



The Government of
the Kingdom of Swaziland



National Emergency Council on
HIV and AIDS (NERCHA)

SWAZILAND

HIV Prevention Response and Modes of Transmission Analysis

March 2009



The Global HIV/AIDS Program (GHAP)
The World Bank



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Final Report
March 2009

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World Bank Global HIV/AIDS Program
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This study, and similar studies in Kenya, Lesotho, Mozambique, Uganda, and Zambia is the outcome of close collaborative by a team in Swaziland, with technical and financial support from the UNAIDS Regional Support Team for Eastern and Southern Africa, UNAIDS Geneva, and the World Bank's Global HIV/AIDS Program (Global AIDS Monitoring and Evaluation Team). The study entailed using existing data and collecting new data to better know the country's HIV epidemic, know the country HIV response and how funding was allocated, so as to improve the HIV response and strengthen prevention based on evidence on what works to prevent new infections.

Keywords: Swaziland, HIV, AIDS, epidemiology, epidemic, modes of transmission, incidence, prevalence, prevention, response Know Your Epidemic, Know Your Response, expenditures, synthesis, National Emergency Response Council on HIV and AIDS, UNAIDS, World Bank

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Acknowledgements

This synthesis report is the result of a nine month process of collaborative research, analysis and thinking, and the MoT Country Team is highly indebted to the Swaziland Core Team for steering and overseeing the process. The researchers would also like to express their sincere gratitude to the continuous support by the Policy Team which is responsible for translating these research findings into policy and programming.

The MoT Country Team is very grateful to all the individuals and organisations that provided information and interviews for the prevention review. Equally, all participants in the Technical Planning Workshop, the Incidence Modelling Workshop and the Synthesis Writing Workshop are thanked for their active participation and input.

Special thanks go to the Central Statistics Office and to Macro International, for their assistance with data for the epidemiological analysis and incidence modelling. At the CSO, Ms Isabella Hlope and Ms Rachel Masuku supported the MoT study throughout with discussions and data from the 2006/07 Demographic and Health Survey. Ms Sri Poedjastoeti and Ms Ladys Ortiz (data processing specialist) at Macro were instrumental in providing specially analysed data for modelling purposes.

The UNAIDS Regional Support Team for Eastern & Southern Africa and UNAIDS Geneva provided invaluable technical and financial support to the study. Ms. Susan Kasedde, Mr. Mark Colvin and Mr. Saul Johnson played important roles in supporting the study, building capacity in applying the incidence model (M.C.) and advising on the prevention review (S.J.). Ms. Eleanor Gouws in the Geneva Office provided expert advice on using the incidence model.

The Global AIDS Monitoring & Evaluation Team of the World Bank provided important technical support and review through Ms. Marelize Gorgens, Jody Zall Kusek and David Wilson. The study team is also grateful to Mr Feng Zhao, World Bank Task Team Leader for Swaziland for his support to the study.

This study drew extensively on existing research and routine data and the MoT Country Team is immensely grateful to all the researchers, implementers and study populations who have contributed to this evidence base.

Finally, the MoT Country Team would like to thank the Government of Swaziland for its willingness to participate in this study which was implemented concomitantly in Kenya, Lesotho, Mozambique and Uganda and which will help to inform future HIV/AIDS strategic planning and programming for the benefit of these populations.

EXECUTIVE SUMMARY

Background, study purpose and implementation - NERCHA, MOHSW, UNAIDS and GAMET/World Bank are collaborating in a capacity development process to support an evidence-based review of Swaziland's epidemiological situation (Know your epidemic, KYE) and the national HIV prevention response (Know your response, KYR). The purpose of this modes of transmission (MoT) study is *“to contribute to the ongoing efforts to understand the epidemic and response in Swaziland and thus help the country improve the scope (doing the right kind of activities), relevance (with the right populations) and comprehensiveness (reaching all members of target populations) of HIV prevention efforts”*. The process for the KYE was an in-depth review of available epidemiological data from Swaziland and the sub-region, and application of the UNAIDS incidence estimation model. The aim was to determine the epidemiology of new (incident) infections. For the KYR part, data were collected on the policy context for prevention, prevention and prevention activities by implementers, and data from the National AIDS Spending Assessment (NASA) of 2008 were reviewed. In a final step, the KYE and KYR evidence was linked to produce an epidemic, response and policy synthesis with recommendations to improve the HIV prevention response through aligning prevention activities with the evidence on the sources of new infections. The study examined the hypothesis that multiple, concurrent long-term heterosexual relationships, happening in a context of implicitly permissive social norms, gender inequality and economic need, are a key contributor to HIV transmission in Swaziland.

Timing of the study - the MoT study took place at an opportune time when Swaziland also was reviewing the second national multisectoral HIV/AIDS strategic plan (2006-2008) and preparing a new National Strategic Framework. The findings of the SDHS 2006-07, the NASA 2008 and the 'Mapping of the National Minimum Package of HIV Services' 2008 had just become available, and the MOHSW and NERCHA had established functional monitoring and evaluation (M&E) systems providing routine data. These all provided essential input into the KYE and KYR analyses.

Supervision and review - the study was overseen by the MoT Core Team through monthly meetings and progress reports. Dissemination of the findings and their translation into policy and practice is the responsibility of the MoT Policy Team. Coordination and communication were ensured by the Coordinator of Communication & Advocacy of NERCHA and technical leadership was with GAMET/World Bank. The report benefited from several reviews by the Swaziland Core Team, the Policy Team, Swaziland stakeholders, and regional peer reviewers (implementers of other MoT studies in Africa, UNAIDS RST ESA & UNAIDS Geneva, and GAMET/World Bank).

Know your Epidemic

HIV prevalence levels and trends - with 26% of the adult population infected (SDHS 2006-07), Swaziland's national HIV prevalence is the highest in the world. This prevalence level results in higher mortality and, combined with labour migration, will produce negative population growth in the foreseeable future. HIV prevalence of pregnant women in most age groups rapidly increased up to 2004 (most dramatically in 25-29 year olds), but a downturn has been seen in the latest sentinel surveillance data; the next round of ANC surveillance data may confirm whether this is a downward trend. The peak in HIV prevalence in 2004 will result in a plateau in AIDS-related deaths of around 12,500 adults and children per year for at least the next four years. As ART coverage improves, AIDS-related deaths are expected to fall considerably, which will result in a stabilisation or even secondary plateau in HIV prevalence (unless HIV incidence dramatically decreases in the next few years). The increase in mortality and slow roll-out of ARVs has drastically affected estimated life expectancy, which is reported to have halved between the 1990s and 2007 (currently at 37 years).

Heterogeneity of the HIV epidemic in Swaziland - although Swaziland is a small country with ethnic homogeneity, there is some heterogeneity in HIV prevalence across specific sub-populations, for instance:

Lower HIV prevalence	Higher HIV prevalence
Males aged 15-30 years	Females aged 15-30 years
Females aged 35-60 years	Males aged 35-60 years
Men & women who live in rural areas	Men & women who live in urban areas
Less wealthy men & women	Wealthier men & women
Unemployed men & women	Employed men & women
Men & women who spend no time away from home	Men & women who spend >1 month away from home/year
Never-married men who have had sex	Never-married women who have had sex
Men & women with one sexual partner	Men and women with 2 or more sexual partners
Women reporting sex only with spouse/live-in partner	Women reporting having had higher-risk sex
Men reporting having had higher-risk sex	Men reporting sex only with spouse or cohabiting partner
Men & women without an ulcerative STI	Men and women with an ulcerative STI

HIV incidence – the available data point to several important conclusions:

- Annual HIV incidence peaked around 1999 at almost 6%. The Spectrum model predicts 13,060 new infections in adults for 2008, which translates into an annual adult HIV incidence of 3%. In 2008, adult new infections outstripped adult AIDS-related deaths by an estimated 3,786.
- Approximately 68% of all new infections in the adult population occur in persons above 25 years of age, many of whom are married or cohabit with a steady partner.
- The majority of new infections (approx. 62%) are in females. Regional and local research shows that while some women with risk behaviour fit the classic description of “passively vulnerable”, many others are “active agents” in seeking multiple partners, especially among older men.
- An estimated 19% of all expected new infections in 2008 occur in children (3,147 infections). Infections in Swazi children aged 5-14 years probably arise through a mix of different exposures and there is clear evidence of sexual abuse of children. Infections in infants arise through non-use of PMTCT services by positive mothers, but also through the partial efficacy of Nevirapine treatment in those using PMTCT services, and through non-exclusive breastfeeding by HIV positive mothers.
- The decreasing HIV prevalence in young pregnant women – a proxy for HIV incidence – suggests that there are fewer new infections in young females. Regression analysis found that between 2002 and 2006 HIV prevalence decreased by 15% and 11% among young pregnant women attending urban and rural ANC respectively.

Sources of new HIV infection - transmission is mainly through heterosexual contact between steady, longer-term partners aged 25 and older. Results from incidence modelling suggest that in 2008, approximately 94% of new infections in adults arise from heterosexual transmission. According to reported behaviours, commercial sex is not very frequent and often protected, and is therefore expected to account for a small part of new infections (~10%, if SWs, SW clients and partners of SW clients are combined). Same-sex transmission (men having sex with men) and transmission through contaminated drug injecting equipment are probably not major drivers of the epidemic, but there is a lack of evidence to support firm conclusions. Some uncertainties remain regarding risks to patients and to health care personnel through unsafe injection practices, but injections in the medical setting are unlikely to account for a large part of new infections. The likelihood of transmission through blood transfusion was found to be low. However, the use of re-

used, unsterilized sharps (blades, knives, needles) is a potential source of new infections, particularly those used for scarification and injections by traditional healers.

A summary of factors impacting on heterosexual transmission of HIV:

- Men and women in Swaziland get married later in life but have first sex at around age 16, resulting in a long period of sex before marriage (almost ten years on average)
- First sexual intercourse is in the age-range 15 to 19 for most men and women, but rural females and urban males tend to become sexually active earlier than urban females and rural males, respectively
- Delaying first sexual intercourse is strongly correlated with more years of education in females
- Age at sexual debut has dropped for males and slightly increased for females
- Swaziland is a “low-circumcision country” - only 8% of men are circumcised
- The practice of ‘multiple, long-term concurrent partnerships’ is perceived to be unacceptable, yet tacitly acknowledged and tolerated in Swazi society
- The majority of people agree that it is common for people to have a secret lover, and believe that their spouse has other sexual partners; socio-cultural evidence suggests that perceptions of a man’s wealth, standing and manhood are closely tied to his ability to secure women
- A higher number of recent and lifetime sexual partners leads to higher HIV prevalence
- There is some evidence of a reduction in multiple concurrent partnerships in recent years – two assessments linked to the multi-media campaign on partner reduction found decreased concurrency especially in men
- Recent condom use data suggest that condom use has not changed much over time and condom use at last sex is always lower than consistent condom use - but more people report that they will not have sex with their partner if they believe that the partner is unfaithful and refuses to use a condom
- Individuals with more years of education are more likely to have preventive knowledge and behaviour (condom & VCT use)
- The prevalence of STIs other than HIV continues to be high in Swaziland
- Sex workers in Swaziland are few, young, regularly use condoms with paying clients and do not regularly use condoms with non-paying (regular) partners
- The extent of transactional sex is unclear - transfers of money, gifts or services have long been and remain an important and expected part of courtship and sexual relationships
- At the community level, parenting, family support and alcohol use are some of the important factors influencing the HIV epidemic (absent or late parents, fragile family structure because of migrant work patterns)
- At a macro (structural) level, mobility and migration, employment conditions, gender roles and identities and sexual violence appear to be important factors in the epidemiology of HIV in Swaziland

Know your Response

Enabling environment for HIV prevention - Swaziland has strived to develop a policy context which is conducive to HIV prevention - the Constitution (2005), key policies on children (2003), HIV/AIDS (2006), blood safety (2006), and health (2008), as well as important acts (administration of estates, girls and women’s protection, marriage, maintenance, interstate succession), and guidelines (HBC, ART, HCT/VCT, PMTCT) all strengthen the policy environment for prevention. Important additions will be the gender policy, the male circumcision policy, and the sexual offences and domestic violence bill (all at draft stage).

In practice, some laws relevant to HIV prevention, for instance on rights in marriage, estate management and sexual abuse, are **inadequately applied and enforced, and may clash with traditional laws**. Some new legislation has remained in draft form for a long time. Sexual abuse is largely unreported due to lack of awareness and other reasons. Social affairs units are understaffed at all levels. Two reports (UNGASS 2008 and the WLSA study 2005) concurred that legislation and related policies are not fully implemented – that laws are still very much “on paper”. There is scope to redress these shortfalls, through advocacy and sensitization programmes to build awareness and give “teeth” to legislation, as well as legal support programmes to ensure that vulnerable populations benefit from the rights enshrined in existing legislation.

Leadership around HIV prevention - There is a sense amongst community members that leadership structures do not spend enough resources on HIV prevention, do not set a good example in their personal behaviour/ sexual practices, do not do enough to oppose bad treatment of PLHIV, and do not protect women and children from abuse.

Swaziland has stated **intentions to provide universal access to HIV prevention**, mobilise resources and build capacity for HIV prevention, and to make HIV prevention truly multisectoral, but more needs to be done to carry out these plans. **Most ongoing prevention interventions aim to change knowledge, attitudes and beliefs** (mass media, interpersonal education-related interventions, family life education, prevention counselling, condom promotion and others). This table summarizes HIV prevention programmes in Swaziland:

Categories	Type of programme most frequently implemented
1. Knowledge / attitude change	Interpersonal communications, Mass media campaigns
2. Risk reduction	Condom distribution & provision of equipment for universal precautions (particularly during traditional scarring)
3. Biomedical interventions	Use of gloves & other protective equipment in hospitals , STI diagnosis & treatment, PMTCT
4. Hybrid interventions	HIV testing & counselling, Condom social marketing, Comprehensive sex education, Social mobilization

Target audiences - most prevention programmes focus either on youth or on the general population. Very few programmes focus on adults 25 and older as a specific target audience. Also, most programmes focus on both men and women as a combined audience, and have not developed gender-specific messages or focused separately on either men or women. Regarding **geographic coverage**, most programmes seem to have a national reach and few programmes focused on one region only (facilitated by Swaziland’s small size and the relative ease of moving from one part of the country to another). As to the **content of messages**, the majority of messages focus on the ABCs of safer sex practices, but there were also messages promoting STI treatment and male circumcision.

NERCHA coordinates the implementation of a national HIV M&E system. **Although significant amounts of strategic information are available, there are information gaps on behaviours amongst specific sub-populations, and weaknesses around coordination of HIV research and quality assurance studies.**

Expenditure - HIV prevention was not a priority – it was the 3rd highest expenditure category (17% of total expenditure), after OVCs and treatment. Actual HIV prevention expenditure was slightly higher than budgeted, while OVC expenditure was much higher than budgeted. On the other hand, expenditure on treatment and care was slightly lower than budgeted in 2006/07.

Expenditure for specific types of HIV prevention programmes changed over the two years of the NASA assessment, with increasing focus on social and behavioural change, and was mostly targeted to the general population. Between the two financial years, funding for some kinds of HIV prevention activities dramatically increased (e.g. communication for social and behavioural change and community mobilisation), whilst funding for other kinds of activities dramatically decreased (PMTCT, risk reduction for vulnerable populations, and voluntary counselling and testing). Funding for other activities did not change much (e.g. PEP, workplace HIV programmes and prevention activities for in-school youth). Most funding for HIV prevention reached and was targeted at the general population, not at a specific higher-risk or vulnerable populations.

Linking the Response to the Epidemic

1. Are HIV prevention policies based on the latest available evidence and global best practice?

Swaziland's prevention strategies -- promotion of abstinence in adolescents, condom provision, treatment of STIs, promotion of counselling and testing, PMTCT and blood safety are covered by national policies and follow international best practice. Delivery of the services under each of these initiatives may not be optimal, but in principle, these areas are being addressed according to the latest international standards. **The new evidence about male circumcision was released after the current NSP became effective**, but there have already been initiatives to include training, promotion and delivery of male circumcision, and a draft MC policy is available (see point 2 below).

Where the national strategies and prevention policies do not fit with the epidemiological evidence is in the areas of sexual behaviour and the targeting and messages for behaviour and social norm changes:

- The evidence indicates that heterosexual transmission among those with one reported sexual partner is the most important source of new HIV infections. This includes married and unmarried individuals, who frequently do not know the HIV status of their partner. There may also be secondary longer-term partners who are often “trusted” and therefore unlikely to use condoms. It has been observed that the majority of existing programmes do not target these couples. The most important message, partner reduction, is “drowning” in the many other messages, and multiple concurrent partners (MCPs) and sexual networks are not explicitly addressed in policies and programmes.
- Age-disparate relationships (including intergenerational relationships, preventing an “AIDS free” generation to grow up) are common. This phenomenon is not properly addressed by policies and programmes that try to go beyond individual behaviour change and change social norms which are currently permissive of such relationships.
- Migrants and other mobile people and their primary partners are much more likely to have multiple partners. Migration, alcohol consumption and discordance in couples are three factors which are not addressed adequately within the current policy context, although they are important co-factors in the epidemic.

Several important policies remain in draft form (male circumcision policy, sexual offences bill, gender policy). With overwhelming evidence of over 45 studies from the last 20 years showing that male circumcision significantly reduces heterosexual infection risk, the policy context and delivery capacity for vastly scaled up male circumcision needs to be accomplished urgently in Swaziland.

2. Do HIV prevention policies and programmes respond to the key drivers of the epidemic?

Male circumcision - the policy framework is currently being created for MC, and a 5-year “MC strategy and implementation plan” has been developed. Family Life Association of Swaziland

(FLAS) has been conducting MC operations for HIV prevention since 2006 and hospitals carry out MC for various reasons. The MC implementation plan will ensure that the intervention is carried out on a scale that will impact the HIV epidemic.

Multiple partnerships and sexual networks - the policy environment has not responded specifically to this key driver of the epidemic. Although the “be faithful” aspect - part of the ABC strategy - has been integrated into several policies and strategies, there is no adequate focus on multiple concurrent partnerships (MCPs). A national MCP campaign has shown that there is great sensitivity around the issue – emphasizing the need to create awareness and understanding among stakeholders and populations that MCPs must be addressed in order to prevent new infections.

Priority populations for prevention - current policies do not provide evidence-informed guidance on priority populations for prevention. In turn, programmes are not targeting the sub-populations where most new infections happen. There is insufficient awareness among implementers that relatively older people are experiencing higher levels of new infections and need to be specifically targeted. Swaziland has not identified its own most at risk populations (MARPs), i.e. populations in which there is a concentration of risk behaviours that increase HIV transmission and may then drive the majority of new infections. Based on this analysis, MARPs in Swaziland are:

- a) People in longer-term steady relationships and married couples, who have MCPs
- b) HIV-discordant couples and concordant positive couples (45% of all couples)
- c) Migrating/mobile couples where one partner lives away from home regularly (regional, national and company-level epidemiological data demonstrate mobility-related HIV risks)
- d) The approximately 185,000 HIV-positive individuals in Swaziland – those who know their status, both those already on ART and the pre-ART cohort, as well as those who have not yet accessed HIV counselling and testing and do not know their HIV status.

With this study, the evidence on the comparatively higher HIV risk of **women** has been corroborating with model estimates on incident infections. This does not mean that women need to be targeted increasingly – rather that some specific programmes require targeting to men, and some to women. When targeting **youth**, the evidence shows that uneducated, unskilled and out-of-school males should be a priority population for prevention. Several risk factors are clustered in these males, including early sexual debut, comparatively lower condom use, and alcohol consumption.

3. Is funding for HIV prevention allocated to where it is most needed?

Only 17% of funding is spent on HIV prevention, whereas 31% of funding is spent on OVCs and 19% on care and treatment. It is certainly necessary to support OVC and provide treatment for those who need it, but HIV prevention warrants more attention. There is regional evidence that prevention must also be fully integrated with care and support programmes for OVCs.

Most funding for HIV prevention is used for individual communication or behaviour change programmes for the general population or the youth. Whilst there has been an increase in funding for community mobilisation activities, there is not yet evidence of such activities being implemented. More HIV prevention funding needs to be spent on programmes for older adults (aged 25-45 years); on programmes to change social norms, and to support families who are part of or affected by oscillatory migration patterns.

Expenditure for surveillance and prevention-related research has been comparatively small, and important research areas have been neglected. There is great awareness about the value of strategic information and increasingly, there is a culture of M&E. National M&E systems are functional and in the process of decentralisation. While the SDHS provides important

epidemiological and behavioural information about the general population, there is a lack of such information from less accessible populations like sex workers and MSM.

Key Recommendations (see Chapter 6 for full list of recommendations)

1. Give **more priority and resources to HIV prevention** programmes (74% of the adult population is HIV negative); “ring fence” a considerable proportion of the total HIV/AIDS budget for prevention and ensure that planned prevention activities are implemented and evaluated; also promote the inclusion of prevention components into other intervention categories like care & support of OVCs, and ART treatment.
2. Define **married, cohabiting and steady couples as a priority population** and implement programmes to focus on them with tailored integrated services and programmes which also address social norms, *with an attached research component to generate evidence on “what works”*.
3. **Make male circumcision a priority.** Scale up male circumcision as a potent biomedical intervention which is complementary to other prevention interventions and is a one-time procedure conferring life-long partial protection.
4. **Encourage strong political leadership of the HIV prevention** response, and put in place policies and strategies to help bring about a change in social norms, especially regarding MCPs, and to support families affected by migration patterns.
5. **Coordinate and conduct research** on ongoing “collective action” approaches and peer education, learning from Swaziland’s successful collective approaches in treatment, care & support, in order to build a prevention/social change movement at community level and test ‘what works’ in this field.
6. **Strengthen the legislative environment:** Legislation that legalizes marriage at age below 18 needs to be repealed to ensure that both traditional and civil marriage below the age of 18 become illegal. Sustained advocacy efforts are required to reach the grass root level aiming at increasing awareness of existing statutes and policies that regulate sexual, marital, maintenance and estate management. Passing the Sexual Offences and Domestic Violence Bill into law needs to be facilitated.

Table of Contents

EXECUTIVE SUMMARY	v
Acknowledgements	iv
Acronyms	xvi
Glossary of Terms	xi
CHAPTER 1. INTRODUCTION, METHODOLOGY and HYPOTHESIS	1
1.1. The Analysis of HIV Prevention and Modes of Transmission (MoT) Study Concept	1
1.2. MoT Study in Swaziland: Rationale, purpose, and objectives	2
1.3. MoT Report Structure	4
CHAPTER 2. MOT STUDY METHODOLOGY	5
2.1. Overall oversight and approval of MoT Study deliverables.....	5
2.2. Methods for the KYE synthesis.....	5
2.3. Methodology for the KYR synthesis.....	6
2.4. Methods for the KYE-KYR Synthesis.....	8
2.5. MoT Study Limitations.....	8
CHAPTER 3. KYE SYNTHESIS	10
3.1. National trends in HIV prevalence	10
3.2. Heterogeneity of HIV prevalence.....	12
3.2.1 Gender-related heterogeneity	12
3.2.2 Age-related heterogeneity	12
3.2.3 Geographic heterogeneity.....	15
3.2.4 Income-level heterogeneity	16
3.2.5 Heterogeneity across migration patterns.....	16
3.2.6 Heterogeneity by education status	16
3.2.7 Heterogeneity related to marital status and type of marital union	17
3.2.8 Heterogeneity in couples (discordant couples).....	18
3.3. Trends in HIV incidence.....	18
3.4. Main sources of new HIV infections (heterosexual transmission)	20
3.5. Factors impacting on the heterosexual transmission of HIV	24
3.5.1 Factors at the individual and couple level that impact on the risk of heterosexual transmission of HIV.....	24
3.5.2 Factors at the community level impacting on the risk of heterosexual transmission of HIV	34
3.5.3 Factors at the structural level impacting on risk of heterosexual transmission of HIV.....	36
3.6. Other sources of new infections (transmission other than heterosexual)	40
3.6.1 Transmission during sex between men.....	40
3.6.2 Transmission from mother-to-child.....	42
3.6.3 Transmission through needle sharing during injecting drug use.....	43
3.6.4 Transmission through use of unsafe (unclean) medical injections and universal precautions	43
3.6.5 Transmission through the transfusion of HIV positive blood products.....	45
3.7. KYE Synthesis: A Summary	46
CHAPTER 4. KYR SYNTHESIS	50
4.1. An Enabling Environment for HIV Prevention	50
4.1.1 Laws and Policies relating to HIV prevention	50
4.1.2 Leadership in the National HIV Response	51
4.1.3 Capacity building for a comprehensive and relevant HIV response.....	52
4.1.4 Resource mobilization for the National HIV Prevention Response	52
4.1.5 Universal access to HIV prevention.....	52
4.1.6 Mainstreaming and multi-sectorality.....	53
4.2. Sectors involved in providing HIV prevention services.....	53

4.3.	Implementation of HIV prevention programmes.....	53
4.3.1	<i>Category 1: Interventions affecting knowledge, attitudes and beliefs and influencing psychological and social correlates.....</i>	55
4.3.2	<i>Category 2: Risk reduction (lowering risk of a behaviour, but not eliminating the behaviour)</i>	55
4.3.3	<i>Category 3: Biological/biomedical interventions that reduce HIV infection and transmission risk..</i>	56
4.3.4	<i>Category 4: Mitigation of Barriers to Prevention and Negative Social outcomes of HIV (includes environmental interventions)</i>	56
4.3.5	<i>Category 5: Mitigation of biological outcomes of HIV Infections</i>	57
4.3.6	<i>Category 6: Standardized hybrid interventions</i>	57
4.4.	Targeting of HIV prevention programmes	58
4.4.1	<i>Targeting by age group.....</i>	58
4.4.2	<i>Targeting by sex.....</i>	58
4.5.	Geographical coverage of HIV prevention programmes	58
4.6.	Key messages in prevention programmes	59
4.7.	Perceived outcomes of HIV prevention programmes	60
4.8.	Availability of Strategic Information for HIV prevention programmes	60
4.8.1	<i>Current range of strategic information.....</i>	60
4.8.2	<i>Gaps in Strategic Information.....</i>	60
4.9.	Resources for HIV prevention programmes.....	61
4.9.1	<i>Overall spending on HIV</i>	61
4.9.2	<i>Percentage HIV response funding to HIV prevention.....</i>	61
4.9.3	<i>Expenditure by type of HIV prevention programme</i>	63
4.9.4	<i>Spending on enabling environment, on community development activities and to specific beneficiaries.....</i>	63
4.10.	KYR Synthesis: A Summary	64
CHAPTER 5. LINKING THE RESPONSE TO THE EPIDEMIC.....		67
5.1.	Are HIV prevention policies based on the latest available evidence and global best practice?.....	67
5.2.	Do HIV prevention policies and programmes respond to the key drivers of the epidemic?	69
5.3.	Is funding for HIV prevention allocated to where it is most needed?	71
CHAPTER 6. RECOMMENDATIONS.....		73
6.1.	Policy-level recommendations.....	73
6.2.	Programmatic recommendations.....	73
REFERENCES.....		77
ANNEXES		
Annex 1.	Implementation calendar MoT study	87
Annex 2.	Prevention implementers included in the MoT study, key informants for SI and policy context.....	90
Annex 3.	Data sources for incidence modelling.....	91
Annex 4.	Results application of UNAIDS HIV Incidence Model	96
Annex 5.	Detailed assessment of laws and policies for HIV prevention in Swaziland.....	100
Annex 6.	Detailed listing of types of messages in HIV prevention programmes	103
Annex 7.	Strategic information regarding prevention	104

Tables

Table 1. Heterogeneity of HIV in specific sub-populations in Swaziland (2007)	47
Table 2: Laws & policies impacting on HIV prevention in Swaziland (as of 2008)	50
Table 3: Opinions on leadership on HIV/AIDS in Swaziland (2007).....	51
Table 4. Number and percentage of activities by type of HIV implementer in Swaziland (2008)	54
Table 5. Targeting of HIV prevention programmes by sex of beneficiaries, different sectors, 2008).....	58
Table 6. Number of people being reached with HIV prevention programmes in Swaziland (2008).....	59
Table 7. Percentage activities by each sector in each region in Swaziland (2008).....	59
Table 8. Summary of the range of HIV prevention programmes in Swaziland (2008)	65
Table 9. Selected prevention areas, global evidence and inclusion in national policies (2008)	67
Table 10 (annex 4). Model outputs using different frequencies of multiple partners	97
Table 11 (annex 6). Messages used in prevention messages, by category.....	103
Table 12 (annex 7). Routine and ad hoc studies that have been conducted on Swaziland.....	104
Table 13 (annex 7). Impact studies conducted from 1999 to 2008	105

Figures

Figure 1. HIV prevalence among persons aged 15 to 49 in selected countries.....	10
Figure 2. Projected population growth rate of Swaziland, Malawi and Zambia (1996-2034)	10
Figure 3. Epidemic state: HIV prevalence in ANC clients in Swaziland (1992-2006).....	11
Figure 4. Projected AIDS-related deaths in Swaziland (2004-2012).....	11
Figure 5. Estimated number of people living with HIV in Swaziland (1997-2005)	11
Figure 6. Total PLHIV, ART need and ART enrolment in Swaziland (2007)	12
Figure 7. HIV prevalence by age and sex in Swaziland (2006-07).....	13
Figure 8. Child mortality (deaths per 100 000 population): Trends in Swaziland from 1986 to 2007	14
Figure 9. Population pyramids for Swaziland for 2000 (actual) and 2025 (projected).....	14
Figure 10. HIV prevalence by age group in Swaziland (ANC clients 1994-2006).....	14
Figure 11. Analysis of age difference and HIV status in couples in Swaziland (2007).....	15
Figure 12. HIV prevalence by region, residence and age group in Swaziland (2007).....	15
Figure 13. HIV prevalence by time away from home and number of times away from home (2007)	16
Figure 14. HIV prevalence and education status in Swaziland (2007)	17
Figure 15. HIV prevalence and marital status for men and women age 15 and older (2007).....	17
Figure 16. Discordance in HIV status among cohabiting couples (cross-country comparison)	18
Figure 17. HIV prevalence trends 2000 - 2006 in young ANC clients (aged 15 to 24) in Swaziland	19
Figure 18. Projected new infections 2004 – 2012 in adults and children in Swaziland (2007)	20
Figure 19a. Sensitivity analysis: Distribution of projected new infections in four scenarios (2008).....	23
Figure 20. Age at first sexual intercourse by residence and by education status (2007).....	25
Figure 21. Percentage of respondents who had two or more partners in the last 12 months (2007).....	28
Figure 22. Attitudes and subjective norms relating to concurrency in Swaziland (2006).....	29
Figure 23. Reported condom use with different types of partners in Swaziland (2006).....	30
Figure 24. Attitudes on and practices around condom use by adults in Swaziland (2002 and 2007)	30
Figure 25. Reported condom use by females and males in Swaziland (2005/2006).....	31
Figure 26. Use of VCT and condom use in higher-risk intercourse, by education status (2007)	31
Figure 27. Reported condom use at last higher-risk intercourse, by age in Swaziland (2007)	32
Figure 28. The prevalence of positive RPR among ANC clients in Swaziland (1994-2006)	33
Figure 29. HIV prevalence in ANC clients in Swaziland and neighbouring areas (2006/07)	37
Figure 30. HIV prevalence by job category in Swaziland (RSSC 2007)	38
Figure 31. Mobile worker cycle of risk accentuation in Swaziland	38
Figure 32. Utilisation of PMTCT in Swaziland (2007).....	42
Figure 33: Percentage of HIV implementers from different sectors in Swaziland (2008).....	53
Figure 34: % of implementers that have implemented different types of prevention interventions in Swaziland (2008)	54
Figure 34: Breakdown of interventions affecting knowledge, attitudes & beliefs (2008)	55
Figure 36: Breakdown of risk reduction activities in Swaziland (2008).....	55
Figure 37: Biological/ biomedical interventions that reduce HIV infection and transmission risk in Swaziland (2008).....	56

Figure 38: Mitigation of barriers to prevention & negative social outcomes of HIV infection (2008)	57
Figure 39: Standardized hybrid interventions in common use in Swaziland (2008).....	57
Figure 40: Targeting by age in Swaziland (2008).....	58
Figure 41. Total expenditure on HIV/AIDS in Swaziland 2005-06 and 2006-07.....	61
Figure 42. Proportional overall spending priorities in 2006/07 financial year from all sources	62
Figure 43. Comparison between HIV/AIDS spending and costed NAP 2006/07 for Swaziland	62
Figure 44. Comparison of preventive activities spending between 2005/2006 and 2006/07	63
Figure 45. HIV/AIDS functions to beneficiaries spending in 2005/2006 in Swaziland	64
Figure 45 (annex 4). Previous model applications in other countries	96
Figure 46 (annex 4). Incidence by mode of exposure: Comparison of two scenarios with double transmission probabilities	99

Acronyms

AIDS	Acquired Immunodeficiency Syndrome	NCP	Neighbourhood Care Point
AMICAALL	Alliance of Mayors' Initiative for Community Action on AIDS at the Local Level	NERCHA	National Emergency Response Council on HIV and AIDS
ANC	Antenatal Care	NMP	National Minimum Package of HIV Services
ART	Antiretroviral Therapy	PEP	Post Exposure Prophylaxis
ARV	Antiretroviral	PLHIV	Person/s Living with HIV
BSS	Behavioural Surveillance Survey	PMTCT	Prevention of Mother-To-Child Transmission
CANGO	Coordinating Assembly of Non Governmental Organisations	RHM	Rural Health Motivators
DHS	Demographic and Health Survey	SDHS	Swaziland Demographic and Health Survey (2006-07)
E	Emalangeni (Swazi currency, plural of Lilangeni)	SHAPMoS	Swaziland HIV/AIDS Programme Monitoring System
ERPS	Epidemiological, Response & Policy Synthesis	SIPAA	Support to International Partnership Against AIDS in Africa
FLAS	Family Life Association of Swaziland	SSA	Sub-Saharan Africa
FP	Family Planning	STI	Sexually Transmitted Infection
GFATM	Global Fund to Fight AIDS, Tuberculosis and Malaria	SWAGAA	Swaziland Action Group Against Abuse
HIV	Human Immunodeficiency Virus	SWANNEPHA	Swaziland National Network of People Living with HIV and AIDS
IDU	Injecting Drug Use/User	UNAIDS	Joint United Nations Programme on HIV/AIDS
KAP	Knowledge, Attitudes and Practices	UNDP	United Nations Development Programme
KYE	Know Your Epidemic	UNFPA	United Nations Population Fund
KYR	Know Your Response	UNICEF	United Nations Children's Fund
MARP	Most-at-risk Population	VCT	Voluntary Counselling and Testing
MOE	Ministry of Education	WFP	World Food Programme
MOHSW	Ministry of Health and Social Welfare	WHO	World Health Organization
MoT	Modes of Transmission		
MSM	Men having Sex with Men		
NASA	National AIDS Spending Assessment		

Glossary of Terms

Discordant couple	A couple where one partner is HIV positive and the other is HIV negative
Driver	Behaviour or other factors that accounts for many or most new HIV infections, including contextual, social or structural factors that impact strongly on individual behaviour in ways that increase risk and transmission. (There are other definitions of the term “driver” in the literature; in this report “drivers and risk factors” are considered together.)
Incidence	The proportion of people who have become infected with HIV during a specified period of time (usually one year, i.e. annual incidence)
Inkhundla	(plural: tinkhundla) Administrative subdivision lower than a region. The regions are divided into 55 tinkhundla.
KaGogo	Traditional Grandmother’s house now refers to a place of refuge within the umphakatsi (chieftaincy).
Makhwapheni	Concurrent partner who is kept secret from a main partner
Prevalence	Proportion of individuals in a population who are HIV infected at a specific point in time
Risk (of HIV)	The probability that a person may acquire HIV infection ¹
Risk factors	Factors which are directly linked or on the causal pathway to HIV infection (e.g. concurrent partners, sharing contaminated instruments, low condom use)
Synthesis	The combination of components to form a connected whole ²
Transactional sex	Exchange of money, gifts or favours for sex
Types of HIV prevention	<p>HIV prevention activities were classified as follows (see also: UNAIDS, 2008a)</p> <ul style="list-style-type: none">a) <i>Interventions affecting knowledge, attitudes and beliefs and influencing psychological and social risk correlates:</i> This refers to all mass media, interpersonal education-related interventions intended to change attitudes and/or behaviour of the population regarding HIV/AIDS. Other activities in this component are family life education which targets both in school and out of school youth and other segments of the population, education to promote universal precautions, prevention counselling, environmental interventions that enable prevention interventions, social mobilisation and condom promotion.b) <i>Risk reduction</i> (lowering risk associated with behaviour without eliminating the behaviour): This category includes all programmes that intervene to lower risk of behaviours: condom distribution, reducing harm for intravenous drug users and livelihood alternatives for sex workers, providing safe spaces for vulnerable populations.c) <i>Biological/ biomedical interventions that reduce HIV infection and transmission risk:</i> These include diagnosis and treatment of STIs, PEP, FP services, male circumcision, PMTCT, breastfeeding substitutes for

¹ UNAIDS (1998).

² Oxford Dictionary, 10th edition, ed. Judy Pearsall, Oxford University Press.

HIV positive mothers, screening blood products, disinfection of medical equipment, use of gloves & protective clothing, proper disposal of biohazard waste as well as drug treatment.

- d) ***Standardized hybrid interventions in common use***: This category includes testing and counselling (aside from PMTCT), condom social marketing, comprehensive sex education and social mobilization.

Universal precautions

Standard infection control practices to be used consistently in all healthcare settings to minimize the risk of exposure to pathogens, e.g. the use of gloves, barrier clothing, masks and goggles to prevent exposure to tissue, blood and body fluids, safe disposal of sharps.

Umphakatsi

(plural imiphakatsi) an administrative subdivision lower than an inkhundla; there are 360 imiphakatsi in Swaziland, each approximately equivalent to a local community.

Vulnerability factors

A range of factors that reduce the ability of individuals and communities to avoid HIV infection, such as personal factors like lack of knowledge and skills required to protect oneself and others; factors pertaining to the quality and coverage of services; societal factors such as social and cultural norms, practices, beliefs and laws that stigmatize and disempower certain populations, and act as barriers to essential HIV prevention messages. These factors, alone or in combination, may create or exacerbate individual vulnerability and, as a result, collective vulnerability to HIV.³

³ UNAIDS (1998).

CHAPTER 1. INTRODUCTION, METHODOLOGY and HYPOTHESIS

1.1. The Analysis of HIV Prevention and Modes of Transmission (MoT) Study Concept

According to the 2008 Report on the global AIDS epidemic, an estimated 1.9 million people were newly infected with HIV in sub-Saharan Africa in 2007, bringing to 22 million the number of people living with HIV in this region (UNAIDS, 2008b). These new infections happened despite 20 years of experience with prevention programmes. Success in accelerating access to treatment has not been matched by similar successes in prevention: for every two people who start anti-retroviral treatment (ART), five others get newly infected (UNAIDS 2008b). **Underpinning the shortcomings in the prevention response is the inadequate use of evidence to inform the response.** The result has been ineffective prevention interventions, non-optimal use of available resources and lost opportunities to address the specific factors driving infection in the populations most at risk within each country.

Most biological measures to assess the status of HIV epidemics revolve around collecting and analysing HIV prevalence data. But **HIV prevalence is not ideal for understanding current transmission dynamics** (Garcia-Calleja *et al.*, 2006), because:

- a) Prevalence reflects the combined effect of new infections, earlier infections, treatment and AIDS deaths. So decreases in prevalence do not necessarily indicate a reduction in risk of infection (Hallett *et al.* 2006).
- b) Changes in prevalence lag behind real changes in risk, and comparisons of prevalence between countries can be confounded by differences in the stage of the epidemic in countries.
- c) Surveillance systems primarily rely on HIV prevalence data collected from women attending selected antenatal clinics. The interpretation of ANC clients' data is complicated by natural epidemiological changes that arise from the long and variable incubation of HIV and AIDS-related mortality (UNAIDS, 1999), by biases in the sample due to lowered fertility associated with bacterial STIs and HIV (Zaba & Gregson, 1998), by the selection bias in surveying pregnant women (who had unprotected sex, a higher risk behaviour) and by the disproportionate selection of surveillance sites in urban areas (Ghys *et al.*, 2006).

A better measure for monitoring the HIV epidemic is **incidence** (rate of new infections over a specific period of time). If incidence is known, changes in the epidemic over time can be better identified and characterised and linked to specific risk behaviours over the same period of time. True incidence data, however, can only be obtained through large-scale cohort studies (Rehle *et al.*, 2007). As such studies have disadvantages⁴, three other methods have been used:

- a) Indirect HIV incidence estimates have been made using prevalence data. For instance, this has been done using prevalence data from young people by single year of age and assuming that HIV prevalence differences between the age strata represent incident HIV infections (Ghys *et al.*, 2006; Zaba *et al.*, 2000);
- b) A laboratory-based method that can distinguish recent from established long-term infections (BED capture enzyme immunoassay) (Hargrove *et al.*, 2008); and
- c) Mathematical modelling of HIV incidence – mathematical models have been developed to provide HIV incidence estimates from prevalence data. Some approaches are specifically designed for early epidemics, others for more stable conditions; some rely on long time-series or involve computationally intensive model-fitting procedures (Gregson *et al.*, 1998, Stover *et al.*, 2008, Williams *et al.* 2001). Wilson & Halperin (2008) point out that mathematical modelling of incident infections is helpful, but that the models are still in their infancy and require better data than generally are available. Hallett *et al.*

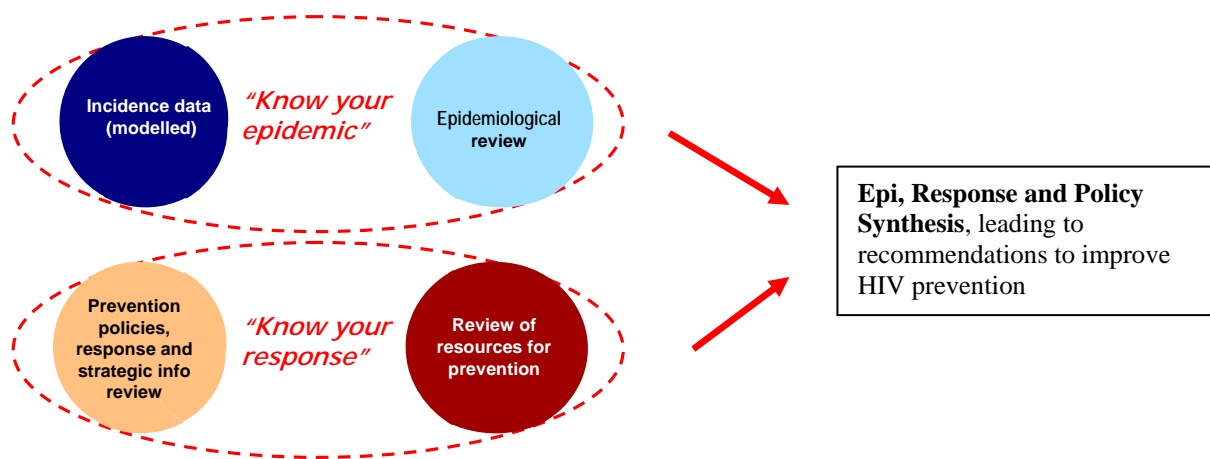
⁴ Such studies have many drawbacks, including cost, ethical considerations, participation and/or selection biases and the fact that those included in a cohort will inevitably have more exposure to HIV interventions.

(2008) emphasise that their performance has not been assessed under rapidly-evolving epidemiological changes including ART coverage gains (Hallett *et al.*, 2008).

This Modes of Transmission (MoT) study used the **UNAIDS incidence model**, used previously in several other countries.^{5,6} This model is unique in that it estimates infections *by mode of exposure*. It estimates the incidence of HIV in various risk groups for the current year and therefore helps identify sub-populations with high transmission rates. The prevention effect of various interventions can be estimated by varying model parameters like condom use and STI prevalence, modelling the impact on incidence. Given the imperfections of models, it is advisable that model estimates be triangulated with other sources of data (Wilson & Halperin, 2008).

The MoT Study was conceived in 2007 by the UNAIDS Regional Support Team, in partnership with the World Bank GAMET team, UNFPA and others, to support better HIV prevention efforts in Eastern and Southern Africa.

The MoT study has four components:



The HIV epidemiological data and incidence modelling estimates were combined to obtain an epidemiological synthesis (‘KYE’ synthesis), and the HIV prevention review data and prevention resources data were combined to obtain an HIV response synthesis (‘KYR’ synthesis). The ‘KYE’ and ‘KYR’ syntheses are then compared to understand the gaps in HIV prevention programming, and make recommendations on how the response can be improved (an HIV Epidemic, Response and Policy Synthesis, World Bank, 2008).

Relevance of the MoT Study to the concept of universal access to HIV prevention: The MoT study is designed to assist countries in focusing prevention better to those who need the services, and by doing so, progress toward universal access to prevention (UNAIDS, 2007c). Unless the key populations at risk and their vulnerability factors are known, and the current prevention response understood, it is impossible to plan, target and deliver interventions that focus on the populations that most need such services, in order to provide universal access to appropriate HIV prevention services to all populations that need them.

1.2. MoT Study in Swaziland: Rationale, purpose, and objectives

Swaziland’s hyperendemic HIV epidemic is maintained by underlying cultural and socio-economic factors such as power differentials in intimate relationships, sexual entitlements, cultural expectations of men and women, and income inequality. In this context, men and women continue to have long-term multiple

⁵ Cambodia, Indonesia, Honduras, Russia, and Kenya, described in Pisani *et al.* (2003)

⁶ Kenya and Thailand, described in Gouws *et al.* (2006)

concurrent sexual partnerships in which sexual acts are often unprotected. The current HIV prevention strategies, focusing primarily on individual sexual behaviours, and to a lesser extent on addressing the underlying norms of society that make these behaviours acceptable, are inadequate to effectively reduce HIV transmission “*While, in many ways, Swaziland’s response has been admirable and unique, it is clear that the HIV prevention programmes have not worked thus far*” Whiteside & Whalley (2007).

Therefore, it was agreed that Swaziland would participate in the MOT process with the **purpose** of “*contributing to the ongoing efforts to understand the epidemic and response in Swaziland and thus help the country improve the scope (doing the right kind of activities), relevance (with the right populations) and comprehensiveness (reaching all members of target populations) of HIV prevention efforts*”.

Specific **objectives** of this study were to:

- a) **Describe and understand the epidemiological situation in Swaziland (‘KYE’ data)** – the national epidemic phase and trends, the heterogeneity of epidemic and the modes of transmission at national level. This would be achieved through an in-depth review and analysis of all available data on HIV incidence, HIV prevalence, risk factors and drivers of the epidemic, stratified by sub-population and geographic location, and the application of the UNAIDS incidence model to generate expected distributions of new infections in different risk populations.
- b) **Describe and understand the HIV prevention response in Swaziland (‘KYR’ data)** – the range of planned and executed HIV prevention efforts in the country (the key messages, target audiences and geographic scope of prevention efforts), the stakeholders involved in HIV prevention, the funding for different types of prevention programmes, and the availability of strategic information to inform prevention. This would be done through a review of the policy context of prevention, strategic information relating to prevention, and current prevention interventions and programmes by implementers in all sectors and an analysis of current resource allocation and use.
- c) **Synthesise the KYE data and KYR data** to understand the scope, relevance and comprehensiveness of HIV prevention policies and programmes in Swaziland, the alignment of prevention programme resources, and gaps in strategic information about HIV prevention.
- d) **Recommend improvements in prevention policies, programmatic action, and resource allocation** to ensure a stronger and more effective national prevention strategy.

The study examines the hypothesis that multiple, long-term heterosexual relationships, happening in a context of implicitly permissive social norms, gender inequality and economic need, are a key contributor to HIV transmission in Swaziland.

Use of MOT Study results in Swaziland: The MoT study came at an opportune time. Over the years, several impact studies had been completed, all demonstrating the negative effects of the epidemic on the lives and demography of the Swazi population, the national economy, the education and agriculture sectors, and other sectors of public life. The country was searching for new strategies to address the epidemic and required more epidemiological and programmatic evidence to do so. In addition, the second national multisectoral HIV/AIDS strategic plan 2006-2008 was under review and a new National Strategic Framework was being developed. The reports on the National AIDS Spending Assessment (NASA) and the ‘Mapping of the National Minimum Package of HIV Services’ (NMP mapping) had just been completed, and findings could be used in the MoT to link prevention activity data collected within the MoT study to spending figures from NASA and to data on service provision at community level from the NMP mapping. The monitoring and evaluation (M&E) systems of the national response established within the MOHSW and at NERCHA in 2005 provided Quarterly Service Coverage Reports on the health sector response and the multisectoral HIV/AIDS response.

1.3. MoT Report Structure

Chapter 1 provides the background and context to the MoT study, discusses options to measure incidence and locates the study within the universal access strategy. It presents the study rationale, purpose and objectives, and how the study results will be used.

Chapter 2 describes how the study was carried out – the methodology followed. The methods for each of the study components and for the synthesis of all the data are introduced, and the study’s limitations noted.

Chapter 3 provides the KYE synthesis results. These include the epidemic state and trends in HIV prevalence and incidence, transmission pathways, sources of new HIV infections, data on sexual behaviours, STIs, and male circumcision. It also provides data on the socio-cultural and economic context of the epidemic.

Chapter 4 presents the KYR results, which include policy level issues relevant to prevention, strategic information aspects of prevention, and a description of preventive interventions currently provided by implementers in the different sectors.

Chapter 5 links the epidemic situation to the response, i.e. it provides an overall synthesis of the KYE and KYR data presented in chapters 3 and 4. The chapter tries to answer specific questions regarding the alignment of current HIV prevention policies and resource allocation with the epidemiological evidence and global best practice.

Chapter 6 gives the recommendations emanating from this study. It contains policy level recommendations and programmatic recommendations and presents specific recommendations for capacity building and research/monitoring & evaluation.

CHAPTER 2. MOT STUDY METHODOLOGY⁷

2.1. Overall oversight and approval of MoT Study deliverables

The study was overseen by the MoT Core Team through monthly meetings and progress reports (see the study's implementation calendar in **Annex 1**). Dissemination of the findings and their translation into policy and practice were the responsibility of the MoT Policy Team. Coordination and communication were ensured by NERCHA and UNAIDS, while technical leadership was provided by GAMET/World Bank. UNAIDS RST provided technical support particularly in modelling component of the study.

The synthesis report was drafted and submitted to the Core Team for an initial internal peer review. The findings were disseminated internal in several fora and externally for a peer review meeting in South Africa, after which the report was validated and finalised.

2.2. Methods for the KYE synthesis

Methodology – epi review: The epidemiological review was a desk study of existing published and unpublished documentation about Swaziland, and relevant studies from other countries in Sub-Saharan Africa (SSA). The review brought together available epidemiological data on HIV and STIs, and data about sexual behaviours, beliefs and attitudes, culture, gender and women's status, social norms, poverty, inequality, food security, economy, mobility, migration and other relevant topics. Quantitative studies were subjected to technical review in order to assess their quality.^{8,9} A judgement call was made on the usability of the data, and due to the paucity of data on many topics of analysis, studies which were of insufficient quality were used as circumstantial evidence (such as the sex work hotspot analysis of 2007). Where possible, data were triangulated. No new data were collected, but there was some simple re-analysis of data.

Literature search and cataloguing: The study team used several approaches to identify as much published and unpublished data and literature relevant to this study as possible. Four strategies were used:

1. *Searches on organisations' websites* – National, regional and international organizations websites were searched.
2. *Searches of large online databases and through search engines* - Searches were conducted using Journal storage, PubMed, Medline, Google Scholar, and Google. The searches looked for publications over the 12 years from 1997 to 2008, using Medical Subject Heading terms to identify relevant papers.
3. *Search based on citation lists in publications* - The team searched the references of the identified publications to find further relevant documents and web sites.
4. *Solicitation of documents from contacts* - The study contacted in-country colleagues, asking for specific documents which were not available in the public domain.

For the first and second strategies (searching partners' websites, online databases and search engines), the following search terms were used alone and in combination:

Swaziland, South Africa, Mozambique, Sub-Saharan Africa, HIV, AIDS, prevalence, incidence, modelling, systematic review, meta analysis, HIV prevention, HIV infection, mobility, migration, sexual behaviour, behaviour change, behaviour adaptation, sexual network, surveillance, DHS, reproductive health, STD/STI, violence, substance use/abuse, heroin, cannabis, alcohol, sex work, anal sex, MSM, homosexual, prison, iatrogenic, medical injection, blood transfusion, social capital, gender and others.

⁷ The methodology of the study was largely based on the "Guidelines for modes of transmission review" (UNAIDS/World Bank, version 12) and on the "How to write an HIV epidemiological, response and policy synthesis: a practical guide" (World Bank, version 3.0).

⁸ UNAIDS/World Bank (2008): page 12 and appendix 6

⁹ The specific quality criteria used were: objectives, definition of variables, definition of target population, geographical spread, methods, sampling methodology, sample size, participation and refusal rates, HIV testing methodologies, data analysis, biases and limitations.

A total of 273 documents considered relevant to the study were found. All documents were first checked for duplicates and then listed in a matrix to create a document catalogue, containing the Document title, File name, Institution/author, Year, Source, website, Date accessed.

Types of data used: Data included measured and projected/modeled data and looked at all transmission pathways (same-sex, heterosexual sex, medical injections, blood and blood products, mother-to-child transmission, and injecting drug use). In general, preference was given to recent data (last 2 years) and to measures indicating recent risk behaviours rather than lifetime exposures, since the MoT study is about the epidemiology of incident (new) HIV infections. However, older data were also considered, particularly when assessing trends over time. The analysis included other sexually transmitted infections (STIs) and in particular ulcerative STIs. It did not include tuberculosis or any other opportunistic infection (OI). Risk factors and socio-cultural drivers were retained as presented in the original literature. The adult population was split into male and female, and into the age groups 15-24 and 25 and above.

Epidemiological Model for Analysis: For the analysis of HIV epidemiological data, it was important to use a relevant epidemiological framework to analyze the risk factors and drivers of the epidemic. After reviewing different causal models for classifying risk factors for HIV transmission, it was decided to use a model that recognizes that individual risk factors for HIV infection are also influenced by factors at the couple level and community level, which are, in turn, affected by factors at the structural level (as described by Poundstone *et al.*, 2004).

Methodology – Incidence Modelling: The incidence modelling was confined by definition to the current year (12 months) and to adults aged 15-49 years. The UNAIDS Incidence Model was used (Model, accompanying CD and manual available from UNAIDS). The study team did an extensive data and literature review to find the best recent data to populate the model. If local estimates were not available, ‘global defaults’ were used as recommended by UNAIDS. If a recommended default was in fact a range (min-max), an informed guess was made as to which value should be used in the model. Model values were subjected to sensitivity analysis in order to understand the effect of changes through interventions. Some key SDHS 2006-07 data were specially analysed by Macro International in order to populate the model with the most recent data.

2.3. Methodology for the KYR synthesis

Sampling method: All prevention implementers assessed in the NASA that were still active were included in the sample. Additional implementers were drawn from the latest SHAPMoS report. In total, sixty-seven (67) organizations working in HIV prevention were sampled. They included UN agencies, public sector, private sector, non-governmental organizations and organization of people living with HIV (see **Annex 2**). Regarding strategic information pertaining to prevention, six key informants were drawn from the country UNGASS team, the national sero-surveillance team, HMIS and M&E coordinators. For policy-level issues, 19 key informants were sampled from the NERCHA Council and the Country Coordinating Mechanism (CCM) (see **Annex 2**). Additional information on both topics was obtained in current reports and guiding documents not older than five years.

Classification of prevention activities: In the *prevention review component*, the assessment of service provision was based on the new classification system proposed by UNAIDS in 2008. This system defines prevention activities by the *specific activities, services or commodities* provided to the beneficiary (previously, there had been a mix of approaches, identifying interventions by setting [e.g. workplace intervention], target population [e.g. sex worker intervention], mode of delivery [e.g. peer education], outcome [e.g. abstinence intervention], etc.). The new system groups these interventions into broad categories, based largely on the interventions’ intended purpose. In the *prevention resources assessment*, the

standard NASA classification was used for prevention interventions.¹⁰ This system draws from the WHO Guide for producing national health accounts (2003) and the resulting NASA classification was approved by members of the UNAIDS Global Resource Tracking Consortium in September 2005. Many countries participated in finalising the NASA classification system, and have started to use this standardised NASA resource tracking system as part of the national M&E system. Target population and age groups were also standardised within the NASA.¹¹

Methodology – HIV prevention review: A brief literature review was carried out, and new data were collected in three topic areas. Data collection used the following three templates/tools designed for this purpose by UNAIDS and GAMET and evaluated, customised and approved in-country:

1. The HIV prevention response *policy checklist*, which was used to guide the literature review and the interviews of key informants. The only adaptations of this checklist recommended by stakeholders were: to add the scoring list as used in the UNGASS policy index, and to extend the question on resource mobilization to include both external and internal resources. Triangulation with information from national literature was also done.
2. The HIV prevention response *strategic information checklist*, which was used to guide key informant interviews, as well as the study of documents. No country-specific modifications were suggested for this checklist by the consulted stakeholders. The 2008 M&E assessment and other relevant documents were also used to inform this area of the review.
3. The HIV *prevention programme template* for capturing information from individual prevention service providers. In-country, the template has undergone a two-step adaptation based on a mini-pilot of the template and on comments from participants at the technical planning workshop. This template was designed to collect information about all major prevention activities, services or commodities,¹² their delivery mode, key messages, target group, age, geographic location, when a programme started, its reach, outputs and methodology.

Data were collected during face-to-face interviews with project and programme managers and service providers which lasted on average about 40 minutes. The implementer data were captured into Epi Info version 3.4.1 and cleaned. Descriptive analysis was done in Epi Info and graphs were produced in Epi Info and Excel.

Methodology – HIV prevention resources review: The NASA, conducted independently of the MoT study, was a key data source. The detailed methodology is described in the NASA report (NERCHA/UNAIDS, 2008a). In brief, this tracking of actual expenditures for HIV/AIDS in Swaziland used the standard NASA methodology, and captured Swazi government and external sources of funds.^{13,14} Priority was given to actual expenditure records obtained from the service providers, or recipients of the funds, rather than the budgetary allocations of government or the commitments or disbursements of donors.¹⁵ The sample included all main sources, all agents of funds in Swaziland and all main providers.¹⁶ A total of 88

¹⁰ UNAIDS (2007d): page 18. Table 3.1 shows the AIDS spending categories with the NASA code, the label and the content description for each intervention. http://data.unaids.org/pub/BaseDocument/2007/20071029_nasa_classifications_definitions_en.pdf

¹¹ UNAIDS (2007d): page 24. Table 3.2

¹² Classification based on UNAIDS (2008).

¹³ UNAIDS (2007e) for NASA methods and procedures

¹⁴ UNAIDS (2007d) for classifications and definitions. The NASA excluded private contributions from business, private health system, and individual spending (these are planned to be included in the next NASA).

¹⁵ Production factors (e.g. labour costs) for all the expenditures were not captured because this level of data was either not available or would have required extensive additional data collection efforts and estimations. Where the actual expenditure could not be obtained, the disbursements from the source were used.

¹⁶ A database of all the stakeholders involved in HIV/AIDS as sources, agents and providers, was developed using the SHAPMoS database and the HIV Stakeholders' directory. The list of health facilities was sourced from the Service Availability Mapping database. Only the large stakeholders were selected to be part of the NASA sample (donors, governmental and non governmental organizations, faith based organizations and some community based organizations).

organizations were sampled for the Swaziland 2007 NASA, plus all seven hospitals, all four health centres and 18 other health care facilities using purposive sampling to obtain representation of urban and rural facilities, and public and private facilities.¹⁷

2.4. Methods for the KYE-KYR Synthesis

This step was largely based on the methodology described in “How to write an HIV epidemic, response and policy synthesis: a practical guide” (World Bank, version 3.0). The key areas of enquiry were:

- To understand the socio-cultural context in which HIV prevention policies are implemented
- To understand whether HIV prevention policies are based on the latest available evidence and global best practice
- To understand whether HIV prevention policies respond to the key drivers of Swaziland’s HIV epidemic
- To understand whether HIV prevention programmes are in line with the country’s HIV prevention policies. If programmes are not in line with policy, to understand whether the policies are outdated (i.e. whether evidence exists that the new, innovative prevention responses are working) or whether the HIV prevention responses need to be adjusted (re-planned, re-designed or re-programmed) to reflect the latest policy-level decisions
- To understand whether the funding allocated for HIV prevention is directed where it is most needed

For the joint analysis of the “know your epidemic” and “know your response” parts, data were synthesized at three levels: individual level, couple level, and community level.

1. *Individual level analysis*: Included biologic, demographic and behavioural factors that may influence a person’s risk of HIV acquisition, such as education status, circumcision status, number of sexual partners;
2. *Couple level analysis*: Included factors which help determine the HIV transmission risk between sexual partners, such as age disparity between the partners;
3. *Community level analysis*: This analysis summarized determinants of HIV transmission that are outside the direct influence of individuals and couples. Conceptually, this includes the family, community and wider society - for example, social norms.

In order to locate risk factors at the different levels and understand the HIV epidemic context, the framework for the social epidemiology of HIV/AIDS described by Poundstone *et al.* (2004) was used. This framework includes “social factors” and “structural factors” beyond the individual level, allowing a wide and encompassing view of the epidemiology and context of HIV.

2.5. MoT Study Limitations

This study had several limitations. Some data on risk groups such as MSM, IDU, clients of sex workers and others, were not available, which limited the scope of the application of the model (see **section 3.5 on specific data gaps**). Furthermore, the model has some inherent limitations: it does not take into account the distribution of behaviours within risk groups, the influence of specific STIs, sexual mixing patterns, or concurrency of relationships (the current version of the incidence model could therefore not fully contribute to the testing of the MoT study hypothesis, see section 1.2). The synthesis had to use some older data where recent data were not available, which weakens the power of the study. It was rarely possible to show long term trends of variables, due to different measurement methodologies. The SDHS 2006-07 data were only

¹⁷ Primary data collected included expenditure information at source as well as qualitative information on various issues around funding and reporting mechanisms for HIV/AIDS spending. Secondary data included audited reports, annual reports and action plans from various organizations. Triangulation was used to create each complete transaction, to avoid double counting. All data collected were transcribed to the NASA forms designed for this project. For missing data, assumptions were made and estimates made (described in main NASA report). The data were captured, checked and balanced before being transferred to the NASA Resource Tracking Software. The outputs were exported to Excel for analysis.

available in the form of bivariate analysis (relationships among pairs of variables), and any data interpretations had to be made with caution due to potential confounding effects by other variables (like age).

The framework for classifying HIV interventions (Sweat 2008) requires a rich description of the intervention, which was not always attained, making classification as per the framework difficult. Additionally, the lack of available data from prevention implementers on coverage, target population, evaluation reports of interventions, etc. limits the conclusiveness of the review (for instance, one programme with complete national coverage may be more important than several very small-scale programmes, but the intervention data available to this review do not sufficiently describe the programmes' scope, reach and coverage). In the data collection for the prevention review, there were competing demands on time of key personnel/key informants and people had difficulty honoring appointments because of other commitments. Some organizations were visited three times in order to conduct an interview. The template used for collecting prevention implementers' data uses a new classification (UNAIDS 2008) and stakeholders in prevention were not familiar with it and at times found it difficult to relate their interventions to it. For instance, condom interventions are split into condom promotion (category 1) and condom distribution (category 2), and some implementers were not used to separating these two activities conceptually.

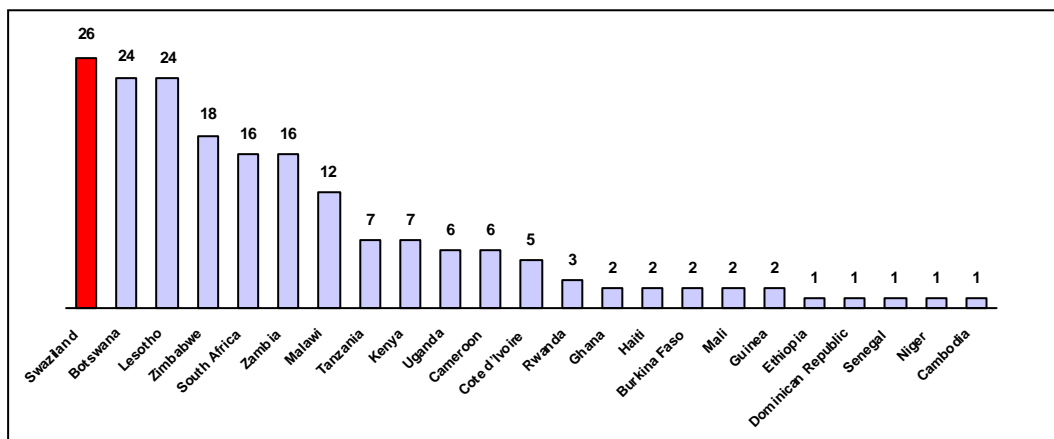
CHAPTER 3. KYE SYNTHESIS

The KYE synthesis draws together available data about HIV prevalence trends and heterogeneity, HIV incidence, and modes of transmission. The KYE synthesis tests the hypothesis that multiple, long-term heterosexual relationships, happening in a context of economic need, implicitly permissive social norms, and gender inequality, are a key contributor to HIV transmission in Swaziland.

3.1. National trends in HIV prevalence

Swaziland's national HIV prevalence is the highest in the world (figure 1) with 26% of the population aged 15-49 HIV positive in 2006 (CSO, 2008).

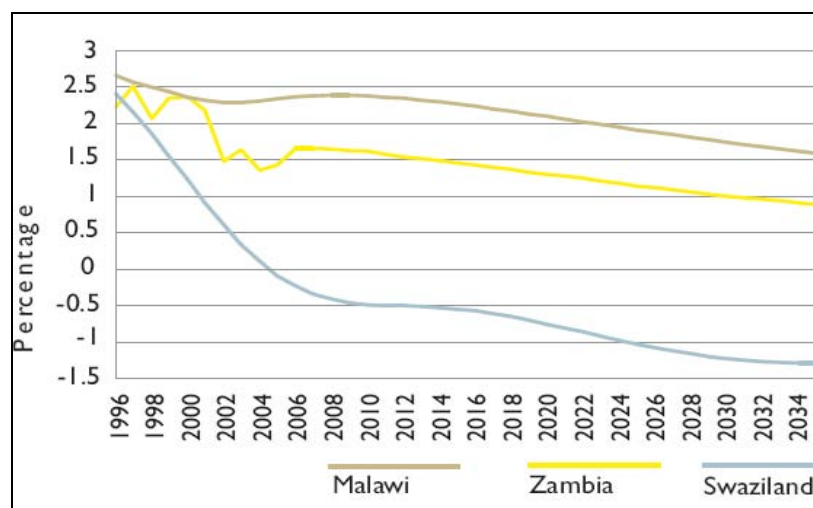
Figure 1. HIV prevalence among persons aged 15 to 49 in selected countries



Source: CSO presentation 27 June 2007 on SDHS 2006-07

The high HIV prevalence, combined with labour migration patterns (see sections 3.3.5. and 3.6.3.1.), **will result in higher mortality and thus negative population growth** for the foreseeable future (see Figure 2).

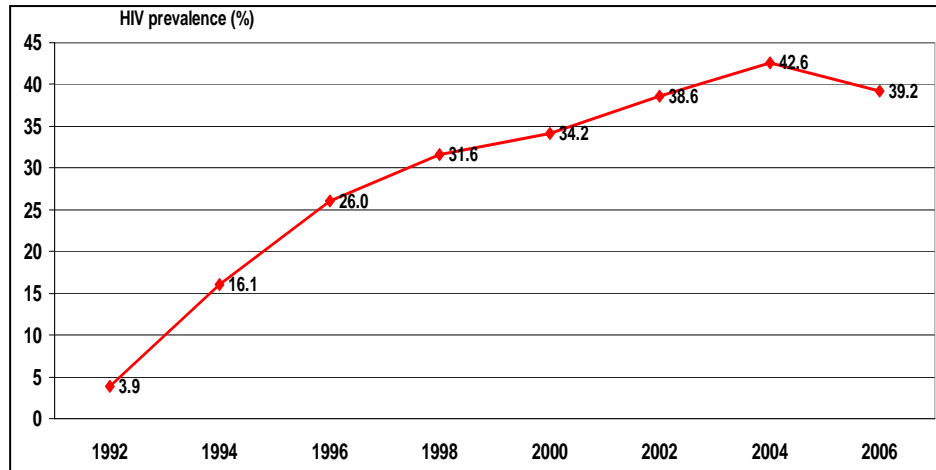
Figure 2. Projected population growth rate of Swaziland, Malawi and Zambia (1996-2034)



Source: US Census Bureau (2007), in Whiteside & Whalley (2007:9)

HIV prevalence peaked between 2004 and 2006. It was projected in 2007 that the national epidemic peaked at about 26% between 2004 and 2006 (NERCHA & UNAIDS, 2007), and there has been a recent reduction in HIV prevalence amongst ANC clients (figure 3). However, the 2008 antenatal sentinel surveillance data are needed to confirm whether this fall is a new trend.

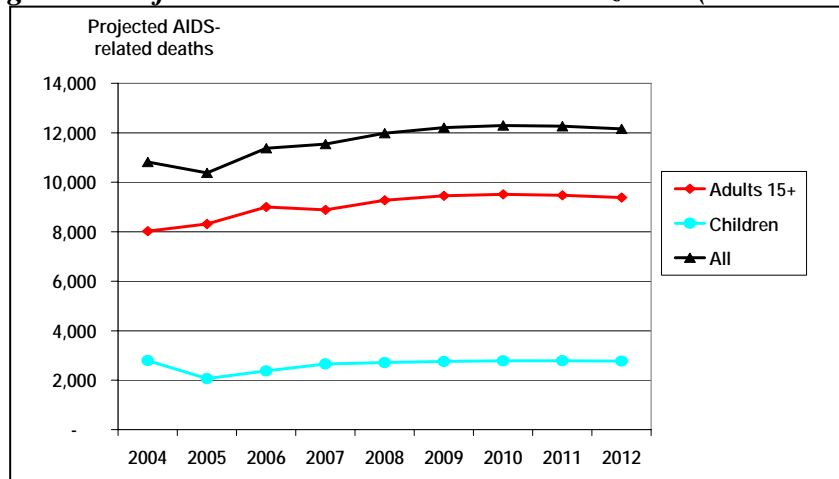
Figure 3. Epidemic state: HIV prevalence in ANC clients in Swaziland (1992-2006)



Source: MOHSW (2002, 2005, 2007)

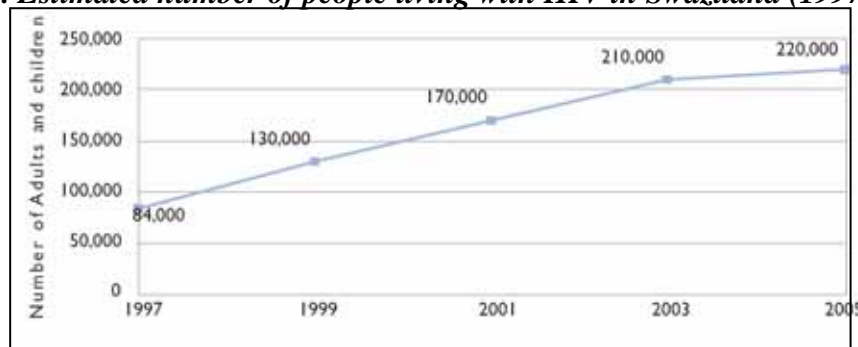
The peak in HIV prevalence in 2004-2006 will result in a plateau in AIDS-related deaths of around **12,500 adults and children per year** (figure 4) for at least the next four years. As HIV prevalence increased, the number of PLHIV increased, reaching between 185,000 and 220,000 in 2005 (NERCHA and UNAIDS, 2007; Whiteside & Whalley, 2007) (figure 5).

Figure 4. Projected AIDS-related deaths in Swaziland (2004-2012)



Source: NERCHA & UNAIDS (2007)

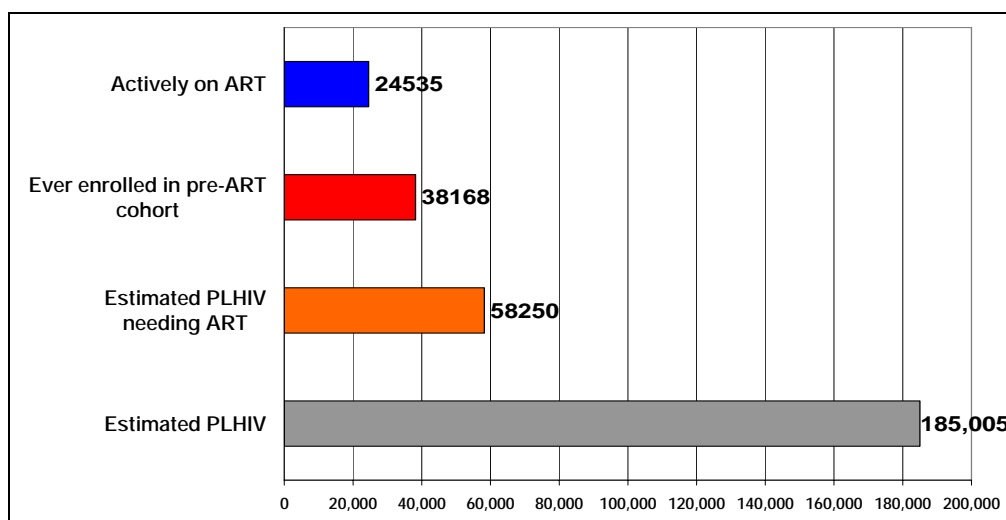
Figure 5. Estimated number of people living with HIV in Swaziland (1997-2005)



Source: UNAIDS (2000, 2002, 2004, 2006)

AIDS-related deaths are expected to slow down if ART coverage increases in the future – currently, it is estimated that 42% of persons who need ARVs, are receiving treatment (see figure 6).

Figure 6. Total PLHIV, ART need and ART enrolment in Swaziland (2007)



Sources: NERCHA and UNAIDS (2007a), MOHSW (2008)

The increase in mortality and slow roll-out of ARVs has drastically affected life expectancy, which is reported to have fallen from 57 to 37 years between 1997 and 2008 (Whiteside *et al.*, 2006; UNDP, 2008). Using 2004 mortality rates, the probability that a 15 year old Swazi will reach age 50 is 28% for males and 22% for females in a modelling scenario which integrates the effect of AIDS. Without AIDS, 94% of males and 97% of females would be expected to reach the age of 50 years (Whiteside *et al.*, 2006).

3.2. Heterogeneity of HIV prevalence

Despite Swaziland’s relatively small size and the overall declines in HIV prevalence in the past two to three years, there is considerable heterogeneity in the HIV epidemic. These areas of heterogeneity – by sex, age, geography, income-level, migration, education status, marital status and within couples – are highlighted here as they hold important relevance for programming.

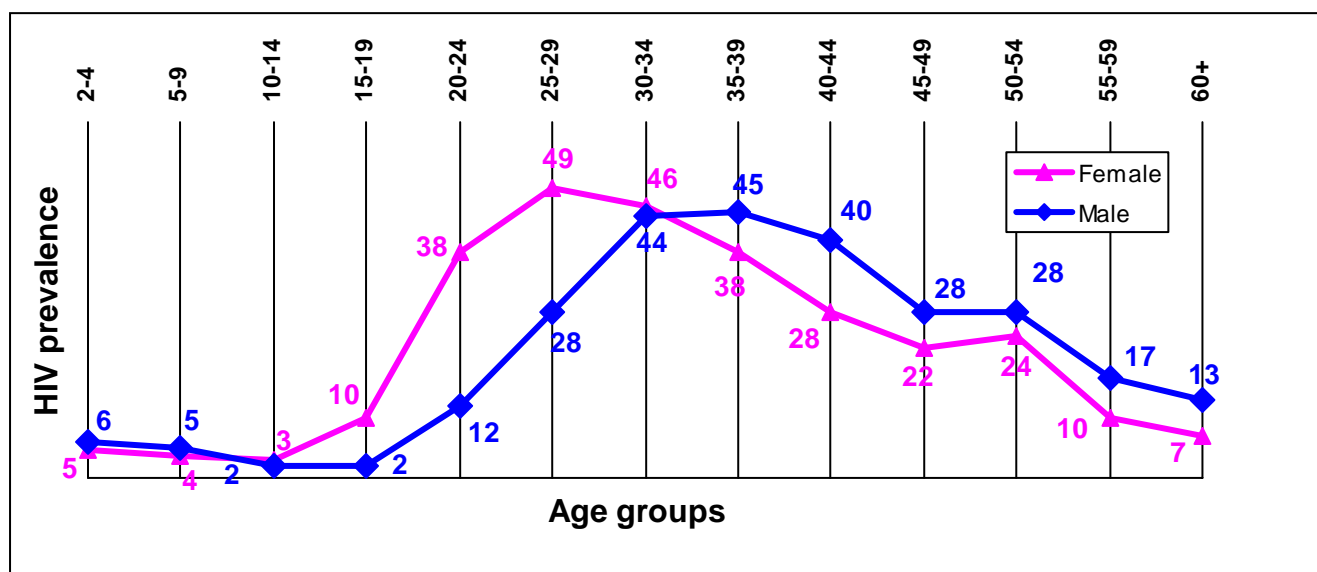
3.2.1 Gender-related heterogeneity

HIV prevalence in females is significantly higher than in men at younger ages, and lower at older ages. HIV prevalence in women aged 15-49 years was significantly higher (31.2%) than in men (19.7%). The difference is most significant at age 20-24, where female prevalence is more than 3 times male prevalence (38% and 12% respectively).

3.2.2 Age-related heterogeneity

HIV prevalence peaks at 25-29 years for women and at 35-39 years for men, and a considerable proportion of older adults are HIV infected (figure 7). From age group 35-39 and older, prevalence among men exceeds prevalence among women. Among the age group 50 and older, the prevalence is 17.8% for men and 11.7% for women, and for men older than 60, HIV prevalence is almost double that of women (13% versus 7%, respectively, see figure 7).

Figure 7. HIV prevalence by age and sex in Swaziland (2006-07)



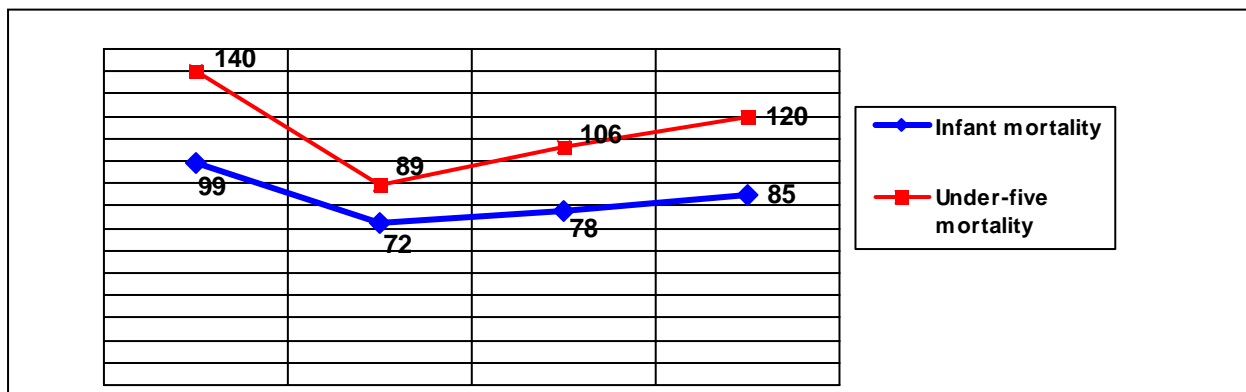
Source: Data from SDHS 2006-07

The high HIV prevalence amongst younger age groups – Swazi children aged 5-14 years – probably arises through a mix of different exposures including sexual abuse. The SDHS2006-07 showed HIV prevalence of 4% in children aged 5-9 years, and 3% in children aged 10-14 years. These are the age groups in which one would expect HIV prevalence close to zero, taking into account their sexual immaturity, and the low probability of longer-term survival of children infected at birth. These infections probably arise through a *mix of different exposures*, and there is evidence to support the view that some stem from sexual abuse of girls and, to a lesser extent, boys:

- According to the Soul City 2002 Baseline Study, 8.2% of youth had first sexual intercourse by 12 years of age, and 81% of these instances were forced (CIET, 2002)
- According to the “Study of Abuse Amongst School Going Children in Swaziland”, child sexual abuse was identified as the most prevalent type of abuse; communities interviewed stated that the majority of child abuse was sexual (MOE, 2003)
- The same study showed that male adults aged 21-40 years were perpetrating a high proportion of these sexual abuse cases, and most of the victims know the perpetrators and are related to them (fathers, brothers, cousins, uncles)
- The 2004/5 Save the Children statistics and SWAGAA 2005 statistics reveal that more than 300 children (of which 8% are boys) reported having been sexually abused. Male adults are said to be the main perpetrators of child sexual abuse cases
- The “National survey on violence against children in Swaziland” by Reza *et al.* (2007) included females aged 13-24 years and also provides evidence of young girls being sexually abused.

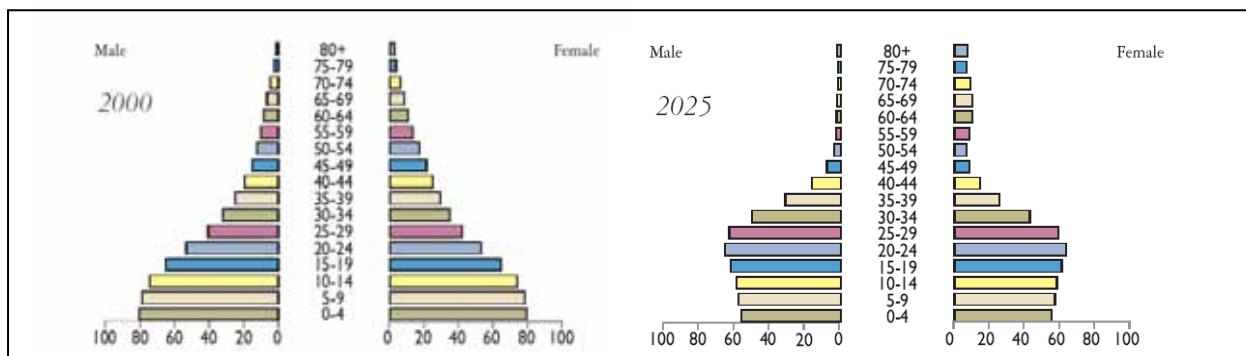
The very high HIV prevalence rates at young ages have impacted mortality rates among young adults and the population age-distribution in Swaziland. A recent vulnerability assessment found that 45% of deaths occur among 16-35 year olds, which is a departure from the norm in which death rates remain low until people age (VAC, 2004). Child survival rates have also declined dramatically (see figure 8). AIDS-related deaths are expected to alter the population structure such that by 2025 there will be a thinning of both the very young and the older age groups (figure 9).

Figure 8. Child mortality (deaths per 100 000 population): Trends in Swaziland from 1986 to 2007



Source: CSO Presentation 27 June 2007 on SDHS 2005-07

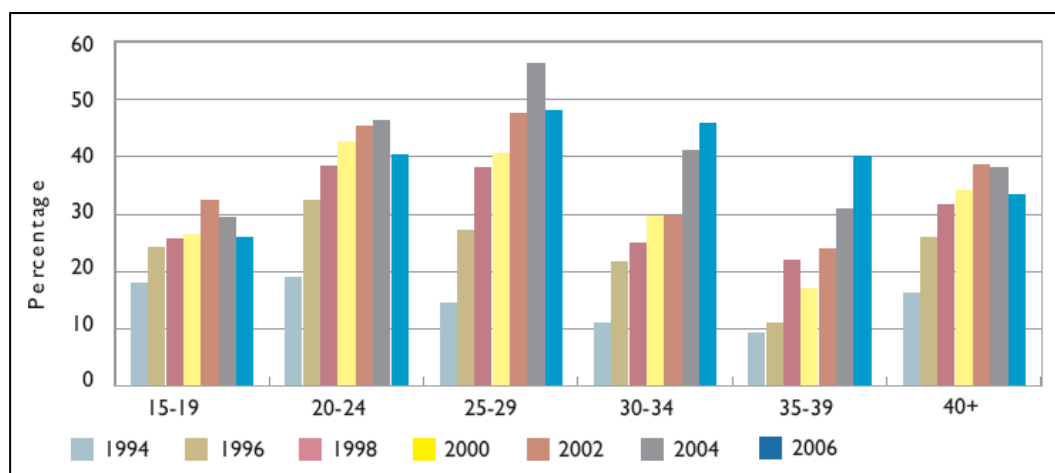
Figure 9. Population pyramids for Swaziland for 2000 (actual) and 2025 (projected)



Source: US Census Bureau (2007), in Whiteside & Whalley (2007, p10).

HIV prevalence in pregnant women in most age groups increased rapidly up to 2004 (most dramatic increases were among 25-29 year olds), but a downturn was seen in the latest sentinel surveillance data among females below 30 years, but not among females in their 30s (figure 10, MOHSW, 2006).

Figure 10. HIV prevalence by age group in Swaziland (ANC clients 1994-2006)

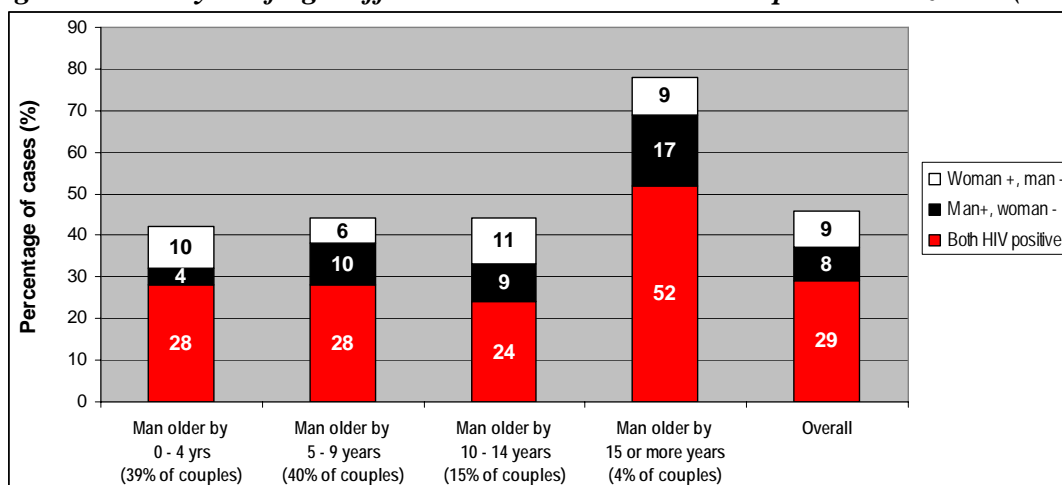


Source: Ministry of Health and Social Welfare (2006)

There is evidence of age-disparate relationships, linked to the age-disparate prevalence curves. Male HIV prevalence peaks at 10 years older than female HIV prevalence and the SDHS data indicate that 12% of females aged 15 to 24 had a partner 10 years or more older as their first sexual partner. In 58% of relationships the man was 5 or more years older than the woman. For the 4% of couples where the man was 15 or more years older than the woman, 52% of couples were both HIV positive – about twice the percentage seen in couples with a smaller age difference (see figure 11). 17% of couples surveyed were

discordant – one was HIV positive and the other HIV negative, with the man mostly likely to be HIV+ in couples with the largest age differences.

Figure 11. Analysis of age difference and HIV status in couples in Swaziland (2007)



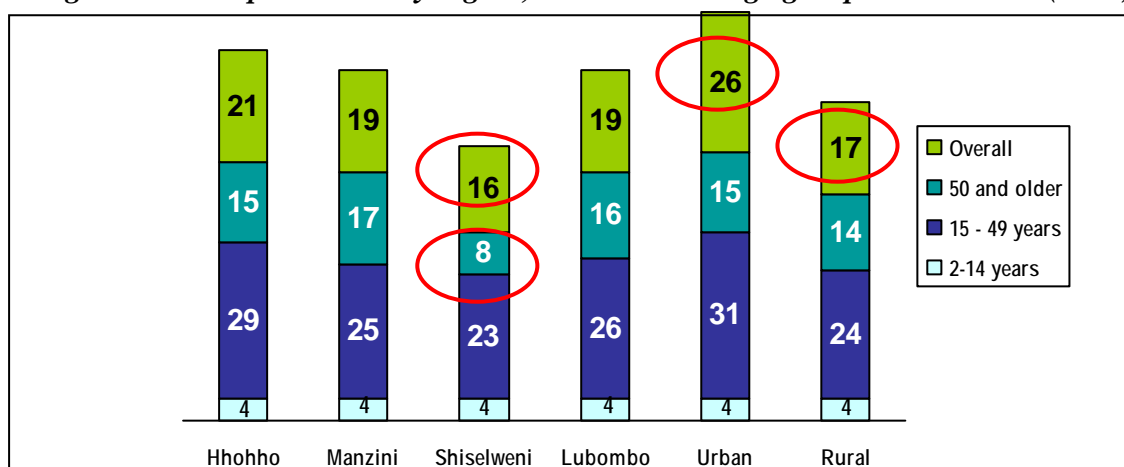
Source: SDHS, 2006/07 (Table 14.13)

The SHDS 2006-07 data on age-disparate sex are corroborated by other studies: (a) SHAPE (2004) reported that 96% of girls’ first sexual experience was with someone of the same age or older, while most boys’ first sexual experience was with someone the same age or younger; and (b) FLAS (2003) found that 29% of females and 8% of males reported that their first sexual experience was with a person who was more than 5 years older than themselves. Similarly, first sexual experience with a younger person was far more common among male respondents (33%) than female respondents (4%). Out of school youth tend to have older partners than in-school youth - mean age of first sexual partner was 15.1 years for males and 20.0 years for females among in school youth while it was 28.7 for females and 22.4 years for males out of school.

3.2.3 Geographic heterogeneity

HIV prevalence differs by age group across regions and urban prevalence is much higher than rural prevalence. The SDHS provides recent data on HIV prevalence by residence (urban/rural) and region. Prevalence across all age groups is 19% (26% for ages 15-49). As figure 12 shows, HIV prevalence is high in all regions, but there are significant differences across regions in specific age groups, specifically in Shiselweni (where overall prevalence is much lower), and HIV prevalence is significantly higher in urban than in rural areas (26% vs. 17%). ANC data confirm that prevalence is higher in urban than in rural areas.

Figure 12. HIV prevalence by region, residence and age group in Swaziland (2007)



Source: SDHS, 2006/07 (Table 14.4)

3.2.4 Income-level heterogeneity

For both men and women, HIV prevalence **slightly increases with wealth quintile** (22% for highest wealth quintile and 19% for lowest wealth quintile) and **differs significantly by employment status** (36% of employed women and 27% of employed men were HIV positive, compared to 24% of unemployed women and 10% of unemployed men). It should be noted, however, that the HIV prevalence levels in both employed and unemployed men and women are unacceptably high, and that at the time of the survey, 55% of women and 46% of men were unemployed.

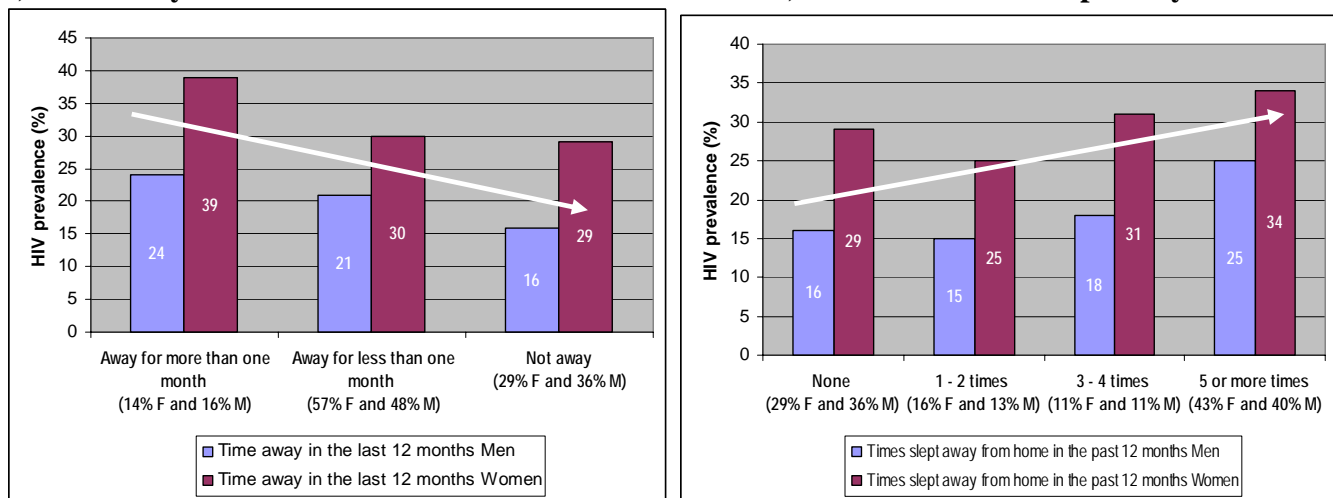
3.2.5 Heterogeneity across migration patterns

Men and women who were away from home for longer periods and slept more nights away from home, have higher HIV prevalence, as figure 13 illustrates.

Figure 13. HIV prevalence by time away from home and number of times away from home (2007)

a) Time away from home

b) Number of times slept away from home



Source: SDHS, 2006/07 (Tables 14.6.1 and 14.6.2)

Figure 13 shows a high percentage of men and women (43% F and 40% M) who spent nights away from home 5 or more times in the last 12 months, and the high percentage (57% F and 48% M) who were away for less than 1 month in the past 12 months. This pattern of migration of frequent stays away from home for fairly short periods of time reflects the common practice in Swaziland of working in a town during the week, and returning to a rural home at weekends.

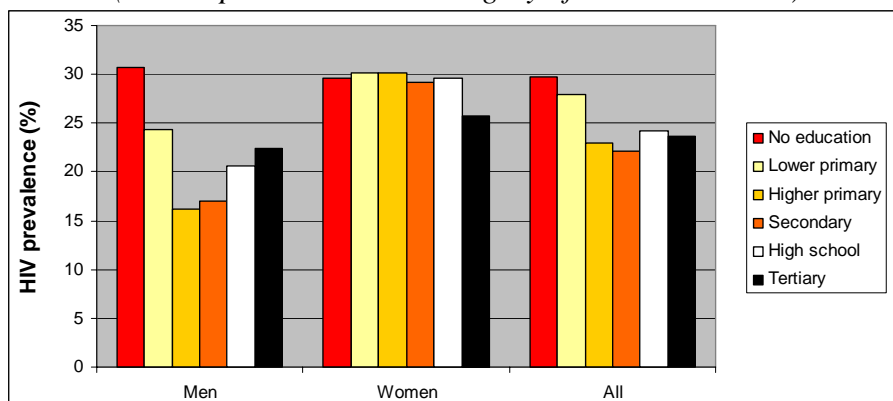
3.2.6 Heterogeneity by education status

Literacy levels in Swaziland are high. Around 81% of the Swazi population (80% men and 82% women) and 94% among young people aged 15-24 years (SHAPE, 2006) are literate. The relationship between education and HIV status is not linear or straightforward (Fortson, 2008). Some studies find no correlation between HIV and education (De Walque, 2006); others find higher HIV among more educated people in some samples/countries, and lower HIV among more educated people in others. A recent review of many studies suggests that the relationship between education and HIV changes over time - education initially increases risk (perhaps because people with money are more likely to buy sex or have multiple partners), but over time, education is protective (educated people seem more likely to access and act on prevention information) (Hargreaves et al 2008).

In Swaziland, the **probability of being HIV positive for women appears not to be related to their education status, except at tertiary level, which includes very few women** (figure 14). ANC data corroborate the SDHS data: the 10th sentinel survey of ANC clients shows the lowest HIV prevalence in women with the highest educational attainment (higher/tertiary completed) (MOHSW, 2007). **In men, HIV infection falls with years of primary education, but increases with education beyond the primary**

level. Tertiary level achievers have almost as high prevalence as men with lower primary education. Men with no education have the highest HIV prevalence (figure 14).

Figure 14. HIV prevalence and education status in Swaziland (2007)
(% HIV positive in each category of education status)



Source: SDHS, 2006/07 (Table 14.5)

3.2.7 Heterogeneity related to marital status and type of marital union

The only adults with low HIV prevalence are people who have never married and never had sex (figure 15). Although HIV is very high in divorced, separated and widowed men and women (47-49% amongst men and 33-47% amongst women), there are few of these persons (2% M and 11%F). **Married men and never married women who have had sex are the most important populations** looking both at proportion of the adult population (33% of M, 29% of F) and HIV prevalence (32% M, 37% F).

Figure 15. HIV prevalence and marital status for men and women age 15 and older in Swaziland (2007)
(shaded areas indicate people in that marital status group who are HIV positive)



Source: SDHS, 2006/07 (Tables 14.6.1 and 14.6.2)

Very few people in Swaziland are in formal polygynous unions (2%M and 7% F), but HIV prevalence of persons in these unions is very high (47%M and 30%F). The HIV prevalence of men and women in monogamous unions is very high too (35% for men and 30% for women).

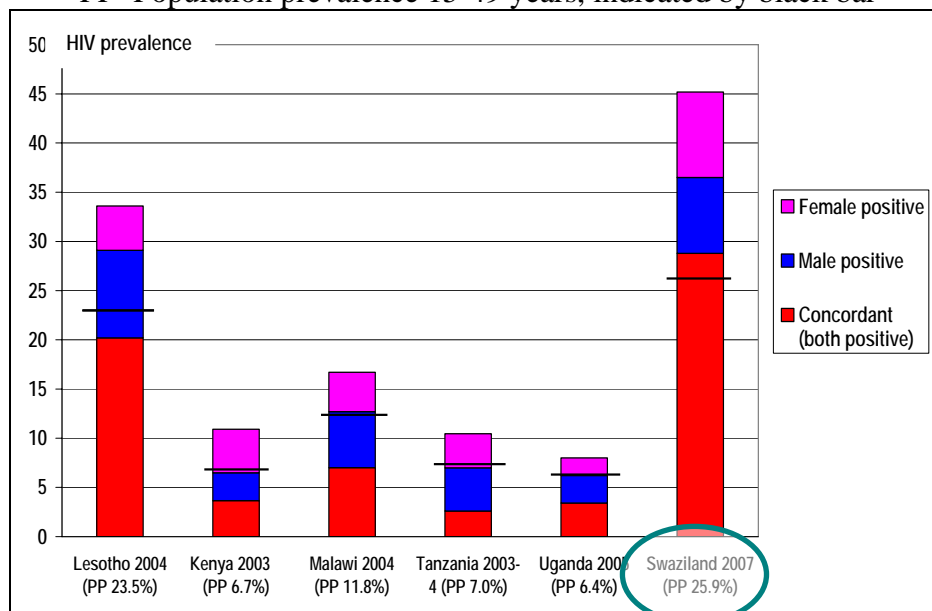
3.2.8 Heterogeneity in couples (discordant couples)

Figure 11 has shown that **in same-age couples, more women than men are HIV positive, and in couples with age differences, more men than women are HIV positive.** Overall, in cohabiting couples, slightly more women than men are HIV positive (see figure 16, Swaziland bar on the right). Discordance varies significantly in East and Southern Africa, as figure 16 illustrates, and **in Swaziland, HIV infections are clustered in couples** (HIV prevalence in couples is higher than population prevalence).

Studies on HIV infection in couples have usually focused on the effects of couple counselling on subsequent HIV acquisition, on the effect of discordance on coping strategies within relationships, or on the effect of ART on sexual behaviour among discordant couples (Lurie *et al.*, 2003). Van der Straten *et al.* (2000) found that **including sero-negative partners in counselling interventions may decrease sexual risk-taking among discordant couples**, and Padian *et al.* (1993) found that **social support resulting from couples counselling is an effective way of promoting behaviour change.** Lingappa *et al.* (2008) found, across 12 sites in East and Southern Africa, HIV-1 discordance of 8-31% in couples tested from the community. Based on the analysis in figure 16, and evidence from the sub-region (Lingappa *et al.*, 2008), it can be concluded that **HIV discordant couples are a critical target for HIV prevention.**

Figure 16. Discordance in HIV status among cohabiting couples (cross-country comparison)

PP=Population prevalence 15-49 years, indicated by black bar



Sources: Corno & de Walque (2007:43), and DHS Lesotho 2004, Kenya 2003, Malawi 2004, Tanzania 2003-4, Swaziland 2006-7, AIS Uganda 2004-5

Although important heterogeneity can be detected, the general impression is that the epidemic is uniformly bad across different socio-demographic sub-populations and that there is hence a high degree of homogeneity in the HIV epidemic of Swaziland.

3.3. Trends in HIV incidence

Because HIV incidence data are not readily available through standard surveillance (see section 1.1) and the interplay between incidence and prevalence is not simple, a strong focus on prevalence exists. However, because of the many years between HIV infection and mortality, prevalence usually continues to rise even after incidence has started to fall. This is even more the case with ARVs increasing life expectancy of people with HIV. It is essential to investigate and understand HIV incidence trends, using proxy and modelled data, in the absence of actual incidence data.

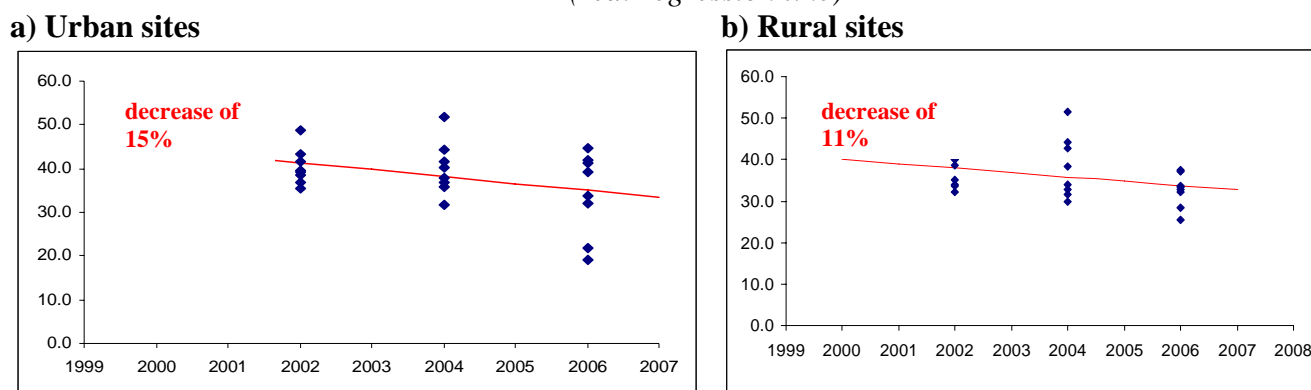
Modelling data suggests that incidence peaked in 1999 (8 years before HIV prevalence peaked) but remains at a high level. Modelling suggests that HIV incidence for Swaziland peaked around 1999 at almost 6% annual incidence, and levelled off thereafter at about 4% annual incidence (Shelton, 2006). The Spectrum model predicts 13,060 new infections in adults in 2008, which translates into an annual adult HIV incidence of 3%. In 2008, adult new infections outstripped adult AIDS-related deaths by an estimated 3,786 (causing prevalence to remain high) (NERCHA and UNAIDS, 2007).

Women continue to bear the brunt of new infections. There is strong evidence that the majority of new infections happen in females. The SDHS HIV prevalence data show a significantly higher burden of HIV infections in females. Incidence modelling¹⁸ indicates that 62% of all new infections in 2008 will occur in females and 38% in males.¹⁹ Regional research shows that while some women with risk behaviour fit the description of “passively vulnerable”²⁰, many others are “active agents” in seeking multiple partners, especially among older men (Leclerc-Madlala, 2008).

The majority of new infections will occur in women and men older than 25. ANC data and modelling results suggest that the majority of new infections occur in women older than 25 (39% of all new infections, compared with 23% of all new infections in females aged 15-24). For men, the respective estimated figures are 29% (men aged 25 years and above) and 9% (new infections in men aged 15-24 years). According to these modelling results, over two thirds (68%) of all new infections in the adult population occur in people above 25 years of age, who are either married or living with a steady partner. About 32% of all new infections are estimated to occur in people 25 years and younger.

Proxy HIV incidence data confirm a recent downward trend in new infections in the past four years. HIV prevalence data amongst the young age groups – a proxy for HIV incidence – confirms that prevalence in younger ANC clients has recently started to drop, suggesting that there are fewer new infections. Modelling suggests that HIV prevalence among young pregnant women decreased by 15.0% and 11.2% from 2002 to 2006 for urban and rural sites, respectively (NERCHA and UNAIDS, 2007) (see figure 17).

Figure 17. HIV prevalence trends 2000 - 2006 in young ANC clients (aged 15 to 24) in Swaziland (red: regression line)



Source: NERCHA & UNAIDS (2007:25-26)

Too many preventable new infections occur in children. An estimated 19% of all expected new infections in 2008 occur in children (3,147 infections, Spectrum estimation). Infections in Swazi children aged 5-14 years probably arise through a mix of different exposures and there is clear evidence of sexual abuse of children. Infections in infants arise through non-use of PMTCT services by positive mothers (450-900 estimated new infections), but also through the partial efficacy of Nevirapine treatment in those using

¹⁸ Application of the UNAIDS Incidence Model within the MoT process

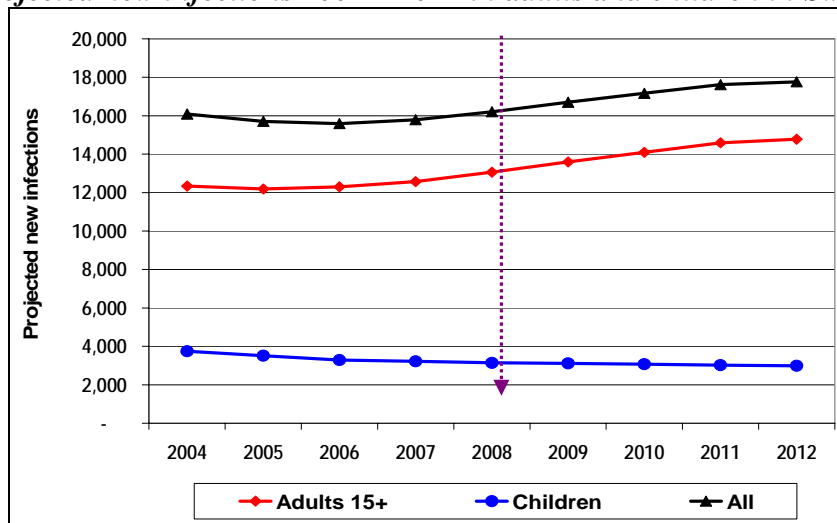
¹⁹ Excludes reported sexual relationships with sex workers (commercial sex was reported by only 0.2% [4/1947] of male respondents in the DHS) – see section 3.6.1.7. for commercial sex.

²⁰ Leclerc-Madlala uses the term “vulnerable victims” - females who report hunger, coercion, manipulation, pressure to conform, obey and show ‘respect’, need for protection, employment and draws a distinction between being passive and active, i.e. the degree of agency in decision-making.

PMTCT services (leading to an estimated 1,200-1,900 new infections), and through non-exclusive breastfeeding by HIV positive mothers (SDHS data suggest that only 10% of infants are not breastfed at all, and that only 17% of women exclusively breastfeed up to age 6 months).²¹

There are indications that HIV incidence may rise in the next 3 to 4 years (see figure 18). Shelton *et al.* (2006) suggest that in countries with incidence plateaus at high levels, epidemic dynamics are almost entirely responsible for the decline, with little or no behavioral change, and that incidence can easily resume a slow increase after a fall or plateau.

Figure 18. Projected new infections 2004 – 2012 in adults and children in Swaziland (2007)



Source: NERCHA & UNAIDS (2007), p20.

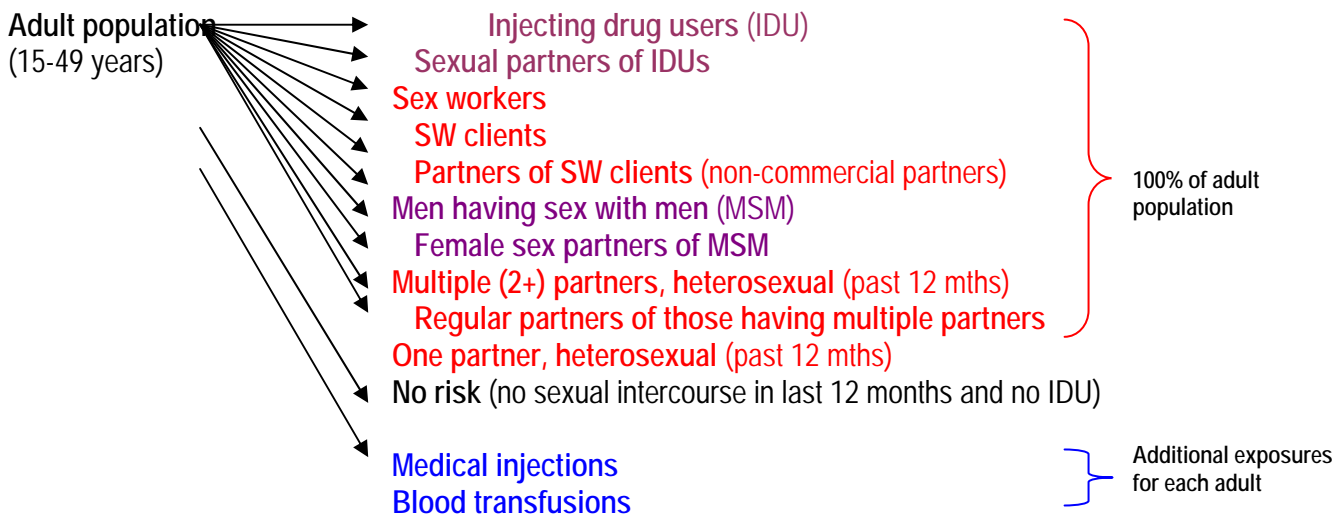
3.4. Main sources of new HIV infections (heterosexual transmission)

Knowing the sources of new HIV infections is important, as this should influence the focus of HIV prevention policies and programming. Using the **UNAIDS HIV Incidence Model**, sources of new infections have been modelled and the results presented here. A word of caution is necessary: the UNAIDS Incidence Model is a new model and requires detailed data. As many of the data required by the model are not available on a national scale (through population-based studies or cohort studies) or not available at all, some proxy data or estimations are necessary. For this reason, the model results should be triangulated with other epidemiological evidence, so as to ensure that model results are interpreted appropriately.

In the model, every person aged 15-49 is allocated to a risk group based on reported sexual behaviour and main exposure to HIV. The model makes assumptions about transmission pathways between the risk groups, for instance, it assumes that all infections in clients of sex workers come from sex workers (this simplification for modelling purposes might not be fully true in reality).

²¹ Exclusive breastfeeding up to six months is recommended by WHO for HIV positive mothers.

Definition of risk groups used in the HIV incidence model (heterosexual transmission in red):



It should also be noted that:

- The model output results are only as accurate as the data that are entered
- The model uses crude groupings of the population according to their main exposure to HIV and does not take into account the distribution of behaviours within risk groups
- The model does not distinguish between multiple serial and multiple concurrent partners
- The model is deterministic whereas HIV infection is a stochastic process (for a stochastic model, see Morris & Kretzschmar, 1997)

The incidence model was run in a participatory modelling workshop of significant stakeholders on 29 and 30 April 2008. Outputs from the workshop were further refined by ensuring consistent application of the data sources within the different spreadsheets. The application of the model was limited by the availability of local data, as the following list summarises:

Main data gaps in the application of the incidence model:

Population size estimates: Lack of data for IDU and MSM populations; uncertainty of existing estimates for sex workers and number of individuals (especially females) with multiple partners

Sexual partnerships: Number of partners of IDUs, MSM, SWs (commercial/other partners), and of those with multiple partners

HIV prevalence: No data for IDU, MSM, SW, clients and their partners

STI prevalence: No data for IDU, MSM, SWs clients and their partners

Annual frequency of coitus: No local data for any of the groups

Annual frequency of injecting drugs, and frequency of using safe injecting equipment (IDUs): No local data

Prevalence of condom use: No data for IDU partners, MSM and their partners

Key issues in applying the model were:

- **Definition of heterosexual populations with lower and higher risk behaviours** - it was decided that lower risk sexually active individuals are those with one partner (last 12 months) and higher risk are those with more than one partner (last 12 months)

- **Data sources for multiple-partner frequency** - the best two sources of national data (2006-07 DHS, 2007 CIET KAP study) were used in the model and sensitivity analysis
- **Transmission probabilities for HIV (male-female and female-male)** – there is evidence that transmission probabilities might be higher in Southern Africa than elsewhere²², and this parameter was therefore varied in the sensitivity analysis. When higher transmission probabilities were used, the number of new infections predicted approached the number predicted by the Spectrum model (13,060 for 2008).

Varying the transmission probabilities and using different multiple partner frequencies, the following outputs were obtained:

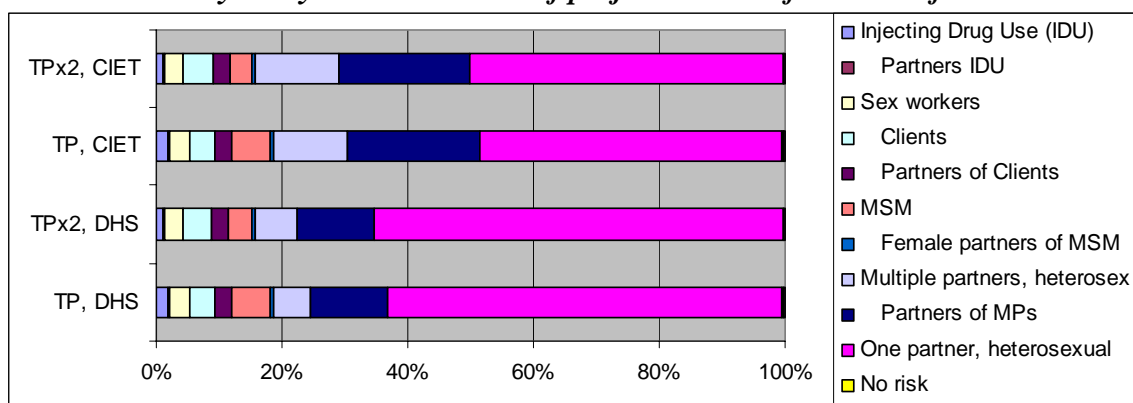
Sensitivity analysis: Estimated number of new infections in four scenarios in Swaziland (2008)

Transmission probabilities	Default values	Default values x2	Default values	Default values x2
Multiple partner frequencies	DHS (13.6%M, 1.59%F)	DHS (13.6%M, 1.59%F)	CIET (24%M, 5%F)	CIET (24%M, 5%F)
Risk Group	Estimated number of new infections in 2008			
Injecting Drug Use (IDU)	127.58	127.58	127.58	127.58
Partners IDU	9.25	15.88	9.25	15.88
Sex workers	207.17	341.50	207.17	341.50
Clients	258.04	531.64	258.04	531.64
Partners of Clients	174.95	299.73	174.95	299.73
MSM	406.43	406.43	406.43	406.43
Female partners of MSM	32.35	55.42	32.35	55.42
Multiple partners, heterosexual	383.14	772.77	761.15	1514.71
Partners of MPs	808.53	1385.17	1383.95	2359.78
One partner, heterosexual	4099.96	7409.92	3125.13	5636.52
No risk	0.00	0.00	0.00	0.00
Medical injections	11.68	11.68	11.86	11.86
Blood transfusions	23.24	23.24	23.74	23.74
Total number new infections	6,542	11,381	6,522	11,325

The contribution of each mode of exposure to total annual incidence is shown in figure 19a. Figure 19b shows the distribution of new infections by mode of exposure for the two most likely scenarios, both using double default transmission probabilities.

²² E.g. Pettifor et al. (*Highly efficient HIV transmission to young women in South Africa, AIDS 2007, 21:861–865*), reports very high per-partnership probability of HIV transmission from men to women in South Africa; and Auvert et al. (*HIV infection among youth in a South African mining town is associated with herpes simplex virus-2 seropositivity and sexual behaviour. AIDS 2001; 15:885–898*) found a per-partner HIV transmission probability estimate close to 1.0 for young women in South Africa.

Figure 19a. Sensitivity analysis: Distribution of projected new infections in four scenarios (2008)

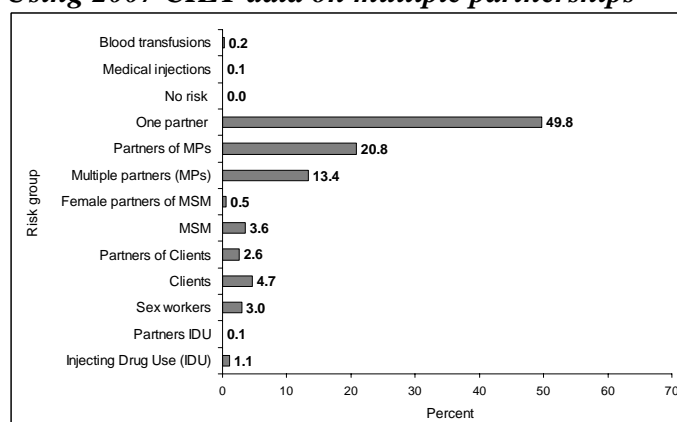
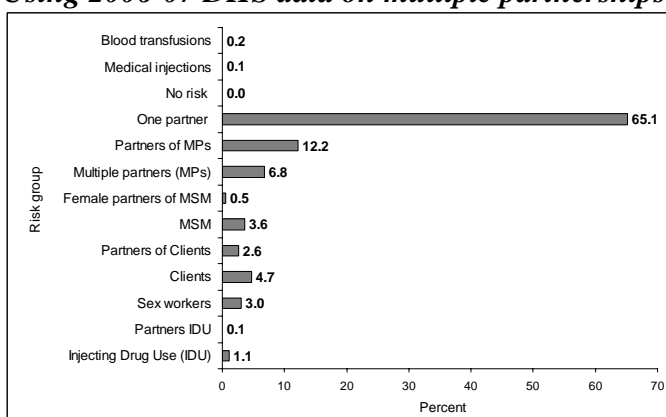


Source: UNAIDS incidence model Swaziland, 2008. 100%=total number of new infections projected for 2008.

Figure 19 b. Distribution of new infections by mode of exposure in Swaziland (2008)

Using 2006-07 DHS data on multiple partnerships

Using 2007 CIET data on multiple partnerships



Source: UNAIDS incidence model Swaziland, 2008. Both graphs use default transmission probabilities x2.

All four scenarios show a similar pattern of sources of new infections, predicting that **most new infections occur in the group reporting one sexual partner only during the last 12 months**. The two scenarios with double default transmission probabilities approximated the Spectrum-predicted annual incidence of 13,060 more closely than the scenarios using the default transmission probabilities. More modelling results are presented in **Annex 4**.

Summary of incidence modelling results (all heterosexual transmission pathways):

Heterosexual transmission of HIV – 94% of predicted new infections (2008)

- Individuals with one sex partner (last 12 months): 49.8% – 65.1%
 - Individuals with more than one sex partner (last 12 months): 6.8% – 13.4%
 - Partners of individuals with more than one sex partner: 12.2% – 20.8%
 - Partners of clients of sex workers: ~2.6%
 - Clients of sex workers: ~4.7%
 - Sex workers: ~3.0%
- Multiple partner behaviours: 19 - 34%**

Interpretation

All scenarios indicate that individuals who reported one sexual partner in the last 12 months contribute most to the number of new infections in Swaziland in 2008 (note the very wide confidence interval). This is because it is the most populous risk group in the model (comprising of 232,800 adults in the DHS scenario). The new infections arise through HIV discordancy in couples, lack of condom use in steady couples, and possibly secret sexual partners which were not declared in the surveys.

Multiple partner behaviours affect two risk groups, those with multiple partners, and their steady partners who inadvertently become part of a sexual network. It is estimated that these MP behaviours are responsible for 19-34% of all new infections.

According to the estimates, sex work (SW, SW clients and their partners) is responsible for about 10% of new infections in 2008.

The very high HIV prevalence and annual incidence estimates, and the significantly higher prevalence and incidence in women (prevalence 31%, CSO 2008) than in men (prevalence 20%), give unambiguous evidence of a heterosexually-driven hyperendemic epidemic. This is confirmed by the modelling results, and by qualitative research and other anecdotal evidence (Whalley & Whiteside, 2007). Data relating to each type of source of new infections are presented in section 3.6 and 3.7:

3.5. Factors impacting on the heterosexual transmission of HIV

Given the high percentage of transmission through heterosexual contact, the next section looks in detail at factors that impact on the rate of heterosexual HIV transmission. Data about factors at the three conceptual levels introduced in section 3.1 are synthesised here: at individual and couple level, at the community level, and at the structural level.

3.5.1 Factors at the individual and couple level that impact on the risk of heterosexual transmission of HIV

3.5.1.1 Marriage and polygyny patterns

Men and women in Swaziland typically marry in their mid-to-late twenties but have first sex at around age 16, resulting in a long period of sex before marriage (almost ten years on average). The SDHS2006-07 found that 50% of women and 66% of men have never married and that the differential is the result of men tending to marry later in life than women (in the age group 20-24, 66% of women and 91% percent of men had never married). Swaziland has one of the highest median ages at first marriage in SSA (24.3 years for women and 27.7 years for men). Other countries with relatively high age at marriage are Botswana (25.7 years), South Africa (26.7 years) and Namibia (28.9 years) (Bongaarts, 2006).

An ecological analysis on marriage patterns and HIV prevalence levels in Sub-Saharan Africa shows a significant positive correlation between HIV prevalence and the median age at first marriage, and between HIV prevalence and the interval between first sex and first marriage (Bongaarts, 2006). The risk for HIV infection per year of exposure among sexually active women is higher before than after first marriage. A high average age at marriage in a population may therefore lead to a long period of premarital sex during which partner changes are relatively common, facilitating the spread of HIV. This is confirmed by the SHDS2006-07 data, which indicate that almost a third of never-married men and women have ever had sex (=pre-marital sex), and their HIV prevalence is high: 17% M and 37% F). Among ANC clients, HIV prevalence of those who are single (never married/cohabiting) of 38% was slightly lower than prevalence among those married or cohabiting (40%) (MOHSW, 2007).²³

These observations are not intended to contribute to the debate on whether marriage is protective or a risk factor. The relationship between marriage and HIV prevalence is prone to confounding by several factors,²⁴ and people's definition or interpretation of marriage can differ from the survey definition (marriages

²³ These bivariate results are difficult to interpret due to likely confounding by age (older women are also more likely to be married and to be HIV positive)

²⁴ Potential confounding factors are age, residence (urban men and women more likely to be married and to be HIV positive), education (more educated men and women are more likely to be married and infected), and wealth (richer men and women are more likely to be married and infected)

sometimes aren't registered, and may involve the transfer of livestock over long periods of time).²⁵ The main conclusion is that there is a trend of increasing age of marriage (which could translate into more years of potential sexual activity before marriage), and that any abstinence-before marriage messages need to take this societal change into account by addressing sexual activity before marriage.

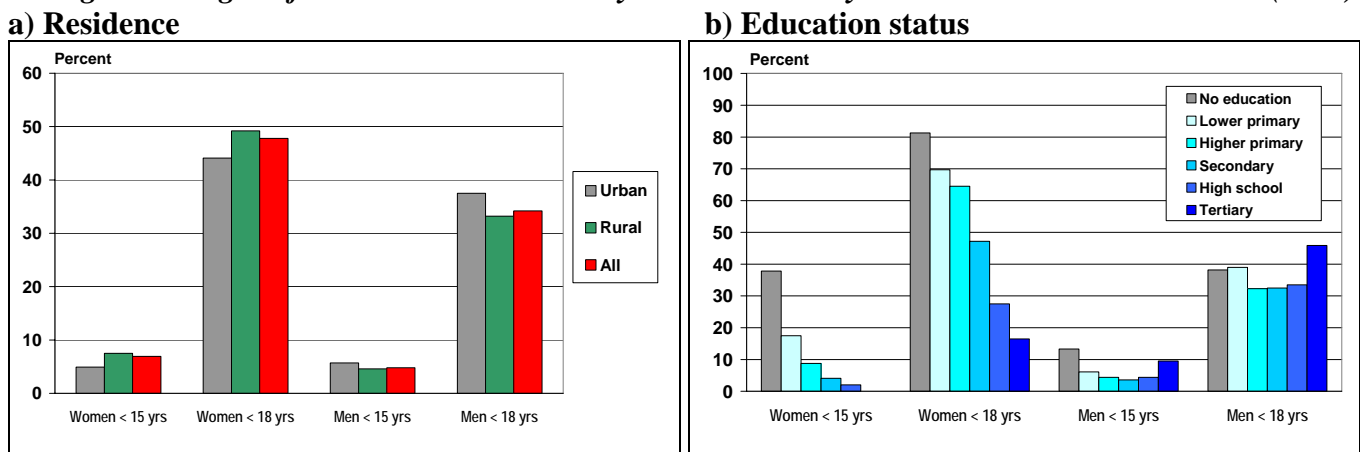
3.5.1.2 Age at first sexual intercourse

Almost a third of men and a sixth of women aged 15 and older have never had sex (29% men and 16% women) – see figure 15 (SDHS 2006-07).

First sexual intercourse is in the age-range 15 to 19 for most men and women, but rural females and urban males tend to become sexually active earlier. The SDHS suggest that 7% of young women and 5% of young men (aged 15-24) initiated sexual activity before age 15 (figure 20a). By the age of 18 years, 48% of women and 34% of men report having had sexual intercourse. Young rural females were significantly more likely to have initiated sex before age 15 or age 18 compared to young urban females. The opposite was observed for young males, with urban men starting to have sexual intercourse earlier than rural men.

Delaying first sexual intercourse is strongly correlated with better education in females. Age of sexual inception was very strongly correlated with education status in women, but not in men (figure 20b). According to the data, a female with tertiary education was five times more likely to be a virgin at the age of 18 than a female without education. Studies by AMICAAL (2005) and FLAS (2003) found that sexual debut was earlier for out-of-school youth than in-school youth. Pupils at peri-urban schools had lowest prevalence of early sexual activity, followed by those in rural schools. The strong effect of education on sexual debut suggests that endeavouring to keep girls in school could help them avoid infection at least until they are old enough to make safer, more informed decisions. A positive development in Swaziland's education system is that girls who fall pregnant while at school are now allowed to come back to the same school to write exams and to continue their education after child-birth.

Figure 20. Age at first sexual intercourse by residence and by education status in Swaziland (2007)



Sources: CSO (2008) - SDHS 2006/07 (Table 13.19)

Reported age at first sex can, like other reported sexual behaviours, be subject to bias. An analysis by Gersovitz (2005) using data from four DHS conducted in SSA found that, after their marriage, women tended to “correct” their age at first sex to make it coincide with their age at marriage (leading to a poor correlation between reported virginity and reported age at first sex). In the SDHS, 64% of *ever* married and 42% of *never* married women reported having had sexual intercourse before age 18. It is not clear if any “correction” of the age of sexual debut may have been applied by the respondents, in order to make it coincide with their age at marriage.

²⁵ For instance, when researchers in northern Tanzania attempted to map all relationships in a rural area, they found many women claimed to be married to a man who denied that he was married to the woman (Nnko S *et al.* Secretive females or swaggering males? An assessment of the quality of sexual partnership reporting in rural Tanzania. Soc Sci Med. 2004 Jul;59(2):299-310).

Other recent studies corroborate this evidence of sexual debut within the age group 15 to 19:

- Baseline survey on in-school youth in 2003 by SHAPE: Largest proportion had sexual debut at 14-16 years
- Evaluation study of the “Swaziland in-school youth HIV & AIDS prevention project” (SHAPE, 2004): Majority of girls had sexual debut at 16-19 years, highest proportion of boys had debut at 13-15 years
- Study on urban youth by AMICAALL (2005): Majority of male and female respondents had sexual debut at 15-19 years.

Age at sexual debut has dropped for males and slightly increased for females. Sexual debut was at around 19 years for men younger than 35, and at about 20 years for men who are now in their 40s (SDHS). There was less change for women: debut at about 18.2 years for women younger than 35, and at about 17.8 years for women older than 35. This is corroborated by data from the “*National survey on violence against children in Swaziland*”, which calculated the median age at first sex for females 13-24 years old as 17.9 years (Reza *et al.* (2007).

The abstinence campaign initiated by King Mswati III in 2001 for young women is reported to have contributed to a decline in both teen pregnancy and teen HIV infection rates (Okunzi & Epstein, 2005). The abstinence campaign’s effect on behaviour and number of partners has not been evaluated.

3.5.1.3 Male circumcision

Male circumcision offers biological protection against HIV acquisition (Bongaarts *et al.*, 1989 ; Moses *et al.*, 1990; Auvert *et al.*, 2005; Drain PK *et al.*, 2006, Bailey RC *et al.*, 2007; Gray *et al.*, 2007).

In Swaziland, very few males are circumcised. According to the SDHS, 92% are uncircumcised (Halperin & Bailey, 1999; CSO, 2008). It is reported that male circumcision was banned by King Mswati II who reigned during the 19th century, based on the view that men recovering from the surgical procedure were diverted from waging war.²⁶ The 8% of men who are circumcised have higher HIV prevalence (21.8%) than men who are not circumcised (19.5% - difference not significant [$\chi^2=1.6$, $p=0.2$]) – this bivariate comparison is not the expected relationship between HIV prevalence and circumcision status. The assessment of the effect of circumcision on HIV risk requires multivariate analysis since some factors like urban living are associated with both HIV prevalence and male circumcision, leading to confounding.

There is increasing acceptance of the practice of circumcision in Sub-Saharan Africa. “*Thirteen studies of the acceptability of circumcision have been conducted in 9 sub-Saharan countries, showing that approximately 65% of men are willing to be circumcised, a decision supported by 69% of women (for their partners). These numbers represent a profound acceptance of this intervention. Interestingly, 71% of men and 81% of women would like their sons to be circumcised. In short, circumcision is starting to be treated as a surgical ‘vaccine’. It reduces the risk of HIV acquisition in men by 50% to 60%, it is a 1-time event, and compliance and adherence are non-issues. However, behavioral disinhibition is a potential major issue; some men use circumcision as an excuse not to use condoms, despite the fact that circumcision is only partially protective*” (McIntyre *et al.*, 2007).

If offered, there is a great interest in MC in Swaziland, although knowledge of its HIV protective effect is low. In 2006, a descriptive cross-sectional study about MC in Manzini region in Swaziland, (Tsela & Halperin, 2006) found that 14% of men reported being circumcised. Only 2% said that circumcision "is not culturally acceptable" in Swaziland. Concerning MC’s protective effects, 81% said that circumcision reduces STI risk, while only 18% believed it reduces HIV risk. 71% said they would want to have a male child circumcised, and 54% of non-circumcised men reported wanting to be circumcised.

²⁶ <http://www.bio-medicine.org/medicine-news/High-Demand-For-Circumcision-In-AIDS-Hit-Swaziland-8083-1/>

3.5.1.4 Multiple, long-term and sometimes concurrent sexual partners

There is an increasing body of evidence suggesting that at the population level, **the overlapping nature of concurrent sexual partnerships determines the magnitude of the epidemic**, much more than the number of life-time partners. The pattern and networks of sexual partnerships have become a focus of sexual behaviour research due to the indications that networks of multiple concurrent partnerships of men and women are a major factor leading to the large-scale heterosexual epidemics of Southern Africa (e.g. Halperin & Epstein, 2004; SADC, 2006). Although concurrency is recognised as a key determinant of the hyperendemic levels of HIV in Southern Africa, there is currently no consensus definition of concurrency nor a universally accepted method of measurement (Mah & Halperin, 2007), making trend analysis difficult.

A higher number of recent and lifetime sex partners leads to higher HIV prevalence. In the SDHS 2006-07, the risk of multiple partners was clearly highlighted: HIV prevalence of men with 2 or more partners in the past 12 months was 37% (and 51% for women with 2+ partners), compared to much lower HIV prevalence of 26% (men) and 27% (women) in those with only one partner. HIV prevalence also increases linearly with number of lifetime partners (23% prevalence amongst women with one lifetime partner, and 54% prevalence amongst women with 5-9 lifetime partners; 6% prevalence amongst men with one lifetime partner, and 46% prevalence among men with 10 or more lifetime partners).

The practice of multiple sexual partnerships is a common feature of Swazi society. Several studies suggest that it is common for men and women to have more than one sexual partner:

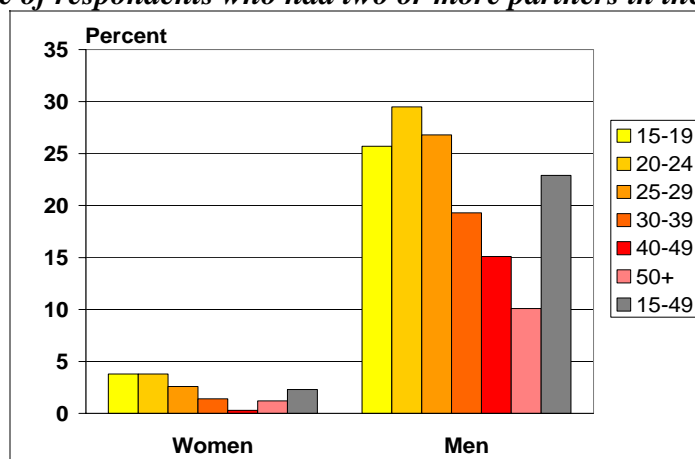
- The BSS (2002) reported that among 15-19 year olds who had had sex, a third had more than one partner;
- Buseh (2004) found that 16% of the students reported sexual intercourse with four or more sexual partners;
- CIET (2006) found that 6% of women and 31% of men had had more than one partner *in the last 6 months*; and
- A study in rural Swaziland (2006) found that 45% of sexually active males and 62% of females reported having 2 or more partners *in the last 3 months* (James & Matikanya, 2006).

In the recent DHS, only 2% of women reported having had two or more sexual partners in the past 12 months (see figure 21), but 45% of sexually active women reported higher risk sex²⁷ in the same time period (42% HIV prevalence). Among men, 20% reported having had two or more sexual partners in the past 12 months (figure 21), and 59% of sexually active men reported higher risk sex - **surprisingly, their HIV prevalence at 27% was lower than the HIV prevalence among sexually active men who reported sex only with a spouse or cohabiting partner, which was at 34%.**

Reporting of concurrency is likely to be affected by social desirability or self-reporting bias (e.g. Mah & Halperin, 2007). Household surveys that do not guarantee privacy or convince respondents on confidentiality are not the best method for collecting such data. Different interviewing techniques may be partly responsible for the large between-survey variations in reported prevalence of multiple and concurrent partnerships in Swaziland.

²⁷ Higher risk sex is defined as having sex with a partner who was neither a spouse nor lived with the respondent.

Figure 21. Percentage of respondents who had two or more partners in the last 12 months (2007)



Source: SDHS (2006-07)

The practice of ‘multiple, long-term concurrent partnerships’ is regarded as unacceptable, yet tacitly acknowledged and accepted in Swazi society. Leclerc-Madlala (2008) argues that “Swaziland falls within the ethnographic ‘cattle complex cultural zone’ which was traditionally polygamous, patrilineal and patrilocal, with large bride-wealth conferring large degree of jural rights over women and children”. According to the same author, many socio-cultural norms and values for gender relations that support this system still persist, and that today, there is a modified form of polygamy which is “multiple concurrent partnerships” (monogamy *de jure*, polygamy *de facto*).

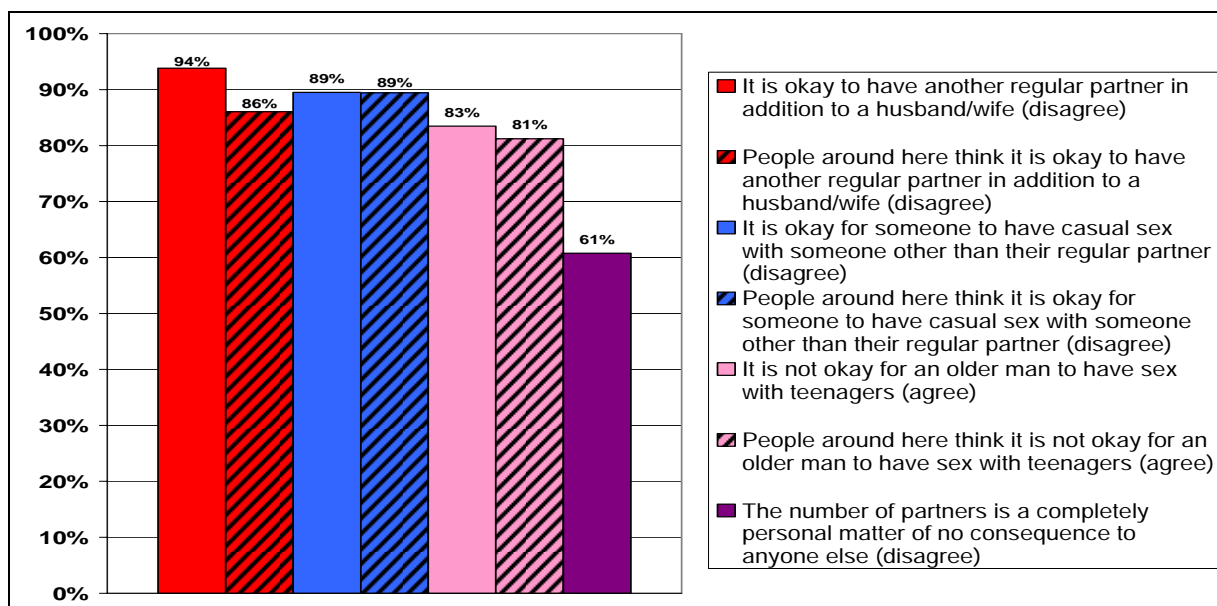
In a qualitative study²⁸, 59% of respondents aged 18-49 years said that it was either **common or very common** for people “around here” to have a *lishende* (secret lover), and 53% thought that their spouses had other sexual partners (CIET, 2006). The explanations for why having a *lishende* was so common –despite broad disapproval by regular partners– were primarily economic reasons, but also for sexual interest, revenge, and as a result of peer pressure and expectations. “[...] all the people in this campaign think *makhwapeni* (secret lover) is a bad thing, but let’s say I live off having a *makhwapeni*, they don’t consider that” (female respondent in FGD). The same CIET 2006 study linked to the “National campaign to reduce multiple partners in Swaziland” found that:

- Perceived norms were not in favour of the apparently widespread habit of having a *lishende*; the vast majority of respondents neither thought it okay to have other regular partners, nor thought other people agree with it. Equally, casual sex (blue bars in figure 22) and sex with teenagers (pink bars) were not endorsed by most respondents.
- Asked if it is true that every new partner means new HIV risk, even if one is faithful to each partner, 87% of respondents agreed in 2005, and 92% in 2006.
- 61% disagreed with the opinion that the number of partners is a completely personal matter of no consequence to others.
- 83% of respondents felt empowered to decide how many partners they have, but **only 18%** believed that they had power to decide if their partner will have other partners.
- The research also highlighted that parents are role models for their children: “Children learn from parents’ practices, like having multiple partners, so they think it is okay”

This is consistent with earlier research, in which 40% of respondents felt at risk of HIV because of the unfaithfulness of their partner, 45% thought that their partner was at risk of getting HIV, and 28% indicated that they had more than one sexual partner in the last 12 months (CIET 2002).

²⁸ The survey covered a random sub-sample of 12 clusters drawn from a panel of 30 nationally representative clusters (1997 population census enumeration areas). Within each of the 7 rural and 5 urban clusters, 100-120 adults were interviewed (all available adults aged 18-49 years in each household)

Figure 22. Attitudes and subjective norms relating to concurrency in Swaziland (2006)



Source: CIET (2006) – selected data page 18.

There is some evidence of a reduction in multiple concurrent partnerships in recent years – the 2005/2006 multi-media campaign showed promising results on partner reduction in men: Self-reported concurrency (last 4 weeks)²⁹ dropped significantly in men from the 2005 baseline value of 30% to 17% in 2006 (no significant effect in women, 3.7% to 3.5%). Multiple partners (last 6 months) decreased in men from 39% to 31% (no significant effect in women, 6.1% to 5.9%).³⁰ The CIET study in 2007 found that the prevalence of multiple concurrent partnerships had fallen from 35% (2002) to 13% (2007) among adults who reported having at least one partner – but more research is needed to obtain data on longer term campaign effects and from respondents who are representative of the entire population.

3.5.1.5 Condom Use

In Swaziland, the more casual the sexual encounter, the more likely a condom is used due to increased risk perception and low level of trust, as illustrated by the data below and in figure 23 (SDHS2006-07):

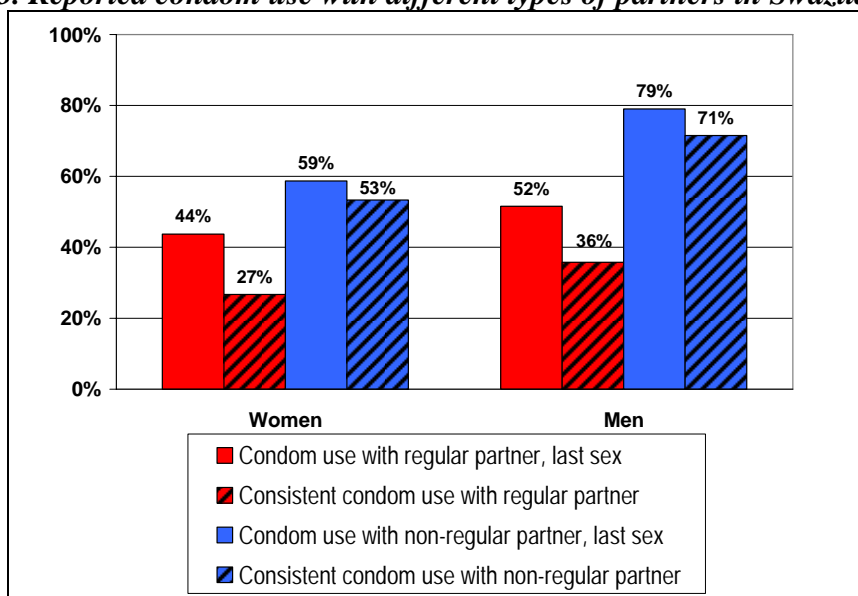
	WOMEN	MEN
Have ever used a condom	55%	79%
Used a condom during last sex	36%	43%
Used a condom during last higher risk sex	53%	65%

According to the recent DHS, HIV prevalence in women who used a condom was higher than HIV prevalence in women who did not (this is a frequent observation in condom use studies, and is called the “condom paradox”), whereas for men, HIV prevalence was lower in men who used a condom than in men who did not use a condom.

²⁹ 4-week indicator roughly covers acute infection period, and may provide some measure of the potential for highly efficient HIV transmission

³⁰ Halperin D *et al.* (2006). Assessing a national HIV behavior change campaign focusing on multiple concurrent partnerships in Swaziland. IAC Oral Presentation Abstract, Toronto, August 2006; IRIN News Service. Swaziland: AIDS campaign induces behaviour change. *IRIN*, 27 October 2006; Timberg C. (2006). In Swaziland, ‘secret lovers’ confronted in fight against AIDS. *Washington Post* 2006; 29 October, p. A15.

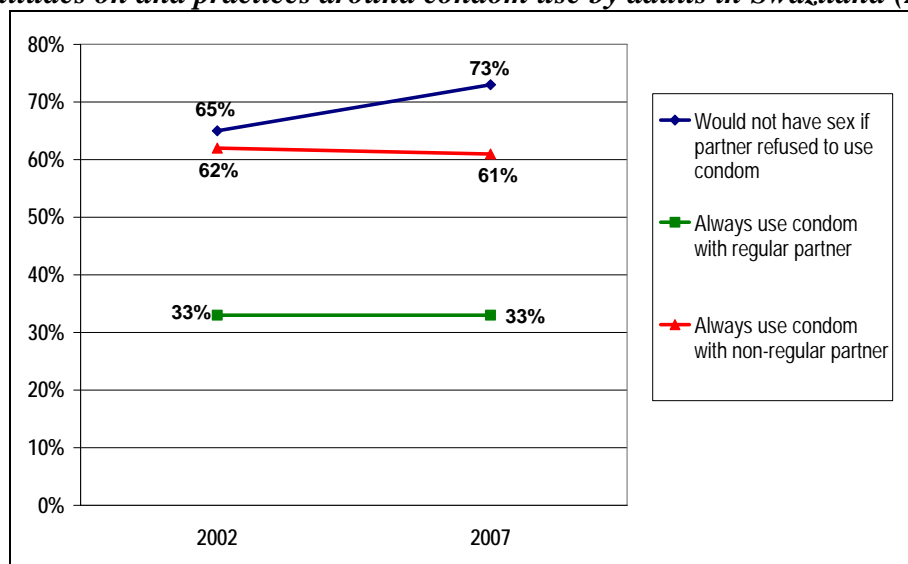
Figure 23. Reported condom use with different types of partners in Swaziland (2006)



Source: CIET (2006) – selected data page 22.

Condom use at last sex is always higher than consistent condom use, but an increasing proportion of people report that they will not have sex with their partner if they believe that the partner is unfaithful and refuses to use a condom (FLAS 1999/2002, AMICAALL 2005, SHAPE 2006, CIET 2002, 2006 and 2007). However, in 2006, 40% of respondents said they would still have sex with their partner if she/he refused to use a condom.³¹ Men who believed that their partners were having other sexual relationships were significantly more likely to say they would not have sex if their partners refused to use a condom (CIET, 2006) – see figure 24.

Figure 24. Attitudes on and practices around condom use by adults in Swaziland (2002 and 2007)



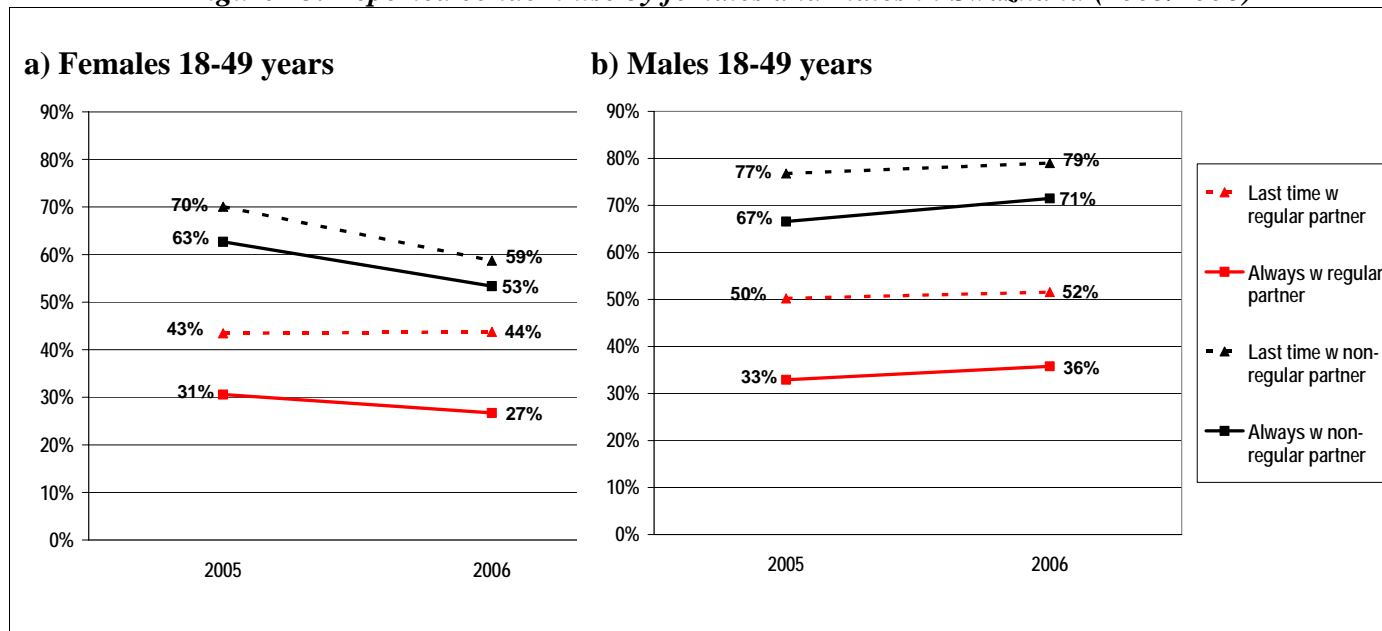
Source: CIET (2002 and 2007)

There are gender differences in negotiating condom use. In a community survey addressing women’s control over decision making in sexual relationships, married women had less control than unmarried in deciding when to have sex or not. This implies that married women are more at risk of abuse and HIV infection than unmarried women (Physicians for Human rights. 2007, p100). More women (18%) than men (3%) reported that their partners had sole decision making authority with respect to condom use. In that survey, 8% of women and 39% of men reported having more than one sexual partner in the past 12 months.

³¹ CIET (2006): page 9.

Recent condom use data suggest that condom use has not changed much over time – it has remained stable (figure 24) or undergone slight positive (figure 25, males) or negative changes (females). The condom use data presented in figure 25 is consistent with a study in the Umbufu Swaziland Defence Force, which showed that 54% were practising safer sex through using a condom (Simelane, 2007:77).

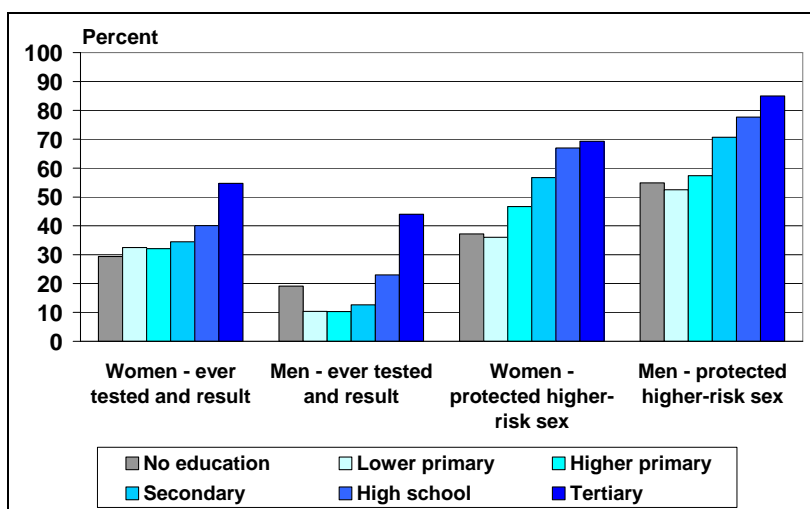
Figure 25. Reported condom use by females and males in Swaziland (2005/2006)



Source: CIET (2006)

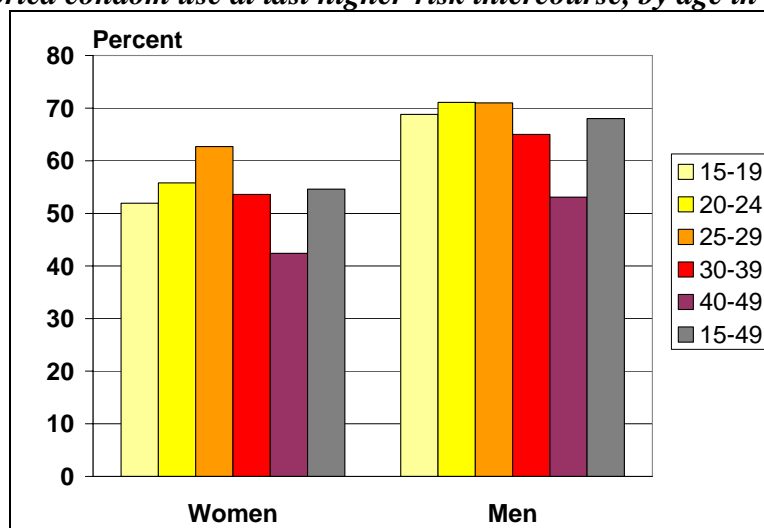
The probability of using a condom during higher risk sex increases with educational achievement in men and women, and is higher in the younger age groups, as illustrated in figures 26 and 27. Young people with low or no education are particularly unlikely to use a condom. Figure 26 also presents findings of another preventive behaviour: use of VCT services (which is also strongly associated with the level of education in females and males, similar to condom use in higher risk intercourse). Condom use is lowest in women and men in their 40s (figure 27).

Figure 26. Use of VCT and condom use in higher-risk intercourse, by education status (2007)
(% ever tested and result obtained, % used condom in last higher-risk sex)



Source: CSO (2007), pages 29, 30, 33 and 34.

Figure 27. Reported condom use at last higher-risk intercourse, by age in Swaziland (2007)



Source: CSO (2007:34).

The extent of unprotected sex among HIV-positive individuals aware of their status has not been assessed in Swaziland. New evidence from a study in Cape Town, South Africa, shows high levels of unprotected sex among individuals on and about to start ART, suggesting great need for effective risk prevention behavioural interventions for HIV-positive individuals in clinical care for HIV/AIDS in that setting (Eisele *et al.*, 2008).

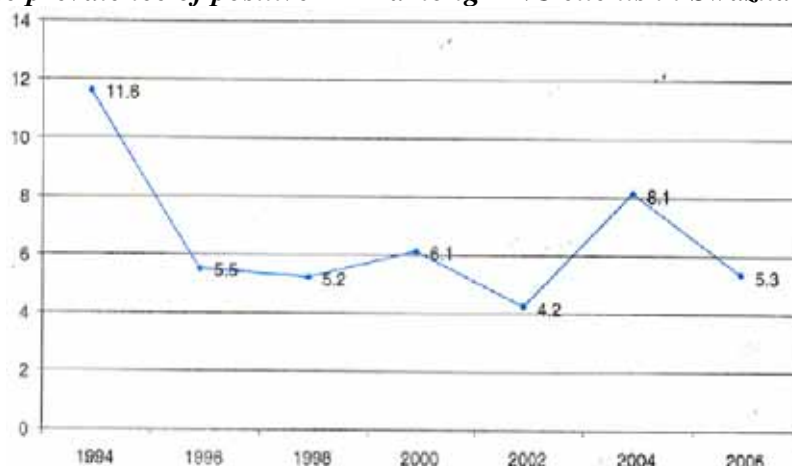
3.5.1.6 Sexually Transmitted Infections

It has been observed that STIs increase the risk of contracting HIV, particularly ulcerative STIs.³² Furthermore, a bi-directional interaction between HIV and HSV-2 has been reported, such that HSV increases the risk of acquisition and, likely, transmission of HIV, while HIV increases the clinical expression of HSV-2 (Chen *et al.*, 2000, Htun *et al.* 2001; Weiss, 2004). In a large systematic review of sexual risk factors of SSA HIV epidemics by Chen *et al.* (2007), HSV-2 was found to be the single most important risk factor for HIV infection (Odds Ratio 4.6 in women and 7.0 in men), but this association may have been affected by behavioural confounding. Importantly, five of six treatment trials of bacterial STIs in Africa did not have any effect on HIV incidence (Gray & Wawer, 2008), and two trials on HSV-2 suppression on HIV acquisition were similarly discouraging (Cohen, 2008). This recent evidence suggests that **the presence of STIs should be regarded as an indicator of unsafe sex, rather than as a risk factor for HIV acquisition.**

In Swaziland, the prevalence of STIs other than HIV continues to be high. In 2003, a first round of biological sentinel surveillance of STIs among ANC clients at two selected clinics was conducted, showing high prevalence rates of 7.8% for gonorrhoea, 18.2% for chlamydia infection, 7.8% for syphilis and 21.9% for trichomonas infection. Recent national data from the STI programme indicate that there were 31,655 STI cases reported from all health facilities over the last six months of the year (National STI Programme, 4th quarter report 2007). This is likely somewhat underreported: a survey in 2005 indicated that one in four STI cases sought care elsewhere before coming to the health facility (EPOS, 2005). In that study, genital ulcers made up 20% of cases, and 61% of these ulcers were caused by HSV-2. Syphilis prevalence, measured as part of HIV ANC surveillance, halved between 1994 and 2006, but with fluctuations (figure 28).

³² The most important ulcerative STIs are syphilis (caused by *Treponema pallidum*), genital herpes (HSV-2), chancroid (*Haemophilus ducreyi*), and lymphogranuloma venereum (LGV, L serotypes of *C. trachomatis*).

Figure 28. The prevalence of positive RPR among ANC clients in Swaziland (1994-2006)



Source: MOHSW (2007)

HIV prevalence in women and men reporting an ulcerative STI was much higher in all regions, and particularly in the 25 – 29 age group: 59% of ANC clients in 2004 with STIs were HIV positive (MOHSW, 2005). Other data confirm these observations: (a) the SDHS 2006-07 shows that 11% of respondents had an STI, and that these men and women had HIV prevalence double the average rate (HIV prevalence of 53%F and 49%M); and (b) HIV surveillance of STI clients shows that 60% of female STI clients and 49% of male STI clients are HIV positive.

“Control of sexually transmitted infections provides important benefits for public health and individuals, and should unquestionably be provided and promoted for this reason. However, the hypothesis that control of STIs can prevent the spread of HIV in populations has been extensively tested and is not supported by evidence in seven of eight trials. It is, therefore, questionable whether control of such infections should be promoted specifically for HIV prevention in HIV-negative populations. We are concerned that this policy will not decrease HIV incidence in general populations and might divert scarce resources from other proven efficacious interventions”. (Grey & Wawer, 2008).

3.5.1.7 Sexual behaviour in key sub-populations at risk of HIV

Defining commercial sex work is challenging due to the frequency of transactional sex in SSA. In SSA, it is not straight-forward to define commercial sex, since exchange of money or goods for sex is part of many relationships between men and women (Nnko & Pool, 1997), and there is a continuum between commercial sex, transactional sex and ‘legitimate’ sex. Even if a sexual encounter is commercial, a woman may not identify herself as a sex worker because she only engages in sex work part-time, or for a short duration (Elmore-Meegan *et al.* 2004). Among women who identify themselves as sex workers, numbers of clients vary greatly, and this variation may be associated with an urban-rural division (*ibid.*). High numbers of clients may indicate ‘professionalisation’, which may be associated with condom use. In contrast, women who have few clients may have a higher level of intimacy with them, and condom use will usually be lower (Mgalla & Pool 1997). Then, the distinction between sex workers with a few steady clients and women with several boyfriends who support them financially becomes unclear (Wojcicki & Malala, 2001).

Transfer of money, gifts or services has long been and remains an important and normative part of courtship and sexual relationships (Leclerc-Madlala, 2008). Transactional sex is associated with high risk of contracting HIV and other STIs due to compromised power relations and the tendency for these to be concurrent, multiple partnerships. A recent meta-analysis confirmed the importance of ‘paid sex’ as a sexual risk factor for heterosexual HIV transmission in SSA for both women and men (Chen *et al.*, 2007). In all the studies combined, about 9% of HIV positive women reported ever having been paid for sex, versus 4% of HIV negative women, and the Odds Ratio was 2.3 (95%CI 1.45-3.62). About 31% of HIV positive men reported ever paying for sex versus 18% of HIV negative men, with an Odds Ratio of 1.75 (95%CI [1.30-2.36]).

Differential condom use by sex workers with different types of partners has become an important aspect of sex worker research and interventions. Some studies among sexual partners of sex workers suggest that condom use with clients has become fairly high, but condom use with regular partners has remained much lower (Voeten *et al.* 2007). At the same time, HIV prevalence among their regular partners may be higher than HIV prevalence among clients (Lowndes *et al.* 2000).

Sex workers in Swaziland are few, young, regularly use condoms with paying clients and do not regularly use condoms with non-paying (regular) partners. In Swaziland's recent 'situation analysis on commercial sex work', the majority of sex workers interviewed were young, with 60% aged below 30 years.³³ Most of them had their first sexual encounter between the ages of 15 and 19 years and are supporting dependents. Their sex work earns decidedly more than the average wage for unskilled workers, and many turn to sex work to complement their income from other employment. The income is probably mostly used to cover essential living expenses (rent, school fees, food), but there is also evidence that income is used for non-essential items like fashion, and for 'having a nice time' (suggested by the rapid hotspot analysis by A. Mndzebele, 2007). The number of different sexual partners per year varied widely from fewer than 10 to an estimated 3,600, with a median of 312. Clients were from diverse professional groups, and are met in bars, at the road side, border posts, hitchhiking spots, parties and other gatherings. The few male sex workers interviewed in the situation analysis reported having had male and female clients. In a study in 2001, reported condom use by FSW with paying clients was 90% (of which 74% consistent), and reported condom use by sex workers with non-paying partners was 60% (FHI, 2002).

Commercial sex is not a major factor in the Swazi epidemic. Transactional and commercial sex was reported by very few respondents in two different surveys as a main reason for sexual intercourse (10% in the 2005 AMICAALL study and less than 2% in the 2002 CIET study).

3.5.2 Factors at the community level impacting on the risk of heterosexual transmission of HIV

The literature review identified a number of studies with information on cultural issues of relevance for HIV and AIDS. The studies mainly provide information about knowledge, attitudes and practices. There is very little in-depth, qualitative information on cultural beliefs, myths, and traditional healing, which are important factors influencing behaviour and agency. Most of the studies treat these issues superficially. This section presents findings of the literature review on selected aspects of the socio-cultural and economic context of the epidemic.

3.5.2.1 Vulnerability of the family in coping with the HIV/AIDS epidemic

The family is the first cultural-social reference group for the individual. In Swaziland, little attention has been paid by researchers to the relationship between behavioural norms and the changing family structure and functions. In the traditional society, child rearing often was shared with grandparents, aunts, and cousins, who assisted in consistent transmission of norms (Khumalo, 2007). Tobias (2001) contends that it is within male and female socialisation that sexual behavioural norms are explicitly or implicitly prescribed. If socialisation empowers men and disempowers women, individual women's ability to make decisions and act on them will be compromised. Decisions about sexual risk behaviour are taken by the individual, putting individual behaviour at the centre of HIV risk behaviour (Zamberia & Kamanja, 2006), but decision are made within a social context.

Studies on HIV and AIDS in Swaziland cite lack of behavioural change as the major barrier in combating the epidemic (FLAS/GOS, 2002). **The family remains an institution of prime importance in inculcating behavioural values, preparing the young for responsible adulthood, and giving a sense of belonging and identity to its members.** The role of the family in parenting is very important in combating the

³³ UNAIDS/UNFPA (2007). Data were collected from 61 sex workers (53 female and 8 male) sampled from the four regions of Swaziland. The tools that were used were questionnaire, focus group discussions, in-depth interview and key informant interviews.

epidemic. However, the quality time spent with children has diminished due to time spent in employment and migrating tendencies (Khumalo, 2007). Good role modelling that is supported by good moral values is becoming a major challenge for Swazi society. If parental choices in relationships continue to legitimize concurrent multiple partnerships, then this value system will be entrenched further in Swaziland.

Adult choices in relationships have further influenced the changing family structure. Modern society has seen the establishment of various family forms that influence parenting practices. People are remaining single longer than they did in the past, thus, there are many single-headed households where the likelihood of concurrent multiple sexual partnerships is greater. There is also increasing tolerance for pre-marital sex by society, making single life more attractive. Pre-marital sex and early sexual debut have been identified by some studies as driving the epidemic among young people in Swaziland – but again, factors such as age and socio-economic status may act as confounders in these observed associations.

The family has been surprisingly resilient in the face of the ‘shock’ to household economic structure caused by the death of economically active individuals.³⁴ These deaths have changed family size, composition, and socio-economic status. Orphans are left in the care of grandparents, other relatives, or alone fending for themselves (Khumalo, 2007). Many children now take on parenting roles in place of ill or deceased parents and when families are in crisis. This abnormal situation has transformed the roles of family members in Swaziland and in other countries ravaged by AIDS. Children increasingly are dealing with adult pressures, losing their fundamental rights as children, and resorting to coping strategies that put girl children especially at high-risk for infection with HIV.

Some HIV and AIDS interventions seem to exert more pressure on already compromised family income. For example, while home-based care is a good response, it places high expectations on the family, reducing women’s time to cultivate crops which compromises food security and income further, and girls drop out of school to assist their sick parents and siblings, reactivating the high school drop-out rate for girls at secondary and high school. According to the Swaziland Household Income and Expenditure Survey (SHIES) 2000-01, food poverty is the most common form of deprivation in poor households. Global inflation and food shortages have worsened overstretched family budgets. Vulnerability to high-risk sexual behaviour will be greater in poor households.

Community efficacy has been observed in interventions like the Neighbourhood Care Points (NCPs), *lihlonbe lekukhalela*,³⁵ *emasimu endlunkhulu*,³⁶ including general charity support. Clearly, these initiatives are working and need to be supported adequately with resources to ensure their continued effectiveness. For instance, the NCPs do not operate on weekends, breaking the chain of support for struggling families. Some churches³⁷ have assumed the responsibility of opening soup kitchens on weekends to fill the vacuum.

3.5.2.2 Alcohol Use

Alcohol use is frequently mentioned in the literature as an important public health problem, and excessive alcohol use is linked to diminished rational capacity. A recent systematic review of alcohol use and sexual risks for HIV in SSA showed a consistent association between alcohol use and sexual risk taking (Kalichman *et al.*, 2007). People who consume larger quantities of alcohol are predicted to have greater sexual risks. The review also showed a clear gender difference in alcohol use and sexual risks; men were more likely to drink and engage in higher risk behavior whereas women's risks were often associated with their male sex partners' drinking. Factors most closely related to alcohol and sexual risks included access to drinking venues and establishments serving alcohol, sexual coercion, and poverty.

³⁴ Sackay & Raparla, 2001 cited in Zamberia & Gathu 2006

³⁵ “A shoulder to cry on”; refers to community-based individuals who are chosen by the community (chiefs meeting) to handle child abuse cases

³⁶ community farming fields which the chief has allocated for farming to benefit OVC, literal meaning “the chief’s fields”

³⁷ St Pauls Methodist Church located at Fairview North, Manzini

In Swaziland, alcohol consumption increased with age, and out of school youth were more likely to consume alcohol than in school youth (11% of in-school and 13% of out of school youth, and more than a quarter of tertiary level students had used alcohol in the past four weeks with males more likely than females). 0.1% (in-school), 6% (out of school) and 8% (tertiary) had used other drugs. Two percent reported ever using dagga (cannabis). Additional drugs for out of school youth included cocaine, mandrax and glue. AMICAALL (2005) reported that 23% of male and 11% of female respondents who drink alcoholic beverages do so once a week. 26% of males and 11% of females had tried dagga in the last 12 months. The 2007 sex work analysis (UNAIDS/UNFPA) found that 52% of the interviewed sex workers took alcohol at least once a week, and 11% used it everyday. On the use of other habit-forming drugs, 87% of the respondents had not used drugs in the past four weeks (8/61 did not respond).

Although not supported directly by HIV prevalence data in heavy drinkers, it is likely that alcohol abuse – through its indirect effects of diminished rational capacity – is a more important factor in the Swazi HIV epidemic than other mind-altering drugs (dagga, cocaine, heroin, etc.). Anecdotal evidence on alcohol abuse and risk-taking among male and female students, dangerous alcohol mixing practices (methanol, battery acids, etc.), alcohol-related accidents, etc. support the notion of increased risk taking under the influence of alcohol. Any future study collecting data on alcohol consumption should use a scoring method to distinguish heavy drinking from other forms of alcohol use.

3.5.3 Factors at the structural level impacting on risk of heterosexual transmission of HIV

3.5.3.1 Labour and Migration

Labour-related migration from Swaziland to South Africa increased markedly in the 1990s. Labour migration from Swaziland to South Africa began in the late 1930s when young Swazi men started working in Johannesburg and the Natal coal mines to pay taxes and *lobola*.³⁸ The numbers of persons crossing the border increased dramatically from 182,792 in 1991 to 809,049 in 2003.³⁹ When unemployment hit Swaziland, migration to South Africa became an alternative for many.

Another important change is the rapid increase in cross-border trading between Swaziland and South Africa, particularly amongst women (SAMP 2004:9). The phenomenon has received very little research and policy attention to date (ibid). As a result, there is little analysis of the economic contribution of this activity at the micro- and macro level of the Swazi economy. For example, it may exacerbate the decreased availability of family labour in agriculture due to death and sickness of family members and need to care for the sick (although agriculture provides a smaller proportion of poor families' income than remittances).

Migration and mobility pose an increased risk of HIV both to the one who is traveling and the one “left behind”. It has long been assumed that the primary direction of HIV spread was from returning migrant men (who become infected while away at work) to their rural partners when they come home. If this were the case, the male would be the HIV infected partner in most discordant couples. Lurie *et al.* (2003) in a study in northern Kwa-Zulu/Natal found that the female was the infected partner in nearly one-third of discordant couples. The patterns of HIV discordance in this study shed light on the role of migration in the spread of HIV to rural areas. It confirmed the importance of migration as a risk factor for infection in both men and women, and changed the understanding of the way in which migration enhances risk: Migration is a risk factor not simply because men return home to infect their rural partners, but also because rural women become infected outside their primary relationships.

An epidemiological model on the impact of migration, developed by the Hlabisa Migration Project, is described by Coffee et al. (2007). The model predicted that the impact of migration depends upon the epidemic stage and the pattern of migration. Based on the model outputs, Coffee et al. concluded that in

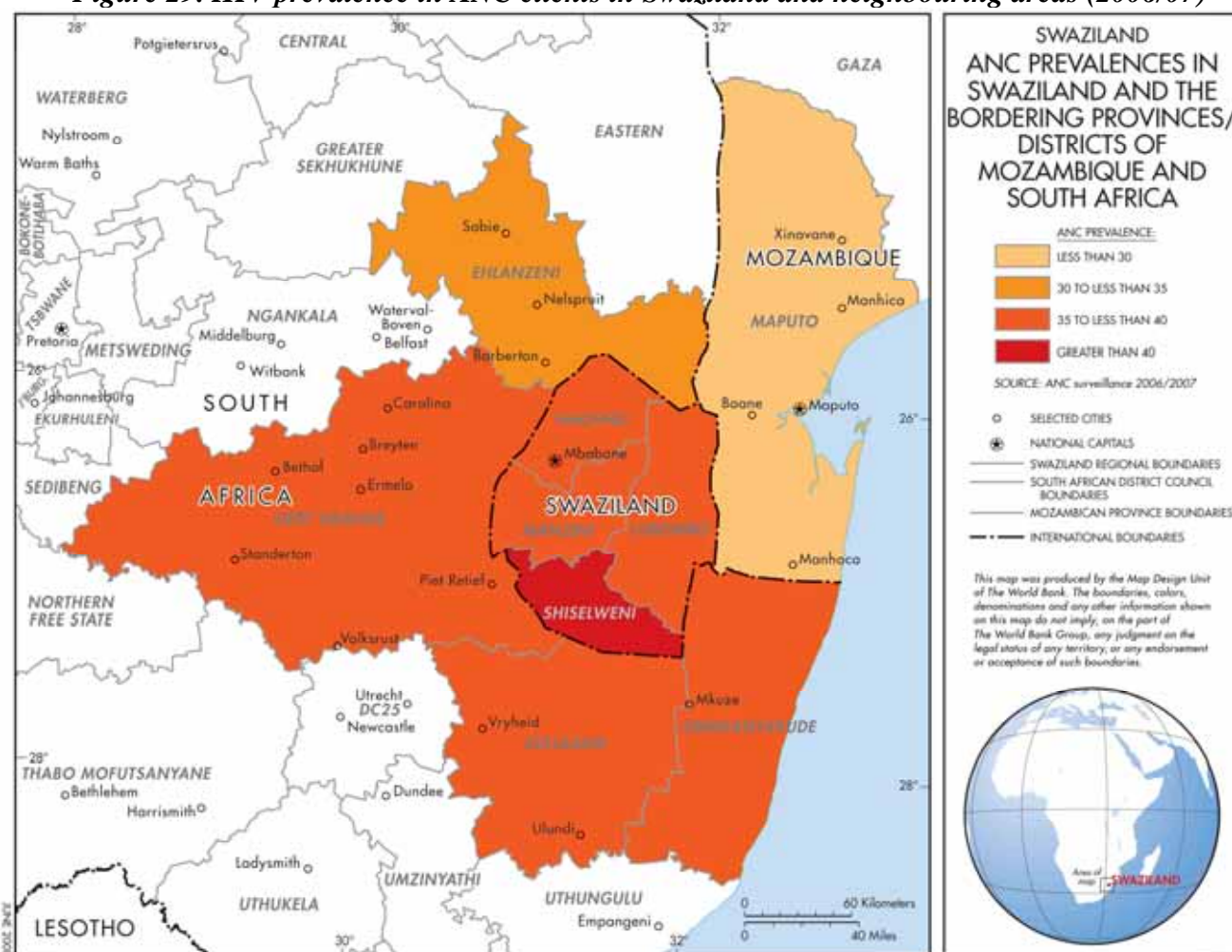
³⁸ Jonathan Crush, 1987 cited in Swaziland Moves: Perceptions and Patterns of Modern Migration, by Simelane Hamilton Siphos and Jonathan Crush, Southern African Migration Project (SAMP), 2004

³⁹ SAMP 2004 p8

*the Hlabisa setting, migration primarily influences HIV spread by increasing high-risk sexual behaviour, rather than by connecting areas of low and high risk. The frequent return of migrants was identified as an important risk factor when coupled with increased sexual risk behaviour. The recommendation was that intervention programmes in South Africa needed to target the sexual behaviour of **short-term migrants** specifically, even though these individuals may be more difficult to identify.*

Further, Swaziland is located in a zone of hyperendemicity. The two South African provinces with highest prevalences in 2006 neighbour Swaziland: KwaZulu-Natal (antenatal prevalence of 39.1% in 2006), and Mpumalanga (32.1%) (Dep. Health South Africa, 2007). The neighbouring Maputo Province of Mozambique recently recorded a prevalence increase and estimated prevalence at 26% for 2008 (MOHSW Mozambique, 2008). The high ANC prevalences in and around Swaziland are illustrated in figure 29.

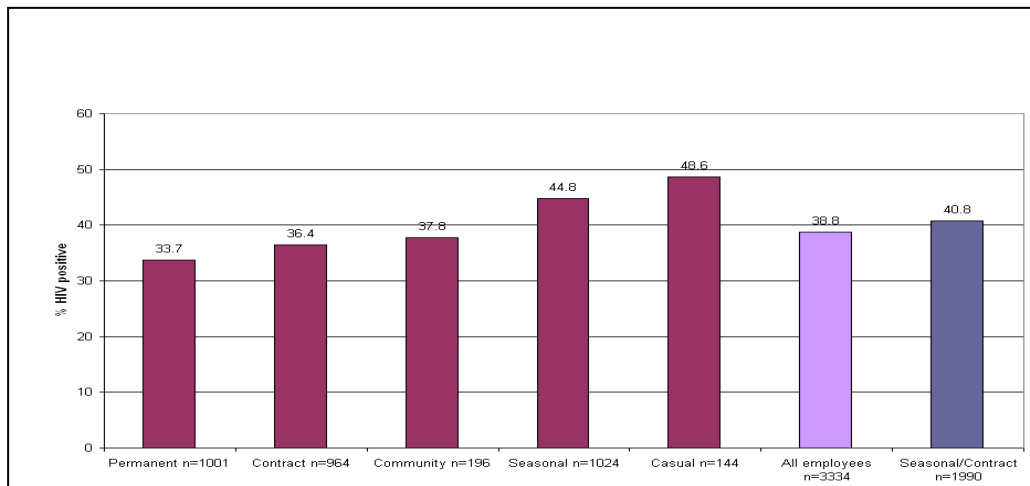
Figure 29. HIV prevalence in ANC clients in Swaziland and neighbouring areas (2006/07)



Source: The World Bank, 2008

Today, Swaziland's migration pattern appears to be more dominated by short-term migration of both men and women, for trading, commerce and work in agricultural estates, textile factories, and urban workplaces. Casualisation and outsourcing have become very important (Bodibe, 2006) (SDHS data in figure 30 confirm this pattern). HIV prevalence is highest among the most mobile sub-populations in Swaziland. This is confirmed by an RSSC study in 2007 that shows a linear relationship between the times workers see their partner and HIV prevalence, ranging from an HIV prevalence of 24% (daily commute) to 41% (monthly commute). The same study found a relationship between job category and HIV: lowest prevalence was found among permanent employees (34%), followed by seasonal/contract workers (41%) and casual workers (49%), but there was a similar and high HIV prevalence among all groups of employees in the lower income/skilled categories.

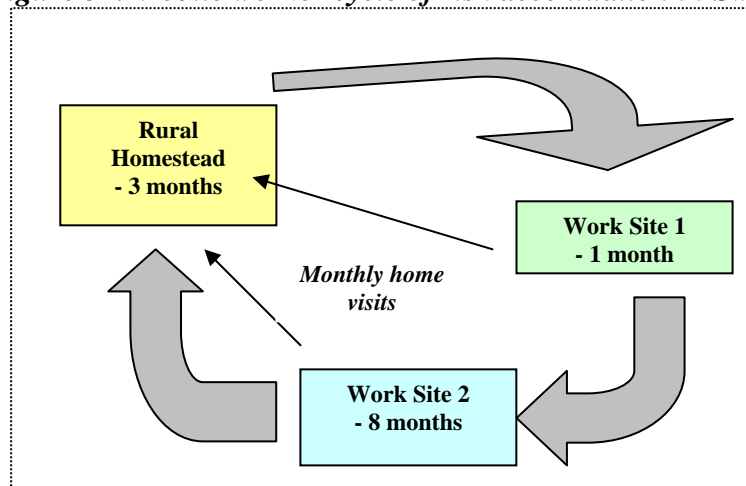
Figure 30. HIV prevalence by job category in Swaziland (RSSC 2007)



Source: RSSC (2007)

Based on the RSSC case study, the MoT team developed the “mobile worker cycle of risk accentuation” (figure 31). Many RSSC workers are short-term migrants, moving between work sites, and visiting their rural homestead each month. Extremely high prevalence in female workers and casual workers, sporadic home visits, and workers lodging outside the estate in the communities provide the perfect conditions for accelerated HIV transmission within sexual networks involving workers and local community members.

Figure 31. Mobile worker cycle of risk accentuation in Swaziland



3.5.3.2 Gender Differences in Swazi Society

The socio-cultural roots of gender discrimination in Swaziland are historical. Armstrong and Russell (1985) say women were responsible for cultivation in addition to domestic chores, while men hunted, tended to cattle, built houses and contributed labour to chiefs as regiments. A woman’s status was equivalent to that of a minor and she was constantly under scrutiny by her husband and in-laws -- she was regarded as a ward under guardianship. The basis of cultural attitudes toward women lies in the fact that Swazi men feel that women are theirs to control (Philip, 2000). This cultural context of power relations between men and women and the broad system of control by men is quite pronounced in Swaziland (Armstrong & Russell, 1985).

Women have limited rights to livestock and land. Under customary law, the most valuable categories of property are livestock and land. Ownership of livestock has always been the preserve of men -- cattle

projected their status in society in wealth and rank. Land has always been under the control of chiefs who allocate it on behalf of the King.⁴⁰

In marriage, folk law emphasizes kinship and group rights, not individual worth, and national laws limit women's power.⁴¹ This system undermines women's rights in marriage since marriage essentially means the joining of two families and has the important goal of procreation. Under common law, the Marriage Act No. 47 of 1964 (under review) also has discriminatory consequences from marital power being held by the husband – a wife cannot enter into any contract without her husband's consent. The law of inheritance excludes widows, giving the heir *inkhosana* control of the estate on behalf of the Family. With unmarried women, the estate is transmitted to her father who is guardian to her children, or her children if her father predeceased her.⁴²

Traditional practices cited as increasing vulnerability of women and girls are “kulamuta”⁴³, child marriages, polygamy and wife inheritance (WLSA, 2001). Women's vulnerability is rooted in inequalities of power between men and women; fostered by civil and customary legal institutions of marriage, property and inheritance and maintained at the individual level in domineering or coercive relationships.⁴⁴ In addition, the legal systems grant women lesser status than men, restricting property ownership, inheritance and other rights (PHR, 2007).

Traditional values in society have been eroded. In traditional society, young girls' virginity was guarded vigilantly by older women. Grandmothers and paternal aunts together with older girls prepared young women entering puberty for adulthood, including giving sex education. Similarly, young men were oriented and guided in sexuality matters by grandfathers and fathers. Counselling by maternal aunts discouraged pregnancy in young women. Issues of sexuality and hygiene during menstruation were covered in the counselling. Parents were usually not directly involved in these discussions (UNESCO, 2001). Now, sex education is included in the life skills taught in schools. Peer pressure has largely distorted traditional values around sexuality, intensified by the sexual images and behaviors shown on television and other media.

3.5.3.3 Sexual violence

Sexual violence⁴⁵ and gender based violence (GBV)⁴⁶ are serious human rights and public health issues, which disproportionately affect women and girls of all ages, from all cultures, countries and socio-economic backgrounds. These types of violence take many forms, including rape, domestic violence, forced marriage, exploitation and harassment, sexual slavery, forced prostitution, human trafficking, and genital cutting. It impacts women and girls' physical, emotional, psychological and social well-being. Sexual violence against females occurs across all socioeconomic and cultural backgrounds, and in many societies, women are socialised to *accept, tolerate, and rationalise* such experiences and to remain silent about them. The “WHO Multi-country study on women's health and domestic violence against women” showed that the majority of acts of sexual violence are perpetrated by intimate partners (Garcia-Moreno, 2006). Refusing sex, inquiring about other partners, or suggesting condom use have all been described as triggers for intimate partner violence; *yet all* are intimately connected to the behavioural cornerstones of HIV prevention.

The power relations between men and women described earlier manifest in sexual violence, which can expose women to risk of HIV infection. The 2007 ‘National Study on Violence against Children and Young Women in Swaziland’ found that violence against female children is highly prevalent in Swaziland,

⁴⁰ Fanin, 1967:7 cited in Iya, 2000:43

⁴¹ Adinkrah, 1990/91 cited in Iya 2000:43

⁴² Rubin, 1965 cited in Iya 2000:44

⁴³ “Kulamuta” traditionally involved a man entering a relationship with his wife's younger sister that generally led to marriage, now this usually implies a sexual relationship.

⁴⁴ A view of key informants in a study by Physicians of Human Rights (PHR, 2007)

⁴⁵ Person has been physically forced to have sexual intercourse; had sexual intercourse because of being afraid of what the partner might do; or been forced to do something sexual found degrading or humiliating

⁴⁶ Any type of violence directed at groups or individuals on the basis of their gender (HIV/AIDS and gender based violence literature review, Harvard School of Public Health, 2006)

with approximately 1 in 4 females having experienced physical violence as a child. Overall, the prevalence of forced intercourse prior to age 18 was 5%, and the prevalence of coerced intercourse prior to age 18 was 9%. The study importantly noted that the risk of violence continues into young adulthood. Among 18-24 year old females, nearly 2 in 3 had experienced sexual violence in Swaziland. Overall, 48% of females reported that they had experienced some form of sexual violence in their lifetime, and 21% reported that they had experienced some form of sexual violence in the preceding 12 months.

In the “National survey on violence against children in Swaziland”, boyfriends and husbands were the most frequent perpetrators of sexual violence, and incidents of sexual violence most frequently occurred in the home of the respondent or a friend, relative or neighbour. Over half of all incidents of sexual violence were not reported to anyone, in less than 1 in 7 incidents resulted in a female seeking help from available services.

Domestic violence specifically against women is common in Swaziland because socialization from childhood promotes beliefs that men are superior to women and have power over them. This imbalance and acceptance of certain behavioural patterns provides for all forms of physical and emotional abuse which include sexual abuse (WLSA, 2001). WLSA further established that this is “*compounded when futile quest for justice for women seeking redress is met with dual legal systems which appear to collude to foster silence and endurance of abuse in women*”. This, it further explains, is “*visible in the reduced awareness among women of disadvantaged social standing such that their silent plight adversely affects their access to the judicial system*”.

In Swaziland, no data on the relationship between sexual violence and HIV status could be identified, but **sexual violence in South Africa was an independent risk factor for HIV transmission**. Very few SSA projects have made quantitative assessments of violence and women’s HIV risk. Importantly, the study by Dunkle *et al.* (2004) on ANC clients in Soweto identified violence as an *independent risk factor for HIV infection*. Intimate partner violence (physical, sexual) was significantly associated with HIV sero-positivity (HIV prevalence 1.4 times elevated, from 28.6% to 40.2%). In that study, child sexual assault, forced first intercourse, and adult sexual assault by non-partners were not associated with HIV sero-status.

Domestic and sexual violence have been linked in several studies to infidelity and MCPs. Jewkes *et al.* (2002) found in a study on risk factors for domestic violence in South Africa that women who had another partner in the year suffered more domestic violence. Lary *et al.* (2004) found in Tanzania that men with MCPs reported becoming violent when their female partners questioned their fidelity. In general, violence appears to be sparked by accusations of infidelity, and not fights over condoms (although requests for condoms could be seen as implicit accusations of infidelity, which could in turn, spark a fight). **Partner reduction could therefore reduce both HIV transmission and domestic violence**.

3.6. Other sources of new infections (transmission other than heterosexual)

3.6.1 Transmission during sex between men

“Same-sex” transmission concerns men who have sex with men (MSM). Approximately two-thirds of African countries still criminalize same-sex sexual relations (Onyango-Ouma *et al.*, 2005), and many MSM experience high levels of violence, especially sexual violence (Auvvert *et al.* 2005, Onyango-Ouma *et al.*, 2005).

The majority of African MSM also have sex with women—two thirds or more, according to some studies (e.g. Onyango-Ouma *et al.*, 2005). Once HIV is introduced into networks of MSM, the virus is therefore also likely to be transmitted to the men’s female partners (given the typically low rates of condom use between regular partners), and subsequently to their newborn babies (van Griensven, 2007).

In a study involving Xhosa men in the rural Eastern Cape, most of the reported same sex activity was revealed in response to a question framed in terms of coercion, rather than a direct question (Jewkes *et al.*, 2006). In that study, 3.6% of men reported having ever had sex with a man. The vast majority said they had been ‘persuaded or forced to when they did not want to’. Most of the group reporting coerced sex said there was *one event*. Many of the experiences were male rape. The median age of first coerced sex with a man was 16.9 years. Having had sex with a man was a major risk factor for HIV infection (OR 3.6, 95%CI 1.0-13.0). This participant group also reported a high rate of male–female rape, which indicates that sexual coercion is generally common in the area. Only one of the participants in the study openly identified himself to project staff as gay. Findings from Kenya suggest that self-identified MSM who had recently experienced violence were more likely to have unprotected sex.

In SiSwati, same-sex encounters are called “*sibashaya sikhova*” (GOS/UNAIDS/UNFPA, 2007). Intentional sexual relations between two male persons are unlawful and considered an offence (sodomy) in Swaziland (SHAPE, year not known). Non-consensual sodomy falls under indecent assault, which is a less grave offence. Currently there are no legislative provisions dealing with sodomy for boys below the age of 18, or unnatural sexual acts or sodomy of girls (SWAGAA, 2003).

The illegality of homosexual/MSM and lesbian practices in Swaziland, in conjunction with the associated taboo, explains the hidden character of same-sex relationships. As a consequence, the importance of same-sex transmission within the epidemic has not been systematically researched. In the “Swaziland Urban Youth Sexuality Baseline Study”, 4.4% of male respondents who had ever had sexual intercourse reported having had a male sexual partner (AMICAALL, 2005). SHAPE (2004) reported that about 27% of respondents who had had sex indicated having had sex with someone of the same sex. Of the male respondents who reported having had sexual intercourse with a male partner, 40% cited commercial reasons followed by transactional (29%) and non-commercial (17%) reasons.

It is also known that female sex workers sometimes serve female clients⁴⁷, and that a minority of sex workers is male (Mndzebele, 2007). Male sex workers serve both male and female clients (GOS/UNAIDS/UNFPA, 2007). No size estimate of MSM or lesbians could be found, and no HIV prevalence data are available for these two groups. There is an organisation called GALESWA (gays and lesbians in Swaziland), but the literature review did not find any document mentioning this organisation.

Data identified on prevalence of MSM:

3.6%	Xhosa, Eastern Cape	Jewkes <i>et al.</i> , 2006	Mostly single events, HIV OR=3.6, possibly confounded by other risk factors
4.4%	Swazi male urban youth	AMICAALL 2005	Possibly mostly single events
27%	Swazi youth	SHAPE 2004	Possibly mostly single events

Same-sex transmission – illegal, taboo and neglected by research, and not expected to be a major factor in the epidemic. The international literature points out that unprotected anal sex between men carries very high transmission risks. MSM relationships are illegal in Swaziland, and although there are some KAP data available, the size of the MSM population is unknown. It can confidently be assumed that there are MSM in Swaziland and that these contacts are kept secret. Some MSM are bisexual, and some of the MSM contacts are commercial or forced (male rape). Using a default value for prevalence of MSM in the adult population of 1%, it was estimated that about 400 new infections (or 4-6% of all new infections) in the current year occur in MSM, and 32-55 (0.5% of all new infections) in female partners of MSM. A better understanding of the size of the MSM population, and their sexual practices and sexual networks is important to appraise the contribution of MSM to annual HIV incidence.

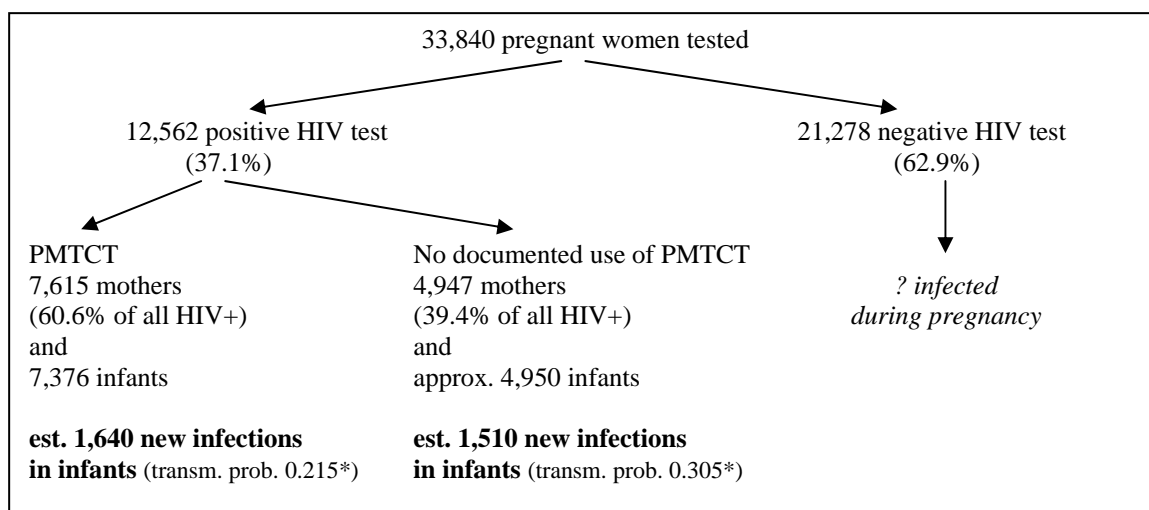
⁴⁷ GOS/UNAIDS/UNFPA (2007): page 25 (on sex toys used between FSW and female clients); page 26 (on women’s reasons for buying sex).

3.6.2 Transmission from mother-to-child

Prevention of mother-to-child transmission (PMTCT) of HIV aims at reducing HIV incidence in infants. PMTCT is one of the priority areas of the Health Sector Response for the period 2006-2008 (MOHSW, 2008, p1). At the time of the prevention review, Nevirapine treatment had been replaced by combination treatment in some health facilities. At the end of 2007, 92% of health facilities offered the minimum package for preventing HIV in infants and young children, and a total of 110 facilities were known to be offering PMTCT (MOHSW, 2008:22). Pregnant women are tested either during their ANC visits or at delivery.

In 2007, of all 33,840 pregnant women tested for HIV, 12,562 were positive and they were all eligible for ARVs for PMTCT (figure 32). Of all these HIV positive women, 60.6% were recorded in the health facility delivery statistics, and most infants born to these women received the infant dose at delivery. The Health Sector QSCR provides no information on whether the infants of the other 39.4% of women who tested positive but did not enter the delivery statistics received prophylactic treatment.

Figure 32. Utilisation of PMTCT in Swaziland (2007)



Source: MOHSW (2008)

* Default transmission probabilities in Spectrum model for single dose Nevirapine (0.215) or no treatment (0.305)

The above Spectrum estimations, using the default transmission probability of 0.215, suggest that about 130 infections are averted in infants per year by Nevirapine treatment within the PMTCT intervention. The true figure might be considerably higher (up to 290 infections averted): PCR studies in Swaziland suggest that transmission probability with Nevirapine may be as low as 0.16 in Swaziland.⁴⁸

The 2006 **WHO Consensus Statement on HIV and Infant Feeding**⁴⁹ recommends “exclusive breastfeeding for HIV-infected women for the first 6 months of life unless replacement feeding is acceptable, feasible, affordable, sustainable and safe for them and their infants”. Although the reasons are not well understood, mixed feeding appears to pose substantially higher transmission risk for infants than not breastfeeding, or exclusive breastfeeding; exclusive breastfeeding for up to 6 months was associated with a 3-4 fold decreased risk of transmission of HIV compared to non-exclusive breastfeeding in three large cohort studies conducted in Côte d’Ivoire, South Africa and Zimbabwe. According to the DHS, more than two-thirds of Swazi infants receive mixed feeding at six months of age and only 17% are exclusively

⁴⁸ By the end of December 2007, a total of 14 health facilities offered HIV testing for infants aged 6 weeks to 9 months through DNA PCR testing, and a total of 2517 DNA PCR tests were performed in 2007. From Oct-Dec 2007, 1042 infants in the follow-up cohort were tested for HIV by PCR, and 16% were positive (=0.16 transmission probability).

⁴⁹ HIV and Infant Feeding Technical Consultation held on behalf of the inter-agency task team on prevention of HIV infections in pregnant women, mothers and their infants. Geneva: WHO; 2006. Available from: <http://www.who.int/reproductive-health/stis/mtct/infantfeedingconsensusstatement.pdf>, accessed 30 July 2008.

breastfed This makes it very **important to promote exclusive breastfeeding to reduce the risks of MTCT and to maximise its other health benefits, and warn of the dangers of mixed feeding practices.**

3.6.3 Transmission through needle sharing during injecting drug use

The use of contaminated drug injecting equipment bears a high risk to transmit HIV, and IDU are often linked to sex work and multiple partners. Injecting drug use is a growing phenomenon in South Africa (Plüddemann *et al.*, 2005), where injecting of heroin has increased in recent years in the Gauteng and Mpumalanga provinces. One attempt to measure the level of HIV among IDUs arrested in three cities (Durban, Pretoria and Cape Town) found prevalence of 20% (Parry & Pithey, 2006), similar to infection levels in the general population. The South African BSS of 2005 found that a total of 4.7% of men and women had ever used injected drugs in their life time, and 1.6% had injected drugs in the last 3 months (Shisana *et al.* 2005, p74). Only 0.1% of respondents indicated that they had shared injecting needles.

Local data on the extent of transmission through IDU are scarce, but circumstantial evidence from the Manzini Psychiatric Centre and COSAD suggest that it may be a minor public health problem. The 2007 situation analysis of commercial sex work in Swaziland found no evidence that any of the interviewed FSW inject drugs (GOS/UNAIDS/UNFPA, 2007). The literature review identified two studies with data on drug injection:

- A household survey of unmarried youth aged 10-24 years residing in the 11 official towns and one rural community found that **2.9%** of females and **4.5%** of males reported having tried intravenous drugs in the last twelve months (AMICAALL, 2005)
- In a recent study among 10-30 year old rural residents of Swaziland, **0.7%** of the respondents reported having injected drugs using syringes in the last 3 months (SNYC/FLAS/UNFPA, 2008).

Both studies merely assessed if respondents had ever used intravenous drugs, and did not establish the proportion of respondents using intravenous drugs on a *regular basis*. Equally, no information was collected on the sharing of injection equipment. However, based on these two studies, and the circumstantial evidence, an overall estimate can be made (allowing for the population distribution between rural and urban areas): an estimated 1.5% of young people in Swaziland have *an experience* of recent use of intravenous drugs, but frequency of use, and practices of sharing of needles and syringes are not currently known.

Data identified on IDU:

1.6%	South African adults	Shisana <i>et al.</i> , 2005	Injected at least once in last 3 months
0.1%	Shared injecting needles		
2.9%	Swazi female urban youth	AMICAALL 2005	Injected at least once in last 12 months
4.5%	Swazi male urban youth	AMICAALL 2005	Injected at least once in last 12 months
0.7%	Swazi rural 10-30 y olds	SNYC/FLAS/UNFPA 2008	injected at least once in last 3 months

Injecting drug use – a high risk practice – data are lacking, but not expected to be a major factor in the epidemic. IDU is happening in Swaziland, but no local data could be found on regular IDU or sharing of injection equipment. Circumstantial evidence suggests that IDU is not an important factor in the HIV epidemic in Swaziland at present. IDU is probably more frequent in towns, and many reported IDU experiences may be single events. Using a regional default value for prevalence of IDU (0.2%), it was estimated through modelling that about 140 (1-2%) of all new infections in the current year arise from IDU.

3.6.4 Transmission through use of unsafe (unclean) medical injections and universal precautions

Unsafe medical injections can lead to infection with HIV, HBC, HCV and other blood-borne pathogens. The large uncertainty in the risk of HIV transmission from HIV-contaminated injections makes quantification of the proportion of transmission caused by contaminated injections difficult, in Swaziland and elsewhere (White *et al.*, 2007, p9794). Several studies have challenged the view that sexual transmission is the main

transmission pathway in African HIV epidemics, and have suggested that unsafe injections are a major source of infections. A recent study by De Walque (2008) investigated the relationships between prophylactic tetanus toxoid injections during pregnancy and HIV infection among women in nationally representative DHS data of Burkina Faso (2003), Cameroon (2004), Ethiopia (2005), Ghana (2003), Kenya (2003), Lesotho (2004) and Senegal (2005). The study found that any association between prophylactic tetanus toxoid injections during pregnancy and HIV infection disappeared after adjusting for potential confounders.

In the 2005 injection safety study (MOHSW/UNICEF, 2005), no facility was found using re-usable equipment for vaccination or curative injections and there was universal availability of a one week supply of disposable/auto-disable (AD) equipment in all facilities. 90% of vaccinations observed used AD syringes. Injection abscesses were reported by 13 out of 40 facilities in the last 12 months. Overall, 75% facilities were estimated to be giving safe injections. The same study found that immediate collection of sharps in 'sharp boxes' was done in 37 out of 40 facilities. In 10% of facilities overflowing or pierced or open sharp containers were observed. Needle stick injuries in the last 12 months were reported by 9 out of 63 providers (14%). Absence of sharps around the health care facility was reported from all but one facility.

In a brief assessment on hospital infection control in 2007, injection safety was mentioned as one of the top five infection control problems encountered at health facility level (Goredema & Ntengu, 2007, p21).

Using the UNAIDS incidence model, it was estimated that in the current year, about 12 new infections (0.1-0.2% of all new infections) arise from unsafe medical infections in modern health care settings. Traditional healers also provide injections, but no data on re-use of injection equipment by healers could be identified.

Although some uncertainties remain regarding risks to patients and risks to providers through unsafe injection practices, contaminated injections in the medical setting are unlikely to account for a large proportion of HIV incidence.

Post Exposure Prophylaxis to reduce incidence of HIV infection due to accidental exposure:

In Swaziland, prevention of accidental exposure to HIV is a relatively new area of HIV intervention and the HMIS for PEP is still being consolidated (NERCHA, 2008a, p15). PEP is offered to health professionals and other populations at risk of accidental exposure to HIV infection, such as rape cases. In 2007, 651 persons were trained on PEP referral (non-health workers), and 34 health workers were trained on the provision of PEP. By the end of 2007, 14% of health facilities were equipped to provide PEP, and 1,584 eligible persons received PEP treatment in 2007 (MOHSW, 2008, p23). The study team was verbally informed that the majority of PEP cases are related to rape, with a few cases of needle stick injuries.

Other potential transmission pathways are linked to the sharing of sharp instruments. This concerns blades, needles and knives which are immediately re-used on another person without being sterilized. This may apply to tattooing (e.g. in prisons), scarification practices (e.g. in traditional medicine), shaving (e.g. barbers) and cuts (e.g. gang style initiations).

Tattooing by inmates on other prisoners is an integral part of the prison sub-culture in South Africa, Lesotho and other countries (Goyer, 2001; Akeke *et al.*, 2007). The study in Lesotho found that 42% of inmates had tattoo marks, of which two-thirds were done in the prison. The instruments used for tattoo marks usually were not sterilized, and the same instruments were used for more than one person in about half of the cases. Furthermore, 65% of the respondents agreed that they shared sharp instruments like shaving blades in the prison. No local data on tattooing or risky practices in prisons could be identified through the literature review. However, the study team was informed that prisoners have VCT and ART services provided at the Mbabane Government Hospital, and that the practice of tattooing seems to be minimal (lack of awareness, appreciation, skills and equipment to perform tattoos in the prison setting).

There is considerable evidence that scarification involving shared instruments is a common practice in many African societies who value specific forms of scarification as a mark of membership to a particular cultural group (Helman, 2000). A study on HIV risk exposure in children in South Africa by Shisana *et al.* (2005) found that children's HIV sero-positive status was significantly associated with being scarified (adjusted Odds Ratio 1.6) and having seen a traditional healer (adj. OR 1.5).⁵⁰

Specifically regarding traditional healers' practices, the 2005 South African HIV exposure study found that not all the instruments used by traditional healers were sterilised. One healer who used porcupine quills in scarification said he did not sterilise his quills, because they were medicine by themselves and had supernatural powers to cleanse themselves of any diseases. Some healers believe in sterilising new blades before using them while others had not heard of this practice. In Swaziland, one traditional health practice is *kugata*, during which incisions are made in the skin with a razor blade to administer traditional medicines, which is potentially dangerous, since *kugata* blades are customarily not cleaned between uses.⁵¹ The practice of herbal medicine injection to cure AIDS has also been reported.

SNAP has conducted workshops for some traditional healers on universal precautions. Since scarification is commonly done by healers, the advice was that healers should ask their clients to provide their own razor blades and scalpels. The prevention review revealed about 15 different interventions on razor blade exchange carried out by implementers, and also found 18 interventions on the provision of equipment for universal precautions. The study team did not find any documentation on the actual practices of applying universal precautions by healers. No evidence was found regarding HIV transmission through tattooing, re-use of unsterilized blades by barbers and blood brotherhood /gang-style initiations.

Sharing of sharp instruments is a potential source of new infections in Swaziland. The main source identified through the literature review was traditional healers' practices like scarification (*kugata*) and herbal medicine injections. No evidence was found regarding HIV transmission through tattooing, re-use of unsterilized blades by barbers or in gang-style initiations.

3.6.5 Transmission through the transfusion of HIV positive blood products

The potential transmission of HIV through blood, blood products and donated organs is important to appraise, because the *efficiency* of HIV transmission through this pathway is high (UNAIDS, 2007a, p54). As a consequence, routine and mandatory screening, aiming at reducing iatrogenic⁵² transmission of HIV, is imperative.

In Swaziland, blood collection is centrally located and uses donors who have a low HIV prevalence such as school-going pupils and regular donors. In the fourth quarter of 2007, only 1.7% of blood units tested positive for HIV due to this select donor base. Blood transfusion is done in all in-patient facilities in the country, including private facilities with in-patient services. According to the MOHSW, 100% of all blood units transfused in 2007 had been adequately screened for HIV according to agreed guidelines (MOHSW, 2008, p19/23). The personnel in charge at MGH confirmed to the study team that there is a theoretical possibility that false negative blood is transfused, since the current testing standards do not detect very recent HIV infections which occurred within a few days. The introduction of molecular screening techniques to eliminate this possibility is under discussion. Regarding the transfusion of unscreened blood in an emergency situation, the personnel at MGH confirmed that this has not occurred in the last 3-4 years. There have also been no suspected or legal cases of blood transfusion related HIV infections. Organ and

⁵⁰ Shisana *et al.* (2005) also found that HIV sero-positivity in children was highly significantly associated with having been breastfed by a non-biological mother (adj. OR 17.0) and having a prior hospital admission (adj. OR 2.0)

⁵¹ "Traditional Healers, New Partners Against HIV/AIDS." IRIN. February 25, 2003. Available at: <http://www.irinnews.org/Report.aspx?ReportId=32780> (accessed 29 April, 2008)

⁵² Iatrogenic = induced inadvertently by a physician or surgeon or by medical treatment or diagnostic procedures. <http://www.merriam-webster.com/dictionary/iatrogenic>

marrow transplants are not done in-country. The study team found reports of three recent kidney transplants and several heart valve replacements, which were all done in South Africa.

Blood and blood products – low risk but need for vigilance. The potential transmission of HIV through blood, blood products and donated organs was found to be low. The health sector is implementing routine and mandatory screening of blood from selected low-risk donors. 100% of all blood units transfused in 2007 had been adequately screened for HIV, and there was no evidence of transfusion of unscreened blood in emergencies, or of suspected or legal cases of BT-related HIV infections. The current testing standards do not detect very recent HIV infections which occurred within a few days, and additional molecular testing procedures are under discussion. Organ and marrow transplants are not done in-country. Using the UNAIDS incidence model, it was estimated that, in the current year, about 24 new infections (<0.4% of all new infections) arise from blood transfusions. The evidence suggests that in Swaziland, HIV transmission through this pathway is likely to be rare but not zero.

On the whole, the likelihood of iatrogenic transmission in Swaziland seems very small, since blood is collected from a very low risk population and 100% of blood units are screened prior to transfusion. In addition, there is no evidence of transfusion of unscreened blood or implantation of unscreened organs.

3.7. KYE Synthesis: A Summary

HIV prevalence levels and trends

With 26% of the adult population infected, Swaziland's national HIV prevalence is among the highest in the world. This high HIV prevalence is resulting in higher mortality and, combined with labour migration patterns, will produce negative population growth for the foreseeable future.

HIV prevalence of pregnant women in most age groups rapidly increased up to 2004 (most dramatic increases among 25-29 year olds), but a downturn has been seen in the latest sentinel surveillance data (figure 10, MOHSW, 2006). It is estimated that HIV prevalence peaked between 2004 and 2006, although 2008 sentinel surveillance data are needed to confirm this trend. The peak in HIV prevalence in 2004 will result in a plateau in AIDS-related deaths of around 12,500 adults and children per year for at least the next four years. As ART coverage improves, AIDS-related deaths are expected to fall considerably, which will result in a stabilisation or rise and secondary plateau in HIV prevalence (unless HIV incidence dramatically decreases in the next few years).

The increase in mortality and slow roll-out of ARVs has drastically affected life expectancy, which is reported to have halved between the 1990s and 2007 (currently at 37 years).

Heterogeneity of the HIV epidemic in Swaziland

Although the overall trend in HIV prevalence in Swaziland seems to be downward and although it is a fairly small country, there are marked differences in HIV prevalence in specific sub-populations of the Swazi society. The heterogeneity of the HIV epidemic in Swaziland, by age, sex, income level, employment status, marital status, education level, residence, region, HIV status of partner and age of partner is summarised in table 1 below.

It should, however, be noted that HIV prevalence levels overall are very high and that heterogeneity should be seen in light of the fact that Swaziland is faced with a hyperendemic HIV epidemic.

Table 1. Heterogeneity of HIV in specific sub-populations in Swaziland (2007)

Lower HIV prevalence	Higher HIV prevalence	Text reference
Males aged 15-30 years	Females aged 15-30 years	Section 3.3.1, figure 7
Females aged 35-60 years	Males aged 35-60 years	Section 3.3.1, figure 7
Males in same-age discordant couples	Females in same-age discordant couples	Section 3.3.2, figure 11
Women in discordant couples where man is 15+ years older	Men in discordant couples and 15+ years older than spouse	Section 3.3.2, figure 11
Men and women who live in rural areas	Men and women who live in urban areas	Section 3.3.3, figure 12
Older people who live in Shiselweni	Younger people who live in Hhohho	Section 3.3.3, figure 12
Poorer men and women	Richer men and women	Section 3.3.4
Unemployed men and women	Employed men and women	Section 3.3.4
Men and women who spend no time away from home	Men and women who spend more than a month away from home in the past 12 months	Section 3.3.5, figure 13
Men and women who did not sleep away from home	Men and women who slept away from home more than 5 times in the past 12 months	Section 3.3.5, figure 13
Women with tertiary education	Women with no education	Section 3.3.6, figure 14
Men with secondary education	Men with no education	Section 3.3.6, figure 14
Men with secondary education	Men with tertiary education	Section 3.3.6, figure 14
Never-married men who have had sex	Never-married women who have had sex	Section 3.3.7, figure 15
Men and women who are married or living together	Divorced, separated or widowed men and women	Section 3.3.7, figure 15
Men who are not circumcised	Men who are circumcised	Section 3.6.1.3
Men and women with one sexual partner	Men and women with 2 or more sexual partners	Section 3.6.1.4
Women reporting sex only with spouse or cohabiting partner	Women reporting having had higher-risk sex	Section 3.6.1.4
Men reporting having had higher-risk sex	Men reporting sex only with spouse or cohabiting partner	Section 3.6.1.4
Men and women without an ulcerative STI	Men and women with an ulcerative STI	Section 3.6.1.6

A considerable proportion of older adults and young children are HIV positive. The high HIV prevalence amongst younger age groups – Swazi children aged 5-14 years – probably arise through a mix of different exposures including sexual abuse. HIV infections in children and adults have altered mortality patterns – child survival rates have declined, premature mortality in adults increased, and the population-age distribution is set to dramatically change in the next 20 years (significant numbers of older and younger people, and fewer people of economically-active age).

HIV incidence levels

The majority of new infections occur in females and males older than 25 and women continue to bear the brunt of new infections. Too many preventable new infections occur in children.

Modelling data suggest that incidence peaked in 1999 (8 years before HIV prevalence peaked) but remains very high. Proxy HIV incidence data confirm a recent downward trend in new infections in the past four years. There are, however, indications that HIV incidence may rise in the next 3 to 4 years, and this secondary plateau suggests that the estimated peak in HIV incidence in 1999 was the result of epidemic dynamics and not effective HIV prevention programmes or behaviour change.

Sources of new infections

Transmission is mainly through heterosexual contact between steady, relatively older partners.

Heterosexual sex is the predominant HIV transmission pathway in Swaziland, confirmed by the very high estimates of HIV population prevalence, the significantly higher prevalence in women (31%) than in men (20%), and the mostly heterosexual nature of reported sexual relationships. Results from incidence modelling suggest that in 2008, about 94% of all new infections in adults arose from heterosexual transmission. Other (minor) sources of new adult infection include MSM activity, IDU activity, unsafe medical injections and blood transfusions.

Factors affecting the rate of sexual transmission of HIV

Multiple concurrent partners – the polygamous tradition lives on. Throughout Southern Africa, multiple concurrent partnerships (MCPs) are common and viewed as normal. *In Swaziland, there is clear evidence from qualitative and quantitative studies that having a secret partner is common and that multiple partners are part of the way of life of many Swazi men and women.* MCPs are legitimised through the deep-rooted traditions of a polygamous society and enculturation of boys and girls resulting in sexual entitlements of men. They are facilitated by labour migration which separates couples and steady partners, by multiple needs and wants of women (financial, emotional, sexual, revenge, networking for social mobility, peer pressure, etc) and perceptions that they verify a man's wealth, standing and manhood. There is evidence that the food crisis and basic needs as well as the availability of modern consumer goods affect risk taking by women (survival sex and consumption sex). When asked, people disapprove of the custom of having secret partners (*lishende, makhwapheni*), but recognised that it is common. Regional research also shows that mistrusting a main partner's faithfulness can motivate acquisition of other partners, who then act as an insurance against being left without a partner, as an emotional backup and as a means of retribution for being made to feel insecure in the main relationship. The frequency of secret partners does not always come out in quantitative large-scale surveys – in the SDHS, only 2% of women reported having had more than one partner in the last 12 months (although people said secret partners are common amongst men and women, and 38% of women 15-49 years reported higher risk sex⁵³ in the past 12 months – of whom 42% were HIV positive), and 38% reported at least one higher-risk partner in the last 12 months. This is probably because of the secret nature of the activity.

The “one-partner” risk group. Based on reported sexual behaviour, a large proportion of sexually active Swazi adults might be classified as “low risk” – they had no commercial sex and no sex with a casual acquaintance. However, it turns out that they are an important risk group, since this population is the major contributor to annual incidence. Using the best available multiple partner data, 48-65% of annual incidence was estimated to occur in this group who reported only one partner. The modelled age and sex distribution was consistent with the findings from the literature on age mixing in sexual relationships: men generally got infected later in life than women, but even in women, two thirds of new infections in this “low risk” group were expected to occur in women aged 25 years and above (and one third in females aged 15-24 years). Risk behaviours in this “one-partner” population are therefore major contributors of the epidemic. The incident infections arise through couple discordancy (between steady partners, unprotected sex is almost the norm). The other probable source of new infections is secret secondary partners, who are not reported in the KAP survey, since transmission between discordant monogamous couples is estimated to be relatively low at 1/2000 -1/384 per coital act and therefore would not explain all incident infections in the “one-partner” group.

Multiple concurrent partners and migration – easy bed mates. Significant numbers of Swazis are mobile, sleep away from home relatively often, and migrate temporarily (mostly for employment and income opportunities). This oscillatory migration by mobile partners is a major driver of the epidemic in

⁵³ Higher risk sex is defined as having sex with a partner who was neither a spouse nor lived with the respondent.

Swaziland: HIV prevalence levels amongst these partners are more than double that in the general population.

Condom use and casual sex go together. In Swaziland, the more casual the sexual encounter, the more likely a condom is used due to increased risk perception. Condom use appears not to have changed greatly in recent years, but more people report that they will not have sex with their partner if they believe that the partner is unfaithful and refuses to use a condom. The probability of using a condom during higher risk sex increased with educational attainment in men and women, and in younger age groups.

Sex with casual acquaintances is not frequent, and is often protected. Few people report sex with a casual acquaintance in the SDHS - only 5.5% of men and 1.0% of women.⁵⁴ We can conclude that sex with a casual, short-term acquaintance is not the norm in Swazi society. Given the relatively high risk perception and condom use with casual partners, we can also conclude that casual heterosexual sex with a casual acquaintance is not a major factor in the epidemic in Swaziland.

Commercial sex – a connector of networks. There is a lack of local data on the estimated size of the sex worker population in Swaziland and sex workers' HIV prevalence. The main concern with sex workers is their differential use of condoms, which is 62% with paying clients and only 34% with non-paying partners. With an average of one client per day and a part-time approach to sex work, many of the sex workers in Swaziland are probably not highly “professional”, and this may be associated with a higher level of intimacy with clients and lower condom use. Modelling results suggest that 210-340 new infections occur in sex workers (about 3% of total annual incidence), but these estimates are uncertain due to lack of input data for the model. About 260-530 new infections were estimated to happen in paying clients of sex workers (about 4% of total annual incidence).

Sexual violence. Many cultural norms and values on gender relations persist from the tradition in which men had a large degree of jural rights over women, and values and norms uphold men's privileges and constrained autonomy for women. These values and norms are deep-rooted and gender discriminatory beliefs are upheld by many men *and* women,⁵⁵ also facilitating tacit acceptance of sexual violence (which appears to be an independent risk factor for HIV transmission in South Africa).

Within Swazi society, the family remains an institution of prime importance in inculcating behavioural values, preparing the young for responsible adulthood, and giving a sense of belonging and identity to its members. However, traditional family values have been eroded by rapid urbanization and labour-related migration, leaving a void instead of an example for children to follow and learn conservative, traditional social norms for sexual behaviour.

Concurrent, multiple sexual relationships involving at least one steady, better-off partner older than 25 in urban areas, relationships between urban and rural partners – either of the same age or different ages – have created sexual networks. The impact on HIV transmission has been fuelled by low levels of male circumcision. This situation is changing particularly amongst the youth, as more educated and younger persons have started to reduce their number of partners.

⁵⁴ Sexual intercourse with a casual acquaintance (not spouse, live-in partner or non-cohabiting partner)

⁵⁵ Examples of investigated gender discriminatory beliefs: men should control significant decisions in relationships; it is more important for a woman to respect her spouse or partner than for a man to do so; women should not insist on condom use if their partner refuses; a man can marry a second wife if his current spouse does not bear children.

CHAPTER 4. KYR SYNTHESIS

4.1. An Enabling Environment for HIV Prevention

4.1.1 Laws and Policies relating to HIV prevention

Laws and policies are essential to set the stage and enable reduction of vulnerability and risk of acquiring HIV for the whole population and especially for the vulnerable populations. These laws and policies further increase access to programmes and activities that promote HIV prevention. In Swaziland, there are a number of laws and policies relating to HIV prevention.

Table 2: Laws & policies impacting on HIV prevention in Swaziland (as of 2008)

Statutes and policy impacting prevention	Year of approval
a. Constitution	2005
b. Laws	
The Administration of Estates Act No.28	1902
The Girls and Women's Protection Act No. 39	1920
The Interstate Succession Act No. 3	1953
Marriage Act	1964
THE Maintenance Act No.35	1970
NERCHA Act	2003
c. Bills (statutes in draft before these become law)	
Sexual offences & Domestic violence Bill	Draft (2008)
d. Policies	
National Policy on Children, including orphans and vulnerable children in Swaziland	2003
National Multisectoral HIV & AIDS Policy	2006
Blood Safety	2006
MOHSW/ PLWHA Collaboration Framework	Draft (2007)
Health Policy	2008
Gender policy	Draft
Male Circumcision policy	Draft
e. Guidelines	
HBC Guidelines	2002
ART Guidelines	2003
HTC/VCT Guidelines	2006
PMTCT Guidelines	2006

Source: HIV Prevention Review Report, June 2008

These policies and laws are described in detail in **Annex 5**. In summary: while the existence of laws and policies goes a long way in creating an enabling environment for HIV prevention, there are challenges which reduce the effectiveness of these statutes. Underlying traditional and cultural factors, norms and laws perceived by society as important pose stiff barriers to effective application of modern laws and evidence

informed policies. Gender inequality and domestic and gender based violence continue to make it difficult for women to protect themselves from HIV infection as seen in media reports.

The UNGASS country report rating of policies, laws and regulations *in place* to promote and protect human rights in relation to HIV and AIDS in 2005 placed them at 2 and 5 in 2007 (using a scale 0 = poor to 10 = good). On efforts to *enforce* the existing policies, laws and regulations, the rating was 2 for 2005 and 3 for 2007 which indicates the urgent need to ensure that policies, laws and regulations which are in place are implemented and *enforced* (UNAIDS 2008).

NGOs like Women and Law of Southern Africa based in Swaziland with support from NERCHA have carried out advocacy and awareness raising activities targeting both leaders and women on rights in marriage, estate management and sexual abuse. The laws on these areas are viewed as inadequate and lacking in application, and they clash with traditional laws to some extent. On a scale of 1-5, policy level informants gave ratings no higher than 3 for the extent to which the country has built awareness and given “teeth” to legislation and policies that create barriers to HIV prevention. Laws are still very much ‘on paper’ and have little impact on people’s lives.

4.1.2 Leadership in the National HIV Response

Physicians for Human Rights (2007) explored the role of the country’s leadership and its impact on HIV prevention by getting opinions of people (table 3). The table suggests that many respondents feel that the leaders at community level (chiefs), at national level (King, national political leaders) and religious leaders (church leaders) do not invest sufficiently in prevention, often do not act as role models, frequently do not give adequate material support and protection to those infected and affected by the epidemic, and do not protect women and children as they should.

Table 3: Opinions on leadership on HIV/AIDS in Swaziland (2007)

Statement of opinion and agreement to it	Chiefs, n (%)	National political leaders, n (%)	King, n (%)	Church leaders, n (%)
Not spend enough money on HIV prevention	614 (89)	504 (73)	325 (48)	444 (63)
Not set a good example in their personal behaviour/sexual practices	554 (79)	542 (80)	538 (77)	342 (48)
Not give survival basics (food, water, shelter, land) to people infected and affected by HIV/AIDS	447 (64)	387 (56)	294 (42)	297 (41)
Not done enough to oppose bad treatment of PLWHA	496 (72)	455 (66)	359 (54)	327 (47)
Not protected women & children from abuse	473 (67)	418 (59)	397 (57)	290 (40)

Source: PHR (2007)

Another important leadership role explored in this review which is also discussed in the current NSP is **coordination**. The NSP defines it as a “process of facilitation, communication, sharing, planning and monitoring of resources, risks and rewards for the purpose of efficiency and effectiveness in scaling up all efforts in the response to the HIV and AIDS epidemic.” The consolidated Action Plan (2006/07) identified the need to improve coordination of all activities and all levels (Objective 54) and its strategy was “to

empower and build capacity of all designated coordinating bodies. **Policy level key informants observed that coordination becomes clouded when bodies tasked with it also implement services.**

Policy level key informants acknowledged efforts made to build awareness on legislation and policies that create barriers to HIV prevention, such as laws that discriminate against women and girls; but felt that amendments to such legislation and policies did not follow suit. They observed that the country has trained leaders to speak out against behaviours that spread HIV without specifically advocating against related stigma and discrimination.

4.1.3 Capacity building for a comprehensive and relevant HIV response

The prevention assessment explored whether there had been any capacity building for those who are directly responsible for the development of policies and strategies. It found that policy makers (MPs, Cabinet Ministers, Government ministries) had been identified as primary targets for capacity building regarding policy and strategy. However, it appeared that there is still a need to capacitate people identified for leadership positions in the response, so that it's not only representation that is achieved but also effectiveness. Key informants from civil society felt the lack of capacity among key individuals from important constituencies was still a major concern and that there remains a challenge to align the response with policy and strategy. Capacity is also built through involvement of relevant stakeholders from umbrella bodies in policy development guiding functions within their interventions. This was acknowledged by all key informants from organizations of PLHIV.

4.1.4 Resource mobilization for the National HIV Prevention Response

The NSP acknowledges Government commitment to funding the national response, evident in budget lines created for this and increasing human resources deployment to the health and other sectors. The first NASA (NERCHA/UNAIDS, 2008a) was commissioned to assess spending on AIDS including prevention. The assessment shows all sources of funds that flow into the national HIV prevention response (see section 4.9).

Key informants from civil society felt more needed to be done regarding resource mobilization and distribution, while those from multilateral organizations felt that there were enough resources for HIV and AIDS in Swaziland, and that a comprehensive plan for absorption was required. Those that felt funds were insufficient noted that the high prevalence and generalised epidemic necessitate more resource mobilisation and further explained that the country still cannot fund all planned activities. It was noted that GFATM funding requires comprehensive planning and accountability, and key informants found that its planning is detailed and implementation can be tracked.

4.1.5 Universal access to HIV prevention

Universal access targets were set, and some steps have been taken to improve access to HIV prevention services, e.g.: removal of user fees that reduce access and use of key commodities, such as test kits, male and female condoms, treatment for sexually transmitted infections and antiretroviral drugs. A Memorandum by the MOHSW (agreed and signed by key partners) ensures that PMTCT, HAART, VCT, STI and HTC services can be accessed without any payments. For male circumcision at health facilities, there are currently user charges. Within the MC strategy, NGOs and private medical services will be encouraged to offer affordable MC services to the population (details of financing modalities for MC intervention are still under discussion). In order to ensure access to other, complementary prevention services, the aim is to offer MC clients a complete package of HIV prevention under "one roof", i.e. counselling (pre- and post- HIV testing and risk reduction counselling), use of onsite rapid HIV tests, diagnosis and syndromic treatment of STIs, condoms, MC procedure, and pre/post operative surgical care (MC strategy and implementation plan by Marufu & Bock, 2008).

4.1.6 Mainstreaming and multi-sectorality

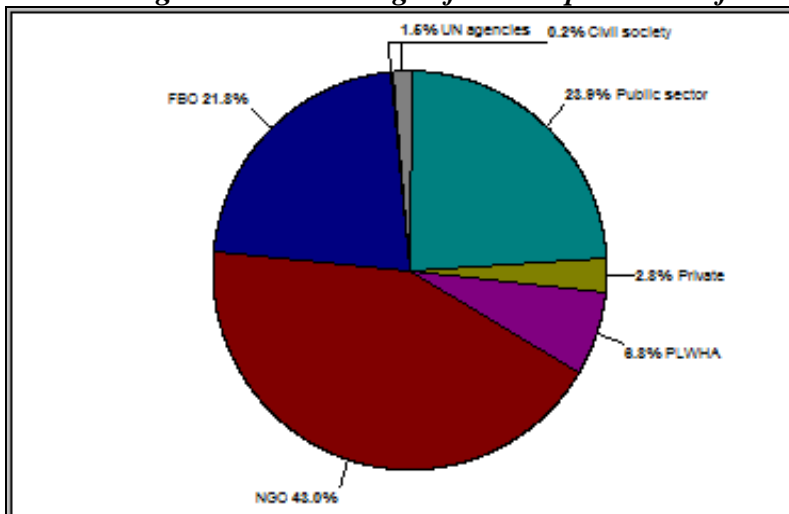
The multi-sectoral response as defined in the NSP is a programming strategy which involves all sectors and sections of society in a holistic response to HIV and AIDS. The introduction of the multi-sectoral response is listed as an achievement in the NSP 2006-2008. The country is seeking to scale up the multi-sectoral response and create an effective, comprehensive, decentralized, well coordinated and sustainable enabling environment at all levels. The involvement or representation of all sectors, groups and partners is visible in all planning, coordinating and implementing bodies of the response to HIV. Important policy bodies on prevention in Swaziland are multi-sectoral in representation and their functions holistic in that they deal with the response from the different perspectives of individual, community, urban and rural. The **NERCHA Council** itself is multi-sectoral including members from public sector, private sector, NGO, FBO, PLHIV organisations, Youth Council and traditional healers.

Some evidence of a multisectoral response is available, but more needs to be done to link the efforts of various sectors. The Ministry of Economic Planning has launched a detailed strategy, using their comparative advantage, and the Ministry of Education and Sebenta National Institute have incorporated into their training curricula some aspects of HIV/AIDS. However, key informants concurred that clear sectoral linkages have not been defined within the multisectoral response.

4.2. Sectors involved in providing HIV prevention services

Two-thirds of the HIV implementers surveyed as part of this assessment were NGOs and FBOs, with the public sector taking up the other majority of implementers – see figure 33.

Figure 33: Percentage of HIV implementers from different sectors in Swaziland (2008)



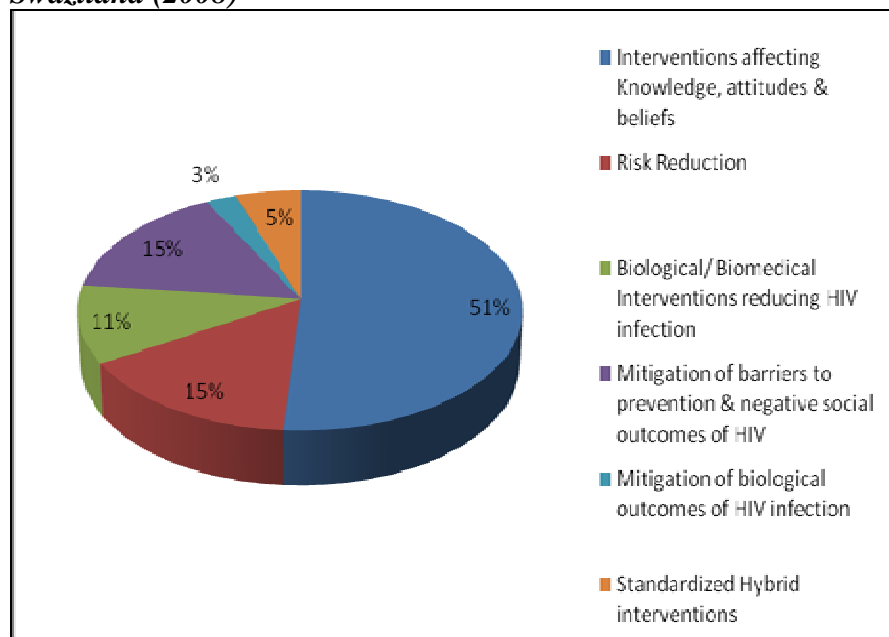
Source: HIV Prevention Review Report, June 2008

NOTE: This analysis illustrates the multi-sectoral nature of the prevention response. However, it is worth noting that CBOs who work at grassroots level were not included in the assessment.

4.3. Implementation of HIV prevention programmes

Of the prevention implementers interviewed, about half (51%) were carrying out interventions aiming at changing knowledge, attitudes and beliefs and influencing psychological and social risk correlates (figure 34).

Figure 34: % of implementers that have implemented different types of prevention interventions in Swaziland (2008)



NOTE: Figure 34 reflects the number of activities in each of the six categories and does not weigh actual importance, size and coverage of these activities.

Source: HIV Prevention Review Report, June 2008

Table 4. Number and percentage of activities by type of HIV implementer in Swaziland (2008)

Categories	FBO n (%)	NGO n (%)	PLHIV org. n (%)	Private sector n (%)	Public sector n (%)	UN agencies n (%)	TOTAL n (%)
1. Knowledge / attitude change	53 (22)	103 (44)	15 (6)	6 (3)	56 (24)	4 (2)	237 (100)
2. Risk reduction	15 (21)	28 (39)	6 (8)	2 (3)	20 (28)	1 (1)	72 (100)
3. Bio/med interventions	10 (20)	20 (41)	3 (6)	1 (2)	15 (31)	0 (0)	49 (100)
4. Mitigation of barriers	17 (24)	31 (43)	6 (8)	2 (3)	13 (18)	2 (3)	72 (100)
5. Mitigation biological outcomes	3 (25)	3 (25)	2 (17)	0 (0)	4 (33)	0 (0)	12 (100)
6. Hybrid interventions	5 (20)	14 (56)	0 (0)	1 (4)	5 (20)	0 (0)	25 (100)
TOTAL	103 (22)	201 (43)	32 (7)	12 (3)	112 (24)	7 (2)	467 (100)

NOTE: Interviewing only at national level for the health sector may have reduced representation of activities like PMTCT and VCT which are being rolled out in all the regions.

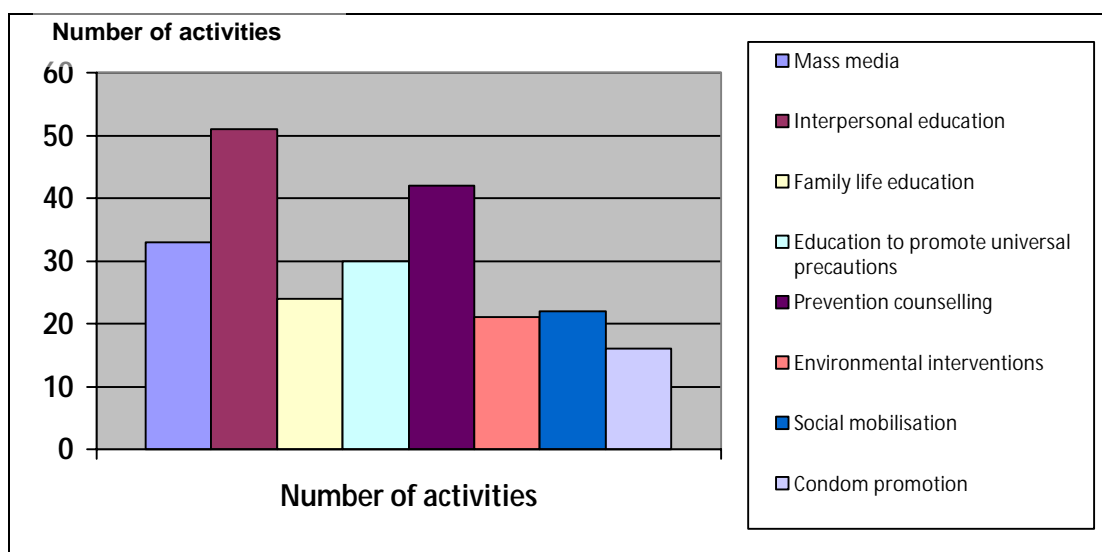
The activities most frequently listed by prevention implementers were identified as priorities in the NSP, as follows:

- Provide Behavior Change Programmes (PLHIV, adults, youth, women, men, girls and boys) – *interventions affecting knowledge, attitudes and beliefs, including the provision of peer education and HIV/AIDS education*
- Provide VCT/HTC services – *hybrid interventions*
- Provide PEP services – *hybrid interventions*
- Provide PMTCT services – *biological interventions*
- Provide STI services – *biological interventions*

4.3.1 Category 1: Interventions affecting knowledge, attitudes and beliefs and influencing psychological and social correlates

Within the interventions affecting knowledge, attitudes and beliefs and influencing psychological and social risk correlates; interpersonal education and persuasion programmes were the most common among implementers with 51 activities (21%) of the 239 activities of this category (figure 35). They include activities such as peer education training, drama and training and using outreach workers. Training peer educators is very common among implementers as an intervention that uses peers to help change risky behaviour. Mass media commonly used among implementers was the radio with many implementers having their own slots on radio and those from the public sector collaborating with the Health Education unit on radio programmes and IEC materials distribution.

Figure 35: Breakdown of interventions affecting knowledge, attitudes & beliefs in Swaziland (2008)

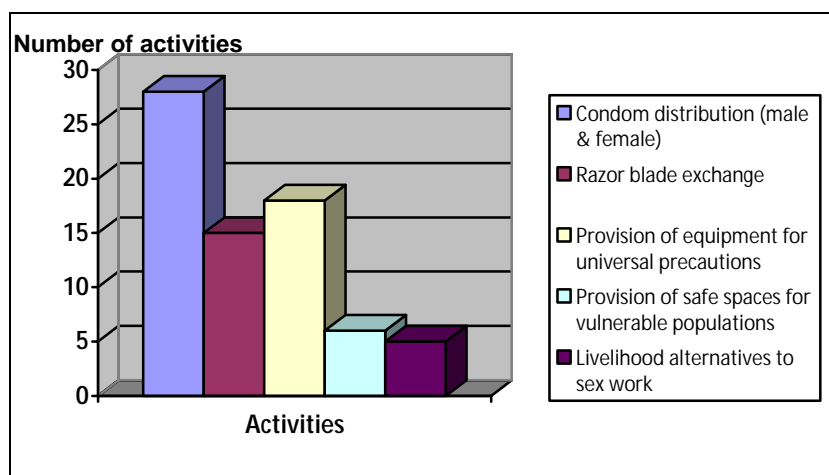


Source: HIV Prevention Review Report, June 2008

4.3.2 Category 2: Risk reduction (lowering risk of a behaviour, but not eliminating the behaviour)

The most common HIV prevention risk reduction activity was condom distribution. Razor/scalpel exchange refers to the many programmes in Swaziland to train traditional healers and their clients to bring their own razor for scarification which is used once only and discarded. Figure 36 shows the breakdown of activities in this category.

Figure 36: Breakdown of risk reduction activities in Swaziland (2008)



Source: HIV Prevention Review Report, June 2008

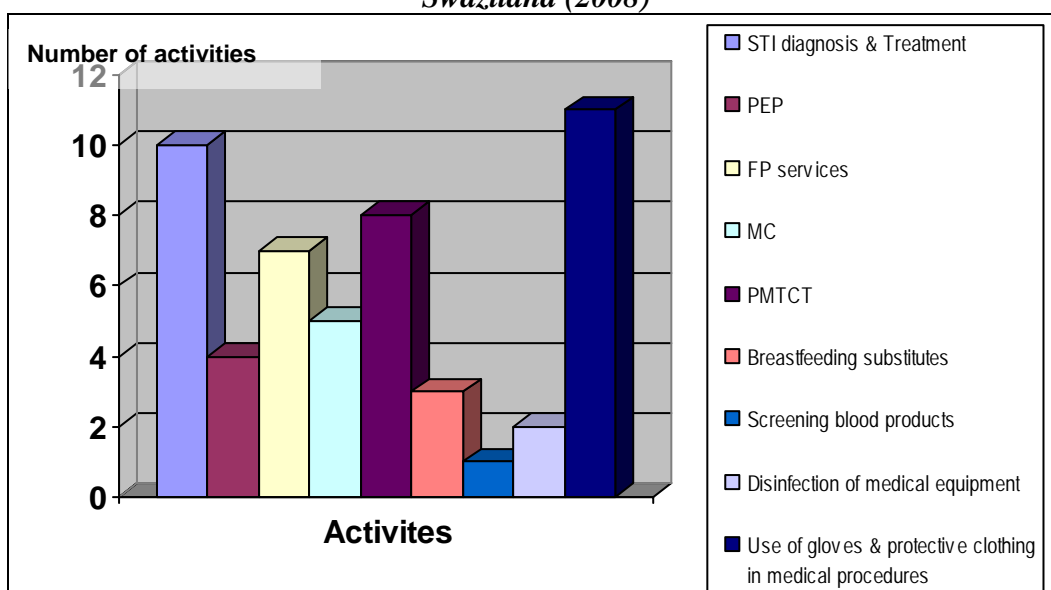
These data are corroborated by the fact that **male and female condom distribution increased substantially in 2007**. Male and female condom distribution rose in the fourth quarter of 2007 to 3,390,400

male condoms compared to 1,790,700 in the third quarter and to 51,022 from 39,709 female condoms. 93% health facilities had condoms in stock during the 4th quarter (MOHSW 4QSR). NERCHA's 2nd Quarterly Service Report (2006/07) recorded the number of condoms distributed in the first two quarters from January to June 2007 at 1,636,169 male condoms and 24,522 female condoms.

4.3.3 Category 3: Biological/biomedical interventions that reduce HIV infection and transmission risk

In this category, use of gloves and protective clothing in medical procedures in health care programmes was the most frequent activity, followed by STI diagnosis and treatment, PMTCT (including breastfeeding substitutes), FP services, post exposure prophylaxis and male circumcision (MOHSW 4th QSR 2007) – see figure 37.

Figure 37: Biological/ biomedical interventions that reduce HIV infection and transmission risk in Swaziland (2008)



Source: HIV Prevention Review Report, June 2008

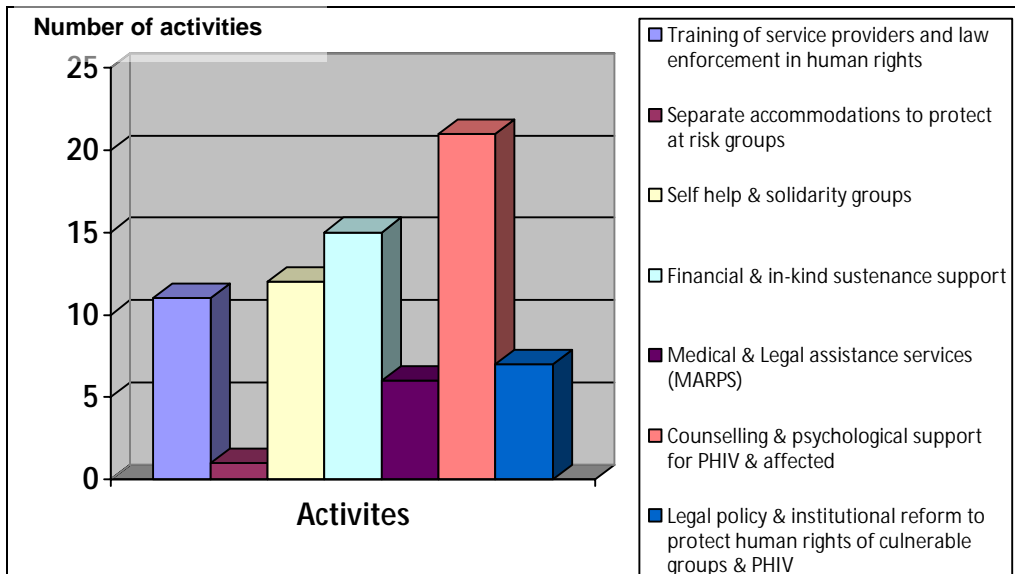
4.3.4 Category 4: Mitigation of Barriers to Prevention and Negative Social outcomes of HIV (includes environmental interventions)

In this category, counselling and psychological support for PLHIV and those affected, as well as training programmes to raise awareness on the rights of vulnerable groups, featured prominently (NERCHA, 2006) - see figure 38.

Different modes of delivery were used for counselling and psychological support for PLHIV and those affected: *face-to-face, workshops, support groups, counselors, peer counselors* and *other mechanisms*. Financial and in-kind sustenance support (backyard garden materials and seedlings) was offered to PLHIV and caregivers. There were also social dialogues, policy advocacy drives and lobbying for change.

There were no programmes focusing on gender equality or economic empowerment (more structural-type interventions).

Figure 38: Mitigation of barriers to prevention & negative social outcomes of HIV infection (2008)



Source: HIV Prevention Review Report, June 2008

4.3.5 Category 5: Mitigation of biological outcomes of HIV Infections

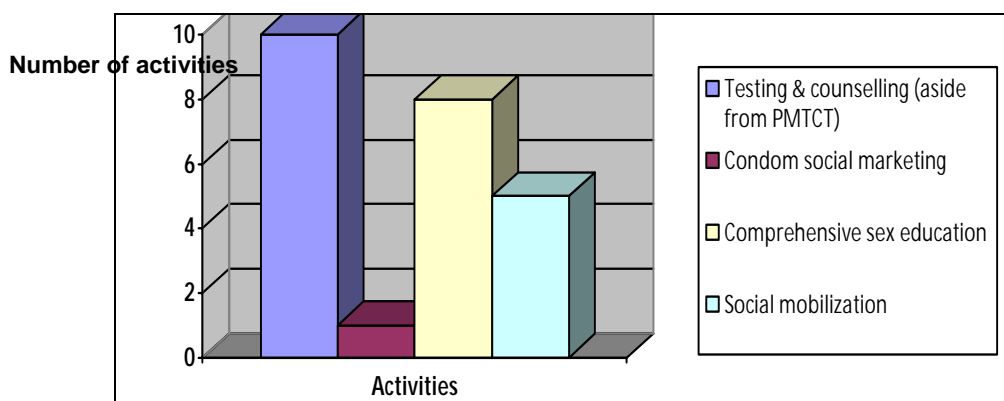
Within this category, HIV/TB treatment services and other opportunistic infections were undertaken with the same frequency. One of Swaziland’s major successes has been to increase the proportion of persons diagnosed with TB who are tested for HIV from below 50% in 2005 to 100% in 2008.

4.3.6 Category 6: Standardized hybrid interventions

In this category, activities carried out by implementers were testing and counselling, condom social marketing, comprehensive sex education and social mobilisation (figure 39). Testing and counselling was the most common with health-worker initiated and clinic-based testing taking place most frequently. Training was provided in testing and counselling. Comprehensive sex education was offered by a number of implementers, through workshops, church classes, face to face interactions and media. Those targeted were out of school youth and church leaders through mechanisms such as concerts, walks, theatre and workshops.

VCT/HTC has been scaled up since its start in 2002 to 119 sites. These services have also been integrated into outreach services by government and NGOs to increase access. The 4th Quarterly Service Report of the MOHSW observed an increased number of people being tested. This helps address the secrecy and denial of HIV infection; disclosure and acceptance are discussed in counselling. Condom social marketing which also falls within this category is important since it addresses low condom use, by familiarizing people with condoms and their use.

Figure 39: Standardized hybrid interventions in common use in Swaziland (2008)



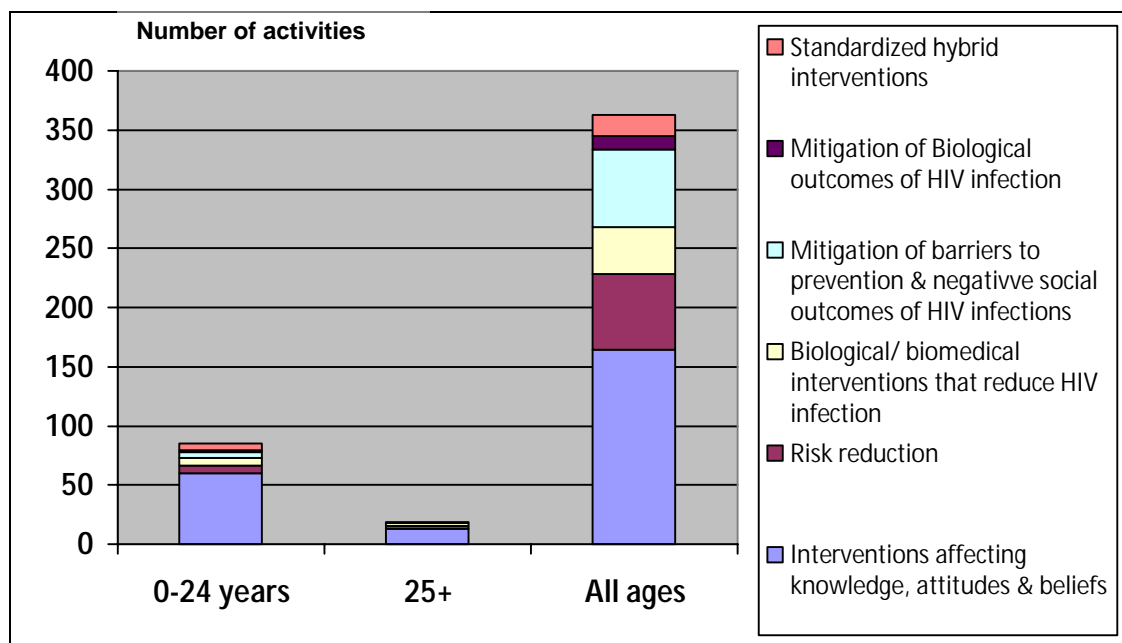
Source: HIV Prevention Review Report, June 2008

4.4. Targeting of HIV prevention programmes

4.4.1 Targeting by age group

Very few programmes focus on targeting adults older than 25. Serving all ages with interventions was found to be common among implementers except for those few whose mandate is to target youth (figure 40).

Figure 40: Targeting by age in Swaziland (2008)



Source: HIV Prevention Review Report, June 2008

There is very little evidence of sex-specific targeting by service providers of prevention interventions (table 5).

Table 5. Targeting of HIV prevention programmes by sex of beneficiaries, by different sectors, 2008)

Target (sex)	Number of activities					
	Civil society	FBO	PLHIV org.	Public sector	UN agencies	TOTAL
Female only	5	0	0	3	0	8 (1%)
Male only	2	0	0	3	0	5 (1%)
Mixed female/male	329	25	5	85	6	450 (98%)
TOTAL	336	25	5	91	6	463

Source: HIV Prevention Review Report, June 2008

4.5. Geographical coverage of HIV prevention programmes

There was a marked increase in the number of persons reached in 2007 compared to 2006, especially in Hhohho region. Implementers of prevention programmes could not give specific numbers and details on their beneficiaries, but the QSCR Q4 2007 of NERCHA listed persons reached by region for 2006 and 2007 (Table 6):

Table 6. Number of people being reached with HIV prevention programmes in Swaziland (2008)

REGION	Total population	In-School Youth	Out-of-School Youth	Adults	Unspecified	Total 2007	Total 2006
Hhohho	282 734	7 249	6 645	7 132	18 334	79 988	14 974
Lubombo	207 731	4 552	104	15 675	-----	29 684	9 499
Manzini	319 530	154	810	3 768	-----	35 033	14 979
Shiselweni	208 454	6 782	3 685	5 095	-----	49 395	19 397
TOTAL	1 018 449	18 737	11 244	31 670	18 334	194 100	58 849

Sources: Brochure population census 2007; SHAPMoS October-December 2007; data extracted from SHAPMoS database on 18 February 2008

The MoT data collection efforts from implementers provided the following coverage data (activities by sector and region) – see table 7:

Table 7. Percentage activities by each sector in each region in Swaziland (2008)

Sector	FBO	NGO	PLWHA	Private	Public sector	UN agencies	Total
Hhohho	0	2.3	0	0	1.4	0	3.7%
Lubombo	2.4	1	1.3	0	0.1	0	4.8%
Manzini	4.2	2.5	0	0	2.1	0	8.8%
Shiselweni	4.6	5.3	0	0	0	0	9.9%
National	11.6	32.2	5.8	2.8	19.5	1.5	73.4%
TOTAL	22.8%	43.3%	7.1%	2.8%	23.1%	1.5%	100%

Source: HIV Prevention Review Report, June 2008

NOTE: The data in Table 7 are influenced by the sampling which did not include small scale, local efforts by CBOs. Note that the highest proportion was at national level and yet there are some overlaps in all the regions. Most efforts are national in scale.

4.6. Key messages in prevention programmes

The review analysed the alignment of prevention messages with the guidance provided by the Swaziland National Behaviour Change Promotion Strategy (2006-2008) (NBCPS). A large proportion of messages focused on the ABCs of safe sex practices, but there were also messages relating to STI treatment, male circumcision and many other prevention areas (see **Annex 6** for a detailed listing of all HIV prevention messages). The messages suggest the need to work with implementers in developing clear and targeted messages. Some messages were not consistent with the NBCPS, such as those on delay of sex, positive prevention, universal precautions, natural remedies and male circumcision.

The NBCPS advocates clear and consistent messages about HIV prevention and desired behaviours, and avoiding negative statements about existing HIV prevention methods (abstinence, faithfulness to an HIV negative partner, condom use). It also stresses that target groups need to be empowered to understand their personal risk, not only general biological or population risk. General information to bear in mind when developing messages are:

- Risk behaviours such as multiple partnering are partially rooted in value systems
- Gender disparities and gender-based violence fuel the HIV and AIDS epidemic
- Stigma and discrimination against PLHIV prevent adoption of HIV prevention behaviour

The MoT review team also looked at promotion materials used within the MC campaign in Swaziland and was concerned that some billboards⁵⁶ might promote a sense of disinhibition. The country's MC-related IEC materials require review in order to safe-guard against and minimise potential behavioural disinhibition of newly circumcised men.

4.7. Perceived outcomes of HIV prevention programmes

While many prevention implementers do not regularly evaluate their programmes, they said they saw desirable change in their target groups, such as increasing numbers of people coming to their workshops, increased distribution of condoms, unsolicited invitations from churches, youth in church now vocal in HIV/AIDS discussion forums, and more people seeking VCT.

4.8. Availability of Strategic Information for HIV prevention programmes

4.8.1 Current range of strategic information

Planning, coordination and decision making at policy level require accurate, useful and timely information from all sectors. Strategic information also needs to inform and guide implementation of the response so that it is targeted, effective and responsive to changing needs (Whiteside *et al.* 2006). Swaziland established a national M&E system for HIV and AIDS in 2005 guided by a framework and operational plan developed in collaboration with all stakeholders (NERCHA, 2006). The system tracks progress towards the NSP objectives using national indicators described in a national M&E framework and integrates information from all sectoral M&E systems. The system's implementation is coordinated by a national unit at NERCHA in collaboration with the national HIV M/E technical working group. Quarterly HIV Service Coverage Reports are produced by the MOHSW (health sector M&E) and by NERCHA (national M&E) which reflect the HIV and AIDS services formally provided in Swaziland (MOHSW, 2008 and NERCHA, 2008a). The National M&E system provides crucial strategic information which enables the country to plan and implement proactively, and to track results.

Periodic, participatory national assessments of the national HIV response are conducted in NSP joint reviews. These assessments, spearheaded by NERCHA, cover response capacity and needs in both governmental and non-governmental sectors. They are informed by literature and community consultations to ensure specific targeting of the subsequent interventions defined in plans and strategies.

NERCHA currently collects biological and behavioural surveillance data, programme monitoring data and does periodic assessments and research. **Annex 7** contains more details on the strategic information collected currently that is beneficial for the HIV response.

4.8.2 Gaps in Strategic Information

There are very limited data about the *quality* of HIV prevention services. Many community-based HIV prevention programmes have not set quality standards against which to measure programme implementation quality. There is too little information about which HIV prevention programmes work in the Swaziland context (i.e. impact and outcome evaluations, operations research and other scientific studies). Also, only one round of the BSS has been conducted – without subsequent rounds, it is not possible to track changes in risk behaviours in high risk groups. Research studies on sexual networking patterns to understand the distribution of risk among the general population and ethnographic studies to better understand the opportunities to promote social change are lacking in the country.

The Joint Assessment of the HIV M&E system in Swaziland (2008) noted the lack of an inventory of surveys and research conducted. It also identified as a weakness the fact that M&E Plan indicators, GFATM

⁵⁶ Message FLAS/IPPF billboard: "Get circumcised & reap the benefits"

indicators and NSP indicators are not fully harmonized. In addition, key informants on policy-level issues in this review indicated that NSP objectives are not time bound, which limits measurement of the extent to which targets are met.

Finally, the approximate size, sexual mixing patterns and HIV prevalence of populations with high risk behaviours (sex workers, clients of sex workers, IDU and MSM populations and their steady partners) is unknown (although these behaviours are not major factors in the epidemic in Swaziland).

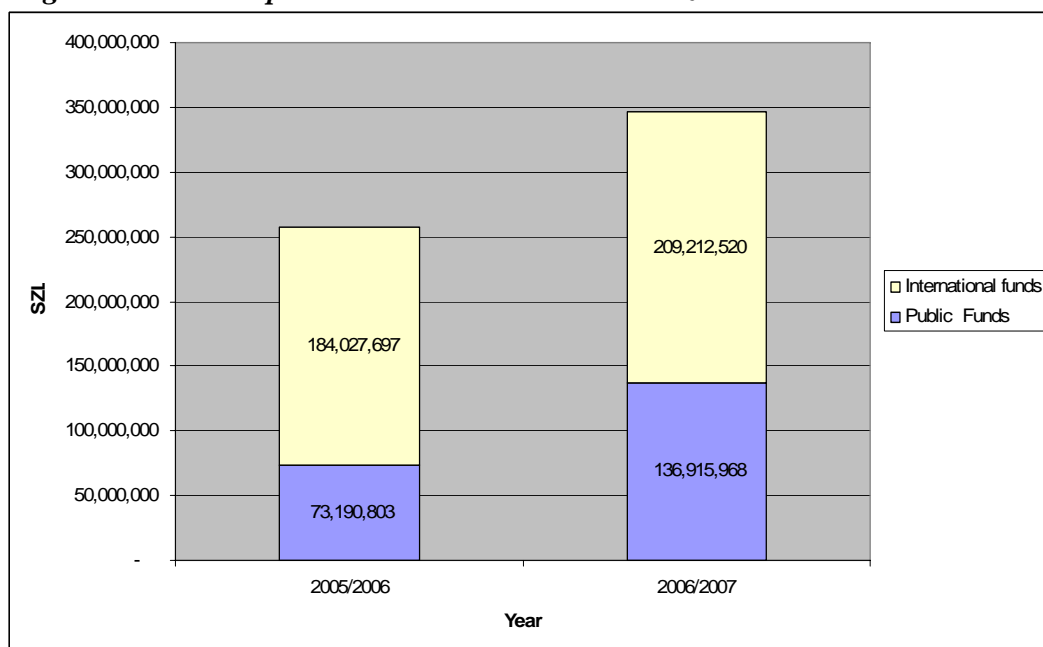
4.9. Resources for HIV prevention programmes

This section addresses spending patterns for different prevention activities (the fourth component of the MoT study on resources for HIV prevention). It relies fully on the findings of the recent National AIDS Spending Assessment (NASA), in which prevention spending was tracked from mid 2005 to mid 2007 (NERCHA/UNAIDS, 2008a).

4.9.1 Overall spending on HIV

Total spending on HIV in Swaziland has increased in the past 2 years, and spending on HIV prevention is the 3rd highest expenditure category. Spending on HIV and AIDS has continued to rise over the years with government being called upon to increase allocations to meet the demands for prevention and treatment. Human resources required to implement HIV and AIDS activities also poses a challenge to the response. Total financial expenditure on HIV and AIDS (from local and international sources) rose from SZE 257 million in 2005/06 financial year to SZE 341 million in 2006/07 (an increase of SZE 80 million, or around USD 10 million) – see figure 41. The NASA highlighted that the main funders of the HIV response were international donors (53%) followed by the public sector (41%); a small proportion comes from the private sector (6%).

Figure 41. Total expenditure on HIV/AIDS in Swaziland 2005-06 and 2006-07



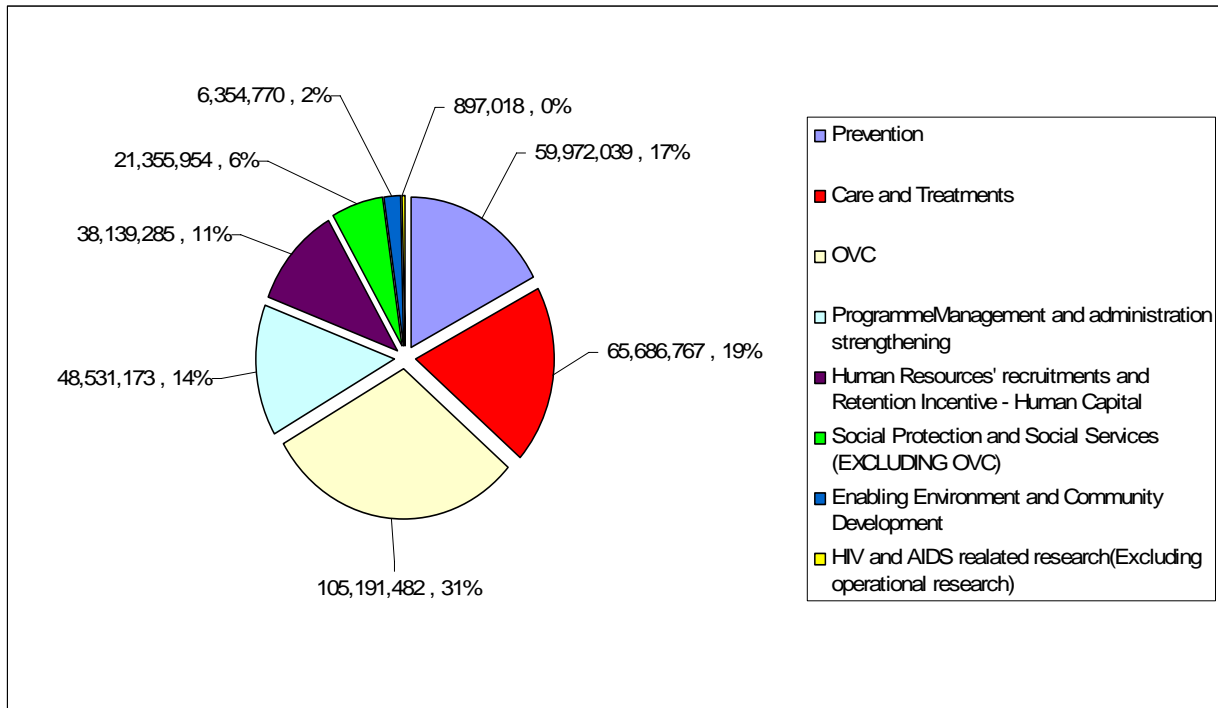
Source: NASA report 2006/07

4.9.2 Percentage HIV response funding to HIV prevention

The largest proportion of funding has been spent on OVC (31%), followed by care and treatment (19%), and prevention (17%). Actual HIV prevention spending was more than planned. Very little funding has been spent on HIV and AIDS related research (less than one percent) – see figure 42. It is also interesting to note the differences between planned budget and actual spending in the different HIV

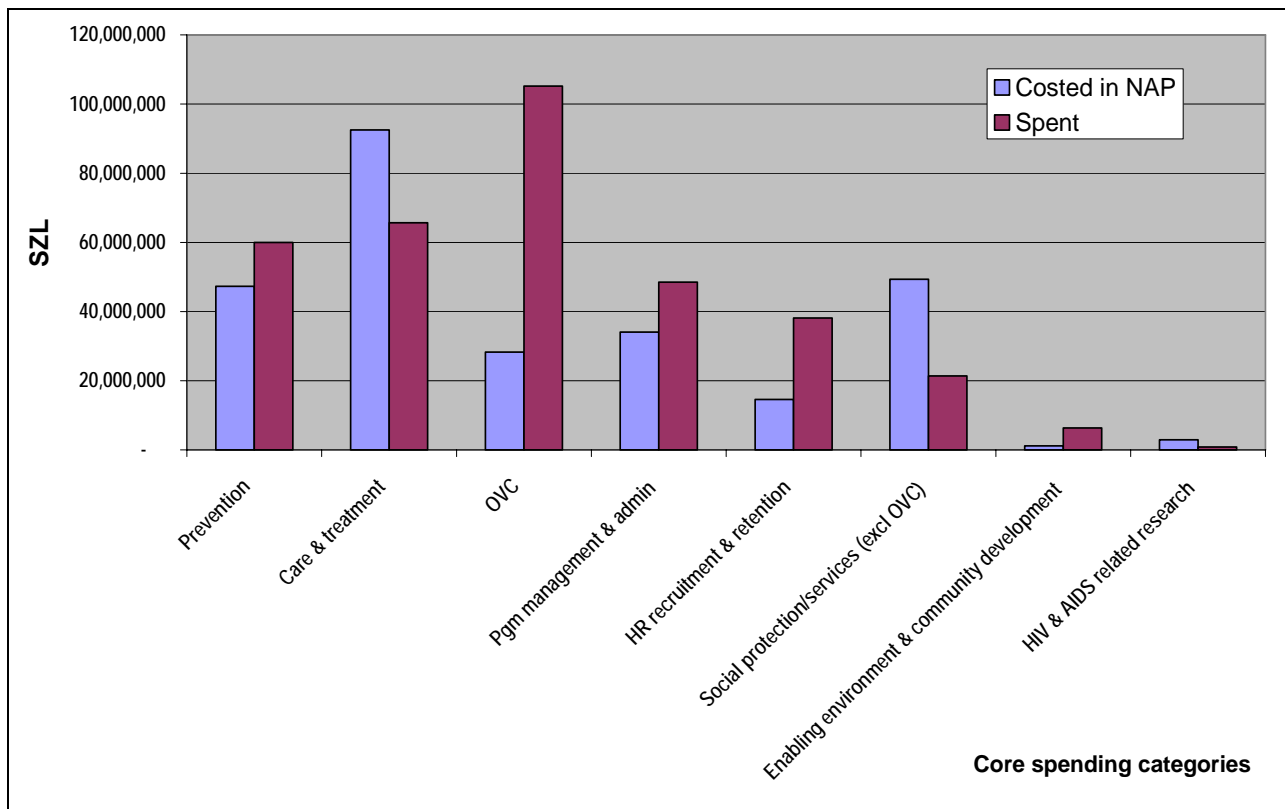
spending categories – in year 2006-07, actual spending on HIV prevention was more than planned according to the NAP (figure 43). However, actual expenditure on HIV prevention fell slightly from 2005-06 to 2006-07 (from USD 9.1 million to USD 8.5 million).

Figure 42. Proportional overall spending priorities in 2006/07 financial year from all sources in Swaziland



Source: NASA report 2006/07

Figure 43. Comparison between HIV/AIDS spending and costed NAP 2006/07 for Swaziland

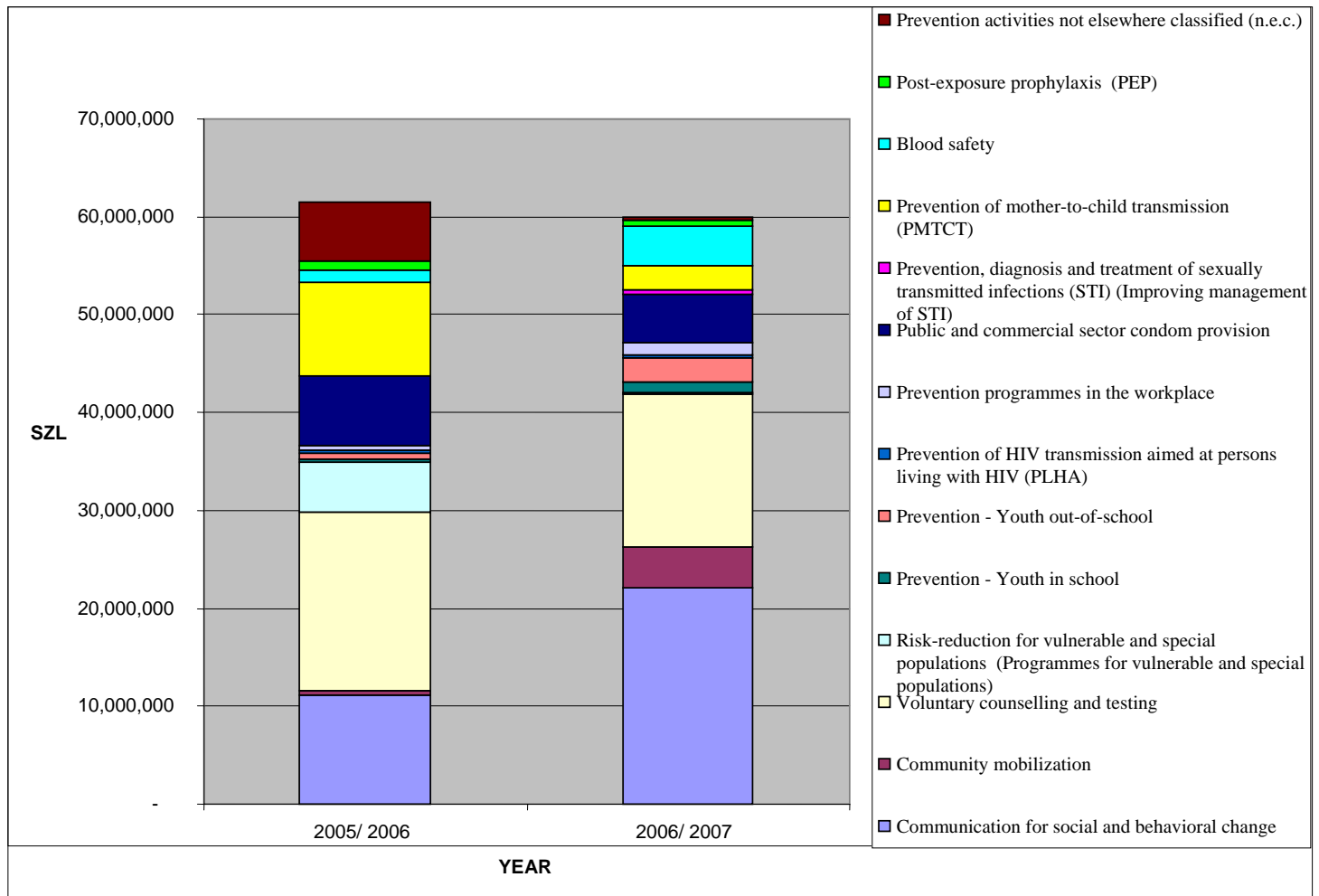


Source: NASA report 2006/07

4.9.3 Expenditure by type of HIV prevention programme

Between the two financial years, funding spent on different types of HIV prevention activities changed: funding for some kinds of activities increased dramatically (e.g. communication for social and behavioural change and community mobilisation), whilst funding for other kinds of activities decreased dramatically (PMTCT, risk reduction for vulnerable populations, and voluntary counselling and testing). Funding for some of the other activities remained more or less the same or showed small differences (e.g. PEP, workplace HIV programmes and prevention activities for in-school youth). (Figure 44.)

Figure 44. Comparison of preventive activities spending between 2005/2006 and 2006/07 in Swaziland



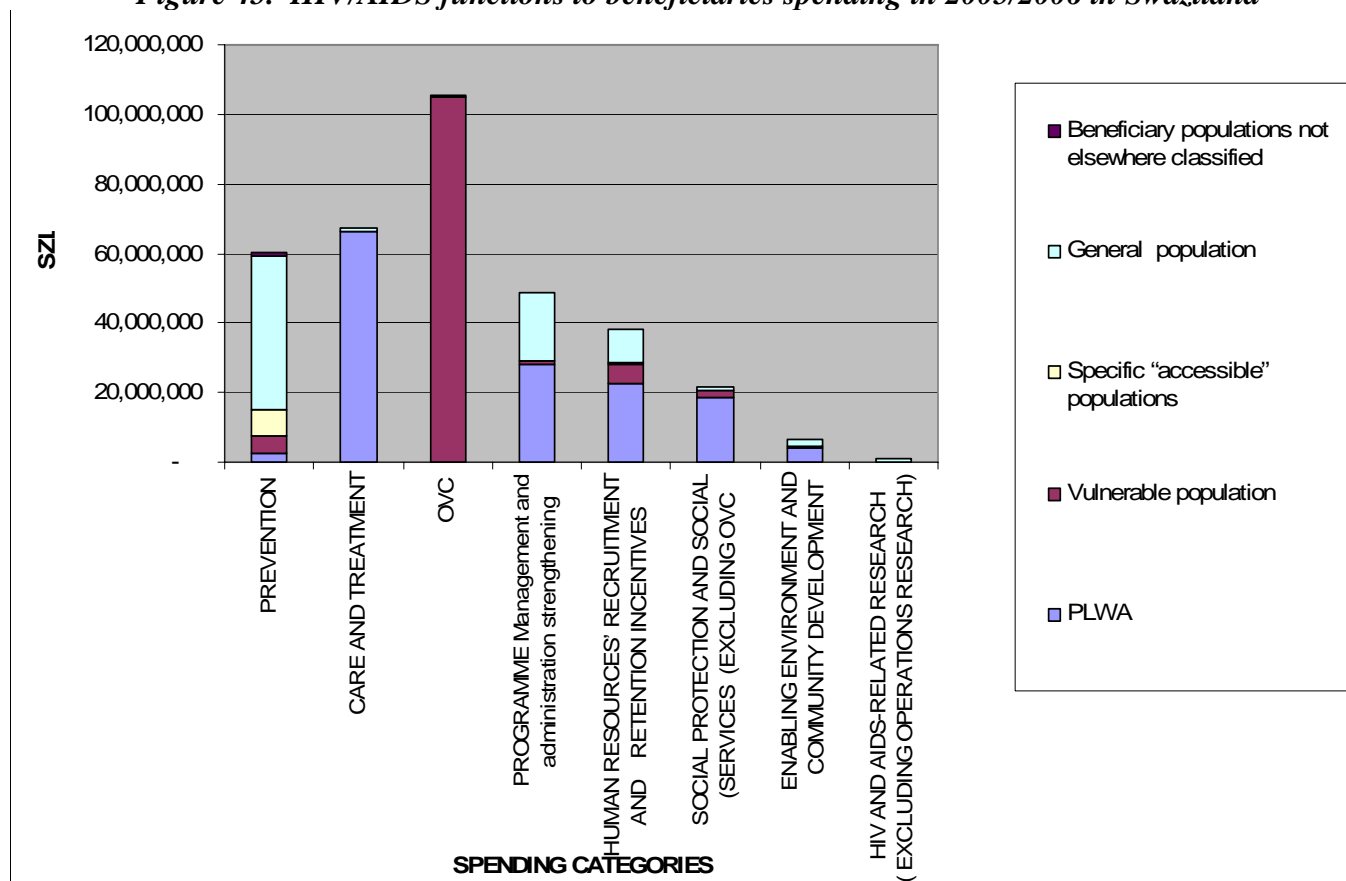
Source: NASA report 2006/07

4.9.4 Spending on enabling environment, on community development activities and to specific beneficiaries

Total spending on enabling environment and community development activities almost doubled between the two financial years – from USD 460 K in 2005-06 to USD 908 K in 2006-07. This includes spending on advocacy and strategic communications, human rights, AIDS-specific institutional development, AIDS programmes focused on women and other enabling environment activities not mentioned above.

In 2006/07, the NASA results showed that actual spending on prevention activities was more directed to the general population, and few preventive activities were done with PLHIV. There were no programmes specifically directed at older adults, women, or other vulnerable populations (figure 45).

Figure 45. HIV/AIDS functions to beneficiaries spending in 2005/2006 in Swaziland



Source: NASA 2005/06 – 2006/07

4.10. KYR Synthesis: A Summary

ENABLING ENVIRONMENT FOR HIV PREVENTION

Whilst Swaziland has made progress in developing or amending **laws, policies, guidelines and statutes** to improve the enabling environment for HIV programmes, barriers remain to the successful implementation of these policies and guidelines: underlying traditional and cultural factors, laws and norms perceived by society, existing gender inequality, and increasing domestic and gender-based violence continue to make it difficult for women to protect themselves from HIV infection.

Two reports (UNGASS 2008 and WLSA study 2005) concurred that legislation and related policies are not yet implemented – laws are still very much ‘on paper’ and do not impact people’s lives.

In terms of **general leadership** around HIV prevention, there is a general sense amongst community leaders that leadership structures do not spend enough money on HIV prevention, not set a good example in their personal behaviour/ sexual practices, do not do enough to oppose bad treatment of PLHIVs and do not protect women and children from abuse.

Swaziland has a stated intention to provide **universal access** to HIV prevention, **mobilise resources** and **build capacity** for HIV prevention, and to make HIV prevention truly **multisectoral**; more needs to be done to realize this.

Some policy level key informants observed that **NERCHA’s** service implementation role may cloud its **effectiveness as a coordination structure** for a comprehensive, relevant and scaled-up HIV prevention response.

IMPLEMENTATION OF HIV PREVENTION PROGRAMMES

Most implementers of HIV prevention programmes are civil society organisations (NGOs and FBOs - 65%), followed by public sector organisations.

The **range of HIV prevention programmes** in Swaziland was classified using a six-category classification developed by UNAIDS (the glossary of terms at the start of the report explains each of the categories in detail), as follows:

Category 1. Interventions affecting knowledge, attitudes and beliefs and influencing psychological and social risk correlates: This refers to all mass media, interpersonal education-related interventions intended to change attitudes and/or behaviour of the population regarding HIV/AIDS.

Category 2. Risk reduction – all programmes that intervene to lower risk of behaviour.

Category 3. Biological/ Biomedical interventions that reduce HIV infection and transmission risk

Category 4. Mitigation of barriers to prevention and negative social outcomes of HIV infection

Category 5. Mitigation of biological outcomes of HIV infection - includes HIV/TB treatment services, HIV related opportunistic infection prophylaxis and treatment, and treatment of Hepatitis.

Category 6. Standardized hybrid interventions in common use - includes testing and counselling (aside from PMTCT), condom social marketing, comprehensive sex education and social mobilization.

Most activities (51%) that were implemented, focused on category 1 (interventions affecting knowledge, attitudes and beliefs and influencing psychological and social risk correlates). The table below summarises the range of HIV prevention interventions in Swaziland implemented in the past 12 months:

Table 8. Summary of the range of HIV prevention programmes in Swaziland (2008)

Categories	Type(s) of HIV prevention programme(s) in this category implemented most frequently
1. Knowledge / attitude change	Interpersonal communications Mass media campaigns
2. Risk reduction	Condom distribution and provision of equipment for universal precautions (particularly during traditional scarring)
3. Biomedical interventions	Use of gloves and other protective equipment in hospitals STI diagnosis and treatment PMTCT
4. Mitigation barriers	Psychosocial support for PLHIV and their families Financial and in-kind support for PLHIV and their families
5. Mitigation biological outcomes	HIV-TB treatment services (HIV testing for people with TB) Treatment of opportunistic infections
6. Hybrid interventions	HIV testing and counselling Condom social marketing Comprehensive sex education and social mobilisation

Target audiences: most prevention programmes focused either on youth or on the general population. Very few programmes focused on adults 25 and older as a specific target audience. Also, most programmes focused on men and women as a single audience, and did not develop separate messages or programmes for men or women.

Geographic coverage: most programmes seem to have a national reach and few programmes focused on one region only (probably because of the relatively small size of Swaziland and ease of moving from one part of the country to another, and because HIV rates are so high in every part of the country).

Types of messages: the majority of messages focus on the ABCs of safe sex practices, but there were also messages promoting STI treatment and male circumcision.

STRATEGIC INFORMATION FOR HIV PREVENTION PROGRAMMES

NERCHA coordinates the implementation of a national HIV M&E system. **Although significant amounts of strategic information are available, there are information gaps on behaviours amongst specific vulnerable populations and from studies such as BSSs, coordinated HIV research, and quality assurance studies.** More information is also needed about the target audiences for specific HIV prevention programmes.

FUNDING FOR HIV PREVENTION PROGRAMMES

HIV prevention was an expenditure priority, but not the highest – it was the 3rd highest expenditure category (17% of total expenditure), after OVC and treatment. Actual HIV prevention expenditure in 2006-07 was higher than budgeted, but actual expenditure dropped between 2005-06 and 2006-07.

Expenditure on specific types of HIV prevention programmes changed over the two years of the NASA assessment, with greatly increased spending on social and behavioural change, mostly targeted to the general population. Between the two financial years, spending on different types of HIV prevention activities changed: funding for some kinds of activities increased dramatically (e.g. communication for social and behavioural change and community mobilisation), whilst funding for other kinds of activities decreased dramatically (PMTCT, risk reduction for vulnerable populations, and voluntary counselling and testing). Funding for most other activities remained more or less the same or showed small differences (e.g. PEP, workplace HIV programmes and prevention activities for in-school youth). Most funding for HIV prevention reached and was targeted at the general population, not at a specific higher-risk or vulnerable population.

CHAPTER 5. LINKING THE RESPONSE TO THE EPIDEMIC

5.1. Are HIV prevention policies based on the latest available evidence and global best practice?

The review looked at 12 key areas of prevention and analyzed whether existing policies address these areas, and global evidence that supports the 13 interventions (table 9).

Table 9. Selected prevention areas, global evidence and inclusion in national policies in Swaziland (2008)

Intervention/ Programme Area	Global evidence ⁵⁷		HIV prevention policies that address the intervention
	Impact at population level	Impact at individual level	
1. Abstinence	Temporary impact on young people through delayed debut. Most HIV infections occur in adults, when abstinence has less relevance. More rapid HIV acquisition in young adults observed ("catch up")	When observed, 100% effective	<ul style="list-style-type: none"> • National HIV & AIDS Policy • Health Policy (Health education & SRH sections) • Youth Policy
2. Be faithful / Partner reduction	Appears to have been key to reduced incidence and prevalence in Uganda, Kenya, Zimbabwe, urban areas of Ethiopia and Malawi	100% effective IF fully maintained by two HIV-negative people (or in a polygamous union)	<ul style="list-style-type: none"> • National HIV & AIDS Policy • Health Policy (Health education & SRH sections) • Marriage Act <p>Multiple concurrent partnerships & sexual network issues not sufficiently addressed</p>
3. Condoms, male	Have contributed to HIV decline in some generalized epidemics, but no evidence of primary role (consistent use has not reached sufficient level, despite years of promotion)	80-90% protective if consistently & correctly used. When most transmission occurs in "steady" couples, consistent use is exceedingly difficult	<ul style="list-style-type: none"> • National HIV & AIDS Policy • Health Policy (Health education section, SRH section) • Youth Policy • HTC Guideline • Condom distribution strategy (zero draft)
4. Condoms, female	Contribute to number of protected sex acts where available	Highly protective against HIV, STIs and pregnancy	<ul style="list-style-type: none"> • National HIV & AIDS Policy • Condom distribution strategy (zero draft)
5. STI treatment	Five of six trials showed no impact of STI treatment on HIV incidence (only targeted bacterial STIs, and missed asymptomatic infections)	STI treatment provides benefits to the individual and remains important for public health (but not as HIV prevention measure)	<ul style="list-style-type: none"> • Health Policy • STI Guideline
6. HSV-2	Recent evidence (two RCTs) on preventing HIV acquisition by treating HSV-2 is discouraging.	Recent infection with HSV-2 doubles the risk of HIV transmission. Recent infection with HSV-2 is more risky than chronic infection.	<p>NOT COVERED</p> <p>Potentially an important contribution to HIV prevention, relies on further research into HSV-2 suppression to assess HIV impact</p>

⁵⁷ Adapted from SADC (2006) and Potts *et al.* (2008).

Intervention/ Programme Area	Global evidence ⁵⁷		HIV prevention policies that address the intervention
	Impact at population level	Impact at individual level	
7. Male circumcision	Strong observational & biological data on protective impact at population level; three RCTs stopped early due to high efficacy of MC. Over time, may protect more women (indirectly) than any other intervention. Potentially an effect of "herd immunity" if enough men circumcised.	50-75% protective for men, possibly some direct protection for women; many other health benefits for males (reduces penile cancer, phimosis, some STIs,) & females (reduced risk of cervical cancer). One-time procedure that confers lifelong partial protection.	<ul style="list-style-type: none"> • MC Policy (draft)
8. Counselling & testing	Little population-level impact shown, although essential as an entry point to care and treatment, and for PMTCT	Some behaviour change shown in discordant couples and in HIV-positive clients	<ul style="list-style-type: none"> • National HIV & AIDS Policy • Health Policy • HTC Guideline • PMTCT Guideline
9. Behaviour change interventions for young people	Strongest evidence for behavioural impacts of: Radio and other media, TV/radio and other media; certain designs of curriculum-based sex- & HIV education effective for youth in school when adult led	Increased individual access to youth- (and gender-) friendly health services shown to be important for general SRH.	<ul style="list-style-type: none"> • Youth Policy
10. Preventing Intergeneration al sex	Rates of HIV in young women correlate with wider age disparity in relationships; data not available at population level on effectiveness of strategies	Young women more susceptible to infection, un-empowered to insist on condom use or to protect self from sexual abuse	<ul style="list-style-type: none"> • Girls and Women's Protection Act (if age<15 years, but not otherwise) • Marriage Act (indirectly as adultery is a criminal offence in civil rites marriage) • Youth Policy (delaying sexual debut)
11. Preventing sexual violence	Likely contribution of sexual violence to HIV transmission, though population level impact not known	Forced sex likely to confer higher HIV risk due to tearing, etc; Violence often sparked by accusations of infidelity - partner reduction therefore an indirect prevention measure	<ul style="list-style-type: none"> • Sexual Offences Bill (draft) • Gender Policy (draft)
12. ARV chemo- prophylaxis	No RCT undertaken of impact of ART on HIV transmission, but viral load is very low and this correlates with low infectivity. One observational study found 50% reduction of HIV transmission in discordant couples on AZT alone	Risk if individuals stop ART of rapid viral load increase that could mean high infectivity	<p>NOT COVERED</p> <p>Need "proof of concept" and feasibility of intervention study (underway). Several challenges to address in using ART for HIV prevention: cost, need for VCT, health infrastructure; may increase behavioural risks; and, if adherence is suboptimal, could increase drug resistance as well as reduce impact on prevention as viral load rises</p>

Based on the policy analysis and the review of prevention programmes, it can be said that:

Swaziland's prevention strategies regarding promotion of abstinence in adolescents, condom provision, treatment of STIs, promotion of counselling and testing, PMTCT and blood safety are covered by national policies and emulate international best practice. Delivery of services under these initiatives may not be optimal, but in principle, these areas are being addressed according to the latest international standards.

The new evidence about male circumcision was released after the current NSP became effective, but already there have been initiatives on training, promotion and delivery of male circumcision, and a draft MC policy is available.

National strategies and prevention policies do not fit with the epidemiological evidence in the sexual behaviours that are targeted and the messages to promote changes in behaviours and social norms:

- The evidence indicates that heterosexual transmission among those with one reported sexual partner is the most important source of new HIV infections. This involves a wide swath of married and unmarried individuals – most over the age of 25, who frequently do not know the HIV status of their partner. There may also be secondary longer-term partners involved with whom condoms generally are not used. There do not seem to be many programmes aimed at these couples. The message of key importance, partner reduction, is “drowning” in the many other messages, and multiple concurrent partners (MCPs) and sexual networks are not explicitly addressed in policies.
- Age-disparate relationships (including intergenerational relationships that erode hope that an “AIDS free” generation will grow up) are common. This phenomenon is not properly addressed by policies⁵⁸ and programmes going beyond behaviour change in order to impact social norms which are currently permissive towards such relationships.
- Mobile and migrating people and their partners are clearly more likely to have multiple concurrent partnerships. Migration, alcohol consumption and discordance in couples are three factors which are not addressed adequately within current policies and programmes, although they are important co-factors in the epidemic.

Finally, it needs to be noted that **several important policies remain in draft form** (male circumcision policy, sexual offences bill, gender policy). Overwhelming evidence from more than 45 studies over 20 years shows that male circumcision significantly reduces the risk of heterosexual infection. The policy context and delivery capacity for vastly scaled up male circumcision urgently needs to be created in Swaziland.

5.2. Do HIV prevention policies and programmes respond to the key drivers of the epidemic?

This analysis combines evidence from Swaziland and relevant regional evidence to define important risk factors and drivers of the hyperendemic situation in Swaziland and discuss the appropriate policy and programmatic responses.

1. Lack of male circumcision (92% of men are not circumcised)

The policy framework is currently being created for MC, and an MC Strategy and Implementation Plan has been developed (Marufu & Bock, 2008). FLAS has been conducting MC operations for HIV prevention since 2006 and hospitals have carried out MC for various reasons. SNAP has conducted awareness radio programmes. PEPFAR and MOH are working together to do thousands of circumcisions by end of 2008. In addition to preventing HIV transmission, MC has other health benefits for men and women (Table 9 point

⁵⁸ The Girls and Women's Protection Act covers only age-disparate relationships involving a person below 15 years of age.

7). The review team found that promotional tools for the MC intervention require careful consideration to prevent misinformation and, potentially, disinhibition.

“Male circumcision must be combined with behaviour change, especially promotion of partner reduction and consistent condom use. Over time MC, which has been called a ‘surgical vaccine’, would probably protect more women, albeit indirectly, than nearly any other achievable HIV prevention strategy” (Potts et al. 2008)

2. Multiple partnerships and sexual networks among heterosexual men and women

The policy environment has not responded specifically to this key determinant of the epidemic. Although the “be faithful” part of the ABC strategy has been integrated into several policies and strategies, there is no adequate coverage of MCP behaviours. A national MCP campaign has shown that there is great sensitivity around the issue and perhaps some stigma, but also a tendency to preserve tradition, sexual entitlements and power relations between the sexes. This emphasizes the need to create awareness and understanding among stakeholders and populations that MCP behaviours are a key factor in the epidemic and needs to be addressed publicly and outspokenly. First results of MCP campaigns show encouraging results in men (decrease by approximately half of concurrency in past 4 weeks).

“...we know too little about how to effectively promote partner reduction. But this is no excuse not to immediately increase our commitment to well-evaluated programmes aimed at reducing multiple and concurrent sexual partnerships.... Lessons learned from the successes in reducing population-level HIV prevalence in countries such as Uganda may prove useful..” (Wilson and Halperin 2008)

3. High levels of sexually transmitted infections

The policy context for STI treatment, as well as STI prevention and control, has recently been strengthened with the 2008 Health Policy. Roll-out of provision of STI services has reached all public health facilities, and health workers are being trained in syndromic management based on the National STI Guideline. Although STI treatment remains critical for broader public health programs, the population-level evidence for impact on HIV transmission, especially in generalized epidemics, appears minimal (see Table 10 points 5&6). Treatment of genital herpes (HSV-2) has not shown an impact on HIV acquisition in recent trials. The management of STIs including HSV-2 must remain a priority for the health sector as important in its own right, but there is no evidence that it will reduce HIV incidence at the population level.

4. Priority populations are not adequately targeted by prevention

Current policies do not provide evidence-informed guidance on priority populations for prevention. In turn, programmes are not targeting the sub-populations where most new infections happen. Swaziland has not defined its own most at risk populations (MARPs), i.e. populations in which there is a concentration of risk behaviours that promote efficient HIV transmission that then drive the majority of new infections.⁵⁹ More often than MARPs, relevant documents deal with “vulnerable populations” (youth, OVCs, the bereaved & vulnerable elderly, PLHIV - e.g. 2007 UNGASS report).

Most importantly, almost no activities are targeted explicitly towards **adults, married couples and people in long-term steady relationships (especially those with MCP behaviours, or whose partners have an MCP)**, despite the growing understanding that risk behaviour is highly prevalent in these groups.

Furthermore, there is little sex-specific targeting, despite the epidemiological evidence. The NSP states that all activities should be sensitive to gender, age and disability. However, implementers – possibly based on the notion that this is a generalized epidemic and everybody is at risk - target males and females equally, and mostly all ages combined. There is insufficient awareness among implementers that relatively older

⁵⁹ UNAIDS (2007). Behaviours that put people at greater risk of HIV infection include high rates of unprotected sexual partnerships – especially concurrent multiple partnerships, unprotected anal sex, and injecting drugs with shared equipment and drug preparations (globally, MARPs are people with concurrent multiple sexual partners, including sex workers, clients of sex workers, and MSM, and injecting drug users, and also sexual partners of IDUs, female partners of MSM, and partners of sex workers, since their partners engage in risky behaviour).

people are experiencing higher levels of new infections and need to be specifically targeted with preventive interventions. The SDHS and incidence modelling estimate considerably higher incidence rates in females, and socio-cultural evidence suggests that verification of a man's wealth, standing and manhood is closely tied to his ability to secure women. Programming which is both gender-sensitive and culturally informed should include prevention activities which specifically target men only or women only.

HIV-discordant and concordant positive couples are a critical target for prevention, given the epidemiological evidence. Programmes are not currently geared towards couples although in 45% of couples, at least one of the two partners is HIV positive.

“Migrating” couples have not been a focus of prevention activities, despite the high level of mobility and migration affecting the stability of couples' lives, and the regional, national and company-level epidemiological data unequivocally showing the increased HIV risk of migrating couples (both the partner who migrates and the one who remains at home).

Without a doubt, the **approximately 185,000 HIV-positive individuals in Swaziland** must be prioritized as a target population, those knowing their status as well as those who have not yet accessed HCT. The pre-ART and ART enrolment process provides important opportunities to address prevention interventions to HIV-positive individuals and couples.

With this study, the body of evidence on the comparatively higher HIV risk of **women** has been corroborated with model estimates on incident infections in females. This does not mean that women need to be targeted increasingly – rather that some specific programmes require targeting to men, and some to women. In targeting **youth**, the evidence shows that uneducated, unskilled and out-of-school males should be a priority population for prevention. Several co-factors are clustered in these males, including early sexual debut, comparatively lower condom use, and alcohol consumption.

While the **legal and policy framework** has been strengthened over the past few years, in practice, some laws relevant to HIV prevention, for instance on rights in marriage, estate management and sexual abuse, are inadequate, and inadequately applied and enforced, and may clash with traditional laws. Some new legislation has remained in draft form for a long time. Sexual abuse is largely unreported due to lack of awareness and other reasons. Social affairs units are understaffed at all levels. There is scope to redress these shortfalls, through advocacy and sensitization programmes to build awareness and give “teeth” to legislation, as well as legal support programmes to ensure that vulnerable populations benefit from the rights enshrined in existing legislation.

5.3. Is funding for HIV prevention allocated to where it is most needed?

According to the NASA 2006/07, only 17% of funding was spent on HIV prevention. In a hyperendemic situation with a large HIV reservoir and considerable high-risk behaviour, this seems too little (within this review, no formal costing or cost-effectiveness analysis of prevention interventions has been done). In 2006/07, 31% of funding was spent on OVCs, and 19% on treatment. These two latter categories are undeniably important, and in future, OVC and treatment costs are likely to increase. Therefore, it seems important to integrate (‘mainstream’) prevention activities into other intervention categories. For instance, it has been shown elsewhere that there is a great need to integrate OVC care and support programmes with effective prevention. Equally, it has been observed that ART patients display considerable risk behaviours and that there is not enough emphasis on positive prevention in the ART and pre-ART cohorts. The PMTCT intervention received far less funding in the second NASA year compared to the first, and requires review and improvements regarding resource availability, service access, utilisation, treatment effectiveness and communication strategy (see recommendations). Also, it is important to note that the only way of completely preventing the transmission of HIV post delivery is replacement feeding (which must be made available and affordable for the infants of as many HIV-positive mothers as possible). VCT has little

population impact according to the current global evidence (Table 9) and funding for VCT requires accompanying M&E activities in order to justify the investment.

More HIV prevention funding needs to be spent on programmes for adults in their 30s, 40s and 50s, programmes to change social norms and programmes to support families who are part of or affected by oscillatory migration patterns. The funding for HIV prevention focuses on the general population or youth, and is mostly focused on individual communication or behaviour change programmes.

Expenditure on positive prevention was tiny (NASA category “Prevention of HIV transmission aimed at persons living with HIV”) in both years of assessment. There has been an **increase in funding for community mobilisation activities**, but as yet little evidence that these activities are being implemented.

More funding is needed for strategic information: There is great awareness of the value of strategic information and increasingly, there is a culture of reporting, data analysis, dissemination of information, indicator harmonisation and results- based management. M&E systems for the national response were established within the MOHSW and NERCHA in 2005 and decentralisation of these systems is ongoing. Quarterly Service Coverage Reports on the health sector response and the multisectoral HIV/AIDS response are produced regularly. While the SDHS provides important epidemiological and behavioural information about the general population, there is a lack of such information from less accessible populations like sex workers and MSM. Expenditure for surveillance and prevention-related research has been comparatively small, and important research areas have been neglected.

In order to maintain the low level of new infections arising through **blood transfusions and medical injections**, the funding for the respective services needs to be maintained (according to the NASA, expenditure for blood safety increased in 2006/07 compared to the previous year, expenditure for universal precautions not assessed separately).

CHAPTER 6. RECOMMENDATIONS

6.1. Policy-level recommendations

1. Encourage strong political leadership of the HIV prevention response, and put in place policies and strategies to help bring about a change in social norms and to support families affected by migration patterns.
2. Give more priority and resources to HIV prevention programmes (74% of the adult population is HIV negative); “ring fence” a considerable proportion of the total HIV/AIDS budget for prevention and ensure that planned prevention activities are implemented and evaluated; also promote the inclusion of prevention components into other intervention categories like care & support of OVCs, and ART treatment.
3. Strengthen the legislative environment: Legislation that legalizes marriage at age below 18 needs to be repealed to ensure that both traditional and civil rights marriage below the age of 18 become illegal. Sustained advocacy efforts are required to reach the grass root level aiming at increasing awareness of available statutes and policies that regulate sexual, marital, maintenance and estate management. Passing the Sexual Offences and Domestic Violence Bill into law needs to be facilitated.

6.2. Programmatic recommendations

The next national strategic plan should identify the behaviours that the evidence suggests are driving the epidemic, considering the different levels of the epidemic environment (macro level, intermediate level, micro/individual level) and focus the proposed interventions on the main risk factors and drivers. These interventions must range from advocacy (for instance, to mobilize other sectors to address social and structural factors) to service provision interventions (to address individual and couple level risk factors). Particularly social and structural factors will require strategic or innovative partnerships to harness the capacity of other sectors and development partners.

IMPLEMENTATION OF PREVENTION PROGRAMMES

4. Define married, cohabiting and steady couples as a priority population and implement programmes that focus on them, especially regarding MCP behaviours. This may include the development and marketing of a “healthy couple” service package which includes family planning, STI counselling, diagnosis and treatment, HTC, pre-ART for HIV-infected partners, relationship counselling, education on sexual risk and specific issues pertaining to migrant couples. Other types of programmes to change harmful social norms are also required – such as the zero grazing campaign in Uganda, which was driven by community leaders from all walks of life (*this type of intervention requires a research component in order to generate evidence on “what works”*)

5. Male circumcision is a priority! Pursue the scaling up of male circumcision as a potent biomedical intervention which is complementary to behaviour and social change interventions promoting partner reduction, mutual faithfulness and safer sexual practices.

6. Improve and expand PMTCT: Improve the management options for HIV-infected pregnant women to reduce new infections in infants and to attain the PMTCT access target and help HIV-negative pregnant women to remain uninfected:

- create awareness of the increased risk of HIV infection during pregnancy and promote safer sex during pregnancy;
- strengthen HIV re-screening late in pregnancy;
- increase uptake of PMTCT among women who have tested positive during pregnancy (may require operational research);
- accelerate the replacement of Nevirapine by combination treatment;

- run extensive campaign warning of the dangers of mixed feeding (breast and other foods) for all mothers, regardless of HIV status, and maximize access to replacement feeding of infants born to HIV-positive mothers;
- ensure adequate access to family planning services particularly for HIV-positive women, in order to reduce future MTCT and orphans.

7. Reinforce the family as a social institution: This will include messages on increasing supervision of children by their parents/guardians in order to prevent child sexual abuse, and emphasize the importance of parents'/guardians' love and guidance to pre-adolescents on matters like intergenerational relationships and unsafe sexual practices.

8. Improve access to prevention interventions, including partner reduction messages and condoms, in the following locations in particular:

- high risk areas such as informal urban areas and, migrant labour settlements
- factories employing low-paid women
- rural schools
- in and around tertiary education institutions and University campuses
- peripheral rural populations
- left-out areas in Lubombo and Manzini regions

9. Ensure that behaviour and social change messages used in campaigns:

- Are harmonised, simple and actionable messages to which the audience can relate, informed by formative research and tested with different audiences including members of PLHIV associations
- Use all communication channels, for coverage, repetition and reinforcement
- Focus on individual sense of risk regarding multiple partner behaviours, concurrency, couple discordancy, extramarital relationships and age/wealth disparate relationships
- Actively engage audience and personalise for instance with drama
- Promote the advantages of mutual faithfulness (less stress, less STIs, less expense, less deception, less intimate partner conflict, jealousy and domestic violence, happier family, etc.)
- Address the behavioural “triggers” (e.g. alcohol, peer pressure) that put people at high risk of risk behaviours to help people to avoid or manage them

Frame or “brand” behaviour change effort overall (e.g. “OneLove”) to help people connect the messaging

10. Ensure access to quality STI treatment & prevention, and male & female condoms as basic public health interventions for the control of all infections transmitted through sexual contact.

11. Overall, improve the implementation of HIV prevention activities through (a) improved coordination of HIV prevention activities, (b) improved quality assurance mechanisms (even for community-based HIV prevention programmes), and (c) improved and ongoing research on ‘what works’ in HIV prevention (and disseminate research findings, e.g. male circumcision).

CAPACITY BUILDING FOR HIV PREVENTION PROGRAMMES

12. Train social change facilitators to work at community level with men, women, boys and girls, facilitating community-based processes which address:

- the dynamic nature of norms and culture;
- social responsibility of everybody towards partners, family members, the community and the nation;
- the high level of violence and abuse;
- sexual behaviours and transmission risks; and
- opportunities for social change in the era of HIV and AIDS.

Specialised training for facilitators must cover topics such as community mobilisation techniques, participation in collective community projects, building social capital, social and sexual networks, sexuality as a socially negotiated phenomenon, the collective negotiation of social identities and their power for social change.

(this intervention requires a research component in order to generate evidence on “what works”).

13. Build capacity among implementers of behaviour change interventions on:

- behaviour change theories and the implications for planning activities;
- the importance of tackling concomitantly individual, contextual (including cultural) and structural (services and environmental) factors in order to be effective;
- the approach of cascade training programmes to ensure that the actual providers understand the rationale on which their activities are based; and
- the value of systematically applied, adequately rationalised behaviour change programmes, that take into account the complexity and challenges of sustainable behaviour change.

RESEARCH, MONITORING & EVALUATION TO TRACK EPIDEMIC TRENDS, AND THE QUALITY AND IMPACT OF HIV PREVENTION PROGRAMMES

14. Coordinate and conduct research on ongoing “collective action” approaches like community and social mobilisation interventions for prevention, as well as on ongoing peer education activities. Learn from Swaziland’s successful collective approaches in treatment, care and support (which demonstrate that communities have pulled together on the mitigation aspects of the epidemic) in order to build a prevention/social change movement at community level (and build evidence for ‘what works’ in this field).

15. Track partner reduction and concurrency in strata of the general population over time using qualitative and quantitative studies including using methods like sexual diaries, focus groups and AIDS indicator surveys (there are huge discrepancies in women’s reporting of sexual multiple partners, indicating the need for high-quality research in this area). Research “transactional sex” as a priority cultural and epidemiological factor. Use the results of qualitative assessments to improve the design and wording of quantitative survey questionnaires, regarding popular terminology and understanding of casual sex, partner, relationship, faithfulness, etc. in order to minimise underreporting.

16. Aim to reduce transmission rates among people with advanced HIV infections. Therefore, assess scope for beginning ART earlier (prior to CD4 count 200) in the interest of the HIV positive patient *and also* to reduce viral load in larger numbers of people with advanced HIV infections, thereby reducing the probability of this group infecting their sexual partners (there is a convergence of individual and population interests in early recruitment of HIV-positive patients into ART programmes).

17. Conduct similar epidemic, response and policy synthesis prior to future NSP revisions which include:

- an assessment of incidence in adults, by modelling prevalence and sexual behaviour data (with increasingly better local data on high risk groups and sexual activity in the general population), strengthened by biological data on recent infections using the BED assay;
- an assessment of incidence in children 0-14 years (use of the BED assay may contribute to a better understanding of the source of HIV infections in children aged 5-14 years - new infections would be less likely to stem from MTCT and more likely to have arisen through child sexual abuse or infection through the health care system); and
- data from priority ethnographic, sociological and biomedical research to fill identified data gaps regarding HIV and migration, female employment, alcohol use, social and sexual networks in urban and rural populations, sexual practices, and HSV-2.

FINALLY: IT IS POSSIBLE!

Changing course and direction of an HIV prevention response need not be cumbersome, difficult or 'impossible' or time consuming. As the case study below shows, in Zanzibar (with a similar population size as Swaziland, and deeply entrenched cultural values) it was possible and relatively straightforward to change the course of the HIV epidemic. **It all started with bold and courageous decisions by policy makers to use available evidence to steer the HIV response in the direction it needed to go.**

CASE STUDY:

JOINT REVIEW CATALYZES THE RESPONSE TO MOST AT RISK POPULATIONS IN ZANZIBAR

The Zanzibar National HIV&AIDS Strategic Plan guides the Zanzibar National HIV response during the period 2004/05 - 2008/09. In 2007, the Zanzibar AIDS Commission (ZAC) led stakeholders in a mid-term review of the ZNSP implementation, to assess the extent to which Zanzibar had mounted a relevant and comprehensive HIV response of appropriate scale, and to recommend what should be done to improve the national HIV response.

The review noted that HIV services had been focused on the general population while the drivers of the epidemic in Zanzibar point to very specific HIV concentration among Most At Risk Populations. A strategic focus on HIV activities targeting Most At Risk Populations was recommended.

With newfound boldness and confidence, ZAC has mobilized additional resources and scaled up HIV interventions with CSWs, MSM, drug and substance abusers.

Source: Abdulla A *et al.* (2008)

**“Never doubt that a small group of thoughtful, committed citizens can change the world;
indeed, it's the only thing that ever has.”**

Margaret Mead

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LIST OF ANNEXES

- Annex 1** Implementation calendar MoT study
- Annex 2** Prevention implementers included in the MoT study, key informants for SI and policy context
- Annex 3.** Data sources for incidence modelling
- Annex 4.** Results application of UNAIDS HIV Incidence Model
- Annex 5.** Detailed assessment of laws and policies for HIV prevention in Swaziland
- Annex 6.** Detailed listing of types of messages in HIV prevention programmes
- Annex 7.** Strategic information regarding prevention

ANNEX 1. Implementation Calendar Modes of Transmission Study

Responsible :		HO	CT	SM	MGA																			
	UCC rep	Steering Committee in-country	NERCHA Focal Point	GAMET supervisor																				
	UNAIDS RST/Geneva	Policy Team	Epi consultant & Nicole together	Patrick Dlamini - NERCHA focal person for mapping																				
	Technical leader	Prevention consultant	NASA consultants	Research Assistant																				
Week	Date	-	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
		Dec 2007	7 - 11 Jan	14 - 18 Jan	21 - 25 Jan	28 Jan- 1 Feb	4 - 8 Feb	11 - 15 Feb	18 - 22 Feb	25 - 29 Feb	3 - 7 Mar	10 - 14 Mar	17 - 21 Mar	24 - 28 Mar	31Mar- 4 Apr	7 - 11 Apr	14 - 18 Apr	21 -25 Apr	28 Apr- 2 May	5 - 9 May	12 - 16 May	19 - 23 May	26 - 30 May	
PREPARATORY TASKS																								
MoT inception workshop 29 Nov chaired by NERCHA		SM																						
Appointment of Steering Committee		HO																						
MoT training by UNAIDS Geneva/RST ESA (14 Dec 2007)		UN																						
Introduction of GAMET TA (e-mail 19 Dec 2007)		MGA																						
Finalization of TORs for epidemiologist & prevention expert		SM																						
Reception of funds for study & reporting of funds to 2008		HO																						
Development of key documents		UN	UN	UN	UN																			
Appointment of lead epidemiologist			CT																					
Recruitment of national epidemiologist			SM	SM	SM	SM	SM	SM	SM	SM	SM													
Development of study implementation calendar			NF			NF					NF													
Transmission of key technical documents to country						UN																		
Signature contract with prevention consultant										SM														
Signature contract with epi/demography consultant											SM													
TASK 1: Review of the epidemiology of HIV																								
		Lead: Nicole Fraser																						
Literature search & cataloguing			NF	NF	NF	NF																		
Initiate correspondence with country			NF																					
Retrieve publications requiring access/subscription				JN	JN	JN																		
Literature reading & technical review					NF	NF																		
Work on inception report section "Epi review"					NF	NF																		
Data analysis, production of tables and figures								NF	NF	NC	NC	NC												
In-country working session during MoT workshop										NC														
Final compilation of grey literature												NC	NC											
Drafting of "Epi section" of synthesis report														NC	NC	NC	NC	NC						
TASK 2: Source of incident infections / MoT																								
		Lead: Nicole Fraser																						
Literature search & cataloguing			NF	NF	NF	NF																		
Initiate correspondence with country			NF																					
Work on inception report section "MoT"						NF					NC													
Prepare detailed data request for CSO								NF																
Request data from CSO											SM													
Discussion of modeling work during MoT workshop											NC													
Receive data from CSO																								
Data review & analysis, populating of transmission model in collaboration with Nhlanhla Nhlabatsi, MOH																	NC	NC	NC	NC				
Identification of alternative data and information for MoT														NC	NC	NC	NC							
Incidence modeling workshop preparations																	SM	SM	SM					
Incidence modelling workshop (29-30 April)																					NC			
Drafting of "MoT section" of synthesis report																						NC	NC	

Week	-	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Date	Dec 2007	7 - 11 Jan	14 - 18 Jan	21 - 25 Jan	28 Jan- 1 Feb	4 - 8 Feb	11 - 15 Feb	18 - 22 Feb	25 - 29 Feb	3 - 7 Mar	10 - 14 Mar	17 - 21 Mar	24 - 28 Mar	31Mar- 4 Apr	7 - 11 Apr	14 - 18 Apr	21 - 25 Apr	28 Apr- 2 May	5 - 9 May	12 - 16 May	19 - 23 May	26 - 30 May
TASK 3: HIV prevention review	Lead: Happiness Mkhathswa																					
NERCHA mapping of services	PD	PD	PD	PD	PD	PD	PD															
Literature reading and review								HM	HM													
Customisation of prevention assessment emplate									HM	HM												
Piloting of section 3 data collection tool and adaptation									HM	HM												
Interview key informants											HM	HM	HM									
Study SHAPMOS data, MOH data& NMP mapping data											HM	HM										
Work on inception report section "Prevention review"										HM												
Presentation of prevention tools and processes in MoT workshop										HM												
Validation of prevention template & process in MoT workshop										SM												
Implement Section 3 as per methodology agreed												HM	HM	HM	HM							
Completion of section 1 (policy level) with key informants												HM	HM									
informants												HM	HM									
Processing and analysis of received section 3 data													HM	HM	HM							
Drafting of "prevention review" report															HM	HM	HM	HM	HM			
Contribution monthly report March														HM								
Comments on prevention report																					CT	
Finalisation of "prevention review" report by 15 April																						HM
Contribution monthly report April																	HM					HM
Attend synthesis workshop																					HM	
TASK 4: Review of resource use in prevention	Lead:Happiness Mkhathswa																					
NASA implementation	NA	NA	NA	NA																		
NASA draft feedback 29 Jan					NA																	
Send NASA table structure to Study Team					SM																	
Discussion of analysis modalities at MoT workshop										HM												
NASA report available													NA									
Analysis of relevant documents													HM	HM	HM	HM	HM	HM				
Work on inception report section "resource use"										HM												
Drafting of "resource use in prevention section" of main report																		HM	HM			
Provide draft section "prevention review"																			HM			
Attend synthesis workshop																					HM	
OVERARCHING TASKS	Lead: Nicole Fraser																					
Production of zero draft inception report (due 31 Jan)					NF																	
Meetings with GAMET supervisor					CT	CT																
Production of January progress report						SM																
Collation of grey literature available only locally						SM																
Preparation of MoT workshop (logistics, coordination/admin)							SM	SM	SM													
Preparation of MoT workshop (technical content)								NC	NC													
Technical planning workshop (4 to 7 March)										SM												
Production of February progress report									SM	SM												
Production of March progress report													SM									
Preparation synthesis w/shop (technical content)													NC	NC	NC							
Preparation modelling w/shop (logistics, coordination)																SM	SM					
Incidence modeling workshop (29-30 April)																				NC		
Preparation synthesis w/shop (logistics, coordination/admin)																	SM	SM	SM			

Annex 2. Prevention Implementers included in the MoT Study and Key Informants for the Strategic Information and Policy Context

Prevention implementers sample

No.	Organizations
	UN agencies
1	UNFPA
2	UNICEF
3	UNESCO
	NGOs, CBOs, FBOs
4	The AIDS Information & Support Centre
5	Family Life Association Swaziland
6	Parish Nurse Programme*
7	Cabrini Sisters*
8	Baylor centre of excellence clinic
9	Swaziland Red Cross Society
10	CARITAS Swaziland*
11	Swaziland Action Group Against Abuse
12	BCHA
13	AMICAALL
14	LUSWETI
15	Ayibuy' imbeleko Shewula
16	CANGO
17	Save the Children Fund
18	Church Forum
19	Nazarene HIV/AIDS Task Force*
20	PSI Swaziland
21	Salvation Army*
22	SOS Swaziland
23	Swaziland Hospice at Home
24	Nhlangano HIV/AIDS Training Info & Counselling
25	Swaziland Youth United against HIV/AIDS
26	Women and Law in Southern Africa
27	YOUNG HEROES
28	Sebenta National Institute
29	Schools Health And Population Education
30	Cheshire homes
31	Children's cup
32	Lutheran Development Services*
33	World vision*
34	Imphilo isachubeka
36	Moya centre

37	Traditional Healers' Organization
38	RSSC
39	ACAT*
40	Scripture Union*
41	Diocesan HIV/AIDS Programme (Anglican)*
42	Women in Development
43	World University Service
44	Hope House*
45	Conference of churches*
46	Swaziland National Association of Teachers
47	Sport Olympic Council of Swaziland
48	COSAD
49	Association of students Against Drug abuse & trafficking
	Public Sector
50	Ministry of Education
51	Ministry of Health & Social Welfare
52	PSCHACC
53	Ministry of Economic Planning
54	Ministry of Finance
55	Super Buddies
56	RSP HIV/AIDS Prevention programme
57	USDF
58	Correctional services
59	Swaziland Girl Guides Association
60	Swaziland National AIDS Programme
61	
62	Rural Health Motivators' Programmes (MOH&SW)
63	Sexual Reproductive Health Programme (MOH&SW)
64	National PMTCT Programme (MOH&SW)
	PLHIV organisations
65	Swaziland AIDS Support Organization
66	SWANNEPHA
67	Swaziland Positive Living for Life
68	International Community of Women Living with HIV

*denotes FBO

Key informants on Strategic Information

1. Mr Nhlanhla Nhlabatsi - MOHSW epidemiologist
2. Ms Sibongile Mndzebele - MOHSW M&E coordinator
3. Ms Nelisiwe Sikhosana - MOHSW HMIS
4. Ms Sanelisiwe Tsela - NERCHA M&E COORDINATOR
5. Mr Mduduzi Ndlovu - SHAPMOS COORDINATOR
6. Ms Faith Dlamini - Health sector response focal point at NERCHA

Key Informants on Policy Context

1. Dr von Wissel (Director NERCHA & CCM member)
2. Rejoice Nkambule (Deputy Director of Health Services MOHSW)
3. Mr Rudolph Maziya (Director AMICAALL & CCM member)
4. Beatrice Dlamini (Programme Manager SNAP & CCM)
5. Mauro Almaviva (Italian Cooperation & CCM)
6. Khanya Mabuza (Assistant Director NERCHA & CCM)
7. WHO Country Representative
8. UNAIDS Country Representative
9. Zodwa Mabuza (Business sector)
10. WFP Country representative
11. Maxwell Jele (SNYC)
12. E. Ndlangamandla (CANGO)
13. Dr I.T. Zwane (UNISWA)
14. Thembi Nkambule (SWANNEPHA)
15. Chief Ndabankulu Simelane (NERCHA COUNCIL CHAIRMAN)
16. Ms Thulisile Dladla (Director Sebenta & member NERCHA Council)
17. Grace Masilela (FBO & Nercha Council)
18. Sonto Magagula (PLWHA & NERCHA Council)
19. Dumisani Masilela (PS Ministry of Finance and NERCHA Council)

Annex 3. Data Sources for Incidence Modeling (scenario 1)

Note: A person can only be counted once, and should be placed in the category of highest HIV risk (excluding medical injections and blood transfusions)

Risk group	Estimate	Year of estimate	Data sources / comments	Default estimates
Total number of adults (15-49 years)	510738	2007	Swaziland Population & Housing Census	
Number of Males	236594	2007		
Number of Females	274144	2007		
Estimated Adult HIV prevalence	25.9%	2006-07	SDHS 2006-07 (15-49 years)	
Injecting Drug Use (IDU)*				
Number / percent IDU in the adult population:	0.20%		Local data: AMICAALL (2005): 3.7% of urban youth tried IDU recently. SNYC (2008): 0.7% of rural youth tried IDU recently. Overall estimate, taking distribution of population into account (rural/urban): 1.45% of youth have tried IDU recently. "Trying" not equal to "being an IDU", re-use of IDU equipment unknown. Therefore use default.	Sub-Saharan Africa: 0.2%(0.003-0.35%)
Male	0.20%			
Female	0.20%			
Total	0.20%			
Prevalence of HIV in this population	25.9%	2006-07	SDHS 2006-07 (15-49 years)	
Prevalence of any STI in this population	13.3%		SDHS/Macro: 759 with rep. STI symptoms/ 5723 (DHS, gen. population)	
Average number of injecting partners per year	5		Assumption	
Average number of acts of needle sharing with each injecting partner per year	30		Assumption	
Percentage of times a clean needle is used when injecting drugs	50%		Assumption	
Partners of IDU*				
Number / percent of IDU partners in the population:	0.10%		Half of default	Half the number of IDUs
Male	0.10%			
Female	0.10%			
Total	0.10%			
Prevalence of HIV in this population	25.90%	2006-07	SDHS 2006-07 (15-49 years)	
Average number of sexual partners per year	1		Estimate	
Average number of sexual acts per partner per year	100		Estimate, based on BSS RSA	
Percentage of times a condom is used during sex with IDU partner	34%		Estimate, based on DHS	

Risk group	Estimate	Year of estimate	Data sources / comments	Default estimates
Sex workers*				
Number / percent of sex workers in the population			No size estimate available, but commercial sex work seems not to involve a large proportion of the population. Assume 0.8% for females (lower end of default) and 0.1% for men (male sex workers)	SS Africa: 0.4 - 4.3%
Male	0.1%			
Female	0.8%			
Prevalence of HIV in this population	60%		No data (2007 CSW survey did not test for HIV). Assume 60%	
Prevalence of any STI in this population	16.1%		BSS 2001/2: 16.1% with reported STI in past 12 mths. 2007 CSW survey has some STI data but not presented in usable format.	
Average number of sexual partners per year	312		2007 CSW survey: Median number = 260-364 (ave=312)	
Average number of sexual acts per partner per year	3		Estimate	
Percentage of times a condom is used during sex	62%		2007 CSW survey page 28	
Clients*				
Number / percent of sex worker clients in the population	5%	2006-07	Estimate. Suspected gross underreporting in SDHS.	Range for E & S Africa: 10% - 11%
Prevalence of HIV in this population	45%		Estimate	
Prevalence of any STI in this population	15%		Estimate	
Average number of sex worker partners per year	16		Estimate	
Average number of sexual acts per partner per year	10	2005	Estimate	
Percentage of times a condom is used during sex with a sex worker	62%		2007 CSW survey page 28	
Partners of Clients*				
Number / percent of partners of sex worker clients in the population	2.5%		Assuming that half of the SW clients are in steady relationships	
Prevalence of HIV in this population	37.5%		Estimate	
Average number of sexual partners per year	1		Estimate	
Average number of sexual acts per partner per year	100	2005	See South African National HIV Prevalence, HIV Incidence, Behaviour & Communication survey 2005 pages 54/55. Assume "twice a week"	
Percentage of times a condom is used during sex	34%		Estimate based on DHS	
Men who have sex with men (MSM)*				
Number / percent of MSM in the population	1%		UNAIDS estimate	
Prevalence of HIV in this population	40%		Estimate	
Prevalence of any STI in this population	15%		Estimate	
Average number of sexual partners per year	2		Estimate	
Average number of sexual acts per partner per year	52	2005	Estimate using data from South African survey 2005, 54/55.	
Percentage of times a condom is used during sex	35%		Estimate	

Risk group	Estimate	Year of estimate	Data sources / comments	Default estimates
Female partners of MSM*				
Number / percent of female partners of MSM in the population	0.5%		Assuming half of all MSM are in steady relationships	
Prevalence of HIV in this population	35%		Estimate	
Average number of sexual partners per year	1		No data	
Average number of sexual acts per partner per year	100	2005	See South African survey 2005 pages 54/55. Assume "twice a week"	
Percentage of times a condom is used during sex	34%		Estimate based on DHS	
Multiple partners, heterosexual sex*				
Number / percent of people in the general population who engage in MP sex				
Male	13.6%	2006-07	22.9% of sexually active had 2+ partners [DHS tables 13.8.2]. Need to use correction factor to relate it to total adult male population, not only sexually active: 59.6% of men were sexually active in last 12 months (tables 6.10.2), leads to : CHS Men 13.6% (22.9% x 0.596)	
Female	1.59%	2006-07	Females: 2.3% of sexually active had 2+ partners, and 69.0% of women were sexually active in last 12 months , leads to: CHS Women 1.59% (2.3% x 0.690)	
Prevalence of HIV in this population	38.1%	2006-07	36.2% (M), 52.3% (F), 38.1% (all) [DHS tables 14.7.2/1]	
Prevalence of any STI in this population	23.9%	2006-07	SDHS/Macro: 67 with reported STI symptoms per 280 persons	
Average number of sexual partners per year	2.1	2006-07	SDHS: 2.1 (M), 2.1 (F), all=2.1	
Average number of sexual acts per partner per year	52	2005	See South African National HIV Prevalence, HIV Incidence, Behaviour & Communication survey 2005 pages 54/55. Assume "once a week"	
Percentage of times a condom is used during sex	68%	2006-07	SDHS: 31/52=60% (women), 160/228=70% (men). Need weighted average since this behaviour is 5 times more likely in women than in men.	
Partners of MP sex*				
Number / percent of people in the general population whose partners engage in MPs sex:				
Male	1.27%		Assume 0.8 times CHS (use opposite sex percentage)	
Female	10.88%		Assume 0.8 times CHS (use opposite sex percentage)	
Prevalence of HIV in this population	37.5%	2006-07	Estimate	
Average number of sexual partners per year	1	2006-07		
Average number of sexual acts per partner per year	100	2005	See South African survey 2005 pages 54/55. Assume "once a week"	
Percentage of times a condom is used during sex	34%		Estimate based on DHS	

Risk group	Estimate	Year of estimate	Data sources / comments	Default estimates
Low risk heterosexual				
Number / percent of people in stable relationships (sexually active, no commercial sex, no casual sex)				
Male	38.63%	2006-07	Adding up to 100%.	
Female	52.53%	2006-07	Adding up to 100%	
Prevalence of HIV in this population	33.0%	2006-07	M: 28.0%, W: 35.8% [DHS tables 14.7.2/1]. All: 33.0%	
Prevalence of any STI in this population	13.3	2006-07	SDHS/1A: 759 with reported STI symptoms per 5723 persons	
Average number of sexual partners per year	1	2006-07	By definition	
Average number of sexual acts per partner per year	100	2005	See South African survey 2005 pages 54/55. Assume "twice a week"	
Percentage of times a condom is used during sex	34%	2006-07	Estimate based on DHS	
No risk				
Number / percent of people who are at NO risk of HIV infection (sexually abstinent)				
Male	40.1%	2006-07	SDHS table 6.10.2 (30.7%+9.4%)	
Female	30.7%	2006-07	SDHS table 6.10.1 (17.6%+13.1%)	
Medical injections				
Number / percent of people receiving medical injections per year	23%, 37%	2006-07	M: 23%, W: 37% SDHS Table 13.17:	
Prevalence of HIV in this population	25.9	2006-07	SDHS 2006-07, adult prevalence	Same as national adult prevalence Hutin et al. 2003: Estimates for S&E Africa: 2 injections/y Hutin et al. 2003: Estimates for S&E Africa: 83%
Average number of medical injections received per person per year	1	2003	Estimate	
Percentage of times sterile needles are used for medical injections	90%		Using SDHS 2006-07 Table 13.17	
Blood transfusions				
Number of people receiving blood transfusions per year	0.5%		Estimate.(5,000 BTs annually)	E & S Africa: 5/1000/y
Prevalence of HIV in this population	25.9	2006-07	SDHS 2006-07, adult prevalence	Same as national adult prevalence

Risk group	Estimate	Year of estimate	Data sources / comments	Default estimates
Average number of blood transfusions per year (i.e. for those people who received a blood transfusion) Percentage of bloods that are effectively screened for HIV	1 96%		Based on QSCR 4th quarter (MOH, 2008) and interviews with laboratory and hospital personnel, allowing for undetected recent infections	Average of 1 Global WHO database for S&E Africa: 96% Publ. studies: 72-93%
Percent of adult males that are circumcised	8.2%	2006-07	SDHS	

Annex 4. Results from applying the UNAIDS HIV Incidence Model

History and previous applications of the model

This model was developed in collaboration with the UNAIDS Reference Group on Estimates, Modeling- and Projections by different individuals from Imperial College, UNAIDS, TFGI, East West Center and FHI in 2002. The model calculates the expected short term incidence of HIV infections among the adult population by mode of transmission. A revision of the model was done in 2005 by Peter White and Eleanor Gouws. A further revision was made by Gouws in 2007 to make the model more useable in countries with generalized epidemics. A second section was also introduced to investigate the distribution of new infections among the general population who are most at risk through casual or low risk sex.

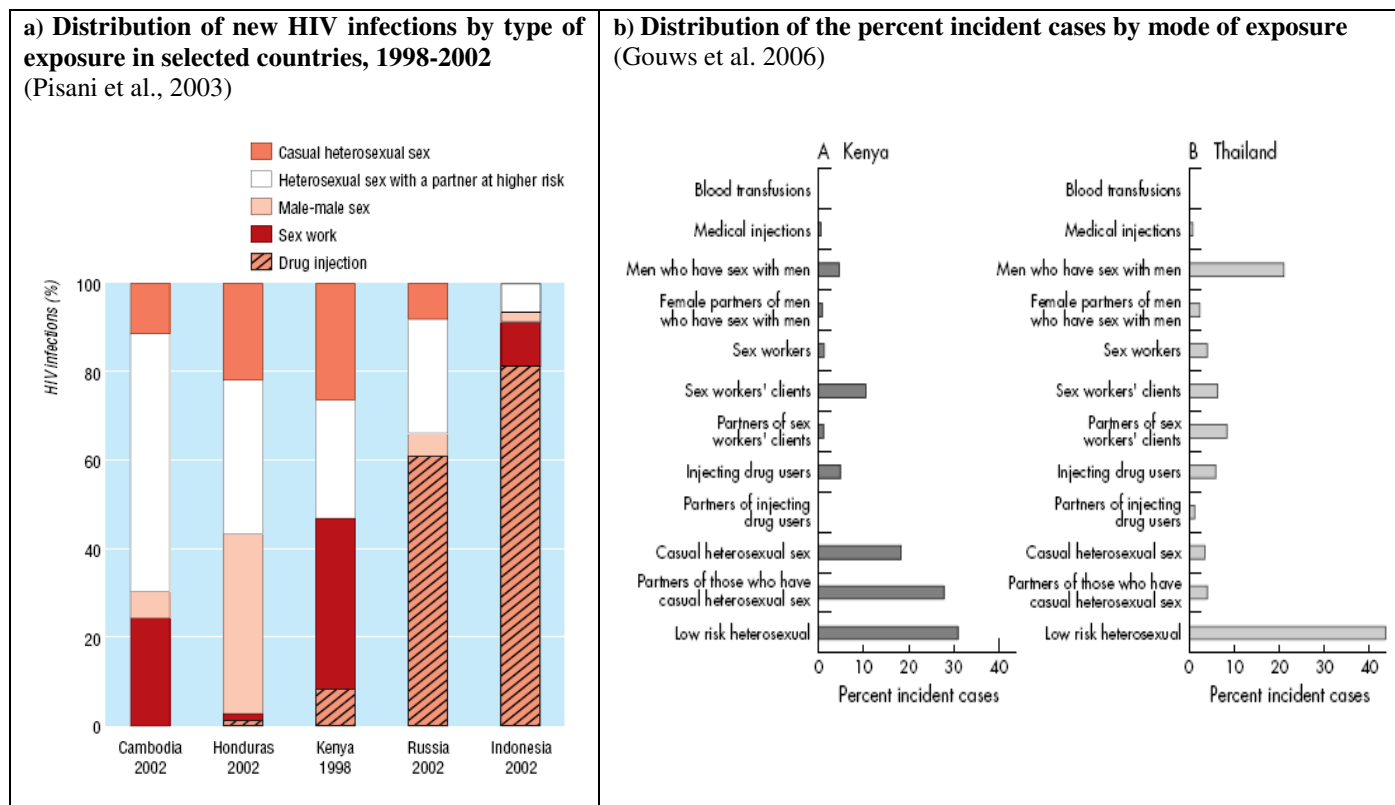
The aim behind the model is to allow the user to:

- calculate the number of new infections over the next year, and
- obtain a sense of the spread of the new infections in adults by age, sex and partnerships.

The model uses country specific behavioural and surveillance data to populate the model spreadsheet which includes the size of each risk group, the prevalence of HIV in the particular risk group, the prevalence of STIs, the average number of partners per year, the average number of exposure events per partner per year, and the percentage of those events that are protected. It provides a tool that can help inform the planning of effective, appropriately targeted, country specific intervention programmes.

The model was applied in 2003 to data from in six countries, namely Cambodia, Honduras, Kenya, Russia, Indonesia and Thailand, and results published by Pisani et al. in 2003 (figure 45a) and to data in Kenya and Thailand in 2006 by Gouws et al. (figure 45b).

Figure 45. Previous model applications in other countries



The model is currently used as part of the UNAIDS/WHO set of methods and it has been included in regional training courses conducted by UNAIDS and WHO. The model is currently applied in several countries within the “know your epidemic” efforts.

Distribution of new infections by mode of exposure in the four scenarios

Table 10. Model outputs using different frequencies of multiple partners

a) Scenario 1 (default transmission probabilities, DHS 2006-07 data on multiple partners)

Adult Risk Behaviour	Male	Female	Total number with risk behaviour	Number HIV+	Incidence	% of incidence	Incidence per 100,000
Injecting Drug Use (IDU)	0.002	0.002	1021	265	128	1.95	12,490
Partners IDU	0.001	0.001	511	132	9	0.14	1,810
Sex workers	0.001	0.008	2298	1379	207	3.17	9,014
Clients	0.05	0.002	13279	5976	258	3.94	1,943
Partners of Clients		0.025	6384	2394	175	2.67	2,740
MSM	0.01		2554	1021	406	6.21	15,915
Female partners of MSM		0.005	1277	447	32	0.49	2,533
Casual heterosexual sex	0.136	0.0159	38791	14779	383	5.86	988
Partners CHS	0.0127	0.1088	31027	11635	809	12.36	2,606
Low-risk heterosexual	0.3863	0.5253	232794	76822	4100	62.67	1,761
No risk	0.401	0.307	180801	16091	0	0.00	-
Medical injections	0.23	0.37	153221	39684	12	0.18	8
Blood transfusions	0.005	0.005	2554	661	23	0.36	910
TOTAL ADULT POPULATION	100	100	510738	130942	6542	100.00	1,281

b) Scenario 2 (default transmission probabilities x2, DHS 2006-07 data on multiple partners)

Adult Risk Behaviour	Male	Female	Total number with risk behaviour	Number HIV+	Incidence	% of incidence	Incidence per 100,000
Injecting Drug Use (IDU)	0.002	0.002	1021	265	128	1.12	12,490
Partners IDU	0.001	0.001	511	132	16	0.14	3,110
Sex workers	0.001	0.008	2298	1379	341	3.00	14,859
Clients	0.05	0.002	13279	5976	532	4.67	4,004
Partners of Clients		0.025	6384	2394	300	2.63	4,695
MSM	0.01		2554	1021	406	3.57	15,915
Female partners of MSM		0.005	1277	447	55	0.49	4,340
Casual heterosexual sex	0.136	0.0159	38791	14779	773	6.79	1,992
Partners CHS	0.0127	0.1088	31027	11635	1385	12.17	4,464
Low-risk heterosexual	0.3863	0.5253	232794	76822	7410	65.11	3,183
No risk	0.401	0.307	180801	16091	0	0.00	-
Medical injections	0.23	0.37	153221	39684	12	0.10	8
Blood transfusions	0.005	0.005	2554	661	23	0.20	910
TOTAL ADULT POPULATION	100	100	510738	130942	11381	100.00	2,228

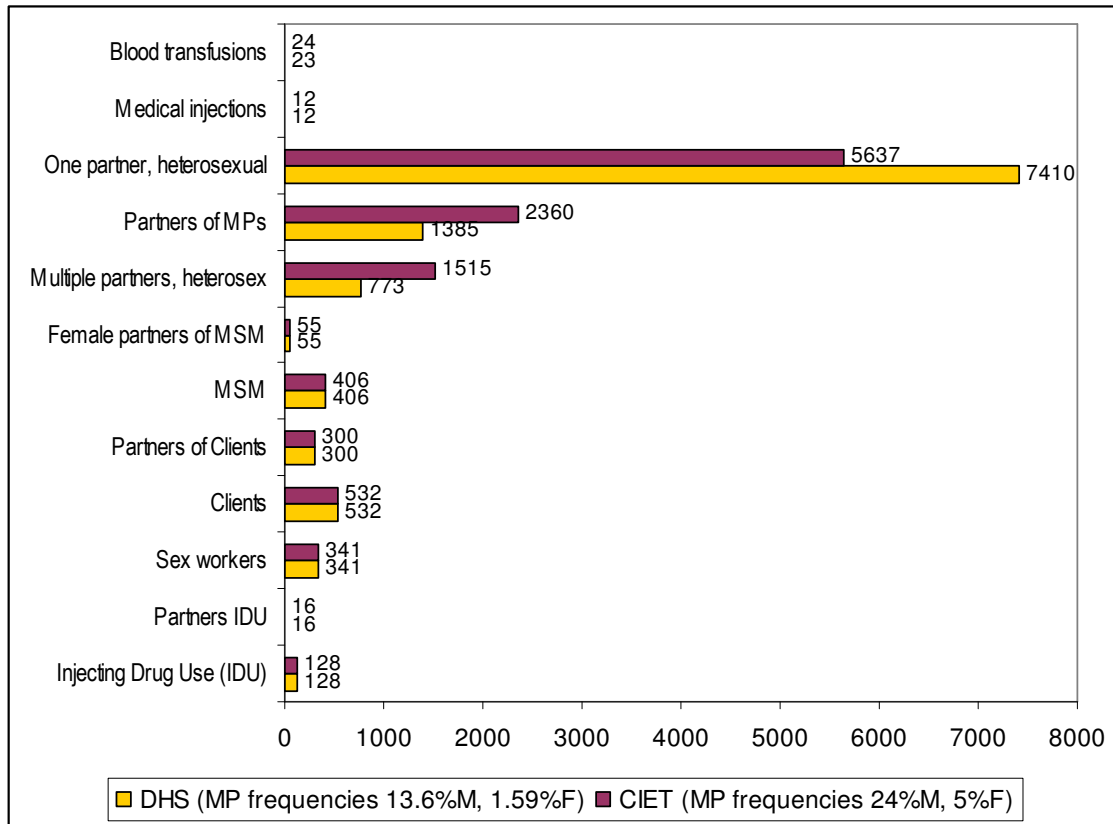
c) Scenario 3 (default transmission probabilities, CIET 2007 data on multiple partners)

Adult Risk Behaviour	Male	Female	Total number with risk behaviour	Number HIV+	Incidence	% of incidence	Incidence per 100,000
Injecting Drug Use (IDU)	0.002	0.002	1021	265	128	1.96	12,490
Partners IDU	0.001	0.001	511	132	9	0.14	1,810
Sex workers	0.001	0.008	2298	1379	207	3.18	9,014
Clients	0.05	0.002	13279	5976	258	3.96	1,943
Partners of Clients		0.025	6384	2394	175	2.68	2,740
MSM	0.01		2554	1021	406	6.23	15,915
Female partners of MSM		0.005	1277	447	32	0.50	2,533
Casual heterosexual sex	0.24	0.05	74057	28216	761	11.67	1,028
Partners CHS	0.0127	0.192	52274	19603	1384	21.22	2,647
Low-risk heterosexual	0.2823	0.408	176281	58173	3125	47.92	1,773
No risk	0.401	0.307	180801	16091	0	0.00	-
Medical injections	0.23	0.37	153221	39684	12	0.18	8
Blood transfusions	0.005	0.005	2554	661	24	0.36	930
TOTAL ADULT POPULATION	100	100	510738	133697	6522	100.00	1,277

d) Scenario 4 (default transmission probabilities x2, CIET 2007 data on multiple partners)

Adult Risk Behaviour	Male	Female	Total number with risk behaviour	Number HIV+	Incidence	% of incidence	Incidence per 100,000
Injecting Drug Use (IDU)	0.002	0.002	1021	265	128	1.13	12,490
Partners IDU	0.001	0.001	511	132	16	0.14	3,110
Sex workers	0.001	0.008	2298	1379	341	3.02	14,859
Clients	0.05	0.002	13279	5976	532	4.69	4,004
Partners of Clients		0.025	6384	2394	300	2.65	4,695
MSM	0.01		2554	1021	406	3.59	15,915
Female partners of MSM		0.005	1277	447	55	0.49	4,340
Casual heterosexual sex	0.24	0.05	74057	28216	1515	13.38	2,045
Partners CHS	0.0127	0.192	52274	19603	2360	20.84	4,514
Low-risk heterosexual	0.2823	0.408	176281	58173	5637	49.77	3,197
No risk	0.401	0.307	180801	16091	0	0.00	-
Medical injections	0.23	0.37	153221	39684	12	0.10	8
Blood transfusions	0.005	0.005	2554	661	24	0.21	930
TOTAL ADULT POPULATION	100	100	510738	133697	11325	100.00	2,217

Figure 46. Incidence by mode of exposure: Comparison of two scenarios with double transmission probabilities



Annex 5. Detailed Assessment of Laws and Policies for HIV prevention in Swaziland

Specific HIV and AIDS policies are very important, but the country's general legislative framework is also very important for an effective enabling environment for preventing HIV. **The Constitution of Swaziland (2005)** is the supreme law of the country that defines constitutional rights of individuals, and is an important part of the legislative framework for preventing HIV especially for vulnerable populations. It was cited by most key informants as enabling the environment for prevention and reducing the vulnerability of women and girls in asserting that "all persons are equal before and under the law" in all spheres of life including social and cultural life (20(1)). It especially reduces vulnerability and risk from cultural practices as it emphasizes consent for women when cultural practices are implemented such as wife inheritance. This however is fairly new and not yet universally known by all communities.

Poverty and gender are also considered to be important policy environment issues that may be linked to vulnerability, discrimination, HIV risk and service access. They are strongly correlated; 63% of females heading households are poor and lack productive assets compared to 52% of their male counterparts. The **Poverty Reduction Strategy and Action Programme (PRSAP)** puts emphasis on affording all citizens, regardless of sex or race, equal opportunity to access social and economic services in order to enhance their development. Orphans, the elderly and retired, destitute and street children, widowed women and people with disabilities are identified as the most vulnerable groups in Swaziland in this important strategy. In the PRSAP, marriage status and the form of marriage were also described as having a varied effect on women's poverty status and decision making. The strategy documents planned action to address poverty and its accompanying effects in the country; consequently addressing an important co-factor of the HIV epidemic.

Furthermore there is a **Marriage Act No. 47 of 1964** which if known and utilized effectively would protect women's and girls' rights. However cultural norms concerned with marriage and bereavement seem to be placed above these statutes in actual lives of women. This Act stipulates the minimum marriage age for males and females as 21 years. It restricts minors' right to marry, requiring consent of a parent or legal guardian, and even with this consent, sets a minimum age at marriage for minors of 18 and 16 years for males and females, respectively. Key informants on policy-level issues acknowledged the difficulty in bringing together people's beliefs and actual implementation of these laws while also acknowledging efforts in localizing ratified conventions such as the Convention on Elimination of Discrimination Against Women (CEDAW). They further described the marriage law as very slow in implementation or response when women seek redress.

The **Girls and Women's Protection Act No. 39 of 1920** criminalises and prohibits any form of sexual intercourse, immoral or indecent dealing by a male with girls under the age of 16 years. It is important to note, however, the high numbers of reported cases in the media of sexual abuse of youth and especially girls.

Another relevant statute is the **Maintenance Act No.35 of 1970** which provides for procedures to be followed in order to obtain a maintenance order in favour of persons who are no longer being maintained by a person legally liable to maintain them. This is important in the era of HIV/AIDS when one considers the plight of OVCs when one parent dies.

The **Administration of Estates Act No.28 of 1902** regulates the administration or management of the estates of deceased persons who were subject to the Roman-Dutch Common Law or whose property is subject to the Roman-Dutch Law. Children of deceased parents whose property falls under Swazi Law and Custom are not considered under this Act. Here the dual system of the country poses a challenge; Swazi Law and Custom varies across regions, and has been invoked in many cases to deny widows and OVCs their inheritance. With regards to management of estates there is also the **Intestate Succession Act No. 3 of 1953** which regulates how the property of a deceased person who left no will, is to be inherited by those entitled to it. Section 3 of this Act provides that the surviving children of a deceased person will inherit equally the property left by that person. However, this section applies only to children of the deceased born in wedlock. Section 6 extends the application of this Act to include relationship by adoption under the **Adoption of Children Act No.64 of 1952**. Effective application of these statutes would reduce vulnerability for children orphaned by AIDS or other causes.

The enabling environment with regards to HIV and AIDS in the country is facilitated by the presence of an Act of Parliament that establishes NERCHA called **The National Emergency Response Council on HIV/AIDS Act, 2003**. This Act mandates NERCHA to among other things to "*oversee the coordination for the National multi-sectoral response to HIV/AIDS; review and adopt as appropriate the HIV/AIDS related policies and strategy recommendation of the Directorate; mobilise, receive, manage and allocate resources from Government and other sources; facilitate information sharing on local and*

international best practices among all sectors of society as considered appropriate; monitor and evaluate projects funded by the council in the national response to the epidemic.”

A comprehensive **National Multi-sectoral HIV and AIDS Policy (2006)** was developed to create an enabling policy environment for the national multi-sectoral response to the epidemic. This policy applies to all governmental and other stakeholders and partners who are involved and support the country in the response to HIV/AIDS. It obligates all Government ministries and organs, stakeholders and partners to mainstream HIV and AIDS into their plans and programmes. Preventing the transmission of HIV is one of its specific targets. The guiding principles of this policy define approaches for implementing the response to HIV and include crucial elements regarding the response:

- A multisectoral and holistic approach;
- Implementation of the response within the “Principle of Three Ones” – One HIV and AIDS Action Framework, One National AIDS Coordinating Authority, and One Monitoring and Evaluation System;
- Strong political will and commitment;
- Strengthened coordination and management of the response including implementation;
- Reliance on sound and evidence based information to inform the response;
- Efficient and effective use of resources;
- Good governance, transparency and exemplary leadership at all levels;
- Individual and collective responsibility;
- Promoting positive cultural practices;
- Full, meaningful involvement and participation of PLHIV and other vulnerable groups in all issues affecting them;
- Protection, non discrimination, non stigmatization of people living with HIV and AIDS and other vulnerable groups;
- Respect for human rights;
- Universal access to HIV and AIDS related health services;
- Compliance with international treaties, conventions and declarations signed and ratified by the Government and national laws;
- Gender equality and equity;
- Confidentiality and privacy; and
- Community owned and driven initiatives, use of existing structures, local solutions, equity and sustainability of programmes.

In order to operationalize policy and guide country action, a **National Strategic Plan 2006-2008** was developed through the leadership of NERCHA with extensive consultation through a joint review and consultation with communities and stakeholders such as interest groupings, government and nongovernmental entities as well as the business sector. The strategy urges all responding agencies to ensure that actions taken are: multi-sectoral; holistic; decentralised; evidence-based; targeted; adaptable; sustainable; and driven by national and local leadership.

The NSP 2006-2008 was viewed by all key informants on policy-level issues as an important document that sets a course for the response, but was limited by costing only the first year. It defined key roles and mandates for leadership, resource mobilisation, coordination and reporting. The need for mobilisation of political will by the leadership in Swaziland to reform discriminatory legal and social structures, address the effects of poverty on vulnerable populations, facilitate education of the general public and set a good example by their personal actions, was found to be necessary to address the HIV/AIDS crisis in Swaziland.

The Health Policy (2008) also promotes coordinated, integrated health services bringing together promotive, preventive, curative and rehabilitative care into all levels of health care service provision. It discourages vertical programming and ensures that HIV prevention is done at the primary care level including community care services and clinics, secondary care level at health centres, and at tertiary level in hospitals including the national referral hospital.

The **Health Sector Response Plan 2006-2008** identified coordination at national level, with partners and within MOHSW, in need of strengthening because of challenges this posed to the previous plan’s implementation. Within the health sector **programmatic guidelines** were put in place to guide roll out and implementation of **PMTCT, VCT, STI, HBC and ART** activities. The MOHSW leads the development of such guidelines and brings together stakeholders and technical assistance from partners.

Swaziland's **Blood Safety Policy 2006** enforces mandatory screening for HIV of donated blood, use of low risk donors and promotion of appropriate use of donated blood. Blood safety has been enhanced by use of antigen screening of donated blood which allows detection of HIV infection in the window period. The use of disposable needles and syringes in all levels of the health sector in Swaziland minimizes infection risk through injections in service provision (MOHSW/UNICEF, 2005).

The country has developed a draft **Male Circumcision Policy** and Implementation Plan. This responds to epidemiological and biological evidence established over the past few years which confirms the strong association between lack of male circumcision and high prevalence of HIV (e.g. Halperin & Epstein, 2004).

It is also worth noting that towards the end of 2007 the country engaged in a process for setting targets and compiled a Universal Access report, titled "**The Road Towards Universal access to HIV and AIDS to Prevention, Treatment, Care and Support: Swaziland Report.**" This document identifies universal access indicators and targets for the national response drawing from internationally recognized indicators and targets which are presented elsewhere in the review.

The **Sexual Offences and Domestic Violence Bill** is comprehensive and if passed and enforced would be a great move towards discouraging these acts. Its purpose is to afford survivors of sexual offences and domestic violence protection, and to introduce mechanisms to empower service providers to give full effect to its provisions. It prohibits cultural practices viewed as increasing the vulnerability of women and children to HIV and AIDS as shown in the following quote:

"No person must, without consent, be subjected to any of the following cultural practices- kungenwa (wife inheritance); kwendziswa (forced marriage); kutekwa (marriage without consent); kuzila (wearing of mourning gowns); kuhlanta (younger sister of wife brought in to have children on behalf of of barren sister); kulamuta (husband sleeping with younger sisters of wife); virginity testing; or female genital mutilation. Any person who subjects another person to the above cultural practices without consent is guilty of an offence."

Annex 6. Detailed listing of types of messages in HIV prevention programmes

Table 11. Messages used in prevention messages, by category

Category	Messages from implemented interventions
ABC	<p>Abstain , condomise & be faithful Abstinence for the unmarried Abstinence the key to success Primary abstinence & secondary abstinence Safer sex Condom use when partner is HIV positive Consistent & correct condom use Dual protection Use a condom every time you have sex Use a condom to protect yourself Have single partner</p>
Positive prevention	<p>You can still live with HIV Live longer with HIV Support for the infected and affected Live positively</p>
Delaying sexual debut	<p>Delay sexual debut, abstinence Sex can wait Its my choice My virginity is my pride</p>
Universal precautions	<p>Use gloves every time you have contact with body fluids Always use gloves</p>
VCT	<p>Know your status Test & know your status Vikela iHIV: Know your status</p>
Natural remedies	<p>Back to ancient and natural remedies</p>
Stigma & discrimination	<p>Reduce stigma & discrimination Our company cares Support the infected and affected Reduce stigma I love you positive or negative</p>
PMTCT	<p>Breast is best</p>
Gender abuse	<p>Stop property grabbing, respect inheritance laws Stop abuse</p>
Circumcision	<p>Circumcise to reduce STI Circumcise and enjoy the benefits</p>
General	<p>Prevent HIV Promote universal access to prevention & treatment HIV free generation We are responsible for the future</p>
Multiple partners	<p>Makhwapheni uyabulala (secret lovers are dangerous) One Man One Woman I will not share my partner Inkunzi lefohlako iyingoti (direct: a bull that breaks out of its kraal is dangerous; in context: a man who sleeps around is dangerous to himself and his family)</p>
Intergenerational sex	<p>Ngitawutfolani..Ungayitfolane HIV (What's in it for me..You can also get HIV)</p>
Reducing vulnerability of younger partners	<p>The future is mine</p>

Annex 7. Strategic Information on Prevention

Surveillance

Surveillance information is crucial for targeting, planning and tracking the prevention response. It helps define priority targets groups and provides information about populations, settings, reach of interventions, and risk. It informs interventions other than HIV prevention interventions, such as the SRH programme. STIs remain a priority if one considers the prevalence of STIs themselves and the prevalence of HIV among women with STIs (56%). It also assists in defining MARPs by indicating groups with high risk behaviours.

A key source of strategic information is the **HIV sentinel surveillance among ANC clients** carried out in urban and rural zones, which has established epidemic trends, estimated incidence, and generated data to make projections on indicators such as HIV prevalence among adults, number of orphans and estimated number of AIDS cases. The sample is drawn from health facilities serving urban and rural populations in all four regions. A 39.2% HIV prevalence rate was established in 2006 showing a decrease from 42.6% in 2004 (MOHSW, 2007a). The STI programme also conducts routine **surveillance of syphilis** through antenatal care services in the country and a biannual **surveillance of genital ulcer diseases**. A **Demographic and Health Survey** with HIV testing module was conducted in 2006/2007. This survey provided the first population prevalence data, linked to socio-demographic variables and sexual behaviour. It is expected to be carried out every five years.

A **Behavioural Surveillance Survey** was conducted in 2001/2002 ('BSS, first round') with the idea to establish a monitoring system to track behavioural trends in specific populations, provide information to guide the planning, design, implementation, and M&E of HIV/AIDS/STI interventions; provide evidence of the relative success of HIV prevention efforts taking place at selected sites; and obtain data in a standardized format, enabling comparison with other behavioural data (FLAS/GOS, 2002). The BSS focused on priority populations including in-school youth, out of school youth, tertiary institutions students, military, kombi drivers and assistants, long distance drivers, seasonal workers, watchmen and the police, female sex workers and female factory workers. It described why these populations are considered at risk of acquiring HIV, noting mobility, multiplicity of partners without consistent use of condoms, unemployment and general vulnerability to HIV. The BSS responded to a data gap and will need to be repeated in subsequent rounds, in order to achieve its objective of tracking behavioural trends over time in selected populations.

Important recent surveys and research studies regarding prevention

Table 12. Routine and ad hoc studies conducted in Swaziland

Study	Period	Comments
HIV Sentinel surveillance among pregnant women	Every two years	HIV and syphilis. Used to project HIV prevalence to the population level, and estimate incidence of HIV.
Cross sectional surveys of behaviour in sub populations	2002 BSS	Included in/out of school youth, tertiary education students, FSWs, kombi drivers, men in uniform, workers
Surveillance of STIs and other biological markers of risk	2005	Biological STI surveillance
Screening for HIV in donated blood	Ongoing	A pool of donors has been developed
Demographic and Health Survey	2007	First time conducted with HIV testing module
Cross sectional surveys of attitudes behaviour among youth	2002 (baseline), 2007 (follow-up)	CIET, Soul City
Data on morbidity & mortality	2007	Health Statistics report
Mapping of National Minimum Package	2008	Identified implementers, verified interventions with communities

Programme activity monitoring systems

Programme activity data from non-health sector and health sector implementers are systematically collected and compiled at NERCHA. For the non health sector, at the end of each calendar quarter, **SHAPMoS** collects reports from all organisations on the progress they have made in providing services. This is a requirement of the Swazi government's NSP and HIV policy. Organisations use uniform data collection tools to report. In the health sector, health facilities keep registers of all HIV services that they provide. Data for some HIV services are captured electronically, (e.g. ART data), whilst other data are paper-based. Each month data are extracted from the registers, captured on summary sheets and sent to the **MOHSW**

National M&E unit at SNAP. The SNAP M&E unit captures the data electronically, compiles quarterly reports and sends them to NERCHA, to feed into the QSCR. These systems are functional and beneficial but limited by the fact that HIV implementers are not compelled to report to these systems and there are no incentives for implementers to report.

Identification and analysis of risk populations

The strategic information the country gathers and analyses is also used to define, understand and monitor most at risk populations and risk settings.

Part of the joint review of 2000–2005 process was conducting countrywide consultations on how the epidemic is affecting individuals, communities and the whole country as well as what could be done differently. It tried to identify the drivers of the HIV epidemic in the country to be able to direct the focus of policy and programming. Youth aged 20-24 and 25-29 were identified as having experienced the highest prevalence since 1996, followed by people of 40 years and above. Women were also identified as “adversely affected and infected by HIV”. This was attributed to their biological and physiological make up as well as their low socio economic status making them more vulnerable to infection than men.

This prevention review found that not all documents define MARPs in the same way - some interpret the concept of MARPs as “who is most vulnerable” and MARPs are equated with vulnerable populations, e.g. in the latest UNGASS country report (NERCHA/UNAIDS, 2008b). However, according to UNAIDS (2007f), MARPs are populations in which there is a concentration of risk behaviours (high rates of unprotected sexual partnerships, unprotected anal sex with multiple partners, and IDU with shared equipment) that lend themselves to efficient transmission that may then drive the majority of new infections. Therefore MARPs (sex workers, IDUs, MSM and their respective sex partners) and vulnerable populations (OVCs, PLHIVs, BVEs) have quite different roles in the epidemic and specific needs for services.

HIV related impact assessment studies

Table 13. Impact studies conducted from 1999 to 2008

Impact study title	Published	Institution/ Author	Benefit to prevention policy formulation
The Economic Impact of AIDS in Swaziland. 1999.	1999	Bollinger & Stover	Not assessed
Swaziland selected development impact of HIV/AIDS.	2001	World Bank	Not assessed
The Impact of HIV/AIDS on Agriculture and the private sector.	2002	Ministry of Agriculture & Cooperatives	Not assessed
A systematic review of the economic impact of HIV/AIDS on Swaziland.	2004	Muwanga, F.T. Wits University	Not assessed
Vulnerability situation analysis report	2004	Swaziland Vulnerability Assessment Committee	Demonstrated vulnerability by food and income; correlated with HIV/AIDS
Human Development in Swaziland	2005	UNDP	Observed decline in HDI from 0.583 to 0.498 as a result of HIV/AIDS
The impact of HIV/AIDS and Drought on local Knowledge Systems for Agro biodiversity and Food security.	2005	Z. Hlanze, WLSA	Not assessed
The NSP 2006-2008	2006	NERCHA	Forecasted impact of HIV/AIDS to different sectors (p6)
The socio-economic impact of HIV/AIDS in Swaziland	2006	NERCHA, HEARD	Described socio-economic, cultural, political and long-term implications of HIV/AIDS
The Potential Impact of Male Circumcision on HIV in Sub Saharan Africa.	2006	Williams, B.G.	Not assessed
The Gendered Impact of HIV/AIDS on education in South Africa and Swaziland: Save the children’s experiences.	2006	Poulsen	Support advocacy for policy development for the free education for OVC programme to prevent or reduce school drop outs
Reviewing ‘emergencies’ for Swaziland	2007	NERCHA	Defined how abnormalities on societies brought by HIV/AIDS are being normalized
Soul City Regional Impact Programme Evaluation	2007	EU, DFID, Irish AID	Effect of edutainment campaign

Source: Prevention review, June 2008.



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