benefit analysis has been conducted on the interventions to pursue, which is beyond the scope of this study. Instead, it provides a useful reference document for governments to use as a benchmark when taking cost–benefit decisions on activities to reduce early pregnancy, HIV transmission and the incidence of GBV.

- The cost of inaction is not necessarily whether money can be 'saved' by the government. In some areas, there are costs being incurred by government that can be reduced—for example, lower costs to the health service by reducing the number of early pregnancies. Other costs are those borne by the individual—for example, travel to health facilities—and often these people are among the poorest and most vulnerable in society who can least afford these costs. Thus, reducing these costs would improve the quality of life due to the ability to spend on other things. Many of the costs are opportunities foregone, for example, lower projected lifetime earnings due to dropping out of school early. These are the costs that are hidden but lead to individuals, communities and even nations being worse off than they could have been due to lower monthly incomes, leading to less money to spend per month, and thereafter leading to lower national growth.

TABLE 2. SUMMARY OF COSTS INCLUDED AND NOT INCLUDED IN THE STUDY

KEY AREA	COSTS INCLUDED	COSTS NOT INCLUDED
EARLY PREGNANCY AMONG 15–19 YEAR OLDS	• *Financial and individual health costs:* financial costs to health system and patient costs per pregnancy. • *Opportunity costs:* loss of lifetime earnings for adolescent girls and boys after dropping out of school due to early pregnancy/fatherhood.	• Second generation costs: especially poorer outcomes faced by children of teenage mothers
HIV AMONG YOUNG PEOPLE (15–24 YEARS OLD)	• For young women living with HIV. • Lifetime cost of HIV to health system per person. • Lifetime cost of HIV to patient per person. • eMTCT[a] cost per mother/baby pair. • Lifetime HIV related costs for children born living with HIV. • For young men living with HIV. • Lifetime cost of HIV to health system per person. • Lifetime cost of HIV to patient per person.	• Financial costs to the health care system and patient costs due to the higher incidence of opportunistic infections and chronic comorbidities. • Loss of earnings for individual and family due to poor health, lower productivity at work and premature death. • Costs associated with onward transmission of HIV infections stemming from young people newly infected with HIV (across their lifetime).
GBV AMONG YOUNG PEOPLE (15–24 YEARS OLD).	• Cost to GBV survivor. • Cost of GBV to government. • Cost of GBV to civil society. • Cost of GBV to business.	• Second generation costs of GBV, including affected family members, especially children. • Costs associated with male perpetrators of violence, e.g. cost to criminal justice system, personal cost of loss of income, etc.

[a] Elimination of mother-to-child transmission (eMTCT).

4 COST CALCULATIONS

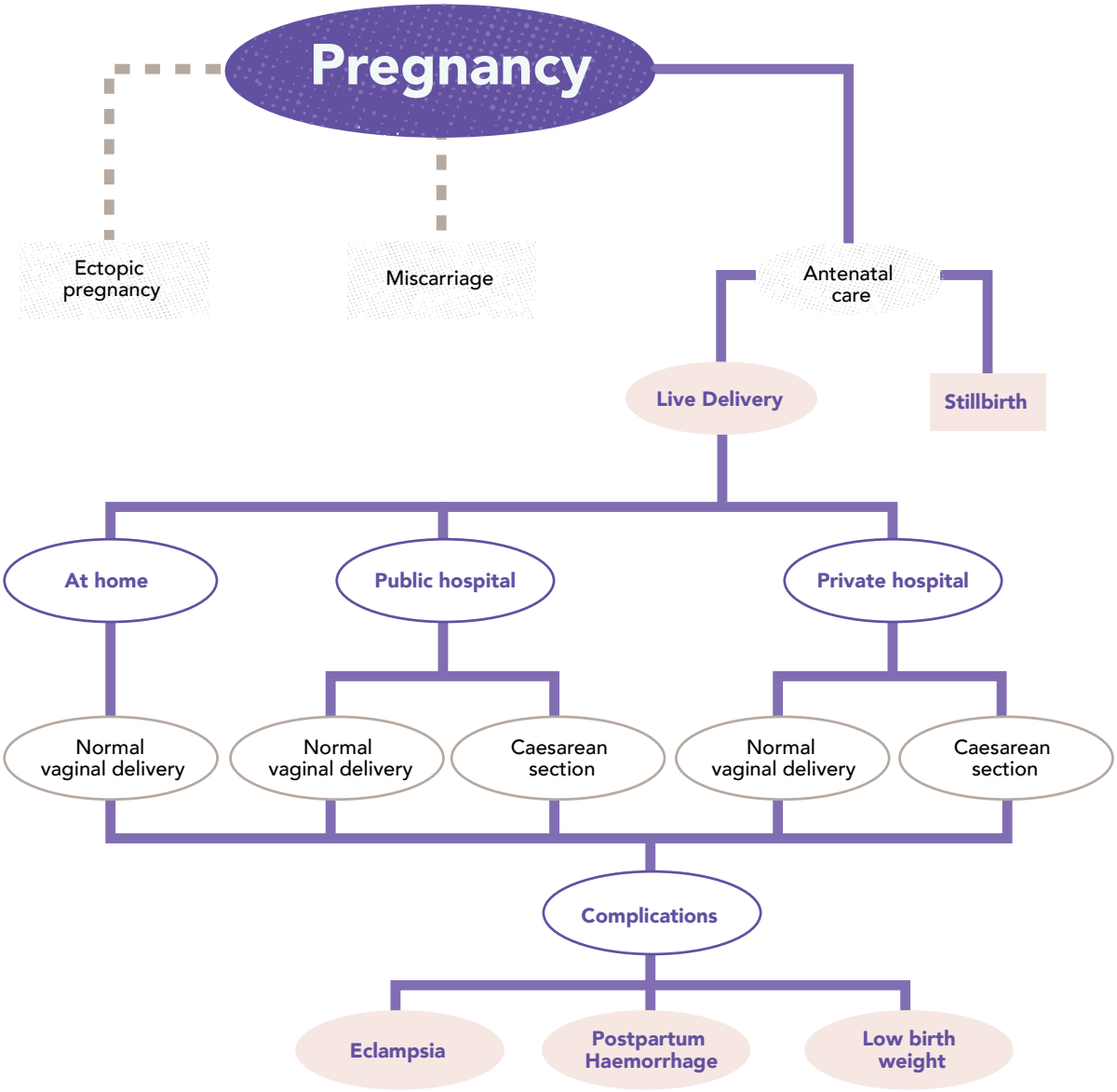
This section explains how each of the costs in the model were calculated, the source of the data and the assumptions made in the process.

EARLY PREGNANCY AMONG 15–19 YEAR OLDS: FINANCIAL COSTS

There are two ways to proceed when looking at the total costs of pregnancy and childbirth among an age group. The first is to take the total cost to the health system and the individual costs of all pregnancies, calculate the proportion of adolescents 15–19 years old among that population and take the relevant proportion of the total cost. The second way is to look at the unit costs for all interactions throughout pregnancy and childbirth, calculate the proportion of pregnancies this is relevant for and calculate the cost per pregnancy. This can then be multiplied by the number of early pregnancies among 15–19 year olds to calculate the total cost. This is the model used for this study as the total cost of pregnancy and childbirth was not available and the unit cost model allows a much better insight into the main drivers of the total cost.

To work out the cost per pregnancy, all the different outcomes for a pregnancy and the interactions with the health system need to be mapped (see Figure 1). A pregnancy could be miscarried, be an ectopic pregnancy or end up with a still birth or a live delivery. Deliveries occur in different places—at home, in public and private hospitals—and some are normal deliveries, while others are by Caesarean section. Also, a proportion of deliveries have severe complications, such as eclampsia and postpartum haemorrhage which can lead to maternal mortality and low birth weight, leading to neonatal mortality.

FIGURE 1. Different outcomes for a pregnancy



In *Figure 1*, each box represents an interaction with the health system which has a cost attached to it. The lines between each box are the probability of occurrence (i.e. proportion) of each interaction. For example, a childbirth in a hospital either takes place through a normal vaginal delivery or Caesarean section. Each interaction has a different cost and the probability of each occurring is known. Therefore, in order to calculate the cost per pregnancy, both the costs and the probabilities were calculated for every variable in each country. Unit costs were first sourced and calculated and then, based on the probability of each outcome occurring, a weighted average per pregnancy was calculated.

PREGNANCY OUTCOMES

In low- and middle-income countries there are an estimated 127 million live births each year, but actually 228 million pregnancies *(23)*. Of the other 101 million pregnancies, it is estimated that 30 million end in miscarriages and three million in stillbirths *(23)*. Therefore, simply focusing on live births misses a large proportion of the cost of pregnancies and ignores the health care needs of millions of women.

ECTOPIC PREGNANCY

Ectopic pregnancy is a complication of pregnancy characterized by an abnormal implantation of the fertilized ovum in tissues other than the endometrial lining of the uterus, usually the fallopian tube *(24)*. This condition is a life-threatening obstetrical condition if undiagnosed, and it is a leading cause of maternal death when rupture occurs in the first trimester of pregnancy *(24)*. The incidence of ectopic pregnancies in Africa is between 1.1% and 2.7% and this incidence has been rising in many African countries in the past few years *(24)*. For example, there was an incidence of 11 cases per 1000 live births between 1993 and 1995, though this doubled to 22 cases per 1000 live births between 2010 and 2014. This is equal to 1.3% of all pregnancies in South Africa. In Zimbabwe, the incidence is lower at 11.2 cases per 1000 live births *(25)*. This is equal to 0.9% of pregnancies in Zimbabwe.

Health care costs for ectopic pregnancy have been calculated for South Africa by Le et al. *(26)*. Costs for Zimbabwe were assumed to be the same as no specific Zimbabwean costing data were available. Patient costs were not found for either country.

MISCARRIAGE

A miscarriage is the spontaneous loss of a pregnancy before the 20th week and is estimated to occur in 13% of pregnancies in low- and middle-income countries *(23)*. Eight out of ten miscarriages occur within the first trimester *(27)*. There are a variety of treatments for miscarriage, including surgery to remove any remaining pregnancy tissues in the uterus, drug based medical treatments, or expectant care (i.e. no treatment) *(28)*. One observational study in South Africa found that of women who had presented to a health facility with a miscarriage, 32% had a surgical procedure, 40% used the medical method and 28% used expectant management *(29)*. However, expectant management only worked for 18.4% of women and the rest needed to proceed with another method *(29)*.

Health care costs for miscarriage have been calculated for South Africa in Le et al. *(26)*. Costs for Zimbabwe were assumed to be the same as no specific Zimbabwean costing data were available.

ANTENATAL CARE

Antenatal care (ANC) with a qualified health provider is essential for protecting the health of women and their unborn children. Until 2016, WHO recommended a minimum of four visits, which was increased to a minimum of eight visits in 2016 *(30)*.

For the purposes of this study, there is an assumption that pregnancies that were miscarried, or for which there was an ectopic pregnancy did not receive an ANC visit. This is because the majority of cases in each category occur during the first trimester and, if an ANC visit picked up an ectopic pregnancy, this cost would be included as part of that costing. Therefore, costs for ANC are only included for pregnancies that lead to live births or still births. Live births make up 61% of pregnancies in South Africa and 75% of pregnancies in Zimbabwe. The difference between the two countries is due to higher ectopic pregnancy rates in South Africa. The stillbirth rate in South Africa is 16.38 per 1000 total births and it is similar in Zimbabwe at 16.05 per 1000 total births *(31)*.

For South Africa, the health care cost for an ANC visit was calculated from the list of unit costs provided by Le et al. *(26)*. Patient costs were calculated using a Rwanda study as a proxy that found that patients spent a total of US$ 3.97 in 2015 on out-of-pocket expenses (mainly transport) attending four ANC appointments *(32)*. This figure was converted to a per visit cost at 2021 US dollar prices and then multiplied by the average number of ANC visits in South Africa, which is 5.9 *(33)*. It is likely this figure is an underestimate, but is the best one currently available.

For Zimbabwe, the patient takes a much higher part of the cost burden for accessing ANC services. The unit price provided by the government to health facilities for an ANC service is US$ 3.00 per patient *(34)*, yet clients are charged US$ 35 for the first ANC appointment and US$ 30 for subsequent appointments *(35)*. Clients attend an average of 4.83 ANC visits—calculated from Zimbabwe's 2015 DHS data *(36)*.

DELIVERY

Costing for delivery depends on both the location of the delivery and the modality. Three locations are used in this model: home; public health facility; and private health facility. Two modalities are used: normal vaginal delivery; and a Caesarean section.

For both South Africa and Zimbabwe, the delivery location probabilities were taken from the latest country DHS report: 2016 for South Africa *(37)* and 2015 for Zimbabwe *(36)*. TThe proportion of deliveries that are a Caesarean section versus a normal delivery in both public and private facilities is available in a 2020 StatsSA report *(38)*. It is assumed that home deliveries are only vaginal deliveries. For Zimbabwe, the proportion of deliveries that are a Caesarean section could not be found so the average figure for Southern Africa was used as a proxy *(39)*.

Regarding health care costs for the different modes of delivery, for South Africa, the costs for a normal vaginal delivery in a public health facility were calculated from unit costs provided in Le et al. *(26)*. For a home delivery, the facility related costs are excluded and it was assumed that the nursing practitioner cost doubles as they can only attend one birth at a time and need to account for travelling time and not managing multiple births. Private health facility costs for both types of delivery were provided in a Council for Medical Schemes report *(40)*. The only cost that was not sourced was the public health care cost of a Caesarean section. As a proxy, it was found that a private Caesarean section was 68.6% more expensive than a private normal delivery. The same ratio was used to calculate the cost of a Caesarean section from a public health facility.

For Zimbabwe, the cost of normal deliveries in a public health facility and Caesarean sections in public and private health facilities are provided in Nhapi (*41*). A home delivery is assumed to be the 2013 health centre recovery cost found in Shepard et al. *(34)*. To find the missing figure of the cost of a normal delivery in a private health facility, the same differential as South Africa (68.6%) was used.

Patient costs for delivering in a health facility in South Africa and Zimbabwe could not be sourced so the average for sub-Saharan Africa, as provided in Mori et al. *(39)* were used which take into account both direct and indirect costs, including loss of income. For both countries, it is assumed that a stillbirth occurs a one of the above delivery channels and there is no additional cost to this delivery.

COMPLICATIONS

ECLAMPSIA

Hypertensive disorders of pregnancy cause 14% of all maternal deaths globally, approximately 42 000 each year *(42)*. The majority of instances of morbidity and mortality is associated with pre-eclampsia and eclampsia. It is estimated that the prevalence of pre-eclampsia and eclampsia globally is 4.6% and 0.3%, respectively *(42)*. However, there is wide variation across regions. There is a 1.6% incidence of eclampsia in South Africa *(43)* and 0.57% in Zimbabwe. The case fatality rate of women experiencing eclampsia is 8.3% in South Africa *(43)* and 5.5% in Zimbabwe *(42)*. Women under 20 years of age, women with low levels of education, and women in their first pregnancy are all reported to be at higher risk *(43)*. This highlights a triple risk factor for adolescent girls who become pregnant, with nearly a third of eclampsia occurring in women under 20 years of age *(42)*.

POSTPARTUM HAEMORRHAGE

Postpartum haemorrhage is blood loss of more than 500 mL in the 24 hours following delivery and severe postpartum haemorrhage is blood loss of more than 1000 mm in the same time period. Globally, 6% of deliveries result in postpartum haemorrhage and this is severe after 1.86% of deliveries *(44)*. The figures are higher in sub-Saharan Africa, with a postpartum haemorrhage figure of 10.45%, but this is not broken down by regions in Africa so the lower global average figure is used for both South Africa and Zimbabwe to err on the side of caution.

LOW BIRTH WEIGHT

The weight of a baby at birth is a major determinant of infant and child mortality. Children who weigh less than 2.5 kg at birth have a higher than average risk of early childhood death. Among adolescent girls in South Africa, 13.8% of babies had low birth weight for mothers according to an analysis of the 2016 South Africa DHS *(38)*. In Zimbabwe, the proportion for adolescent mothers was not available, but for all mothers this was estimated by UNICEF as 12.63% in 2015 *(45)*, but different studies vary, ranging from 10.8% to 24.3% *(46)*.

The costs for each of the above complications were sourced from a systematic review across sub-Saharan Africa *(39)*. In the review, costs were categorized as health system costs if they were borne by the health care facility and patient costs if they were borne by the patient or caregiver. Patient costs included both direct and indirect costs. Direct costs included those paid in the process of accessing care and included out of pocket payment for treatment, transport to and from the health care facility, food and other related expenses. Indirect costs were those that resulted from the loss of income as a result of not being able to engage in economically productive activities due to illness. The median cost has been used for both South Africa and Zimbabwe as a locally sourced cost was not available for any of the complications listed above.

NUMBER OF EARLY PREGNANCIES AMONG 15–19 YEAR OLDS

The number of live deliveries for 15–19 year olds was calculated using the adolescent birth rate per 1000 women *(47)* and dividing by the total current estimated population of adolescent girls aged 15–19 *(48)*. The number of pregnancies was then calculated using the ratios explained above. This number is not calculated 'per year' but 'per cohort', i.e. the number of adolescent girls between ages 15 and 19 who become pregnant.

EARLY PREGNANCY AMONG 15–19 YEAR OLDS: ECONOMIC COSTS

As well as additional health costs and potential negative complications due to early pregnancy, there is a high economic cost both to the individual and to society. This is driven mainly by the greater likelihood that a girl will drop out of school due to pregnancy. In South Africa, one in three adolescent girls drops out of school if she has a child *(49)*. In Zimbabwe, the figure is 55%[1] *(50)*. The assumption is that girls drop out only if they have a child who survives and not, for example, if there is a miscarriage in the first or second trimester. The economic costs of dropping out of school early are as follows:

- **For an individual girl.** Lower lifetime earnings owing to a lack of a higher level of education. There is also an increased likelihood of unemployment throughout the working life *(17)*. This means that girls who have an early pregnancy have an increased risk of facing GBV and living in poverty, with the associated negative health and social consequences *(51)*.

1 Of the 57 500 school dropouts in 2019, 12.5% were due to pregnancy. Over five years (the size of the cohort), this comes to 35 958 adolescent women, which is 55% of all those who gave birth.

- **For society.** Lower lifetime earnings and higher levels of unemployment both reduce potential tax revenue received by the government and lead to lower productivity. This translates into lower output and reduces potential GDP growth for the country due to a smaller skilled workforce. For example, a 2008 study in Latin America found that a high secondary school dropout rate of 70% would reduce GDP growth by 1.7% a year, which over a 35 year timeframe is the equivalent of 58% of annual GDP *(17)*.

Other knock-on effects for both individuals and society of early school dropout are an increase in unemployment, crime, violence (including GBV) and risky sexual behaviour, leading to further early pregnancies and also the increased chance of HIV infection *(1, 17, 52)*. For simplicity, the costs associated with youth unemployment, crime and incarceration are not included in this study. Also, these costs are of lower magnitude than those covered in this study as they have a limited timeframe, whereas early school leaving has a lifelong impact *(17)*.

There are also consequences for the children of adolescent mothers, who are more likely to have low birth weight, poorer health, be physically abused, struggle academically and die prematurely *(1, 17)*. This knock-on effect in terms of additional neonatal mortality is included in this study but additional costs are not.

There are also consequences of early pregnancy for boys becoming adolescent fathers. A South African study found that only one in ten young fathers remain in school because of the social pressure to provide financially for their children.[2] In 2011, there were 3 211 teenage fathers included on birth certificates, which meant that the number of young men becoming fathers between the ages of 15 and 19 years was 16 055.[3] The male net secondary school attendance rate in South Africa is 77.2%[4], meaning there are likely to be 12 394 adolescent boys in school when they became fathers. Due to the 90% drop out rate, 11 155 adolescent boys dropped out of school after becoming a father. This is likely to be an underestimate as the number of teenage fathers was taken from birth certificate records, yet 65% of birth certificates had the age of the fathers missing, and this was more likely for births to adolescent girls.[5] For Zimbabwe, data for the number of teenage fathers were not available so it was assumed that the proportion of adolescent fathers to adolescent mothers that dropped out of school was the same as South Africa. This figure was then used to estimate the number of adolescent fathers in Zimbabwe that dropped out of school.

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CALCULATING FOREGONE LIFETIME EARNINGS
AFTER DROPPING OUT OF SECONDARY SCHOOL

The economic costs of early pregnancy is the foregone lifetime earnings associated with the completion of a higher schooling level. A gross income is used to capture a societal as well as individual impact, i.e. foregone taxation receipts are included.

To calculate the lifetime cost of dropping out of school early, discounted to the present day, it is important to compare the difference in average annual earnings for someone who did not complete secondary school with someone who did across their working lifetime. This can be mathematically displayed as follows:

$$\sum_{t=1}^{T}\left[\frac{w^{ss}-w^{drop}}{(1+r)^{t}}\right]$$

This is the net present value of the difference between the average earnings of a secondary school graduate (w^{ss}) and a secondary school dropout (w^{drop}); r is the discount factor; and T is the expected working lifetime. Following Cunningham et al., the discount rate is set to 5%, with a 45 year working life *(17)*.

This is not the full picture. A proportion of secondary school graduates also go on to complete a diploma or technical college qualification, and another proportion go on to complete a degree. Naturally, earnings are higher for each group compared with secondary school graduates. For diploma/college graduates this is displayed mathematically as follows:

$$\Pr(\text{Dip/SS})\times\sum_{t=1}^{T}\left[\frac{w^{dip}-w^{ss}}{(1+r)^{t}}\right]$$

This equation calculates the difference in average earnings for a diploma graduate (w^{dip}) and a secondary school graduate (w^{ss}), weighted by the probability that a secondary school graduate will attend college for a diploma. This is estimated using the fraction of secondary school graduates who attend college:

$$\Pr(\text{Deg/SS}) \times \sum_{t=1}^{T} \left[\frac{w^{deg} - w^{ss}}{(1+r)^t} \right]$$

The equation above does exactly the same thing, except it compares the average earnings for a university graduate (w^{deg}) and a secondary school graduate (w^{ss}), weighted by the probability that a secondary school graduate will attend university to get a degree. The source data look at the probability of a student receiving a diploma or a degree so these are compared directly with secondary school graduates. Some will have obtained both a diploma and a degree, but it is the final qualification that matters and therefore is being measured. To calculate the total cost of dropping out of secondary school, the three numbers generated are then summed together.

As per Cunningham et al, it is assumed that the wage differences remain constant throughout an individual's lifetime and that the working life is the same *(17)*. While this is not strictly true in practice, these assumptions are used to simplify the calculations and do not affect the conclusions.

For these calculations, earnings data for South Africa came from Compare Guru analysis conducted with Statistics South Africa data, using the Analytico Earnings Analysis Model™ *(53)*. The data were in South African rand as of October 2016. Average wage growth from October 2016 to December 2021 was calculated using Statistics South Africa data and the average income figures were adjusted accordingly *(54)* The rand value was then converted to US dollars at the average exchange rate for the year *(21)*. For Zimbabwe, earnings data came from the Zimbabwe Youth Investment Case Study, which was presented in US dollars in 2011 *(52)*. This was adjusted to 2021 US dollars using the relevant US Consumer Price Index *(22)*.

In both countries, the proportion of adolescent boys and girls who completed secondary school was calculated from UNICEF secondary education and enrolment statistics *(55)*. In South Africa, the proportion that completed college or university was sourced from a Higher Education Department report *(56)* and in Zimbabwe this information was sourced from the 2019 Multiple Indicator Cluster Survey *(57)* and the Zimbabwe National Statistics Agency Education Statistics Report 2018–2020 *(58)*.

COST PER PERSON LIVING WITH HIV

The financial costs of HIV include the health system costs of HIV related services, in particular ART, and the individual costs of travelling to appointments and related out of pocket expenses, for example purchasing nutritional supplements. A review by Tran et al. *(59)* calculated global estimates for the lifetime cost of managing HIV and provides figures per World Bank country classification—lower middle income, upper middle income, higher income, etc. The median figure for an upper middle income country like South Africa was US$ 14 211 in 2021 US dollars *(59)*. As part of the same review, it was found that ART costs are usually between 53.6% and 81.6% of the total lifetime cost *(59)*. Therefore, this figure was checked using values provided by HE2RO. The 2021 ART costs were multiplied by the average life expectancy in South Africa for a woman and man aged 20 living with HIV. For women, average life expectancy is 36.8 years and for men it is 27.6 years *(60)*. The cost is US$ 7 704 for women, which represents 54.3% of the total provided in the Tran et al. review and fits within the range of ART costs. As a result, the lifetime health care cost of US$ 14 211 per person was used as the average health care cost of HIV. Added to this was the average cost of eMTCT services per mother–baby pair, which was applied just to young women living with HIV *(61)*.

In South Africa, a study by Pillai et al. *(62)* costed the individual expenses—both out of pocket and lost income—of people living with HIV in the three months leading up to initiation of ART. During this time, an average of one health visit per month was made and a monthly cost was provided. It was assumed that people living with HIV and undergoing ART visit a health facility once every quarter rather than once a month. Therefore, the monthly cost in terms of out of pocket expenses and lost income prior to initiation of ART was used as the estimated quarterly cost after ART initiation. This quarterly cost was turned into lifetime cost by multiplying by the average number of quarters an individual would be on ART based on the average life expectancy for men and women *(60)*.

In Zimbabwe, the cost of ART drugs was US$ 73 per year for first line treatment and US$ 227 per year for second line treatment *(63)*. Since the proportion of people receiving second line treatment was between 1% and 5%, a midpoint of 3% was taken *(64)*. The ART cost excluded broader health system costs, including medical staff, health facility operations costs, etc. It was assumed that life expectancy for men and women living with HIV aged 20 years old was the same as in South Africa as no reliable data on average life expectancy among young people in Zimbabwe was available *(60)*. This produced the lifetime cost of ART, but not the lifetime cost taking into account full health system costs. In South Africa, the lifetime ART cost made up 54.2% of the lifetime cost and the same proportion was used for Zimbabwe to calculate the lifetime health system cost of HIV. This was US$ 5 606 for women and US$ 4 189 for men—less due to a lower life expectancy. These figures were compared and found to be consistent with the median lifetime cost of US$ 5 221 in other low- and lower-middle-income countries in Africa *(64)*. The eMTCT and ART costs of patients accessing HIV data were calculated the same way as for South Africa, using recent costing data from Zimbabwe *(65)*.

To calculate the total cost of HIV services for the cohort of young people in each country, the latest UNAIDS Epidemiological Data were used to source the number of young men and women living with HIV (aged 15–24 years), HIV prevalence, the number of deliveries to young women living with HIV and the MTCT rate *(66)*. From these figures the number of children born living with HIV was also calculated.

Note that a person living with HIV is going to catch more opportunistic infections and a higher incidence of chronic comorbidities such as cancer, liver failure and heart disease. These will add both an individual cost—especially in terms of lost earnings—and a health system cost. These costs are not included in this study as they could not be reliably estimated due to a paucity of data *(59)*. For similar reasons, the economic costs of HIV, including the costs associated with premature death and lower productivity at work, were also not included *(17)*.

GENDER-BASED VIOLENCE

GBV has serious consequences for women's physical health, as well as their sexual and reproductive and mental health. It is also a fundamental violation of women's human rights and has adverse economic and social consequences for men, women, their children, families and communities *(5)*. More than 30 studies, mostly from developed countries, have attempted to quantify the costs of various forms of violence against women. These studies focus largely on the costs of services, and the economic losses due to lost output, decreased productivity and lower earnings resulting from violence. Some of the most comprehensive studies, in both developed and developing countries, estimate the cost of violence to be between 1% and 2% of GDP, and these are widely accepted to be underestimates, given the conservatism of the methodology and the gross under-reporting of violence.

In 2014, KMPG South Africa completed a study on the economic impact of GBV in South Africa *(67)*. This study assessed the direct and indirect cost to victims, the cost to government, the costs to civil society and the cost to business. It sought to assess the second generation cost, but was unable to find reliable data. As that study fits neatly into the remit of this study, the figures provided in 2012 South African rand have been converted to 2012 US dollars at the average exchange rate for that year *(21)* and adjusted to 2021 US dollars using the relevant US Consumer Price Index *(22)*. As the total figure of the report was for all women of reproductive age, the proportion of young women 15–24 years out of the total population aged 15–49 years was calculated and this proportion of the total cost was used.

The KPMG study does not include any GBV related costs associated with men, either as perpetrators or affected family members of women facing violence. Also not included were second generation costs—the cost of children witnessing and living with violence, such as increased juvenile and adult crime. Data on these were not available so this element is not included within the costing calculations in this study. There is no comparable study for Zimbabwe and no reliable proxy information could be found.

5 RESULTS

THE COST OF EARLY PREGNANCIES

Table 3 outlines the cost per pregnancy for both South Africa and Zimbabwe. The methodology for each of the component parts is explained in the methodology section. The average cost of a pregnancy in South Africa is US$ 721.53, of which 91.0% is the health care cost and 9.0% is the cost to the individual. The cost per pregnancy in Zimbabwe is much lower—the average cost is US$ 382.78, but the cost borne by the individual is much higher at 45.0% due to higher out of pocket expenses to access health care. It should be noted that this is the average cost. Some pregnancies will cost much less than this, especially if terminated early or if there is an early miscarriage. Similarly, some pregnancies will be a lot more expensive if there are complications, especially during and after childbirth. The average figure—based on the probability of each event happening during a pregnancy, provides a base cost for the calculations that follow.

TABLE 3. TOTAL COST PER EARLY PREGNANCY IN SOUTH AFRICA AND ZIMBABWE

	SOUTH AFRICA			ZIMBABWE		
PREGNANCY RELATED SERVICE	WEIGHTED PROBABILITY	COST PER SERVICE (US$ 2021)	COST PER PREGNANCY (US$ 2021)	WEIGHTED PROBABILITY	COST PER SERVICE (US$ 2021)	COST PER PREGNANCY (US$ 2021)
HEALTH SERVICE COST						
Miscarriage	0.130	297.34	38.65	0.130	57.23	7.44
Ectopic pregnancy	0.013	297.34	3.87	0.090	286.13	25.75
ANC	0.617	36.14	22.30	0.683	3.49	2.38
Deliveries						
Midwife home delivery	0.023	418.87	9.56	0.137	14.54	2.00
Public hospital normal delivery	0.421	649.10	273.02	0.347	22.00	7.63
Public hospital Caesarean section delivery	0.119	1094.21	129.81	0.098	146.00	14.28
Private hospital normal delivery	0.020	1739.37	35.58	0.032	928.93	29.45
Private hospital Caesarean section delivery	0.032	2932.13	93.80	0.050	1354.72	67.17
Other	0.002	Unknown		0.020	Unknown	
Complications						
Eclampsia	0.010	166.69	1.65	0.004	166.69	0.65
Postpartum haemorrhage	0.037	115.94	4.29	0.041	115.94	4.75
Low birth weight	0.085	554.37	47.20	0.086	554.37	47.82
Health system cost per pregnancy			**659.74**			**209.32**

PREGNANCY RELATED SERVICE	SOUTH AFRICA WEIGHTED PROBABILITY	SOUTH AFRICA COST PER SERVICE (US$ 2021)	SOUTH AFRICA COST PER PREGNANCY (US$ 2021)	ZIMBABWE WEIGHTED PROBABILITY	ZIMBABWE COST PER SERVICE (US$ 2021)	ZIMBABWE COST PER PREGNANCY (US$ 2021)
CLIENT COST						
Miscarriage	0.130	36.24	4.71	0.130	33.60	4.37
Ectopic pregnancy	0.013	36.24	0.47	0.090	33.60	3.02
ANC	0.617	6.69	4.13	0.683	171.48	117.12
Normal deliveries	0.464	19.52	9.06	0.516	18.10	9.34
Caesarean section	0.151	153.91	23.18	0.147	142.70	21.03
Eclampsia	0.010	147.81	1.46	0.004	137.05	0.53
Management of maternal haemorrhage	0.037	124.25	4.60	0.041	115.20	4.72
Low-birth weight baby care	0.085	166.53	14.18	0.086	154.40	13.32
Client cost per pregnancy			**61.79**			**173.46**
TOTAL COST PER PREGNANCY			**721.53**			**382.78**

Table 4 shows the net present value of earnings foregone if an adolescent girl drops out of secondary school before completion. A girl who completes secondary school earns 3.1 times more per year than a girl who has dropped out of secondary school. For the 9.4% that go on to complete a diploma or TVET certificate, this differential increases to five times, and to 8.1 times for the 6% who instead complete a degree. Thus, the total loss of earnings for dropping out of secondary school at present value over a 45 year working life is US$ 150 198.41 in South Africa.

TABLE 4. NET PRESENT VALUE OF EARNINGS FOREGONE IF AN ADOLESCENT GIRL DROPS OUT OF SECONDARY SCHOOL

	SOUTH AFRICA	ZIMBABWE
INDICATOR	**US$ 2021**	**US$ 2021**
Annual salary if dropping out of secondary school	2772.15	2645.03
Annual salary if completing secondary school	8677.05	4466.20
Annual salary if completing diploma	13 942.05	6793.25
Annual salary if completing degree	22 434.64	9539.46
Probability of adolescent girls completing secondary school	0.5187	0.136
Probability of holding a diploma or TVET certificate	0.094	0.044
Probability of having a degree	0.06	0.033
NET PRESENT VALUE OF EARNINGS FOREGONE	**150 198.41**	**67 631.25**

For Zimbabwe, a girl who completes secondary school earns 1.7 times more per year than a girl who has dropped out of secondary school. Furthermore, 13.6% of graduates go on to complete a diploma or TVET certificate and the wage differential for them is 2.6 times higher. Another 3.3% complete a degree and they earn on average 3.6 times the girl who dropped out of secondary school. In Zimbabwe, while the annual salary for women who have dropped out of secondary school is similar to South Africa, the size of the salary growth for each additional educational qualification is lower than in South Africa, as is the proportion of women who achieve each level of education. Therefore, the total loss of earnings for dropping out of secondary school at present value over a 45 year working life in Zimbabwe is US$ 67 613.25.

Only 13.6% of girls currently complete secondary school, compared with 51.9% in South Africa. In Zimbabwe there is a much higher rate of early marriage, with 33.7% of girls married before age 18 *(68)* compared with 3.6% in South Africa *(69, 70, 71)*. Also, the chance of dropping out of school due to pregnancy is much higher in Zimbabwe. While both countries have policies that require adolescent school girls who have a child to be allowed back in school *(72, 73)*, 33% do not return in South Africa *(72)* and 55% do not return in Zimbabwe due to stigma and other barriers *(50)*[6]. It should be noted that Zimbabwe only changed the law in August 2020 to specifically prohibit state schools from banning pregnant students from attending school *(71)*. Table 5 shows the calculations for the total cost of inaction for teenage pregnancy.

6 In 2018, 12.5% of 57 500 students who dropped out of school did so because of pregnancy. Over five years, this comes to 35 938 students. There are 65 760 live deliveries to adolescent women aged 15–19 years. Thus, 55% drop out.

TABLE 5. CALCULATING THE COST OF INACTION FOR EARLY PREGNANCIES

	SOUTH AFRICA			ZIMBABWE		
	NUMBER OF PREGNANCIES/ ADOLESCENT GIRLS	COST PER PREGNANCY/ PERSON	COST OF INACTION (US$ 2021)	NUMBER OF PREGNANCIES/ ADOLESCENT GIRLS	COST PER PREGNANCY/ PERSON	COST OF INACTION (US$ 2021)
Financial health costs—financial costs to health system for cohort	**273 585**	659.74	180 494 968	87 397	209.32	18 293 940
Individual health costs—financial cost to patient for cohort	**273 585**	61.79	16 904 817	87 397	173.46	15 132 441
Number of adolescent deliveries (15–19 years)	**168 707**			65 760		
Proportion that drop out of school due to pregnancy	**33%**			55%		
Number of adolescent girls who drop out of school due to pregnancy and the resulting loss of earnings	**56 236**	150 198.41	8 446 557 785	35 938	67 631.25	2 430 531 863
Number of adolescent boys who drop out of school due to early fatherhood and the resulting loss of earnings	**11 155**	150 198.41	1 675 463 264	7 129	67 631.25	482 143 181
TOTAL COST OF INACTION FOR EARLY PREGNANCIES			**10 319 420 834**			**2 946 101 425**

The cost of inaction for early pregnancies among adolescent girls is therefore calculated by multiplying the number of adolescent pregnancies among 15–19 year olds by the average cost per pregnancy. This gives a total cost of US$ 197.4 million in South Africa and US$ 33.4 million in Zimbabwe. It is assumed that only girls and young women who carry the pregnancy to term are at risk of dropping out of school and then not every girl or young woman drops out of school, as mentioned above, with a proportion returning. Therefore, the opportunity cost in terms of wages lost is calculated for the number that drop out of school in each country. This means that the cost of lost wages is US$ 8.4 billion in South Africa and US$ 2.4 billion in Zimbabwe for adolescent girls, and US$ 1.7 billion and US$ 0.5 billion for adolescent fathers, respectively. **This leads to a total cost of inaction for early pregnancy of US$ 10.3 billion in South Africa and US$ 2.9 billion in Zimbabwe.**

There are two main costs not included in the above, which means it is probably an underestimate. First, the assumption is made that adolescent girls who have a child while at school and continue their schooling are just as likely as their peers to proceed to further qualifications such as a diploma or a degree. Having a child is likely to reduce the probability they will continue their education after secondary school, so they will lose out on lifetime income. Second, adolescent pregnancy can affect future generations, with daughters of teenage mothers at a greater risk of teenage pregnancy themselves, perpetuating intergenerational cycles of poverty *(73)*. Neither of these figures could be calculated due to the lack of reliable data.

Total cost of inanction for early pregnancy is of US$ 10.3 BILLION IN SOUTH AFRICA and US$ 2.9 BILLION IN ZIMBABWE for lifetime of cohort.

COST OF HIV

Table 6 summarizes the total lifetime cost to society of HIV among young people aged 15–24 years.

TABLE 6. TOTAL LIFETIME COST OF HIV AMONG YOUNG PEOPLE AGED 15–24 YEARS

	SOUTH AFRICA			ZIMBABWE		
INDICATOR	NUMBER	COST PER PERSON	COST OF INACTION (US$ 2021)	NUMBER	COST PER PERSON	COST OF INACTION (US 2021)
YOUNG WOMEN LIVING WITH HIV						
Lifetime health system cost of HIV	488 752	14 211.38	6 945 838 200	75 602	5 606.39	423 854 600
Lifetime cost to patient (young woman)	488 752	2689.61	1 314 553 722	75 602	1 036.54	78 364 523
HIV prevalence among young women 15–24 years	10.35%			5.15%		
Number of deliveries to young women living with HIV and eMTCT cost per mother-baby pair	17 465.70	97.55	1 703 787	3387.95	42.39	143 624
Mother-to-child transmission rate	3.91%			8.70%		
Total cost to society of HIV among young women and girls (15–24 years)			**8 260 507 199.14**			**502 382 337.01**
YOUNG MEN LIVING WITH HIV						
Lifetime health system cost of HIV (male)	168 614	14 211.38	2 396 236 869	41 852.00	4 189.28	175 329 732
Lifetime cost to patient (young man)	168 614	2017.21	340 129 802	41 852.00	777.41	32 535 965
Total cost to society of HIV among young men (15–24 years)			**2 736 366 671**			**207 865 697**
TOTAL COST OF INACTION OF HIV AMONG YOUNG PEOPLE (15–24 YEARS)			**10 996 873 870**			**710 248 034**

In South Africa, the cost to society of HIV among young people is US$ 8.2 billion for young women and US$ 2.7 billion for young men, making a total of US$ 11.0 billion. In Zimbabwe, it is US$ 502 million for young women and US$ 208 million for young men—a total of US$ 710.2 million. This is the lifetime cost of all young men and women currently living with HIV between the ages of 15 and 24, both those newly infected and those who acquired HIV at an earlier age, including perinatally. If the HIV incidence stays the same, it will also be the same future cost for each new cohort of adolescents and young people aged 15–24 years. Given the disproportionate burden of HIV, and therefore much higher rate of HIV acquisition among young women and the direct impact due to mother-to-child transmission through pregnancy, birth and breastfeeding, the cost is over three times higher among young women than young men in South Africa and almost 2.5 times higher in Zimbabwe.

COST OF GBV FOR YOUNG WOMEN

TABLE 7. TOTAL COST OF GBV AMONG AGYW IN SOUTH AFRICA

	SOUTH AFRICA		
INDICATOR	TOTAL COST OF INACTION PER YEAR (U$ 2021)	COST OF INACTION FOR YOUNG WOMEN AGED 15–24 PER YEAR (US$ 2021)	COST OF INACTION FOR YOUNG WOMEN AGED 15– 24 PER COHORT (US$ 2021)
Cost to GBV survivor	3 622 110 663	1 100 296 869	11 002 968 691
Cost of GBV to government	73 800 948	22 418 683	224 186 835
Cost of GBV to civil society	127 264 952	38 659 566	386 595 665
Cost of GBV to business	262 012 016	79 591 992	795 919 916
Second generation costs of GBV	Unable to quantify		
Costs associated with male perpetrators of violence	Unable to quantify		
COST OF GBV AMONG AGYW 15–24 YEARS	**12 409 671 106**		

The total annual cost of GBV in South Africa is US$ 4.09 billion among women aged 15–49 years. Adolescent girls and young women make up 30.4% of this age group. Therefore, assuming that GBV happens at the same rate regardless of age7, the cost of GBV among AGYW is US$ 1.24 billion per year. The cohort cost—i.e. the cost of GBV between the ages of 15 and 24 years—is therefore US$ 12.4 billion (Table 7). Most of this cost (89%) is the cost to the survivor, which comprised: the cost of seeking help, including transport, phone calls, medical costs and counselling costs; loss of earnings; and costs associated with morbidity and mortality, including resultant health conditions, disabilities and deaths associated with GBV. The 2016 South African DHS found that the prevalence of physical violence was greater among less educated women than those with secondary education or higher *(9)*. This shows other adverse consequences for dropping out of school early, including due to teenage pregnancy. Similarly, the prevalence of physical and sexual violence decreased with the wealth quintile: 29% of the lowest wealth quintile had experienced physical violence and 8% had experienced sexual violence. These figures were 12% and 4%, respectively, for the highest wealth quintile *(9)*.

TOTAL COST OF INACTION

To put the figures for the total cost of inaction into context, it is instructive to compare them with the latest national GDP figure (Table 8).

TABLE 8. TOTAL COST OF INACTION AND COMPARISON WITH NATIONAL GDP

	SOUTH AFRICA		ZIMBABWE	
INDICATOR	**COST (US DOLLARS)**	**PROPORTION OF GDP**	**COST (US DOLLARS)**	**PROPORTION OF GDP**
GDP—2021 (US dollars)	419 015 020 000		28 371 240 000	
Total cost to society of early pregnancy	10 319 420 834	2.5%	2 946 101 425	10.4%
Total cost to society of HIV among AGYW (15–24 years)	8 260 507 199	2.0%	502 382 337	1.8%
Total cost to society of HIV among young men (15–24 years)	2 736 366 671	0.7%	207 865 697	0.7%
Total annual cost to society of GBV among AGYW (15–24 years)	12 409 671 106	3.0%		
TOTAL COST OF INACTION	**33 727 669 597**	**8.0%**	**3 656 349 459**	**12.9%**

7 This is a fair assumption to make, since 11% of women aged 15–49 years in South Africa have experienced physical or sexual violence in the past 12 months, while 11.8% of AGYW aged 15–24 years have experienced such violence *(74)*.

The latest GDP figures for South Africa and Zimbabwe are for 2021 *(75)*. The GDP in current US dollars has been used as this matches the costing numbers, which are also provided in current US dollar figures. The GDP in South Africa in 2020 was $419 billion and in Zimbabwe it was $28 billion. The total cost of inaction in South Africa is equivalent to 8.0% of annual GDP. In other words, for every $100 spent in the country over the course of a year, the cost of inaction on youth SRHR is equivalent to $8.00 in financial outlay on paying for the effects of the lack of SRHR services, or opportunity costs of future value and income foregone due to the consequences of these actions. The biggest contributing factors are the cost to society of GBV, which is 3.0% of GDP, early pregnancy which is 2.5% of GDP and the cost to society of young girls living with HIV, which is 2.0% of GDP. In Zimbabwe, the total cost of inaction is equivalent to 12.9% of GDP, driven mainly by the cost to society of early pregnancy, which is 10.4% of GDP. The total cost to society of HIV among young women and men is 1.8% and 0.7% of GDP, respectively.

While the absolute cost of inaction on youth SRHR is smaller in Zimbabwe, given the smaller size of the economy, the cost is a higher percentage of GDP, in other words, higher relative to the size of the economy.

TABLE 9. ANNUAL SPENDING BY THE SOUTH AFRICAN AND ZIMBABWEAN GOVERNMENTS IN 2021 IN COMPARISON TO THE COST OF INACTION

CATEGORY	ANNUAL SPENDING BY THE SOUTH AFRICAN GOVERNMENT (US$ MILLION)[8]	ANNUAL SPENDING BY THE ZIMBABWEAN GOVERNMENT (US$ MILLION)[9]
Social development	22 669	90
Health	16 821	503
Education	27 239	640
Total government budget, 2021	136 568	3 951
Cost of inaction on adolescent sexual and reproductive health	33 727	3 656
Proportion of total government spending, 2021	24.7%	92.5%

To put the magnitude of these figures further into context, the total cost of inaction in South Africa is larger than the annual education budget and more than double the annual health budget (Table 9). In Zimbabwe, the cost of inaction is higher than social development, health and education spending combined. In fact, the cost of inaction on adolescent sexual and reproductive health comes to 92.5% of the total Zimbabwean Government budget for 2021.

8 These figures were calculated from the 2021–2022 South Africa budget *(76)* using the 2021 average US dollar exchange rate *(21)*.

9 These figures were calculated from the 2021 Zimbabwean Government budget *(77)* using the official US dollar exchange rate for 31 December 2021 as the average exchange rate was not available *(78)*.

TABLE 10. COST OF INACTION WITH REGARD TO ADOLESCENT SEXUAL AND REPRODUCTIVE HEALTH FOR EACH OF THE KEY AREAS

AREA	COST CATEGORY	SOUTH AFRICA COST (US$ 2021)	ZIMBABWE COST (US$ 2021)
Early pregnancy among 15–19 year olds	Financial health costs—financial costs to the health system for cohort	180 494 968	18 293 940
	Individual health costs—financial cost to patient for cohort	16 904 817	15 132 441
	Opportunity costs—loss of lifetime earnings to adolescent mothers due to dropping out of school	8 362 036 864	2 430 498 047
	Opportunity costs—loss of lifetime earnings to adolescent fathers due to dropping out of school	1 675 463 264	482 143 181
	Second generation costs—especially poorer outcomes faced by children of teenage mothers	Unable to quantify	Unable to quantify
	TOTAL EARLY PREGNANCY COSTS	**10 319 420 834**	**2 946 101 425**
HIV among young people (15–24 years old)	YOUNG WOMEN LIVING WITH HIV		
	Lifetime cost of HIV to health system for cohort	6 945 838 200	423 854 600
	Lifetime cost of HIV to patient for cohort	1 314 553 722	78 364 523
	eMTCT cost per mother/baby pair	1 703 787	143 624
	Lifetime HIV related costs for children born living with HIV	115 277	19 590
	YOUNG MEN LIVING WITH HIV		
	Lifetime cost of HIV to health system for cohort	2 396 236 869	175 329 732
	Lifetime cost of HIV to patient for cohort	340 129 802	32 535 965
	YOUNG WOMEN AND YOUNG MEN LIVING WITH HIV		
	Costs associated with onward transmission of HIV to sexual partners throughout lifetime	Unable to quantify	Unable to quantify
	Financial costs due to higher incidence of opportunistic infections and chronic comorbidities	Unable to quantify	Unable to quantify
	Opportunity cost of living with HIV	Unable to quantify	Unable to quantify
	TOTAL HIV COSTS	**10 998 577 657**	**710 248 034**
GBV among AGYW (15–24 years old)	Cost to GBV survivor	11 002 968 691	Unable to quantify
	Cost of GBV to government	224 186 835	Unable to quantify
	Cost of GBV to civil society	386 595 665	Unable to quantify
	Cost of GBV to business	795 919 916	Unable to quantify
	Second generation costs of GBV	Unable to quantify	Unable to quantify
	Costs to male perpetrators of violence	Unable to quantify	Unable to quantify
	TOTAL GBV COSTS	**12 409 671 106**	**Unable to quantify**
TOTAL COST OF INACTION		**33 727 669 597**	**3 656 349 459**

6 DISCUSSION

The cost of inaction on youth sexual and reproductive health is clear. Inaction in the provision of effective, youth friendly SRHR services is placing a huge burden on young people in Zimbabwe and South Africa. Teenage pregnancy is high, leading to school dropouts, HIV transmission remains high, especially among AGYW, and GBV continues to be pervasive. These costs of inaction impose a lifelong burden for those directly affected and the ripple effects of this burden affect families, communities and the country as a whole. With the identification of this cost of inaction, these costs can be compared to the cost of different policy options for supporting youth SRHR. The scope of this report does not go as far as outlining and costing specific interventions. However, based on current best practice and evidence, urgent action is needed in the following five interlinked areas.

1. BREAK DOWN THE DIVIDE BETWEEN HEALTH AND EDUCATION SECTORS TO ENHANCE CSE

Comprehensive sexuality education is a curriculum based process of teaching and learning about the cognitive, emotional, physical and social aspects of sexuality. It provides youth with reliable information which prepares them for a safe, productive and fulfilling life.

School-based CSE, when delivered effectively using engaging and interactive game based methods, empowers young people to make informed decisions about relationships and supports them in avoiding early and unintended pregnancies, HIV and other sexually transmitted infections *(79, 80)*.

In 2013, a Ministerial Commitment on CSE and SRHR services for adolescents and young people in East and southern Africa was signed by representatives from 21 countries across the region *(81)*. This commitment generated a concerted effort on CSE, but a recent review found that "the long-standing divide between health and education persists in many countries, making practical collaboration challenging" *(82)*.

This divide needs to be overcome so high quality CSE can be provided to young people both in and out of school. It will require blended rather than vertical financing for CSE programmes, which is jointly managed by the health and education departments, as well as a more effective monitoring and evaluation system based on the targets set by the ESA Commitment. Many indicators are currently not being collected frequently enough for reliable tracking of what is working and what is not *(82)*. This framework should also include joint reporting requirements to further strengthen collaborative work between the health and education sectors. One example is the Our Rights, Our Lives, Our Future (O3 Programme) across East and southern Africa. This project includes collaboration between secondary education institutions, the Ministry of Education and UNESCO for the provision of CSE and greater uptake by students of quality SRHR services and information *(83)*.

Finally, collaborative work should take place at the community level between teachers, health care providers, community led organizations, and peer led programmes to increase understanding between all groups on the specific SRHR related needs of adolescents in their

communities. These interactions can also improve knowledge and understanding of CSE and increase its quality in the classroom setting, and improve non-stigmatizing access to contraceptives and other needed SRHR services. For example, provision of contraceptives in a school is allowed by law in South Africa for students over 12 years of age *(84)*. However, the current policy is that condoms are only available through an authority figure on school premises placing a significant barrier to access due to the still taboo nature of sex among adolescents *(85)*. For this policy to work, condoms need to be provided in a supportive and confidential manner and, if this is not possible within a school setting, it should be provided through partnerships with other trusted and reliable service providers.

2. PROVIDE YOUTH FRIENDLY SRHR SERVICES

Youth friendly SRHR services are essential for helping ensure the health of adolescents, and especially in preventing unintended pregnancies and HIV *(6)*. According to South African law, anyone aged 12 and over has a right to receive contraception without parental consent *(86)*. However, while a legal possibility exists to give teenagers access to contraception, barriers persist as shown by the high levels of early and unplanned pregnancies in the country. The opinion of health care providers has been found to be a major barrier to adolescent girls accessing contraceptive services as these providers believe that young women should not be having sex before marriage *(87, 88)*. When health care providers did offer contraceptives, an injectable was the most frequently offered method and longer term methods such as intrauterine devices (IUDs) were not recommended. This goes against international standards, which recommend long acting, reversible methods such as IUDs and implants as first-line methods for young women *(89, 90)*.

In Zimbabwe, current laws restrict adolescents under the age of 16 from accessing SRHR services such as contraceptives and emergency family planning pills *(90)*. While the age of consent for sex is also 16, the Criminal Law Act states that where young persons are both between the ages of 12 and 16, they will not be prosecuted for having sex *(90)*. Adolescents are getting around the age of consent law for accessing contraceptives by obtaining them from private pharmacies. However, the result is high rates of incorrect use and failure to use contraceptives consistently *(95)*. Therefore, the age of consent for accessing contraceptives in Zimbabwe needs to be lowered, and additional information and training on the use of contraceptives is urgently needed.

In both countries, key actions for the achievement of accessible youth friendly SRHR services are as follows *(7)*:

- Ensuring confidentiality for young people at the health facility. For example, if the receptionist asks why the young person has come to the clinic, or the young person has to walk through a door that says 'Family Planning', with everyone in the waiting room from the community listening or watching, the young person will be reluctant to attend the health services.

- Open and friendly health care providers. Caregivers are needed who are not stigmatizing to the young person but exhibit a supportive approach. This includes a specific focus on young key populations who specifically value confidentiality and are often the most marginalized from such services because of negative health provider attitudes *(91)*.
- Free contraceptive services and condoms. These are needed for adolescent girls as the cost of not providing them will be much higher in the long run, as this study has shown.

3. KEEP GIRLS IN SCHOOL AND HELP THEM RETURN AFTER A PREGNANCY

Adolescent girls bear a disproportionate share of the burdens of teenage pregnancy *(8)* and, as this study shows, the lifetime economic and health costs of adolescent girls dropping out of school are substantial. A concerted effort is needed to stop girls from dropping out of school for whatever reason—economic, family pressure, child marriage, or early pregnancy.

An evaluation of a Networking HIV and AIDS Community of Southern Africa (NACOSA) and Global Fund project between 2014 and 2018 in a selection of schools in the 1–3 quintiles in South Africa found that the following interventions worked well *(92)*:

- A peer education approach. Where girls formed a self-organized club that met once a week and used printed resources to form the basis of group discussions.
- Remedial teaching support. Provided to girls who are falling behind academically.
- Comprehensive sexuality education. Provided by nongovernmental organizations (NGOs) to girls during school hours. It was recommended that boys also be included for some classes, such as the use of contraception. These classes should be delivered in an engaging manner using interactive, game based methods.
- Girls identified as being at risk of dropping out of school. A number of girls were followed up by their absences through home visits and then referred to a lead social worker if necessary. The involvement of parents and community members needs to also be strong to help the girls make positive choices outside of school.

For adolescent girls who get pregnant and have a baby, there needs to be concerted efforts to support them to return to school as this is currently not the case for 33% of South African girls and 56% of Zimbabwean girls who become pregnant. Challenges currently faced by pregnant students in South Africa are insufficient child care assistance and support possibilities from schools and teachers. Only a few schools have formal or effective mechanisms in place to offer opportunities for girls to catch up on missed work *(93)*. However, it was found that adolescent mothers who had support from their own mothers were most likely to return and remain in school *(93)*.

In Zimbabwe, an additional problem is the large number of child marriages. While the Zimbabwean Constitution sets 18 years as the minimum age of marriage, according to the 2019 Zimbabwe Multiple Indicator Cluster Survey, 33.7% of girls under 18 are married *(59*,

94). This varies by region, with 52.1% of girls married before 18 in Mashonaland Central while the lowest prevalence is 10.9% of girls in Bulawayo *(57)*. These high rates of child marriage mean that girls are dropping out of school—in fact, just 13.6% of girls complete secondary school *(57)*.

Pregnancy prevention efforts tend to focus primarily on young women, yet young men have an important role to play in reducing teenage pregnancy. Prevention efforts should recognize current varying views among young men on the importance of contraception and which partner(s) should be responsible for its use *(95)*. Limited contraception knowledge is also a problem and health care, education providers, and community led organizations all have an important role to play as sources of reliable sexual and reproductive health information for young men *(95)*.

Involving adolescent fathers is also important. Despite the common cultural portrayal of absent teenage fathers, research finds that young men are willing to be involved in the lives of their babies, but there is often a lack of appropriate support or help for them to achieve this *(96, 97, 98)*. The impact of teenage fatherhood is also seen to have far-reaching educational, economic and social consequences. One study in South Africa found that 90% of adolescents who became fathers dropped out of school, driven primarily by social norms and the need to provide financially for their children.[10] Yet, dropping out of school for both adolescent girls and boys has a lifelong impact on earnings potential. Supporting young fathers to take up their roles and responsibilities will reduce the probability that they will drop out of school and will also enable them to provide better support to the mothers, in turn enabling them to continue in school. It will also be beneficial for the ongoing development and outcomes for the child *(98)*.

It should be noted that much of the research comes from developed country contexts in Europe, North America and New Zealand. Further research is needed specifically in an African setting. To keep girls in school, it is necessary to work with groups of young women and young men to find out whether there are any activities or information that would 'nudge' them in the direction of staying at school. For example, will making it clearly known that the consequence of dropping out of school early would reduce their lifetime income by US$ 150 000 for a South African or US$ 68 000 for a Zimbabwean be a motivator to stay in school, or engage with programmes that will assist them to do so? Many do not realize that they are making an expensive decision that will have implications on their earning potential for the rest of their life. More research is needed on how to best convince these young people.

10 Johannes L-A. Only 1 in 10 young fathers remain in school: Facts about SA's teen dads. News24 (28 July 2020); https://www.news24.com/parent/teen_13-18/development/only-1-in-10-young-fathers-remain-in-school-facts-about-sas-teen-dads-20200727

4. REDUCE GBV

South Africa and Zimbabwe have endemic rates of GBV. In South Africa, 16% of 15–24 year olds have experienced physical or sexual violence; this percentage is 34.9% in Zimbabwe *(36, 76)*. Gender based violence is higher among those with lower levels of education and those who are poorer *(9)*. It is also closely linked to HIV, directly—as trauma increases the risk of HIV transmission—and indirectly. Survivors of childhood sexual abuse are more likely to be HIV positive, and to have high-risk behaviours. GBV perpetrators are also at higher risk of infection *(10)*.

Reducing GBV is thus an essential component to address the current cost of inaction on SRHR for AGYW. Some key strategies to achieve this include the following:

- Provide GBV clinical services in lower level health facilities, where key interventions such as emergency contraception, HIV post-exposure prophylaxis and counselling and support are administered. Bringing services closer to the community, particularly in rural areas, will enable faster access. While this could be seen as simply dealing with the symptoms of GBV, swift action in this area helps to mitigate the worst of the consequences *(11)*.
- Educate young people (e.g. through CSE programmes as per point 1 above) with tips to prevent GBV. These include: understanding the root causes of violence; stopping sexist and discriminatory language; stopping abuse, sexual harassment and victim blaming; creating safe spaces to discuss GBV; be supportive and believe stories of violence from peers; and understand and practice consent *(12)*.
- Scale up community based gender transformative programmes that work with both women and men. Examples of programmes that have changed harmful gender norms that lead to the perpetration of GBV include Stepping Stones, the Sonke Gender Justice One Man Can Campaign, the SASA! Community mobilization intervention and the HeForShe community based initiative on engaging men and transforming harmful norms to prevent violence and HIV *(13)*.

A comprehensive approach will be needed, tied closely with gender equality goals. These will require urgently addressing and implementing these three approaches.

5. PREVENT HIV

A common thread through the above is activities to ensure that young people stay HIV negative. Up to 79 000 young people each year are acquiring HIV in South Africa, and 7 500 in Zimbabwe *(66)*. More than 75% of new infections are among young women in each country. While many of these new infections are found in AGYW, many will go on to transmit HIV to their peers over time who will in turn infect a new generation of adolescent girls. Thus, the cycle will continue.

A combination HIV prevention approach remains important to meet the specific needs of adolescents and young people and focuses on a combination of biomedical, behavioural and structural interventions. These interventions will include easy access to condoms, continuing voluntary medical male circumcision campaigns, ensuring high quality CSE (as per point 1), prevention of mother-to-child transmission of HIV, and offering pre-exposure prophylaxis to groups of young people with a high incidence of HIV *(14)*. It is important to also remove legal and policy barriers to accessing services and support peer-led education approaches as part of the prevention package.

THE WAY AHEAD

The cost of inaction related to the SRHR of young men and women in Zimbabwe and South Africa paints a stark picture of the usually unseen impact of current policies. The results presented in this report should provide a rallying call for political leaders and government officials that action to improve the SRHR of young people is urgently needed *(99)*. They should use these figures as part of the evidence base and to urgently design, cost and implement policies that will reduce these costs and thus provide positive change in the lives of thousands of young people that will last throughout their lives. Real change requires a proactive, prevention-based response rather than a reactive one. This is at the crux of looking at the cost of inaction—i.e. taking action early, before the 'damage' has been done, or things have become much worse.

Taking urgent action in the five interlinked areas outlined above requires a multisectoral response that includes joint work by the health, education and social and community development sectors. It also requires a legal environment which is supportive of the health goals aiming to be achieved. Given the economic impact of the current inaction, additional actors such as economic development, the ministries of finance and treasury, and budget committees in Parliament need to be involved. Ways of working need to be changed that force a move out of traditional siloed approaches by providing incentives for joint approaches through joint staffing and budgets. Shared monitoring and evaluation frameworks—as part of a clear accountability framework—need to be developed which will frequently and quickly measure whether progress is being made in the right direction, allowing for swift recalibration and further innovation, if required.

Other actors that need to be involved are families and communities which should actively engage with and include young people themselves in the design and implementation of programmes. Young people have the most to lose, but also the most to gain from improved SRHR services and education. The figures for the cost of inaction clearly show this. Therefore, this process should be driven by young people themselves.

Ultimately, business as usual is not going to work. Different approaches are needed to generate change. Understanding the cost of inaction helps to re-evaluate current approaches. Costing activities, including the cost of inaction in the cost–benefit analysis, will enable appropriate investment decisions for activities that provide real change, both now and also in the health and economic livelihoods of the next generations.

7 CONCLUSION

THE CURRENT COST OF INACTION RELATED TO SRHR, INCLUDING HIV, OF YOUNG MEN AND WOMEN IS **US$ 33.7 BILLION FOR SOUTH AFRICA** (EQUIVALENT TO 8.1% OF ANNUAL GDP) AND **US$ 3.6 BILLION FOR ZIMBABWE** (EQUIVALENT TO 12.9% OF ANNUAL GDP).

Urgent action is needed to improve support and services that support the SRHR, and HIV, needs of young people including effective CSE, greater access to youth friendly SRHR services and easy access to condoms and a wide choice of contraceptive methods. It also requires working hand in hand with the education sector.

If a girl does get pregnant, support is needed to stop her from dropping out of school and managing the way forward. Comprehensive HIV and GBV prevention measures are needed. Wider social and legal factors also need to be factored in, such as the prevalence of early marriage, lack of access to SRHR (including HIV) services in general due to parental consent, criminalization and other legal barriers.

Meaningfully involving young people in bringing about this change and building youth leadership and the capacity of youth-led organizations is a key part of this. Ultimately, if children and their future are to be safeguarded, this is an investment that must be made. The next steps are now working on the exact package of interventions that will provide the biggest return on investment and the highest impact on the lives of young men and women.

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