Health and Development Africa
102 Dashing House
25 Bath Avenue
Rosebank
27+11+880755 telephone
011-880 6694 fax

REQUEST FOR PROPOSALS NO. JCNAT674-97-P006-02

Economic Impact of the HIV/AIDS Pandemic and its Impact on Governance

Final Report submitted to the Joint Centre for Political and Economic Studies

Project title:

Quantifying Effects of Illness and Death on Education at School Level: Implications for HIV/AIDS responses

Authors: Gill Schierhout, Anthony Kinghorn, Riona Govender, John Mungani and Priscilla Morely

contact: gschierhout@hda.co.za
akinghorn@hda.co.za

This research paper is jointly sponsored by the foreign development agencies of Australia (AusAID), the United Kingdom (DFID) and the United States (USAID) and administered by the Joint Center for Political and Economic Studies through a subcontract agreement with Nathan Associates Inc.

Contents

List of Tables

List of Figures

List of Annexes

EXECUTIVE SUMMARY

This study provides information on the extent of household illness and death in schools in two provinces in South Africa and explores the relationship between these events and select educational measures. Based on the study findings, some of the challenges facing the education sector with regards to ongoing surveillance of the impacts of illness and death, including HIV and AIDS on education at school level are presented.

The study comprised a cross-sectional quantitative survey of schools in two provinces of South Africa; interviews with key informants and reviews of documents and other studies. The final sample included 117 schools in the Free State and 126 schools in Limpopo Province, and 639 and 806 Grade 10 learner respondents respectively from these provinces. The education departments of these two provinces have shown considerable leadership in supporting local responses to Orphans and Vulnerable Children (OVC), and thus the educational impacts seen here, are likely to be less severe than in other provinces in South Africa with less developed responses. The sample size allowed for most risk-related factors to be adequately explored, but there were sample size limitations for certain sub-groups.

Household circumstances

The Grade 10 learner sample lived in various household forms, and these were, at the time of the survey, not determined by whether or not the child was orphaned – many children with living parents lived geographically apart from them. Just under half of the sample in each province lived in households with 2-3 adults present, one in four children lived in single-adult households, and a fairly high proportion (14% and 17% for the Free State and Limpopo respectively) reported that there were no adults in the household. Household composition was fairly fluid in both provinces and slightly more so in Limpopo compared to Free State; some 10% and 16% of Grade 10 learners in the Free State and Limpopo reported that children from their household had been sent to live elsewhere/ to other homes in the previous year and a further 8% and 11% respectively reported that other children had come from elsewhere to live with them in their households in the previous year. Almost a third of learners lived in poor households. Most learners (84% in Free State and 81% in Limpopo) reported that they were in regular contact with extended family who lived elsewhere.

Extent of orphanhood amongst learners

Amongst the Grade 10 learners respondents (median age 17 years), around 1 in 3 learners reported that one or both parents were deceased from any cause (34% and 28% in Free State and Limpopo respectively). Some 7% of learners (1 in 14 learners) in the Free State were double orphans and 4% of learners in Limpopo. Learners who were maternal

orphans (regardless of whether or not father was living), comprised 10% of the Grade 10 sample.[a]

Most parental deaths, particularly those occurring in the past 3 years, were a result of sickness. Sickness accounted for three quarters of all maternal deaths and 85% of recent maternal deaths. Sickness accounted for 54% of all paternal deaths. When looking at recent paternal deaths only (deaths within the past 3 years), sickness accounted for 80% of these deaths. It seems highly plausible that the increase in proportion of deaths due to illness reflect the increasing impact of AIDS on mortality of the parents of these school-age children in recent years, although there may be other explanations, related to age of parents.

Education measures

Educational disadvantage measures showed that between 9% and 19% of Grade 10 learners had negative factors or outcomes on one or more of the educational disadvantage measures used. Measures included: self-reports of academic performance and performance changes relative to the previous year; school absenteeism; and reports of non-enrollment or absenteeism by other school age children in the household. Notably, 9% and 12% of learners in the Free State and Limpopo respectively had experienced a period of a year or more of school interruption since first enrollment; some 9 and 10% of learners in Free State and Limpopo said that they did not attend school most school days and around 1 in 5 learners in each province reported that there were other children in their household who were of school age, but currently not attending school at all. There was some overlap between the measures, indicating that some children experience more than one negative outcome, and their education may be more severely compromised.

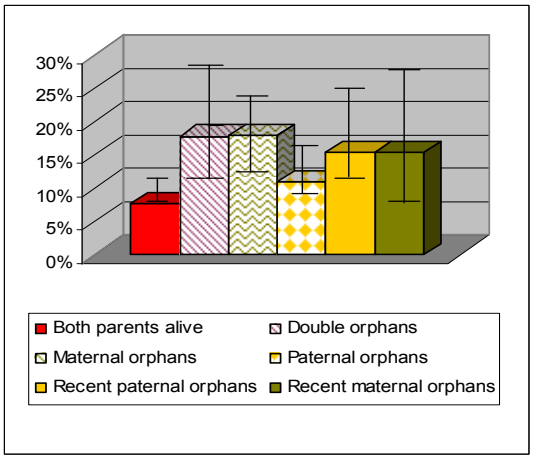
Association between household and parental illness and death and education measures

School attendance

Almost 1 in 4 double orphans and a similar proportion of maternal orphans, regardless of time of orphaning, reported erratic daily attendance. Their rates of erratic attendance were more than double those of non-orphans (8%). Consistent with anecdotal reports, double and maternal orphans showed the greatest vulnerability but notably, children who had recently lost a father also had markedly increased risk on this measure (Figure A).

[a] As this is a school-based study, and by definition the learners are still dependents by virtue of being in school, orphan status is not restricted by age group – orphan figures presented include any learner respondent whose parents are deceased, whether or not the respondent was over 15 years.

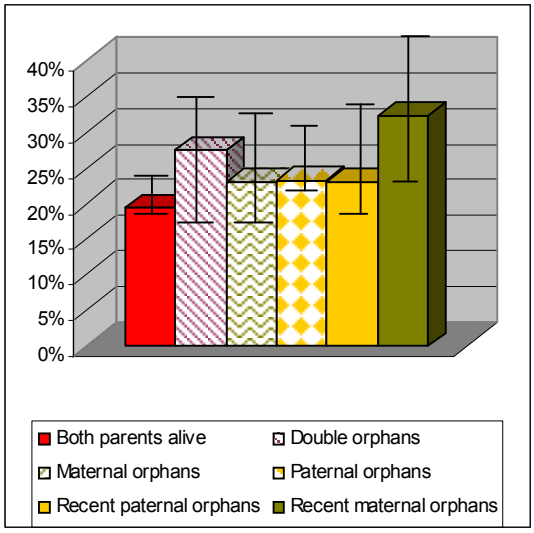
Figure A: Prevalence (95% CI) of Grade 10 learners reporting erratic daily school attendance by orphan status



Other household children out of school

Grade 10 learners were asked about other children of school age in their household who were currently not enrolled in school. Similar to rates for erratic attendance, recently orphaned children were more likely than other children to have other children in the household out of school. Almost a third of learners who had recently lost a mother to death, reported other household children out of school (32% vs 19% of children with alive parents). Rates reported by recently paternally orphaned children were also elevated (Figure B).

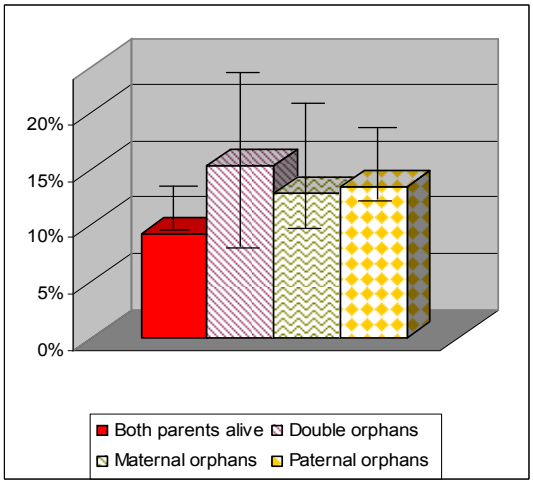
Figure B: Proportion of Grade 10 learners with household children out of school



School interruption (being out of school for a year or more since enrollment)

Around 15% of double orphans and 13% of maternal and paternal orphans had experienced one or more periods of school interruption, compared to 8% of learners with both parents alive. Importantly, paternal orphans equally likely as maternal orphans to report school interruption, indicating the vulnerability to educational disadvantage amongst orphaned children is not restricted to maternal orphans.

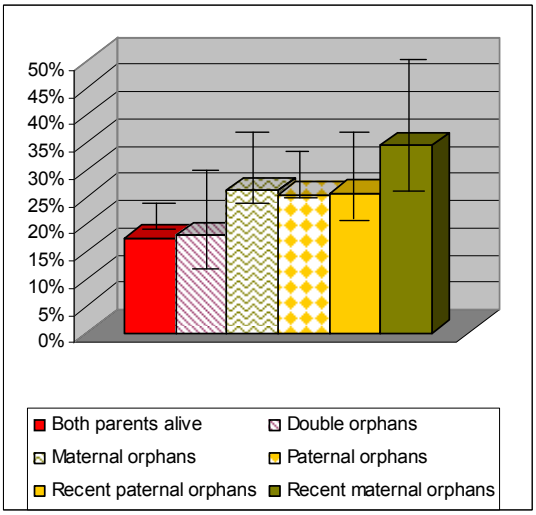
Figure C: Proportion of Grade 10 learners who had experienced school interruption



School absenteeism due to work

Around 1 in 4 maternal and paternal orphans reported school absenteeism due to work, compared to 11% of non-orphans. Interestingly, double orphans did not show increase rates for this measure. This may have been due to sample size constraints as shown by the 95% CI, or possibly to a lack of work opportunities for marginalised children, or to other issues. Recently maternally orphaned children showed the highest rates of recent work-related school absence (Figure D). Children in these situations may need special support to enable them to stay in school.

Figure D: Proportion of learners reporting absenteeism due to work



The figures presented above illustrate the vulnerability of orphaned children in two provinces of South Africa to educational disadvantage. Vulnerability is not restricted to maternal and double orphans but includes paternal orphans, particularly those whose fathers have recently died (these recent deaths are also more likely to be deaths preceded by illness as already described).

In order to control for confounding factors (these are other factors, which may be independently associated with the educational measures and with orphan status - for example, household poverty, if children from poor households are more likely to be absent from school, and are also more likely to be orphaned) and assess independent effects of illness and death on educational measures, we constructed a multivariate logistic regression model, which allows for standardization on multiple confounders and other effect modifiers.

Children at risk for educational disadvantage that were identified in this analysis included:

- **Recent maternal orphans (for erratic daily attendance and for having other household children that are out of school)**
- **Recent paternal orphans (for erratic daily attendance & school absence due to work)**
- **Double orphans (for erratic daily attendance)**
- **Learners with changes in the primary caregiver in the past year (for school absence due to work)**
- **Those living in fluid or 'elastic' households[b] (for school absence due to work & for having other household children that are out of school)**

[b] These were households that had received other children into the household, and those who had sent children away to live elsewhere.

- **Those with >6 (and >3) other children living in the household (for school interruption & for other household children that are out of school)**
- **Learners with recent death of a household member under 60 years (for sustained school absence by respondent or another household child)**
- **Gender was found to be a significant factor in educational disadvantage, but boys and girls are each affected in different ways; girls were more likely to report erratic daily attendance, and boys more likely to report that they missed school because of needing to work.**
- **Children from disorganized classes, where a daily attendance register was not taken (for school absence due to work)**

Current extent and patterns of teacher illness and deaths, and effect on the learning environment

Data collected on teachers indicated that there were fairly high background levels of attrition of teachers in the sampled schools. Overall attrition was higher in the Free State than Limpopo Province, 11% compared to 4% for 2002.

The most common reason for educators leaving the service of a school was to take up a position elsewhere in education. However, when looking only at attrition out of the education system (excluding educators who left for another position in education), illness and death was the second most common cause of attrition, affecting about 0.8% of all staff. Secondary schools seemed to be disproportionately affected by educator deaths, as well as by prolonged staff absenteeism.

Prolonged absenteeism of educators due to illness (>30 days during 2002) affected a significant proportion of schools, around 1 in 5 schools, or 2.1% of all staff. Prolonged absenteeism rates were almost twice as high in the Free State compared to Limpopo.

Current levels of absenteeism (from all causes) appear to be resulting in less than optimal contact time for learners. Of the Grade 10 sample, around 13% reported substantial teacher absenteeism without substitution[c]. Provincial differences in learner reports of teacher absenteeism were marked; affecting 18% of learners in Free State schools compared to 13% of learners in Limpopo.

A high proportion of schools reported vacant posts (more than 1 in 3 schools, and 2.5% of all teacher posts), but categories of schools that reported high attrition were not disproportionately affected by vacant posts. There were more posts vacant in Limpopo schools than in the Free State, and large schools seemed to have greater difficulty filling posts than small schools. Reducing the problems of filling posts seems to be important independent of illness and death, and will reinforce the system against potential impacts of HIV/AIDS in future.

[c] Teacher absenteeism for 4 or more lessons during the past 2 weeks, with no replacement.

School-level capacity, current response and gaps in response

Around half of the Grade 10 learner sample reported that they were sexually active, and of these around 7% in both provinces indicated that they had been forced or pressurized into sex against their will. Children who were double orphans or maternal orphans were 2-3 times more likely to have been forced to have sex than those whose parents were alive (OR=3.01; 95%CI=1.54;5.89). This indicates a cycle of HIV and vulnerability whereby orphaned and other affected children may be at increased risk themselves of infection. There is still an urgent need to promote the rights and protection of all children, particularly the most vulnerable in South Africas schools.

In general, there seemed to be confusion amongst teachers, heads and learners regarding how HIV is transmitted, and a high proportion of respondents did not know basic facts about HIV and AIDS.

Nonetheless schools in the two provinces surveyed had already instituted a number of responses to their situations. Responses were primarily directed toward supporting needy children. Managing the effects of staff illness and death on the learning environment was seldom mentioned, and appears to be an important gap in response; given the paucity of data available on the issue, it seems likely that there are some needs for school management capacity in this area.

With regards to supporting needy children, there were reports of fairly extensive involvement of teachers and School Governing Bodies (SGB); many schools reported orphan registers were kept and around two thirds of schools reported that the SGB was active in helping support needy children. Monitoring the appropriateness and quality of support provided to children by the various agencies in and around the school setting, presents a particular challenge to the education sector. Worldwide, measurement of these responses is not well developed.

Responses are taking place in the context of other barriers to education – school fees cited by 30% of heads as a main barrier to children completing their education, and around 60% of schools had not granted fee exemptions to any learners. Teenage pregnancy amongst girls and behavioural problems amongst boys were perceived by heads and teachers as important reasons for children not completing their schooling, or performing poorly. Problems with school fees and families not regarding school as important were also perceived to be important background issues affecting school completion.

Study limitations

As this is a school-based survey, the information presented does not necessarily represent the situation of children generally in South Africa, some of who are out of school. Further, the household and living circumstances of learners in South Africa's schools are not likely to remain static over the next 5-10 years, given the scale and stage of the HIV and AIDS epidemic and general social and economic factors. The factors described relate to the situation in 2003, and can be used as baseline information for comparison with data that may be obtained in future years. However, school-based information will be sensitive to trends in enrollment, repetition and drop out, and interpretation of any follow-on or comparator data will need to take these factors into account.

Implications of the findings for monitoring and surveillance

As the AIDS epidemic advances, there are likely to be substantial increases in proportions of children vulnerable to educational disadvantage; these will include, but not be restricted to orphaned children. Ensuring that these groups can continue to access education will be a significant challenge, and a part of promoting education for all. Staff absenteeism and attrition are already important obstacles to education quality, and monitoring and managing these situations are opportunities to strengthen the system. Furthermore, school communities are already active in providing a range of support, and it may be important for the education sector to take an active role in monitoring what goes on in schools to help guide responses.

Recommendations for ongoing monitoring based on this study include:

- Exploring cost-effective ways to strengthen monitoring information and avoid duplication and wasted effort; this may include providing minimum sets of indicators on HIV and AIDS related factors and educational disadvantage measures for possible inclusion in external evaluations of school-based programmes e.g. lifeskills, loveLife Games etc. This would also aid interpretation of studies by making them more comparable on some measures. Utilisation of household survey data could also be explored.

- Encouraging the use of standardized indicators wherever possible

- Considering feasibility and appropriateness of the participation of learners, SGB's and teachers in certain routine and other data collection efforts

- Examining a range of outcomes and risk-related factors, and avoid basing conclusions of vulnerability on single-indicators

- Refining a framework for monitoring of HIV and AIDS impacts in education to help ensure that systems are not overburdened by data collection, and that information is collected at appropriate levels by the most suitable partners.

Specific research recommendations related to development of monitoring tools and indicators are discussed.

1. Background

Although there is growing evidence of the impacts of HIV/AIDS on Education in Sub-Saharan Africa very little empirical quantitative work on this topic has been done at school-level in South Africa. Much knowledge about HIV/AIDS impacts on Education remains either anecdotal or at the level of projected impacts. While these sources of information are important to consider in planning, this work needs to be complemented by empirical work, which seeks to understand the current local level realities, and how prepared and responsive current local level institutions are to deal with impacts.

International experience indicates that the HIV/AIDS epidemic can have substantial influences on the needs of learners and demand for education. The greatest impact of the HIV epidemic on learners while they are in South Africa's schools will be through impacts on their families and households. Orphans will be the most obvious affected group, but other children may be affected when their households take in orphans or provide other support to family or community members. Orphans' schooling can be affected through economic stresses on their households, psychological impacts that are a result of changes in family structure and functions that involve new responsibilities to care for the sick, the elderly or siblings, as well as loss of parental guidance and interest in children's education.

Dropout or failure to enroll is the grossest manifestation of impacts of orphanhood on education. International evidence indicates that orphans tend to have lower enrollment rates than children with both parents alive and their disadvantage can be substantial – around 30% lower or worse.[1] However, studies suggest that orphans do not always have substantially lower enrollment rates. Impacts seem to vary widely, depending on social, economic and cultural circumstances. There are strong indications that household income may be a stronger predictor of non-enrollment than orphan status per se. Recent analyses of data from other countries suggest that impacts of orphanhood on enrollment of girls does not appear proportionately greater than among boy orphans in many countries, and tends to mirror general gender inequities in enrollment.

Other impacts of orphanhood on education outcomes have frequently been noted, although understanding of them is still at an early stage. Reports, mainly based on qualitative research findings indicate that orphanhood, particularly due to a stigmatized disease such as AIDS, can impact substantially on performance, completion rates and general development of learners.[2] Contributing factors include erratic attendance due to household circumstances; poorer concentration due to hunger, household demands and psychological impacts; and emotional/behavioural disturbances. Commentators have noted that effects of orphanhood on children may only manifest after many years and could have important social consequences in view of the scale of orphanhood in many communities.

In South Africa, while projected numbers of maternal orphans are in the region of 5% or 1 in 20 of 10-14 year olds in 2002, this is anticipated to more than double by 2015, with around 1 in 10 children aged 10-14 years orphaned by AIDS in that year.[3] Estimates that

include all children under the age of 18 years, suggest that the percentage of children orphaned by AIDS are likely to be in the region of 18% maternal orphans, 28% paternal orphans and 12% double orphans.[4] Provincial differences are likely to be marked.

There are currently limited data available on orphan drop out, repetition and attendance rates in South Africa's schools, or on efforts by schools to keep vulnerable children in school. While an important limitation of school based surveys may be the under-reporting of orphaning owing to school drop out by some orphans, it is still important to quantify current numbers of orphans and other vulnerable children in the school system and their experience of education, failure, repetition etc. Subject to recall and other biases, it is also useful in the school survey setting to obtain estimates of orphans who have dropped out from teachers, heads and fellow learners.

The degree to which schools are facing challenges posed by infected and ill children in the classroom is not known in South Africa. Overall, projections indicate fairly low levels of ill and infected children in schools overall, but these numbers are likely to rise over the next decade, and even knowledge of one or two ill children in a school setting can be disruptive and cause stress for learners and educators. Some schools may be more badly affected than others, and policy makers and planners have indicated a desire to know the extent to which illness and death directly affecting learners is a problem in school settings, and what particular problems are manifesting.

While the impacts of illness and death on learners may be substantial, the epidemic will also affect the capacity of the Education System to deliver Education, through impacts on educators and other employees. Projections of HIV/AIDS illness and death amongst educators in South Africa indicate that while effects are unlikely to be devastating in any one year, cumulative impacts on loss of teaching capacity may be substantial. Continuous or intermittent absenteeism due to HIV/AIDS may have severe repercussions on contact time and the ability of the system to continue to deliver quality education. Critical is the ability at the local level to manage absenteeism and staff attrition in the most effective manner possible. Currently there is insufficient information from the local level on experience and extent of absenteeism and attrition, or systems in place for effective management.

The dissemination of information about impacts of illness and death on learners, teacher and school communities is a potentially powerful way to elicit public support for continued efforts in HIV prevention and impact mitigation. Such efforts are likely to be multi-sectoral and may include reinforcing existing interventions, new policy considerations to support orphans and other vulnerable children, to increase the ability of the system to maintain access and quality in the face of possible impacts of increased teacher illness and attrition.

A baseline school survey as is presented in this report provides an opportunity to explore and recommend feasible and appropriate indicators for ongoing surveillance.

The main questions addressed by this survey included:

1. What is the extent of the potential risk factors in schools in South Africa?

- Orphans; illness and death in learner households; changes in household composition; poverty & other risk factors

- Educator attrition & absenteeism; contribution of illness & death
- Response capacity in schools

2. Are potential risk factors affecting children's education?

- Drop out; school attendance; performance; enrollment

3. What are the challenges and opportunities for ongoing monitoring?

2. Approach and methods

2.1 Preparatory phase

The study obtained approval and co-operation from the Ministry of Education, who gave input on selection of provinces for inclusion, facilitated access to sampling frame for schools and provided a letter of support to help facilitate school access.

A draft conceptual framework for measurement and monitoring of the impacts of illness and death at school level is provided in Annex 1A and 2B. Annex 1A and 1B illustrate the expected relationships between functional implications on education and "demand side" and "supply side" impacts respectively. The framework was used as a guide to develop the approaches and instruments and it was refined in the course of the project. In the preparatory phase, we conducted some interviews with key informants to elicit input of stakeholders in the design of data collection tools to ensure these meet their needs, and to refine the overall conceptual basis of the project.

2.2 Literature review

We conducted a systematic literature review (Annex 2). The literature review comprised a systematic and critical appraisal of research undertaken to date in respect of the impact of illness and death on education systems, with a focus on impacts at the local level and measurement issues. The literature review was conducted in order to help to identify research gaps, identify standardised and tested approaches to data collection, including but not restricted to those previously used in school surveys, and inform the finalisation of the conceptual approach.

The literature review highlighted the diversity of approaches and tools that have been used to measure impacts of illness and death on education at the local level.

There was a common understanding across the studies reviewed that enrollment on its own is a necessary but not a sufficient measure of impacts on vulnerable children. Other measures that were reported examined other aspects of educational outcomes, but these were not well developed.

Impacts in some studies were related not only to orphans, but also to other affected children, such as those in receiving households, or those caring for the sick.

Methods to measure impacts on teachers and other staff, and to measure response capacity at school level were not well developed, and the relationships between these and the demand side impacts were seldom explored in previous work in this area.

2.3 Study population and sampling

Provinces purposively selected to participate in the study were Limpopo Province (11.5% HIV+) and Free State (19.4% HIV+)[d]. Initial criteria for selection of provinces were that they should be at different stages in the epidemic and represent the range of schooling and socio-economic conditions in the country. Limpopo Province, as an example of a predominantly rural province, with an epidemic at levels that are relatively low when compared to other provinces, and Free State, as an example of a province with a more advanced epidemic with both rural and urban areas.

The sampling frame was drawn from the School Register of Needs Update 2000. This dataset was the most recently updated dataset containing line by line data on all schools registered with the Department of Education, as well as demographic variables such as province, area, school size, level of school and type of school (farm school, church school, independent etc.) that could be used as strata for sampling. While unlikely to be completely up-to-date or complete, this dataset was likely to have adequate coverage for the purposes of sampling for this study.

The overall sample size was 250 schools, and a sample of 243 schools was achieved. Statistical estimation of required sample size was inappropriate as numerous outcomes were to be measured in the study. However, 250 schools across 2 provinces were believed to be likely to provide adequate statistical power for certain critical outcomes. Simple random sampling proportional to enrollment was conducted within each stratum. Very small schools were sampled separately to ensure adequate representation of these schools as they are likely to have particular vulnerabilities to HIV/AIDS impacts. The EMIS school reference codes were retained as far as possible in the database to allow cross checking and supplementation of school demographic data with the EMIS records through merging the datasets.

Schools were approached with due regard for processes and procedures in the Departments of Education. Non-response or refusals were substituted randomly by a school in the same strata in the original sampling frame. A list of substitutions and refusals can be provided on request. Comparison between the achieved sample and the sampling frame from the School Register of Needs Update database is shown in Table 1 below.

Table 1: Comparison Between Sample and the School Register of Needs Database 2000

	Free State				Limpopo				Total sample	
	SRN database		Sample		SRN database		Sample			
	N	%	n	%	N	%	n	%		
Schools >40 learners	1453	58%	94	80%	4148	97%	119	94%	213	88%
Small schools	1046	42%	23	20%	113	3%	7	6%	30	12%
	2499	100%	117	100%	4261	100%	126	100%	243	100%

The small schools were exclusively primary schools; in the achieved sample, these small primary schools are over-represented in the Limpopo Province and under-represented

[d] Estimated HIV prevalence amongst 15-49 year olds in the NMF/HSRC Household Survey 2002.

in the Free State relative to the sampling frame. However, in general, the situation with regards to small schools is in flux in the Free State, and many Free State school closures and mergers have been underway in the last several years, such that approximation of the sample with the actual situation in 2003 may be closer than reflected in the Table. For the purposes of analysis, small schools were compared to the main sample, and where no differences were found, the findings are presented together.

At each sampled school, data were collected from (1) Heads (2) A guidance or lifeskills or other member of the teaching staff and (3) a randomly selected Grade 10 class in a sub-sample of approximately 50 secondary schools i.e. there were planned to be approximately 1500 learner respondents. Data were collected by trained interviewers using structured interviewer-administered questionnaires for heads and teachers, and learners completed a short self-administered questionnaire. Reasons for selecting Grade 10's as informants were that a higher Grade is more likely to be biased by a self-selection of more advantaged learners who may not accurately represent learner circumstance and experience due to drop out after Grade 10. Lower grades could be included, but literacy and ability to accurately interpret questions about HIV risk and impact are more likely in a Grade 10 class than at lower levels.

2.4 Data collection instruments

Four separate data gathering instruments for use at school level were designed. These were:

1. A structured questionnaire for school heads designed to be administered by a trained interviewer in an interview setting.

2. A structured questionnaire for the lifeskills or guidance teacher (or another teacher if there was no such teacher in the school), also designed to be administered by a trained interviewer in an interview setting.

3. A data capture sheet requesting information on school demographics such as numbers of learners, teachers, vacant posts, absenteeism etc. The information on the data capture sheet is often available from school records and extracted by a clerk or another person assigned by the Head to this task.

4. A simple questionnaire designed to be self-completed by Grade 10 learners in a classroom situation. This questionnaire asked learners directly about orphaning, home circumstances, progress through the education system as well as knowledge of HIV and risk behaviour.

The design of the questionnaires was based on (1) the literature review (2) previously used instruments and lessons learned from our previous school survey experience assessing HIV/AIDS impacts,[5] and (3) modifications and priorities suggested by the steering and reference teams and in stakeholder interviews.

Instruments were designed to capture several years of information where this was feasible, to give some indication of cumulative impacts.

Wherever possible and appropriate standardised concepts, definitions and classification were used in formulating questions. .

Key questions that the data collection exercise was aimed to answer are summarised in Figure 1 below.

Figure I: Key questions addressed by the school survey

DEMAND SIDE IMPACTS

1. What are the impacts of adult illness and death on learners, including:
   - Prevalence of orphanhood and vulnerable children within the school system at various levels?
   - Household structure and composition
   - Ability to meet basic needs
   - Continued school attendance and performance
   - Discipline, behaviour problems, other special needs of affected and infected children
   - Prevalence and perceptions of stigma and discrimination
   - How important are these in relation to other challenges within the system?

SUPPLY SIDE IMPACTS

2. What are the already experienced and likely impacts of HIV/AIDS amongst staff at school level on
   - Teacher absenteeism
   - Employee attrition
   - Management and school functioning
   - Contact time, process and quality of education?
   - Prevalence and perceptions of stigma and discrimination?

RESPONSE CAPACITY OF SCHOOLS

3. How prepared are schools and school communities to respond to HIV in terms of prevention and mitigation responses, including:
   - Policy and planning?
   - Stigma and discrimination at school level?
   - Basic knowledge of HIV prevention & wellness?
   - Attitudes to adolescent sexual health education in schools?
   - Help and support received by orphans - types, extent and gaps?
   - Help and support received by staff?
   - Management of e.g. absenteeism, attrition and other factors potentially affected by HIV/AIDS?
   - What interventions and responses have already occurred in the schools and communities?

4. What are the perceived priorities and challenges to education independent of HIV/AIDS? What are the challenges and needs for ongoing surveillance?

2.5 Fieldwork logistics, management and quality control

Day to day management of the fieldwork was done by CASE, an experienced survey firm with a database of more than 400 fieldworkers around the country and 40 experienced supervisors. Fieldworkers for this project were required to have at minimum a Grade 12 matriculation certificate and pass an English proficiency test. We also ensured that fieldworkers were proficient in the languages most common in the areas to which they were assigned.

The team from HDA and CASE jointly conducted the initial training sessions for fieldworkers. Training was a full one-day participatory workshop in each province. The training programme included:

- Background to the study and to HIV/AIDS impacts on education systems
- Interviewer techniques
- Administering the questionnaires
- Translation of questions
- Role-playing the questionnaires taking the form of a 'round robin'.

The local supervisor performed the first line of quality control of the data collection process. Supervisors checked completed questionnaires. Questionnaires were then checked by members from the fieldwork unit for errors or inconsistencies.

Researchers and members of the fieldwork unit made a series of unscheduled visits to a selection of schools while the survey was in field to check that the fieldwork was being conducted to the required standards and to observe a selection of interviews. Back checks were carried out by CASE staff on a selection of the interviews.

The data were punched using a double entry verification system to minimise punching errors. The data were converted into the statistical package, STATA for analysis.

Overall, the quality of the data was believed to be reasonably good, based on field reports and receptivity of respondents to the data collection exercise. Many questions were based on widely used CDC, DHS and other instruments, and a good response rate on most questions was achieved. Areas where responses were less complete, were head's reports concerning recent teacher absenteeism, illness and death. In some instances, basic school demographic information seemed hard to elicit. It seems that it is unrealistic to expect to elicit complete data on staff illness, death and absenteeism using standard structured interviewer-administered questionnaires. Turnover of staff is an issue, recently arrived heads of schools cannot be expected to report on the situation prior to their arrival, and recall biases also seem to be substantial on these issues. In this study, missing data were excluded from the analysis, and where there was substantial missing information, the entire question was excluded. Thus, on the whole, we believe that the information that is presented below is of adequate quality and any biases would not change the conclusions substantially.

2.6 Description of the sample

2.6.1 Schools

A total of 117 Free State schools and 126 Limpopo schools participated in the survey. Just over half of participating schools were primary schools, 35% secondary schools, with the remainder combined. There were 30 small schools (<41 learners) included in the sample. A total of 3452 teachers were employed in the schools in 2002; 44% male and 56% female. The schools in the sample taught a total of 106446 learners, 52% female, and 48% male. The median school size was 368 learners for Limpopo schools and 402 for Free State schools.

Table 2: Select summary measures of sample characteristics by province

Measure	Total sample	Limpopo % (N)	Free State % (N)
Total teachers in sampled schools	3452	1616	1836
Total learners in sampled schools	106446	53820	52626
Median no. learners (range)	373 (7-1823)	368 (13-1823)	402 (7-1261)

2.6.2 Heads

A total of 243 respondents answered the Head of School questionnaire. Of these, 83.5% were the Head of School, 11.5% the Deputy Head of School, with the remaining 5% a combination of heads of departments, acting principal, assistant deputy and teachers. Two-thirds of the respondents were men. Half were between 40 and 50 years of age.

2.6.3 Teacher respondents

Two hundred and thirty four teachers were interviewed. The majority were female (67%) and in the age group 31-40 years (47%).

2.6.4 Learner respondents

A total of 1496 learners were interviewed. The majority (88%) was over the age of 15 years. More female (55%) than male (44%) learners participated in the survey.

Data analysis included descriptive data analysis, as well as more sophisticated multivariate analysis to explore relationships between variables, controlling for confounding, and determinants of levels of impact.

The specific variables of interest and data analysis methods are described separately for demand side impacts, supply side impacts and response capacity below. Results for these three sections are presented separately in subsequent chapters, and the findings are consolidated in the final chapter looking at measurement considerations across all three areas of enquiry.

2.7 Methods of data analysis

Educational outcomes and learner circumstances

Most of the variables for this section of the analysis were extracted from the learner questionnaire, and to a lesser extent, information from heads and teachers.

We studied several different educational disadvantage outcome measures and their association with several categories of risk related factors.

The outcomes considered were self reports of:

- School interruption (being out of school for an entire school year)
- School absenteeism due to work (missed school for more than a week due to having to work at home or for money or food)
- Erratic school attendance on a day to day basis ('do you attend school regularly on most school days?)
- Sustained school absenteeism for >2 weeks by respondent or another household child
- Poor school performance in previous year
- Performance declines relative to the previous year
- Repetition (ever having repeated a grade) and
- Having other household children of school-going age who were currently not enrolled in school.

The outcomes were all binary outcomes.

Based on the conceptual model (Annex 1A) and the literature review (Annex 2), we considered the following risk related factors:

Sex, age, class dis-organisation (proxied by not having a class register taken), living outside the family home, number of adults living in the households; number of children in the household; children having been sent away from household; children having been received into the household; household poverty (sometimes or never having enough for basics); contact with extended family; delayed enrollment[e]; illness in the household in the past year; death in the household in past year; maternal orphaning (compared to mother

[e] Although late enrollment of household children is frequently cited in the literature as a negative coping mechanism used by families affected by HIV/AIDS, this is unlikely to have been the case for our sample, who would have enrolled pre-1991 when the AIDS epidemic was at a relatively early stage. In this study, we used late enrollment as one measure of pre-existing educational disadvantage for our sample.

alive) and time since maternal death. We also examined effects of paternal orphaning and dual orphaning in separate models.[f]

We examined uni-variate and bi-variate relationships between the risk-related factors and outcomes and then conducted multivariate analysis to assess net effects of each factor when the effects of the other factors were controlled statistically. Analyses were undertaken using the software package STATA, adjusting for survey design effects.

Logistic regression was used to assess the factors associated with the binary outcomes relating to educational disadvantage (school interruption, school absenteeism related to work, school performance). Owing to the large number of independent variables, at first we entered the terms separately into the model, to check for co-linearity problems, but found little evidence of co-linearity influencing the model outputs.

The following limitations of the study should be noted.

- The outcome variables are largely based on self-reported behaviours and the data are subject to reporting errors of unknown direction and magnitude.
- Because the data are cross-sectional, the direction of causal relationships between the variables cannot always be clearly established. Although this study serves to identify possible associations and issues of concern to policy makers and planners, longitudinal studies (or more targeted analysis of existing panel studies) are desirable to disentangle causal relationships between some of the variables. A follow-on study that takes into account measurement considerations identified in this study would also provide important data.
- A school-based study is unable to accurately gather information on out of school youth, including those who have dropped out or not yet enrolled. This is likely to make it harder to show HIV and AIDS-related impacts, impacts of illness and death generally, and effects of other vulnerabilities.
- The risk factors identified here apply to learners in their late teens (Grade 10 sample), and different patterns of risk-related factors may emerge for younger learners. A similar study adapted for younger grades is recommended to explore this issue.

Nonetheless, there are several advantages to the approach used here: A school-based study is able to include school-based risk-related factors, which are often not addressed in household surveys and secondly the study population are arguably are more amenable to intervention by the education sector than those youth who have already dropped out of school or not enrolled. In addition, this approach provides useful information on the challenges facing schools and to guide prioritisation of responses in relation to staff and the learners who are in school.

Teacher absenteeism, illness and death

[f] Further explanations of outcomes and risk-related factors can be provided on request.

Most of the information in this section was elicited from the interviews with heads of schools as well as the data capture sheet, and to a lesser extent interviews with teachers. We also asked learners about teacher absenteeism. The findings were examined separately for each province, and by level of school. This section is primarily descriptive, and statistical methods were not extensively used.

Response capacity, current responses and gaps

This section covered information related to support received and offered to needy learners and staff; HIV knowledge and risk and the general school environment in which responses occur. Descriptive results are presented.

The measurement of HIV and AIDS response capacity in school settings is in its infancy. There are few measures of response capacity available, virtually no standardized measures, and no overarching conceptual framework on a theory of change that would be required for analysis of the issue in relation to educational outcomes. This lack meant that we did not consider it appropriate to fully explore relationships between school response indicators and educational outcomes. In this study, we piloted some questions, and have identified a few potentially useful indicators, but in retrospect, drawing on social capital theory for defining and isolating indicators may have been productive. In addition, there are many overlaps apparent with basic school management functions and quality of response that need further investigation to ensure consistent measures. One of the research recommendations flowing from this study is a focused study of response capacity of schools, building on the lessons learned from this survey.

3. Learner circumstances, household illness and death and other factors and associations with educational outcomes

3.1 Key questions

Orphanhood and illness and death in the household are widely believed to be associated with adverse effects on education for affected learners. Some effects for enrollment have been previously demonstrated for other countries, and commentators have noted that attendance, learner performance and school completion may be also affected. These impacts have not previously been documented in South Africa, and data from other countries is sparse. Previous studies have shown that impacts seem to vary widely, depending on social, economic and cultural circumstances.

The key questions addressed in this section of the analysis are:

What is the extent of impacts of illness and death currently evident at school level in Limpopo Province and Free State? E.g. orphanhood, illness and death in the family etc.
What are the factors associated with educational disadvantage, and how important are illness and death and potential HIV and AIDS related factors, relative to other factors that are associated with educational disadvantage?

3.2 What is the situation of learners in school?

There were 1485 Grade 10 learner respondents from 44 senior schools included in the sample. Table 3 shows the demographic and risk factor characteristics for learners in the Limpopo and Free State.

There were slightly more girls than boys included in the sample in both provinces (57% female in the Free State and 55% female in Limpopo Province). The majority of learner respondents were aged 16-18 years in both provinces (67% and 62% for Free State and Limpopo respectively).

3.2.1 Where do learners live?

As for many South African children, the learners in this study came from a number of different family and household forms. Household composition tended to be fairly fluid in terms of children being sent to live elsewhere or coming into the household. Most learners from both provinces lived in households with 2-3 adults living with them and less than 3 other children. Limpopo learners tended to live in larger households; for example, 9% of Limpopo learners and 4% of Free State learners came from households where 6 or more other children were resident.

Around 10% and 16% of learners in Free State and Limpopo respectively reported that their households had sent children away to live elsewhere in the previous year and some 8% and 11% of learners in these provinces reported that other children from elsewhere had come to live in the household in the previous year.

Illness and death in the household has important impacts on child migrancy in this sample. Although sending children from the household to live elsewhere, or receiving other children to live in the household were fairly commonly reported in the two provinces surveyed, these events were at least twice as common where there was recent illness and death in the household.

In Limpopo, some 12% (n=67) of those without recent death in the household had sent children away to live elsewhere, compared to 23% (n=36) of those who had experienced pemature death of a household member i.e. aged under 61 years, and 38% (n=18) of those who had a death of a member over 60 years. In the Free State, 7% (n=31) of those with no household deaths had sent children away, compared to 18% (n=26) of those with death of a young person, and 5% of those with deaths over 60 years. In Limpopo Province, those households with recent adult death were also more likely to have received children into the household, but this was not observed in the Free State.

Thus, while child migrancy between households is significantly associated with the occurance of adult illness and death, but these relationships are not consistent between the provinces. Death of an elderly person seems to be more disruptive to household structure in Limpopo, whilst death of a younger person was more disruptive in the Free State.

Household poverty was widespread, and on average, there were no more orphaned learners than non-orphans in poor households in this sample. However it may have been that our measures of poverty did not pick up more nuanced effects.

A greater proportion of Limpopo learners reported household poverty; some 69% and 56% of learners in these provinces reported that their households never or only sometimes had enough for basics.

Around 1 in 4 learners in both provinces lived in a household with only one adult present. A surprisingly large proportion of learners said that they lived in households with no adults at all (14% in Free State and 17% in Limpopo Province). Around one quarter (61) of all the learners who reported that they were in these "child-headed" households (CHH) 61 were over 18, leaving 11.6% of learners overall who were both under 18 and in households

without adults. There were no marked gender differences in household composition. Around 16% of Free State learners and 20% of Limpopo learners were not in regular contact with their extended family.

We examined relationships between child headed households (since a surprising number of children lived in child headed households), and orphan status. We found that the distribution of CCH across the orphan categories did not show disproportionate numbers of CCH amongst orphaned children and youth in school.[g]

There were many learners from both provinces who appeared to have limited adult and extended family support in their households. This was largely irrespective of orphan status. Many children with living parents lived geographically apart from them.

Teacher perceptions

Teacher perceptions of the occurrence of learners in CHH were somewhat different.[h] Over half (54%) of the teachers interviewed said that they had learners who lived in a house with no adults. Their estimates suggested that approximately 7% of learners were in CHHs. Their estimated percentage of learners that lived without an adult per teacher ranged from 0 to 61% (average %: 5.1, median %: 1.4).[i]

[g] Some 16% of children whose parents were both alive, were in CHH (n=169), compared to 19% of those with both parents dead (n=14), 13% of those whose mother only was deceased (n=40), and 21% of those whose fathers only were deceased (n=8). Among maternal orphans, the time since the mother died did not clearly influence their risk of living in a CHH. The percentage living in a CHH was 15% of those whose mother died in past year, 14% of those whose mothers died more than 3 years ago, and 32% of those who were unsure when mother died.

[h] They are not strictly comparable as the teachers may have taught classes other than grade 10 .

[i] There were many missing data from the teacher estimates of how many learners were in their classes, and some outliers had to be recoded to missing, hence the estimate of the denominator must be interpreted with caution.

Table 3: Prevalence of demographic and contextual factors amongst Grade 10 learners

Measure	Free State % (N)	Limpopo % (N)
Demographic characteristics		
Gender		
Female	57% (359)	55% (442)
Male	44% (277)	45% (361)
Age group		
<16 years	12% (76)	9% (70)
16-18 years	67% (426)	62% (497)
>18 years	21% (133)	29% (236)
Household characteristics		
Living situation during school term		
Boarding hostel	2% (12)	3% (21)
Own family home	79% (502)	80% (640)
Other family home	18% (110)	17% (134)
Other	2% (10)	1% (8)
Regular contact with extended family		
Yes	84% (534)	81% (649)
No	16% (105)	20% (157)
No. of adults in the household		
2-3 adults	47% (302)	41% (329)
No adults	14% (92)	17% (133)
1 adult	17% (108)	20% (158)
>3 adults	21% (136)	23% (180)
No. of children in the household		
<3 children	66% (422)	51% (412)
3-6 children	30% (193)	40% (320)
>6 children	4% (24)	9% (74)
Children sent away from household		
No	90% (577)	84% (678)
Yes	10% (62)	16% (128)
Children received into the household		
No	92% (590)	89% (718)
Yes	8% (49)	11% (88)
Household poverty		
Never enough for basics	27% (170)	31% (244)
Sometimes enough for basics	27% (173)	38% (303)
Usually enough for basics	34% (215)	26% (207)
Usually enough for luxuries	13% (80)	6% (47)
Length of time resident with current caregiver		
>5 years	86% (548)	89% (706)
1-5 years	9% (59)	7% (58)
<1 year	4% (28)	4% (32)

3.2.2 What is the extent of orphanhood, illness and death in learner households?

Although the two provinces included in the survey are at a relatively early stage of the AIDS epidemic, many children had been affected by death of parents or household members, and the children attributed most of these deaths to sickness, rather than other causes.

Table 4 presents the percentage of the learner samples experiencing orphanhood and recent illness and death in their households.

Table 4: Prevalence of orphaning and household illness and death amongst Grade 10 learners

Measure	Free State % (N)	Limpopo % (N)
Death in the household in past year		
No one died	71% (451)	73% (573)
Deceased was <61 years[j]	23% (143)	20% (156)
Deceased was >60 years	5% (31)	5% (42)
Unsure	1% (9)	2% (15)
Chronic illness in the household in past year		
No one ill	71% (1042)	69% (548)
Ill person was <61 years	23% (128)	20% (156)
Ill person was >60 years	3% (21)	5% (42)
Unsure	4% (26)	2% (15)
Maternal orphaning status		
Mother alive	87% (557)	91% (735)
<3 years ago	6% (37)	3% (25)
3+ years ago	5% (30)	5% (36)
Unsure	2% (15)	6% (45)
Paternal orphaning status		
Father alive	71% (452)	76% (612)
<3 years ago	11% (69)	5% (42)
3+ years ago	10% (66)	10% (80)
Unsure	2% (15)	9% (68)
Composite orphan variable		
Both parents alive	66% (418)	72% (574)
Mother only deceased	5% (34)	5% (38)
Father only deceased	22% (139)	20% (158)
Both died	7% (46)	4% (32)

[j] We do not mean to imply that all deaths in those under 60 years are due to HIV/AIDS; however, such an age cut-off does allow a ballpark estimate of premature death, i.e. deaths in those under 60 are clearly not directly linked to old age.

Some 34% and 28% of Grade 10 learners in Free State and Limpopo respectively had one or both parent deceased from any cause. Around 13% of learner respondents in the Free State and 9% in Limpopo were maternal orphans. Some 6% of Free State learners and 3% of Limpopo learners said that mother had died within the previous 3 years, a further 5% from both provinces said mother had died more than 3 years previously and around 1-2% did not know when their mother had died.

Paternal orphaning was more commonly reported than maternal orphaning. Some 11% of Free State learners and 5% of Limpopo learners reported recent paternal death (within the last 3 years). Some 7% of Free State learners and 4% of Limpopo learners were double orphans.

Consistent with the stage and severity of the HIV/AIDS epidemics in the two provinces, orphanhood and recent illness and death of a household member younger than 60 years were more commonly reported from the Free State compared to Limpopo. Around 1 in 14 Grade 10 learners in the Free State had no living parent, compared to 1 in 25 in Limpopo. There were also more recent maternal deaths reported by Free State learners. It will be important to monitor levels of orphanhood into the future.

Learners who had been orphaned attributed most parental deaths to sickness (Figure 2a and 2b). Short and long sickness accounted for 74% of maternal deaths and 54% of paternal deaths. The lower proportion of paternal deaths attributed to illness, is due to more accidental deaths, and more deaths as due to unknown causes. Absolute numbers of paternal deaths due to sickness were higher than maternal deaths due to sickness.

The data suggest that sickness as a cause of death may be becoming more common. Looking at recent deaths only i.e. within the past 3 years, some 86% of recent maternal deaths (n=65) were due to sickness (55% of these attributed to a 'long sickness'), compared to 74% for all maternal deaths.

Of fathers who were deceased, there were 113 deceased in the past 3 years, and 80% of these recent paternal deaths were due to sickness (40% of which were attributed to 'long sickness'), compared to 54% attributed to sickness for all paternal deaths.

It seems highly plausible that the increase in proportion of deaths due to illness reflect the increasing impact of AIDS on mortality of the parents of these school-age children in recent years, although there may be other explanations, related to age of parents.

Teachers estimates

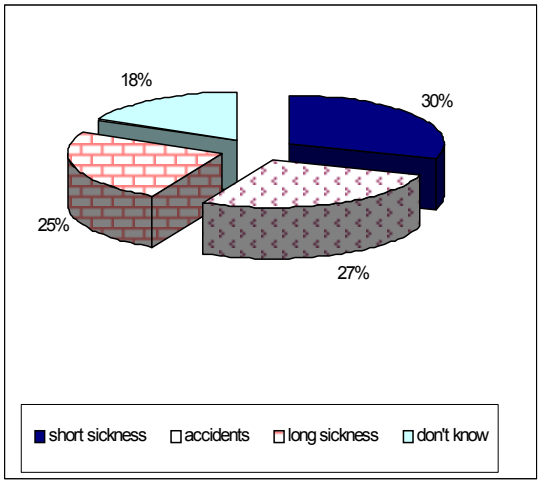
Teachers were asked to estimate how many learners in their classes lost a parent or main caregiver to death during the past 2 years. Sixty-three teachers either said none, refused to estimate or did not know. Of the remainder, a total of 1196 learners were estimated to have lost a parent/caregiver to death in the past 2 years. This is an average of 6.9 (1196/171) learners per teacher who gave an estimate (Table 5).

Table 5: Estimated numbers and percentages of orphans in sampled schools

Orphanhood indicator	Total	Limpopo	Free State
Estimated no. of double orphans (heads estimates)	7123	3490	3633
	6.7%	6.5%	6.9%
Estimated percentage orphans per school (median and range)	3.4% (0-85%)	2.8% (0-85%)	4.7% (0-24%)
Primary	2.8% (121)	*	*
Secondary	5% (84)	*	*
Combined	3.9% (29)	*	*

Figure 2a: Causes of parental death in the Free State

"what did your father die from?"



"what did your mother die from?"

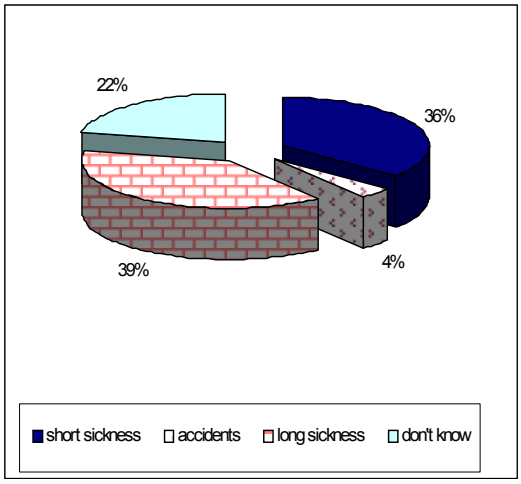
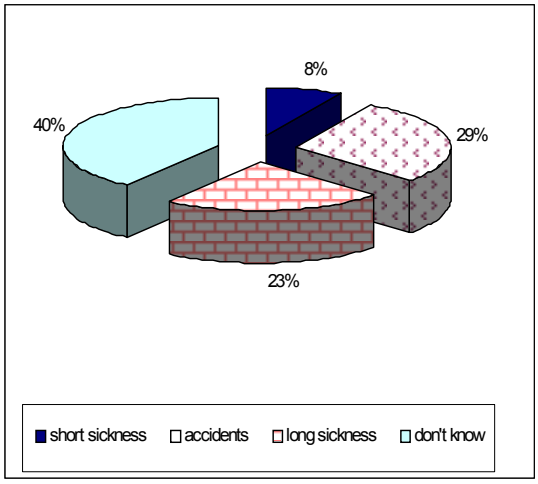
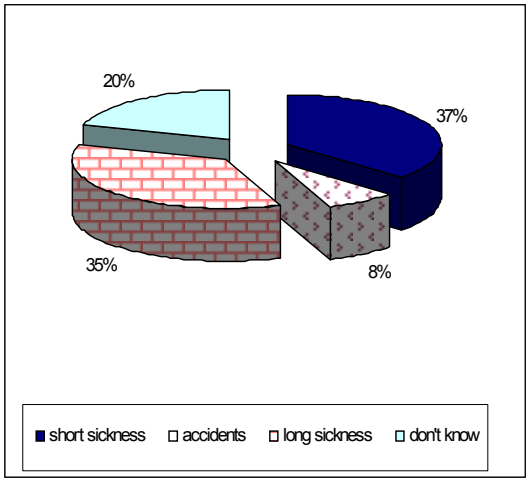


Figure 2B: Causes of parental death in Limpopo Province

"what did your father die from?"



"what did your mother die from?"



3.2.3 Education measures used in this study

This section describes the education related measures of the sample overall, and presents findings separately by orphan status, where this is relevant. The findings show that orphans had significantly elevated risks for many categories of educational disadvantage. The following section explores these associations in more detail using multi-variate techniques which enable control for potential confounders such as household size, poverty and other factors.

Late enrollment

Late enrolment was reported by approximately 16% and 14% of learners in the Free State and Limpopo respectively (Table 6), with slightly greater proportions of Grade 10 boys than girls reporting that when they first enrolled in school they were over 8 years. Although age at first enrollment is not likely to be influenced by HIV and AIDS in our sample, as the AIDS epidemic would have been at a very early stage at the time of first school enrolment of these secondary school children, it may be an indication of early or pre-existing educational disadvantage. As would be expected, there were no significant differences between the proportions of orphans who enrolled late compared to other children.

School interruption

Around 9% of Free State Grade 10's and 12% of Limpopo Grade 10's reported that they had experienced at least one period of school interruption, being out of school for an entire school year since first enrollment (Table 6).

Around 1 in 10 learners in both provinces had dropped out of school for a year or more since first enrollment. School interruption was almost twice as commonly experienced by double orphans compared to children whose parents were alive (Figure 3). The most common reasons mentioned by learners for school interruption were migration and problems paying school fees.

Orphan compared to non-orphan rates of school interruption were statistically significant for paternal orphanhood, but not for the other categories of orphanhood, probably due to sample size constraints.[k] The two provinces showed similar distributions of school interruption by orphanhood (not shown).

The most common reason for being out of school amongst learners who had had a period of school interruption were migration and problems paying fees. Reasons are presented in Figure 4 below. A number of other reasons were less commonly mentioned, including cultural factors; unsupportive parents and family problems; accidents; school closure, or the reason was unknown (9%). There were no marked provincial differences evident in reasons given for being out of school.

[k] Odds ratio's for double orphans compared to children with both live parents: OR=1.77; 95% CI=0.90;3.49; for maternal orphans compared to those whose mothers were living: OR=1.27; 95% CI=0.76;2.13; and for paternal orphans compared to those whose fathers were living: OR=1.45; 95% CI=1.01;2.09.

Figure 3: Proportion of Grade 10 learners who had experienced school interruption of a year or more

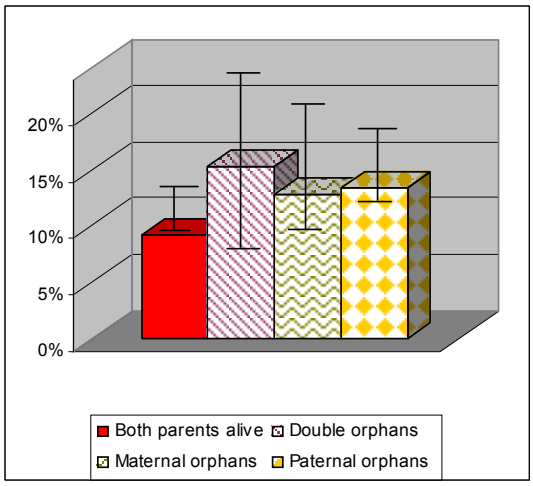
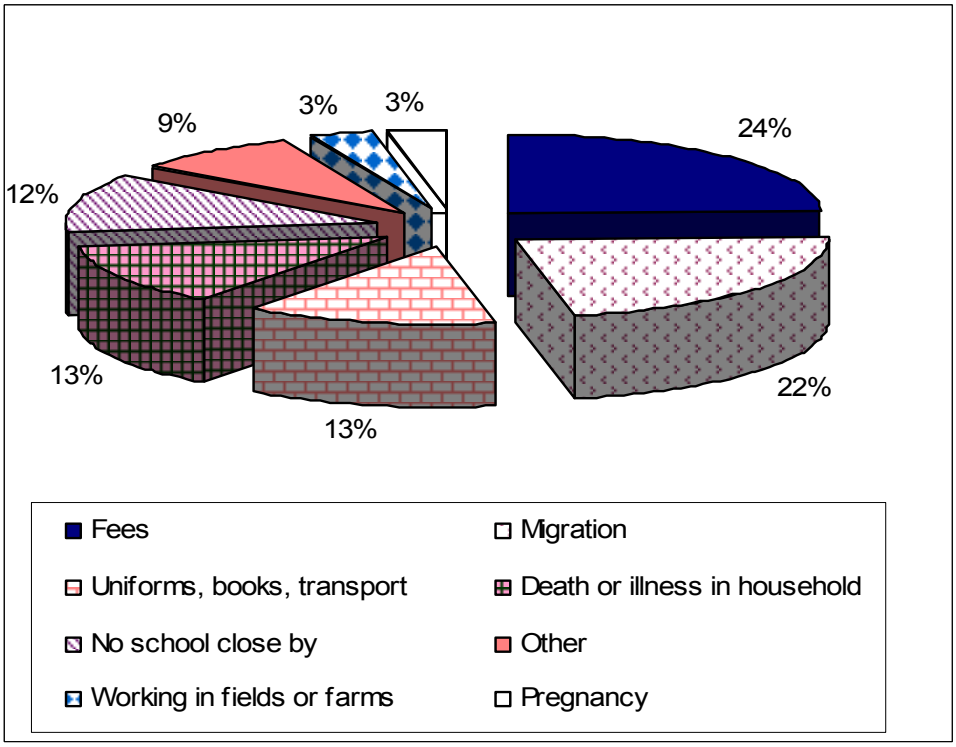


Figure 4: Self reports of reasons for school interruption amongst learners



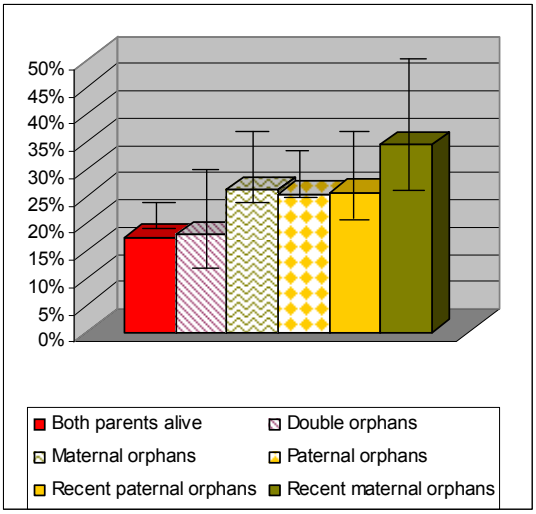
Absenteeism

Absenteeism due to work

Some 18% and 22% of Free State and Limpopo learners reported that they had recently missed 5 or more school days in a term because of work, either for cash or labour needed at home. This was slightly higher for boys than girls for the sample overall (23% and 16% respectively).

Learners in most categories of orphanhood showed elevated risks, with the most affected group being learners whose mothers had died within the previous three years (Figure 5).

Figure 5: Proportion of learners reporting absenteeism due to work

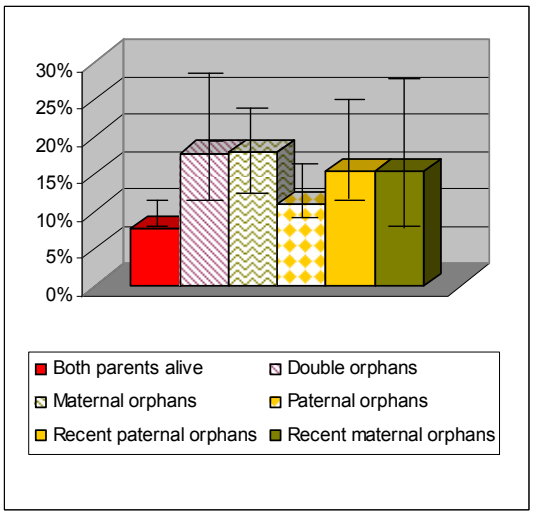


Erratic daily attendance

In response to the question, "do you attend school most school days?" 9% of Free State learners and 10% of Limpopo learners reported that they did not. Girls were slightly more likely than boys to report erratic attendance (11.4% (n=85) for girls and 7.3% (n=48) for boys). All categories of orphans were disproportionately erratically attending (Figure 6).

Double orphans and maternal orphans showed the highest risk (OR=2.59; 95% CI=1.35;4.93; p>chi2=0.003 for double orphans and (OR=2.05; 95% CI=1.27;3.30 for maternal orphans), but paternal orphans, particularly those whose fathers had died within the past 3 years, also showed increased risk for erratic attendance.

Figure 6: Prevalence (95% CI) of Grade 10 learners reporting erratic daily school attendance by orphan status



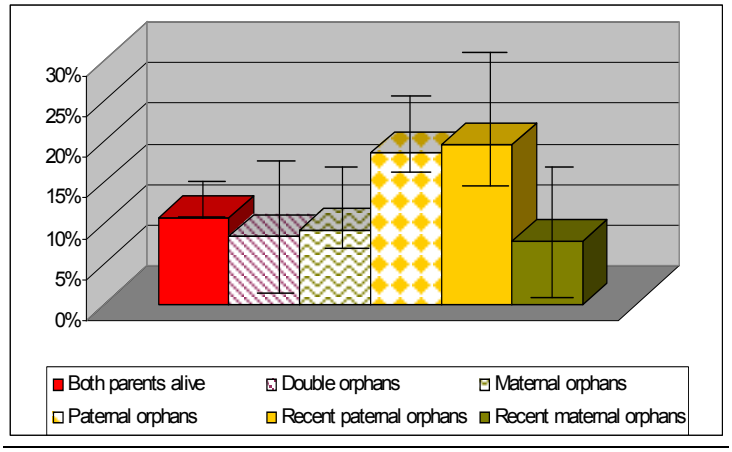
Sustained school absence (>2 weeks at a time) by respondent or another household child

Overall 12% of Free State learners and 14% of Limpopo learners reported that they or another child of school age in the household had missed more than 2 consecutive weeks of school during school term. Differences by orphan status are shown in Figure 7 below.

Paternal orphans showed elevated risks for sustained school absence compared to other children (19% of paternal orphans reported sustained school absence compared to 11% of children with both parents alive; OR=1.95; 95% CI=1.41;2.69; p>chi2=0.000). However, maternal orphans showed slightly decreased risk relative to children with both alive parents although this difference was not statistically significant (9% compared to 11%; OR=1.95; 95%CI=1.41;2.69; p>chi2=0.175). These findings are discussed further in section 3.3.3. related to the multivariate analysis.

Many orphans, despite being officially enrolled in school, do not attend school regularly. Almost 1 in 4 orphaned learners reported that they did not attend school on most school days, compared to around 6% of non-orphans. Around 1 in 3 learners whose mothers had died in the past 3 years reported that they had recently missed school for work (5 or more days in a term). This was higher than for non-orphans (11%). Sustained school absenteeism (missing school for more than 2 weeks at a stretch) was more common amongst paternal orphans, but less common amongst maternal orphans.

Figure 7: Sustained school absence by respondent or another household child by orphan status of respondent



Academic performance

Self-reports of grades were fairly high; poor performance (defined by not obtaining A or B symbols for any subject in the previous year) was reported by 41% (39% of boys and 42% of girls).

Performance declines in the past year were reported by 7% of the learner sample. There were no gender differences. There were no differences between academic performance or performance declines amongst orphans and non-orphans in this learner sample. This is unsurprising, given the time-sequencing of orphaning relative to current performance, and the small sample size meant that we could not explore the effect of recent orphaning on this outcome. However, there is clear evidence of increased risk for performance *declines* amongst learners who reported premature death in the household and also chronic illness of a household member in the past year (discussed later in multi-variate analysis).

Repetition

A little less than two thirds of the sample reported that they had repeated a grade (64% for boys and 60% for girls).

Paternal orphans were slightly more likely than children with living fathers to have repeated a grade (68% versus 59%; OR=1.49; 95% CI=1.17;1.91 p>chi2=0.001). In this sample of school-going Grade 10 learners, other categories of orphans were no more likely than other children to have ever repeated a grade. Owing to the high numbers of children who had ever repeated, this was not considered a sufficiently fine measure of educational disadvantage, and was therefore not included as an outcome term in the multivariate modelling.

Table 6: Prevalence of educational disadvantage measures amongst Grade 10 learners by province

Measure	Free State % (N)	Limpopo % (N)
Age at school enrollment		
8 years or younger	84% (534)	86% (693)
> 8 years	15% (220)	14% (113)
Class attendance register taken		
Yes	85% (1250)	77% (614)
No	14% (199)	20% (161)
Don't know	1% (6)	3% (22)
School interruption for 1 year or more		
Yes	9% (56)	12% (98)
No	90% (571)	85% (682)
Don't know	2% (29)	3% (21)
Missing school because of work	18% (523)	22% (172)
Erratic daily attendance	9% (57)	10% (76)
Poor performance	27% (165)	55% (360)
Non-enrollment of other household children	20% (126)	23% (182)
Sustained school absence >2 weeks by respondent or another household child	12% (75)	14% (798)

Other household children not enrolled

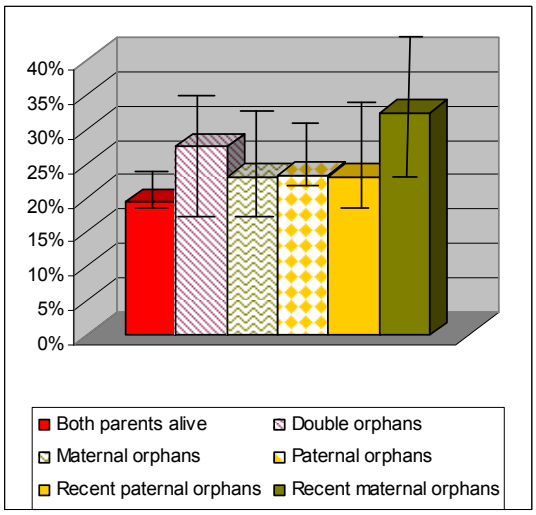
Around 1 in 5 learners (19.7% and 22.6% for Free State and Limpopo respectively) said that there were other children in the household aged 7-18 years who were not attending school.

Of all household children between the ages of 7 and 18 years, a relatively high proportion (26%) was not in school. There were no differences in proportions of boys and girls not in school.

Learners who were orphaned were more likely than other children to have household children out of school (Figure 8).

Recent maternal orphans were most likely to report other household children out of school (32% vs 19% of children with alive parents; OR=1.86; 95%CI=1.09;3.18 p>chi2=0.022). Possible confounding of this relationship by household size is controlled for in the following section.

Figure 8: Other household children of school age currently not enrolled by orphan status of respondent



Linkages between different measures of educational disadvantage

Although (we hope) each of the educational indicators relates to the achievement of education goals (e.g. it is better to attend school on most school days than not, and it is better to not have one's schooling interrupted etc.), and therefore were desirable for their own sake, we were also interested to know how these factors related to one another; for example, if periods of school interruption influenced academic performance, or if children who had previously had their schooling interrupted, were more likely to be erratic attenders in the present school year. We were also interested to see if children who had previously been out of school for an entire year, were more likely to currently have other children in their households who were out of school.

If the indicators were robust, and measured something toward the 'education good', we would expect that there would be observed overlaps between the measures. Summary results are presented in Table 7 below. Statistically significant measures of association are marked with a #.

The data indicate that the educational disadvantage measures do affect one another, and in the directions we would expect.

Children who are disadvantaged on one measure, are at increased risk at being disadvantaged on another measure, and their education may be more severely compromised. However, most of the associations are not remarkably strong, suggesting that the measures are indicators of different factors, which is what was intended.

Table 7: Associations between the different measures of educational disadvantage

	School absenteeism due to work OR (95% CI)	Poor academic performance OR (95% CI)	Erratic daily attendance OR (95% CI)	Household children not enrolled OR (95% CI)	Sustained absenteeism OR (95% CI)
School interruption	2.36# (1.68;3.32)	1.57# (1.10;2.24)	1.28 (0.78;2.12)	1.58# (1.09;2.31)	3.10# (2.13;4.49)
Absenteeism due to work		1.66# (1.25;2.20)	1.63# (1.09;2.44)	1.48# (1.10;2.00)	1.46# (1.01;2.08)
Poor performance			1.82# (1.23;2.71)	1.06 (0.81;1.39)	1.46# (1.04;2.04)
Erratic daily attendance				1.17 (0.67;1.78)	1.27 (0.77;2.10)
HH children not enrolled					1.48# (1.10;2.00)

3.2.4 Key issues

- The overall picture presented by the data was that of a Grade 10 learner sample who live in a variety of household and family forms, largely independent of orphan status.

- Around a half of the sample lived in homes with 2-3 adults, around 1 in 4 children lived in households where there was only one adult present, and a high proportion (16%) reported that there were no adults in the household. Thus for as many as 16%-35% or more of our sample, adult supervision is likely to be limited. Further, some 9% and 13% of learners indicated changes in household composition, where other children had been sent away, or received into the households in the past year, respectively.

- Almost a third of the sample indicated that their households lived in severe poverty and never had access to enough for basics such as food.

- Approximately 34% of the Free State sample and 28% of the Limpopo sample fitted into one of the orphan categories. There were 7% (FS) and 4% (LP) double orphans, 21% (FS) and 15% (LP) paternal orphans and 11% (FS) and 8% (LP) maternal orphans. The numbers of orphans reported were higher than national projections produced in 1999 (roughly 5% of 10-14 year olds for 2002).

- Between 9% and 19% of learners had negative factors or outcomes on one or more of the educational disadvantage measures. Orphans were around twice as likely as other children to experience educational disadvantage on most of the measures. There was some overlap between the measures, indicating that some children experience more than one of the negative factors or outcomes, and their education may be more severely compromised.

3.3 How do orphanhood and other factors affect learners education? Results of multivariate analyses

Clearly, the elevated risks for educational disadvantage of orphans compared to non-orphans that are illustrated above, may be confounded by other factors. Confounding factors, are those factors that are independently associated with the educational measures and with orphan status (for example, household poverty, if children from poor households are more likely to be absent from school, and are also more likely to be orphaned, household size etc). In order to control for these factors, and assess independent effects of illness and death on educational measures, we constructed multivariate logistic regression models. These methods of analysis allow for the control of a number of important effect modifiers and confounders, while not losing statistical power.

The measures of association that were found between learner educational disadvantage and risk-related factors are presented in Table 7. Table 8 shows the associations between the educational disadvantage (enrollment and attendance) of other household children and risk related factors. Similar risk factors were explored for both sets of outcomes.

Each of the risk factors is discussed below in relation to the data in both tables.

3.3.1 Age and gender and education measures

Among the demographic factors, ***being older than 18 years was significantly associated with school interruption***; this is unsurprising, as learners who experienced periods of school interruption, would by definition often have failed or dropped out, and re-entered a year older than when they left off.

Gender and education : It is often held that the HIV/AIDS epidemic may disproportionately disadvantage the education of girls due to gendered differences in household responsibilities and other factors e.g. gendered expectations with respect to caring for the sick or younger siblings, or gender bias in intra-household resource allocation, leading to girls' education being compromised first. The findings of this study suggest that gender is a significant factor in educational disadvantage, but girls and boys are each disproportionately affected in different ways. For example, girls were more likely to report erratic daily attendance than boys after controlling for other co-variates, but girls were less likely to report school absence due to work.

The reasons for ***gender discrepancies in patterns of absenteeism reporting*** are unclear. However it seems plausible from anecdotal reports, and from the teacher interviews that there may be some under-reporting of work-related absence by girls. Girls may be reluctant to report school absence that is related to sex work as work-related absence; such absence is anecdotally is fairly common amongst certain girl learners. Further, in these data, girls were significantly more likely than boys to be aware of other school age children in their household who were out of school. It is not clear why that should be, except perhaps a

gender-related reporting bias whereby girls are more attuned to the status of other household children, and this could be interpreted as providing some indirect evidence of greater care responsibilities, although this is rather speculative. It may be that there are more girls (or boys) who are not enrolled in school, and therefore do not appear in the survey. However our analysis of other household children showed no gender differences in the levels of enrollment of other household children.

3.3.2 Living circumstances and education

Household poverty was independently associated with all measures of educational disadvantage, highlighting the intrinsic vulnerability of children from poor households. However, the associations were not statistically significant; this may reflect a limitation of our measure of household poverty, which had to be fairly crude owing to reliance on self-reports in a self-administered questionnaire setting. ***Lack of contact with extended family*** was found to be a significant factor.

Children who did not have any contact with extended family, were significantly more likely to have experienced substantial school interruption than other children and were more likely to report sustained absenteeism by themselves or other household children.

Learners with weak extended family links or poorer social cohesiveness more generally, may be particularly vulnerable to educational disadvantage and need special support. Conversely, strengthening family and community ties, along with other interventions, may have the potential to increase educational resilience in children. Action-oriented intervention studies would be needed to assess this.

Learners from CHH were more likely than other children to attend erratically (ns), but were less likely than other children to be absent from school because of work, possibly suggesting a lack of access to work opportunities, rather than lack of need to work. ***Households with many children and those that received children into the household*** were significantly more likely to experience several negative effects on education measures. ***Recent change of household caregiver*** seemed to have some negative effects. Living with a caregiver for less than one or 5 years, compared to living with him/her for 6 or more years was significantly associated with school absenteeism due to work in the past year.

Learners from households that had sent other household children to live elsewhere in the past year were at increased risk for missing school due to work and erratic attendance by household children. Learners from these 'elastic' households were also far more likely than other learners to report that there are other children in their households who are not currently enrolled. Ensuring the system provides sufficient support to children in undergoing shifts in household living arrangements, and migrant children more generally, is an important policy and planning issue.

Table 8: Odds ratios from multiple logistic regression analysis indicating effects of selected measures on educational disadvantage

Measure	School interruption	School absenteeism due to work	Erratic daily attendance
Demographic factors			
Sex (being female)	1.11 (0.72;1.69)	0.73 (0.54; 0.98)*	1.59 (1.00;2.55)*
Age			
<16 years	1.21 (0.61;2.37)	0.72 (0.42; 1.22)	0.77 (0.41;1.48)
>18 years	2.41 (1.65;3.52)*	1.30 (0.91; 1.80)	1.48 (0.80;2.71)
Household characteristics			
Household poverty	1.31 (0.76;2.22)	1.26 (0.96; 1.64)*	1.24 (0.71;2.17)
Child headed HH	1.06 (0.59;1.87)	0.42 (0.23; 0.77)	1.65 (0.95;2.85)
Single-adult HH	0.68 (0.42;1.10)	0.74 (0.52; 1.04)	1.01 (0.53;1.93)
>3 adults	1.17 (0.80;1.70)	0.88 (0.60; 1.30)	1.15 (0.75;1.74)
3-6 children HH	1.75 (1.15;2.65)*	1.20 (0.82; 1.80)	0.95 (0.65;1.39)
>6 children HH	2.86 (1.46;5.62)*	0.82 (0.50;1.40)	1.24 (0.62; 2.47)
Living outside family home	1.02 (0.62;1.64)	1.22 (0.86; 1.75)	1.01 (0.57;1.77)
No contact with extended family	1.53 (1.08;2.16)*	0.94 (0.62; 1.42)	1.01 (0.58;1.77)
Children sent away from HH	1.02 (0.52;1.99)	1.50 (1.11; 2.02)*	0.70 (0.40;1.22)
Children received into HH	2.36 (1.37;4.03)*	1.54 (0.98; 2.40)	0.54 (0.25;1.16)
Lived with caregiver 1-5 years	1.10 (0.58; 2.07)	1.82 (1.10; 3.10)*	1.41 (0.74;2.69)
Lived with caregiver <1 year	1.57 (0.60; 4.19)	2.30 (1.21; 4.30)*	1.11 (0.48;2.55)
Illness and Death in the Household			
Death of HH member in past year; <61 years	1.56 (1.04;2.32)*	1.16 (0.83; 1.63)	0.90 (0.48;1.72)
Death of HH member in past year; >60 years	0.72 (0.31;1.67)	1.61 (0.91; 2.84)	1.32 (0.66;2.62)
Illness of HH member in past year; <61 years	1.24 (0.82;1.88)	1.41 (0.95; 2.07)	1.25 (0.77;2.02)
Illness of HH member in past year; <61 years	1.82 (0.91;3.68)	1.08 (0.53; 2.23)	1.68 (0.78;3.62)
Orphanhood status			
Both parents died	1.77 (0.52;6.09)	1.84 (0.96; 3.52)	2.09 (1.09;3.99)*
Mother only deceased	1.21 (0.54;2.74)	0.90 (0.50; 1.63)	2.85 (1.27;5.94)*
Father only deceased	1.12 (0.44;2.30)	1.30 (0.91; 1.83)	1.32 (0.72;2.43)
Mother died <3 years ago	*1.61 (0.79;3.32)*	*1.82 (0.98;3.37)*	*2.27 (1.10;4.68)**
Mother died 3 or more years ago	*1,20 (0.52;2.91)*	*0.91 (0.44;1.87)*	*1.65 (0.62;4.41)*
Father died <3 years ago	*1.15 (0.56;2.34)*	*1.61 (1.02;2.55)**	*1.98 (1.04;3.77)**
Father died >3 years ago	*1.54 (0.94;2.49)*	*1.27 (0.75;2.16)*	*1.30 (0.71;2.35)*
Other factors			
Age at enrollment >8 years	1.25 (0.72; 2.16)	1.60 (1.20; 2.20)	1.24 (0.81;1.92)
No daily class register	1.66 (0.99;2.79)	1.65 (1.10; 2.50)	1.01 (0.61;2.00)
No. observations	1405	1393	1400
Log likelihood	463.20	631.01	-405.62

Pseudo R squared	0.11	0.10	0.0475

3.3.3 Orphan status, recent household illness and death and education measures

After controlling for the other factors discussed above, these data show independent effects of orphaning and illness and death of household members on various facets of educational disadvantage. Slightly different effects were seen for erratic daily attendance, and for sustained absenteeism (described in more detail below). In general, *recent* orphaning, and recent household illness and death, seemed more important than orphan status per se.

Double orphans and learners who had only lost their mother, were more than twice as likely as other learners to report that they did not attend school most school days. (Table 8).[1] However, when asked about sustained school absence (>2 weeks) by themselves or by household children, ***maternal orphans were significantly less likely than other children to report sustained absenteeism*** (Table 9). This is difficult to make sense of, but it seems to imply that there are different mechanisms at play in these different forms of absenteeism. It is plausible that schooling is a form of support for these vulnerable children, which discourages sustained absenteeism (they may need the sense of belonging that school can provide), but daily attendance may be more erratic than that of other children, given household pressures. It may also be a selection bias, if those orphans who do tend to have sustained absence are also more likely to have dropped out completely. In any event, this finding suggests that aggregate data on school absenteeism, without a sense of the distribution of the absenteeism across the year (in 'large chunks' or little bits here and there) may miss important dimensions of educational obstacles experienced by children.

Children who experienced recent illness of a productive-age person in the household were more likely to report sustained absenteeism by themselves or another household child. It is possible that care-giving responsibilities may be an issue for these children although this could not be explored with the available data.

Learners whose mothers had died in the past 3 years were almost twice as likely as learners with living mothers, to have siblings or other household children out of school.

Learners who had experienced recent premature death of a household member (<60 years) were more likely than other children to have experienced school interruption, although whether the death preceded the school interruption is unknown.

[1] Un-adjusted odds ratios showed that recently orphaned maternal orphans were more likely than other children to not attend regularly (OR=2.02; 95% CI (1.03;3.96). Other categories of maternal orphans showed smaller elevated risks, which were not statistically significant: OR=1.81 (0.66;4.94) for orphaning longer than 3 years back and OR=2.78 (95% CI (0.99;7.78) for those who were unsure when mother had died). As shown in the text, these associations remained after entering the terms into the model and adjusting for other co-variates.

Table 9: Odds ratios from multi-variable logistic regression analysis indicating effects of selected measures on school attendance of other household children

Measure	Household children not enrolled in school	Sustained school absence by respondent or another household child[m]
Sex (being female)	1.70 (1.19;2.44)*	1.08 (0.70;1.65)
Living outside family home	1.12 (0.78;1.59)	1.28 (0.75;2.20)
No contact with extended family	1.27 (0.88;1.83)	1.79 (1.28;2.52)*
Number of adults in household		
No adults	0.39 (0.23;0.67)*	0.89 (0.47;1.69)
Single-adult household	0.89 (0.63;1.26)	0.69 (0.45;1.08)
More than 3 adults	1.03 (0.70;1.50)	1.02 (0.65;1.61)
Number of children in household		
3-6 children	2.61 (1.93;3.51)*	1.25 (0.83;1.88)
>6 children	4.33 (2.55;7.38)*	1.27 (0.63;2.53)
Children sent away from hh	1.05 (0.67;1.74)	1.93 (1.14;3.28)*
Children received into the hh	1.92 (1.33;2.77)*	1.25 (0.74;2.12)
Death in the household in previous year		
Deceased was 60 years or younger	0.95 (0.65;1.38)	1.75 (1.24;2.49)*
Deceased was >60 years	0.98 (0.50;1.92)	1.35 (0.69;2.63)
Unsure if someone died	0.65 (0.19;2.20)	1.05 (0.35;3.17)
Illness in the household in previous year		
Person ill was 60 years or younger	1.26 (0.85;1.86)	1.95 (1.33;2.87)*
Person ill was >60 years	0.88 (0.41;1.93)	1.73 (0.87;3.43)
Unsure if someone was ill	1.54 (0.92;2.56)	0.91 (0.40;2.10)
Household poverty	1.18 (0.87;1.59)	1.65 (0.98;2.78)
Maternal orphanhood status		
Mother died <3 years ago	1.79 (1.06;3.03)*	0.38 (0.17;0.86)*
Mother died 3+ years ago	1.06 (0.50;2.25)	0.73 (0.32;1.69)
Unsure when mother died	0.40 (0.94;1.69)	0.62 (0.16;2.32)
Lived with caregiver		
1-5 years	1.48 (0.89;2.47)	1.24 (0.63;2.44)
<1 year	1.12 (0.60;2.08)	1.11 (0.55;2.25)
No. observations	1428	1421
Log likelihood	-663.91	-501.27
Pseudo R squared	0.087	0.072

*There were important independent associations observed between **recent household illness with respect to performance declines in the past year.** Learners who had experienced family illness were around twice as likely as children who had not, to report that their grades got worse last year. The age of the ill person did not seem to make a difference on this measure (Unadjusted odds ratios were: illness of adult <61 years OR=2.41 (95%I 1.14;5.09); illness of adult >60 years OR=2.11 (95% CI 0.97;4.61).*

[m] :During either this year or last year, did you or another child in your home stay away from school for two weeks or for more during a school term?"

Learners who reported that there had been a death in the household showed slightly increased risk, but this was not statistically significant.[n]

3.3.4 School-linked factors and education measures

The educational disadvantage that may be experienced by children affected by household illness and death is likely to be strongly influenced by whether their class or school is poorly managed.

There was no evidence in bi-variate analysis that maternal, paternal or dual orphans were clustered in schools with poor class organization (not shown). However, poor children are more likely to be in dis-organised schools (16%) than children who are not poor (10%). (OR=1.6; 95%CI 1.14; 2.20).

Class organization, proxied by not having a regular class attendance register was fairly strongly associated with both school absenteeism and poor performance in this study. This highlights the importance of class and school management factors as a reason for poorer educational outcomes of disadvantaged and other children.

3.3.5 Teachers and heads perceptions

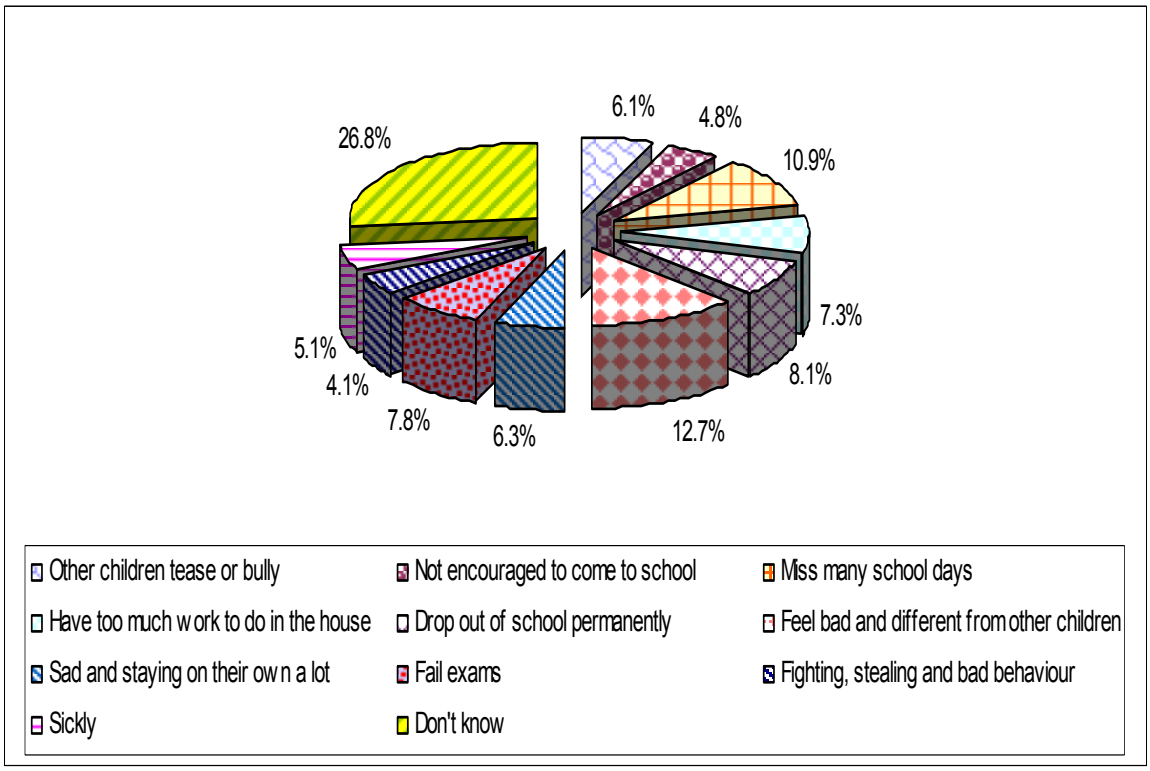
Previous studies have pointed out that teachers and heads tend to consider that educational effects of orphaning are very serious, but data that demonstrates these effects are less easily available. The perceptions of heads regarding problems that are experienced by children from families affected by HIV and AIDS are described below (Figure 9). The responses concurred with those associations that have been highlighted in the preceding analyses. ***According to heads perceptions: these children missed many school days (11% of all responses), they dropped out of school permanently (8% of all responses), and they failed their exams (8%)***.

Of particular note however, is that many heads did not know what problems HIV and AIDS affected children in their school might experience and many others believed that 'soft' impacts such as withdrawal and isolation were most commonly experienced. Thus, the measurable indicators that have been used in this study should not be regarded as comprehensive – they are likely to represent only a portion of the potential and experienced impacts of orphaning and household illness and death on childrens educational chances.

[n] Performance declines were not used as an outcome in the multivariate modeling. This was because of the potential confusion with time sequencing – many of the risk factors occurred more than a year ago, and therefore whether grades declined from the previous year, would be irrelevant for some measures. A new model could be constructed looking specifically at this issue with restricted risk factors – however it seems unlikely that the conclusions from such an exercise would change what is presented here.

This concern about education impacts was echoed by teachers, 80.6% of whom said that orphanhood affected school performance, with 46% of these claiming a drastic decline in performance.

Figure 9: Heads perceptions of problems experienced by children from families affected by HIV and AIDS



In summary, the multivariate modeling showed that one or more of the educational disadvantage measures were independently significantly associated with:

- Recent maternal orphaning (for erratic daily attendance and for having other household children that are out of school)
- Recent paternal orphaning (for erratic daily attendance & school absence due to work)
- Double orphaning (for erratic daily attendance)
- Changes in the primary caregiver in the past year (for school absence due to work)
- Living in fluid or 'elastic' households[o] (for school absence due to work & for having other household children that are out of school)
- Having >6 (and >3) other children living in the household (for school interruption & for other household children that are out of school)
- Recent death of a household member under 60 years (for sustained school absence by respondent or another household child)
- Gender was found to be a significant factor in educational disadvantage, but boys and girls are each affected in different ways; girls were more likely to report erratic daily attendance, and boys more likely to report that they missed school because of needing to work.
- Children from disorganized classes, where a daily attendance register was not taken (for school absence due to work).

3.3.6 Key issues

- Overall, the results show that HIV and AIDS has the potential to impact significantly on educational chances of children in South Africa.
- The factors that emerged as significantly associated with measures of educational disadvantage are in general consistent with what has been noted in previous studies, and postulated in the conceptual model.
  - The findings illustrate some of the nuanced ways in which education can be adversely affected by changing household composition, poverty, caregiver changes, and illness and death of family and household members, as well as independent effects of gender.
  - The critical importance of the quality of the school environment as a risk factor and a potential intervention point is emphasized by these data.
  - The potential of older learners to act as conduits of intervention to increase the access of household children to schooling, is also highlighted.

[o] These were households that had received other children into the household, and those who had sent children away to live elsewhere.

- Ways to measure educational disadvantage in studies like this are relatively under-developed, particularly in settings without easily accessible and accurate records. This is compounded by fairly high background attrition of staff (around 7% p.a. in the surveyed schools), leading to lower levels of institutional memory. The outcome measures used in this survey were fairly crude, relying on self-reports by learners. There is a possibility of biased reporting on educational disadvantage by learners, but systematic reporting that would change the direction of the observed associations is unlikely, and would probably have been picked up by the different range of outcome measures used.

- There may be important aspects of educational disadvantage that were overlooked in this study, or unable to be captured, and the indicators of vulnerability that were identified should not be seen as the last word on the subject – there may be other aspects of education influenced in different ways by other risk factors.

3.3.7 Implications and recommendations

1. Indicators of vulnerability identified in this study could potentially be useful for the education sector and partners in generating responses to vulnerable children, bearing in mind that not all children will face "average" outcomes of particular circumstances.

2. Overall aggregate information (e.g. aggregate annual learner absenteeism) may mask differences between various categories of learners and a number of measures may be necessary to pick up vulnerabilities. Conclusions on learner vulnerability that are based on only one type of indicator, or that don't provide adequate description of the indicator and its limitations, are likely to be misleading.

- In this study, different measures of absenteeism showed different patterns of risk-related factors associated with them. For learner absenteeism in particular, the attendance measures that were explored viz. erratic daily attendance; sustained school absence and absenteeism specifically in order to work each showed different directions of associations with important categories of vulnerability.

- This has implications for the design of interventions to address educational disadvantage amongst vulnerable children, as well as implications for data collection, surveillance and research.

- There may be sub-groups within these categories that may be at heightened risk for educational disadvantage. These sub-groups could not be fully explored with the available data because of small numbers, but could potentially be examined in other data sets.

4. In this study, different measures of educational disadvantage were associated with slightly different risk-related factors, indicating that single measures (e.g. attendance only or enrollment only) would not be sufficiently nuanced to capture

the range of potential threats due to HIV/AIDS or other factors on children's education.

- For example, in general, school interruption appeared to be more sensitive to changes in household composition and death in the household, and school performance, more sensitive to household poverty. Children who experienced changes in their primary caregiver were more likely to miss school because of work than other children.

- The educational disadvantage measures were also linked however, with indications that children are more likely to experience more than one negative outcome – they are not independent of one another.

5. Learner reports of educational status (attendance, performance, enrollment of other household children etc.) may be useful to supplement and verify existing routinely kept data and to provide data where records are not available.

- Older children who are in the school system are feasible to include in surveillance systems, and may be integral to interventions to access out of school youth in their households, in order to try to increase enrolment amongst these groups.

6. Orphanhood and family illness and death are likely to be highly traumatic events for affected children, and this study shows a range of associations between parental death and educational disadvantage.

- In terms of ***enrollment***, a surprising number of learners reported out of school children in their households, and these reports were consistent with recent household composition changes and maternal orphan status.

- Double orphans and maternal orphans ***attended school less regularly*** than their peers in this study, but this did not appear to be related to obtaining work, and the effects of household poverty (using a fairly crude measure) were controlled for in the analysis. However it seems likely that, in addition to the obvious economic and household structure changes, there are more nuanced psycho-social and other factors that make it more difficult for orphaned children to remain in school and sustain good attendance and academic performance.

- Apart from orphaning, some categories of vulnerability that were identified in this study, such as household member illness and death, and taking children in or sending children out of the household, were independently significantly associated with various educational disadvantage measures.

- The strength of associations between orphanhood and educational disadvantage may well be diluted in this and other school-based studies, by prior drop out of the most vulnerable children. This is evident in the data where maternal death was associated with twice the risk of non-enrollment of other children in the household, who may or may not have been biological children of the deceased. Thus, the impacts described here are likely to be under-estimates.

7. Other categories of children, such as those in 'elastic' households and those without extended family contact also show significant educational disadvantage relative to other children. Such circumstances have preceded the AIDS epidemic, and are likely to go on, independently of AIDS. However, there is a logical basis for assuming that the proportions of children falling into these vulnerable categories will increase as the AIDS epidemic advances, and finding ways to support these children, will become increasingly urgent as greater numbers of children are affected by such circumstances.

- Expectations of increasing numbers of children in these categories because of AIDS, are supported indirectly by data from the survey in the differences observed between the two provinces, with the Free State, with a more advanced and severe epidemic, showing higher proportions of children in these 'vulnerable' categories (as well as higher proportions of double orphans). Thus, school-linked support to these categories of children is likely to target needy children affected by HIV and AIDS as well as other children.

8. The findings of this study do not support *school-linked* interventions that are exclusive to orphans if the aim is to improve affected children's educational chances – it is illustrated here, and well documented elsewhere that children's vulnerability begins before the death of a parent, and leaving interventions until parental death, may mean many vulnerable children could be lost to the system, making future interventions targeting these children more difficult.

9. While the survey documents the current levels of impacts on learners in the two provinces surveyed, it must be noted that the orphan epidemic is at a relatively early stage in both of these provinces, compared to what is anticipated, for example in 5 or 10 years time. Thus, in later years, if family and community coping mechanisms become over-extended, the impacts of these issues on educational disadvantage may become more pronounced.

4. Teachers and staff at school level and potential HIV and AIDS related impacts

4.1 Key questions

There are concerns that the HIV and AIDS epidemic will affect the capacity of the Education System to deliver Education, through impacts on educators and other employees. For example, continuous or intermittent staff absenteeism due to illness or for other reasons

such as funeral attendance and caring for ill family members may have severe repercussions on teacher-student contact time. Staff attrition, if coupled with delays in filling posts may also have detrimental effects. The ability at the local level to manage absenteeism and staff attrition in the most effective manner possible is critical.

This study explored a range of potential capacity issues that may be related to the effects of HIV and AIDS on staff and their households, through interviews with heads and teachers and to a lesser extent, the experience of learners. The selection of risk related factors was based on the conceptual model developed from a review of the literature (shown diagrammatically in Annex 1B).

The questions addressed by this section of the report are outlined in the box below:

What are the currently experienced levels of staff absenteeism and attrition in sampled schools?

What is the likely current contribution of HIV and AIDS to absenteeism and attrition, relative to other contributors?

What are current capacity constraints and likely effect of any increase in current levels of absenteeism and attrition?

4.2 Levels of staff attrition and absenteeism

Heads were asked about how many staff left the school for any reason at all during 2001 and 2002. Together with information on all staff employed at the school, staff attrition was calculated. Owing to high levels of non-response for time periods more than a year ago, we disregarded retrospective data. The information presented is for 2002 only.

In 2002, overall staff attrition in the Free State schools was 10.8% and in Limpopo Province was 4.2% (Table 10). This is broadly in keeping with a normal or 'net' attrition previously been estimated for KZN as 6% during 1999.[6]

These figures were higher than figures elicited through the data capture sheet, which gave an overall attrition of 1.9% for both provinces combined. The data capture sheet was completed primarily through consulting school records, whereas the heads estimates were captured by trained interviewers during structured interviews. Owing to the disparate nature of the school records, and the rather ad hoc way these seemed to be consulted in the completion of the data capture form, we consider that the heads reports of attrition are more likely to be accurate. Nonetheless, the possibility of over- under-reporting for 2002 due to recall bias (particularly if events are highly disruptive in contiguous years) cannot be discounted.

Measurement of staff attrition and absenteeism was found to vary according to the source of the estimate. Estimates of attrition obtained via official school records were considerably

lower than those obtained through structured interviews with heads (10.8% and 4.2% for Free State and Limpopo respectively in 2002).

Attrition due to illness and death

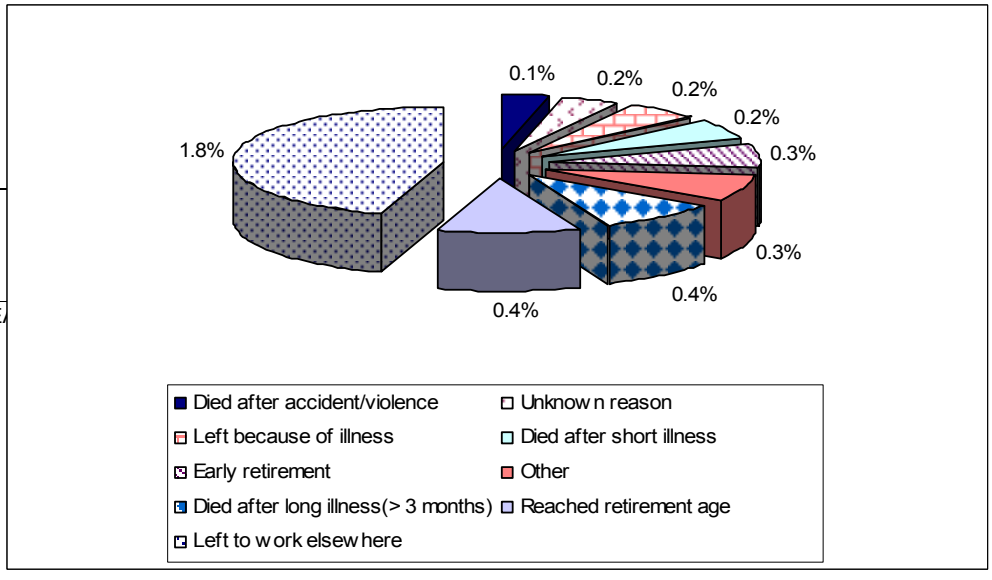
As would be expected, there are many reasons for teachers leaving the service of a school. Illness and death were considered to currently constitute a fairly small proportion of reasons for leaving. However, discounting leaving for another education post (the most common cause of attrition), deaths and illness were the second most common cause of attrition.

Attrition due to illness or due to a death following illness accounted for loss of 0.8% of staff p.a. This comprised 0.4% of staff who died after a long illness, 0.2% who died after a short illness and 0.2% who left because of illness in 2002.[p] These figures are slightly lower than expected, given the AIDS epidemic. This may reflect chance, reporting errors, the early stage of the epidemic, use of ARV therapy, or lower risk amongst educators than has been previously thought. We did not ask heads or teachers about access to ARV therapy, and indeed, a head cannot be expected to be able to reliably proxy-report on this issue. However, the uptake of ARVs amongst educators also has potential to substantially influence attrition due to illness and death, as well as sickness-related absenteeism. Measures to assess ARV uptake and access would be important to include in future studies as ARV therapy becomes more widely available.

It has been previously pointed out that deaths-in-service account for only a portion of deaths due to illness; there may be educators leaving for 'other' or 'unknown' reasons but whose underlying reason is AIDS-related illness. However, given fairly generous staff benefits such as sick leave, it seems unlikely that very many AIDS affected staff would leave paid employment and access to medical aid at a crisis time of illness. Thus these figures are probably not gross under-estimates of illness-related attrition. Further, even if all ill health and early retirement *were* due to pre-terminal illness, this would suggest a limited effect of teacher illness and death, and HIV/AIDS on overall attrition rates.

Figure 10 below is illustrative of overall staff attrition during 2002 by reason for leaving, as reported by heads of schools – it contains information for both provinces combined. Excluding leaving the school for another education post (3.8% - not shown, as these teachers are not lost to the system), the most common reason for staff attrition was leaving to work elsewhere (outside of education – 1.8%). The next most common reasons were death after lengthy illness (0.4%) and reached retirement age (0.4%).

Figure 10: Staff attrition in 2002 in the sampled schools by reason for leaving (heads reports)



There was some clustering of death- or illness-related attrition within schools, with more than one death reported by a number of schools. Altogether, deaths of staff, either in – service after illness, or following ill health retirement affected 17% of schools in the Free State and 7% of schools in Limpopo Province in 2002 (Heads Reports); or 12% and 5% (Records) depending on the data source being used.[q]

There were also a greater proportion of secondary schools reporting deaths in service than primary and combined schools (13% compared to around 5% each for primary and combined). Similarly, a disproportionate number of deaths were seen amongst secondary teachers, when looking at absolute rates over two years[r]:

Table 10: Staff attrition, absenteeism and vacant posts by province

Measure	Limpopo % (N)	Free State % (N)
School demographics		
Total teachers in sampled schools	1616	1836
Total learners in sampled schools	53820	52626
Median no. learners (range)	368 (13-1823)	402 (7-1261)
Staff attrition and absenteeism in 2002		

[q] This is somewhat higher than the data from Kwa-Zulu Natal in 1999, which showed that 8% of school returns for the Annual Survey indicated mortality with a staff death rate due to illness of 0.74% and 0.6% p.a. depending on the data source being used. Indications from the HEARD survey are that any single source of data on attrition due to deaths seems to under-enumerate actual deaths, possibly around 25% under-reporting for any given source.

[r] 11 teacher deaths reported for primary schools, or 0.01% of all primary teachers; 23 teacher deaths from secondary schools, or 1.34% of all secondary teachers, and 3 teacher deaths from combined schools, or 0.91% of all combined teachers.

(Heads reports of deaths – for past two years)

Total teachers leaving for all reasons (Heads report)	4.2% (68)	10.8%(198)
Total teachers leaving for all reasons (records)	1.3% (21)	2.5% (46)
Schools with 1 or more staff deaths due to illness (Heads report)	7.2% (9)	17.2% (20)
Schools with 1 or more staff deaths (records)	4.8% (6)	11.8% (13)
Teachers absent >30 days due to illness	1.5% (25)	2.6% (47)
Schools with one or more teachers absent >30 days due to illness	13% (16)	26% (30)
Heads of schools reporting knowledge of one or more HIV infected or HIV-ill staff member	3.2% (4)	16.7% (19)
Vacant posts		
Vacant posts (heads reports)		
No vacant posts	51.6% (63)	72.4% (84)
One or more vacant posts	48.0% (59)	25.0% (29)
Vacant posts (records)		
No vacant posts	76% (95)	81% (95)
1-2 vacant posts	15% (19)	10% (12)
>2 vacant posts	9% (11)	9% (10)
Average Months (range)		
Time to fill vacant teacher posts	3.3 (0-36)	4.6 (0-36)
Time to fill vacant head posts	2.9 (0-48)	5.5 (0-72)

Although teacher mortality was difficult to determine in this cross-sectional study, indications are that death of educators is an issue that affects a substantial proportion of schools. Almost 1 in 5 Free State schools and 1 in 20 Limpopo schools reported illness-related death of an educator during 2002.

The average age of deceased staff was 38.6 years, range 28-63 years and median 37 years. There did not appear to be marked differences between ages of males and females who had died. The survey did not collect data on the age profile of all educators, making it difficult to interpret this figure.

4.2.2 Prolonged staff absenteeism

Absenteeism of staff, whether due to illness or any other reason, is a potentially significant issue affecting education quality in schools in these provinces. As later stage HIV infection is often associated with periods of chronic illness, there have been concerns that illness related absenteeism among staff, or absenteeism to care for ill family members, funeral absence etc. may increase as the epidemic advances. Effective systems to monitor absenteeism are currently not well developed and reliable data on the issue are not routinely available to the education system.

In this survey, heads were asked about their recollection of prolonged absenteeism of staff members during 2001 and 2002. Similar to attrition data, the 2001 data was discarded owing to incompleteness of the data. For 2002, heads reported some 2.6% of staff employed

in the Free State and 1.5% of all staff employed in Limpopo as absent for 30 consecutive days or more during that year.

Heads were asked to give further details on the gender of staff absent and reasons for absenteeism amongst staff. As could be expected, reporting here was slightly lower. For both provinces combined, there were a total of 84 staff reported to have been absent from school for 30 days or more during 2002, or 2.4% of staff for both provinces combined.[s] Absenteeism was slightly higher amongst females; 2.2% for male teachers and 2.7% for female teachers. Moreover, Heads of schools reported that prolonged absenteeism was due to illness for 94% of the females who had been absent, and for 68% of the males.

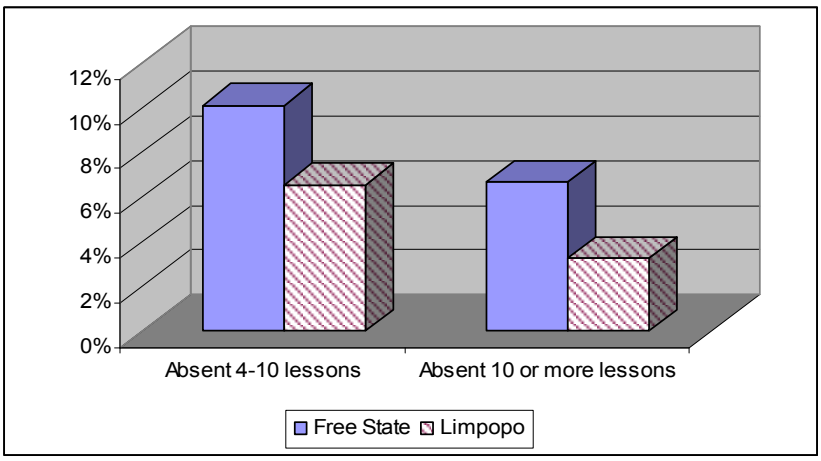
Provincial differences for substantial absenteeism reported by Grade 10 learners concurred with that reported by heads, with the Free State showing more marked absenteeism – 18% of Free State learners compared to 13% of Limpopo learners reported teacher absenteeism for more than 3 lessons in the past 2 weeks (Figure 5).

Free State teachers were also absent for a greater number of lessons - some 11% of learners in the Free State reported that there was no teacher for between 4 and 10 lessons in the past two weeks, compared to 7% of Limpopo learners. Twice the proportion of Free State learners reported extended teacher absenteeism (>10 lessons) than Limpopo learners (7% compared to 3%). There were no gender differences apparent in reporting.

It should be noted that the responses to this question would not include teacher absenteeism where a substitute teacher taught the class – the question specified there being no teacher to teach the class, indicating loss of contact time.

[s] Provincial disaggregation is not presented owing to small numbers.

Figure 11: Learner reports of recent teacher absenteeism



Refers to teacher absenteeism in previous 2 weeks, with no substitute teacher

Proportion and types of schools most affected by prolonged staff absenteeism

Prolonged absenteeism of staff during 2002 was reported from 1 in 4 schools in the Free State and 13% of schools in Limpopo (OR=2.4 95%CI; 1.19;4.63). The data are not available to draw conclusions about the reasons for absenteeism, and in many instances, heads reports of reasons may be unreliable.

Extended absenteeism amongst teachers was 2 to 3 times more prevalent in secondary than in primary schools (31% vs. 58%) OR=3.53 (95% CI 1.67;7.44). As this difference may have been due to more primary schools falling in the Limpopo sample, we adjusted for province, but the association with level of school remained significant at a similar level. We also report absolute rates by level of schooling, to take into account differences in school size, but secondary teachers still are disproportionately affected by absenteeism. Here extended absenteeism affected:

- 18 primary school teachers or 1.4% of all primary teachers
- 46 secondary school teachers or 2.8% of all secondary teachers
- 7 combined school teachers or 2.1% of all combined teachers

There were 46 schools (15% of the total) that reported that *more than one* teacher had been absent 30 days or more in that year. Within schools, the percentage of staff absent for prolonged periods due to illness ranged from 0-100% The two schools that reported a 100% absenteeism had only one active teacher post each. The next highest absenteeism was 33% of teachers. ***The main point is that in some schools, particularly small ones, prolonged absenteeism seemed to affect a substantial proportion of teachers and thus ability to deliver education in those schools.***

Some 17% of Heads in the Free State and 3% of Heads in Limpopo believed that they knew of one or more HIV infected or ill staff member. Prolonged absenteeism in the school was almost twice as commonly reported by those who knew of HIV infected staff than those who didn't.

Around 1 in 4 schools in the Free State and 13% of schools in Limpopo reported that 1 or more staff members had missed 30 or more consecutive school days during 2002. Reasons for absenteeism were not probed. Prolonged absenteeism was almost twice as commonly reported by those heads who knew of HIV infected staff in the school than those who did not. Implications are that a significant proportion of heads of schools may need management support in dealing with sustained absenteeism amongst staff.

We did not ask heads about staff absenteeism for other reasons e.g. funeral attendance. This does come out as important overall causes of absenteeism in focused studies in other countries, but would have been difficult to capture retrospectively in a cross-sectional study because of the lack of rigorous record keeping at school level. Recall of a few days here and there, was unlikely to have been reliable.

4.2.3 Vacant positions and school management of absenteeism and attrition

Heads reported vacant posts at 24% of Limpopo schools and 19% of Free State schools. There were 1.6% (n=30) of all posts vacant in Free State schools and 9.6% of all posts vacant in Limpopo schools. It seems therefore that vacant posts are a bigger problem than staff absenteeism and deaths, although they add to the impact of the latter.

It is also possible that schools are able to reorganize to a certain extent to cover for vacant posts, whereas absenteeism in particular may have more significant functional impacts as children are more likely to be left without substitute teaching.

There were no differences between primary, secondary or combined schools with respect to vacant posts. However a larger proportion of large-sized schools had vacant posts than small or medium sized schools, and a larger proportion had more than two vacant posts (not shown). Importantly, those schools which reported higher attrition and absenteeism were not disproportionately affected by vacant posts. This suggests that the ability of a school to attract staff is probably more important than levels of attrition per se in terms of functional impacts on contact time.

Heads from both provinces reported that it takes between 0 and 36 months to fill vacant teacher posts, with an average of 3.3 months in Limpopo and 4.6 months in the Free State (Table 10). There were no differences in time to fill posts by level of school. The large schools reported slightly longer time to fill vacant posts than smaller schools (3 months compared to 1.9 months to fill teacher posts).

4.3 Perceptions and attitudes toward HIV affected staff

4.3.1 Heads awareness of HIV infected staff in the school

Around 17% of Free State Heads and around 3% of Limpopo Heads knew of teachers or other employees who were thought to be ill with AIDS or infected with HIV in the school. Clearly, this does not reflect the level of actual HIV infection in the school. However it is a significant finding as it suggests the extent to which the condition has become known to heads.

Knowledge of HIV infected staff was higher amongst secondary school heads (16.5% versus 5.7% of primary school heads and 7% of combined school heads). This may be because secondary schools were on average a little bigger than other schools, therefore more likely to know of an infected staff member. On the other hand, given the disproportionately high percentages of prolonged absenteeism due to illness and deaths due to illness in secondary compared to other schools, it may be that these schools are in fact more heavily affected by HIV/AIDS amongst staff. Reasons may include a possibly different demographic profile e.g. older (not measured), or higher risk behaviour amongst secondary teachers.

In total, heads knew of 27 male teachers (1.8% of total males) and 17 female teachers (0.9%) who were/are thought to be ill with AIDS or infected with HIV. This information became available to the Heads of Schools mostly from frequent illnesses/absenteeism and from voluntary reporting by the staff. It is likely therefore that these teachers represent some sort of a management challenge to the Heads.

4.3.2 Stigma and discrimination

Teachers interviewed did not perceive stigma to be a problem in the schools and communities. In response to the question 'are teachers from families affected by HIV treated differently' only 4.3% (n=10) said yes, 36.5% (n=85) did not know and 40% (n=138) said that they were not treated differently. Provincial differences are not reported owing to small numbers.

It was also not possible to report on stigma versus actual experience of HIV in the school, owing to small numbers.

4.4 Key issues

- The data indicate a system that currently has significant challenges in terms of maintaining ability to supply an optimal level of educator capacity, with:
  - Between 19% and 25% of schools in Free State and Limpopo respectively reporting vacant posts, and some 1.6% and 9.5% of all teacher posts vacant at the time of the survey in these provinces respectively.

Deleted:

Deleted: :

- A further 1 in 4 Free State schools and 13% Limpopo schools and 2.6% and 1.5% of teachers respectively affected by prolonged staff absenteeism in the preceding year, the majority of which was believed to be the result of illness
- Overall attrition at around 11% in the Free State and 4% in Limpopo, with around 0.5% of educators lost to death in-service in the preceding year.
- Around 17% of Free State schools and 7% of Limpopo schools being affected by illness-related death of a staff member during the year.

- Educator capacity constraints were disproportionately experienced by schools in the Free State (apart from vacant posts), by secondary schools, and to an extent, by larger schools compared to small and medium sized schools.

- Around 10% of heads believe that one or more of their staff members is currently infected. This perception of having infected staff on board is more common amongst:
  - Heads of secondary schools
  - Heads of schools in the Free State
  - While this finding may indicate greater awareness or greater risk in these schools, it was not possible to assess the accuracy of head's perceptions.

4.5 Implications and recommendations arising from data on supply side impacts

1. Illness and deaths seem to have had a relatively small impact on teacher numbers and overall attrition rates in the Free State and Limpopo in 2002. Understanding other reasons why educators are leaving the service, and providing incentives targeting preventable reasons has potential to offset a substantial proportion of the loss due to AIDS or other illness.

- Validation of attrition, death and ill-health retirement data from other sources would seem to be important to confirm findings and exclude possible response biases.

2. Despite relatively low overall death rates, managing the effects of Illness and death is an issue for a substantial number of schools and their managers Thus enhancing capacity of systems and managers to deal with this seems to be an important issue.

3. Reducing the problems of filling posts seems to be important independent of HIV/AIDS, and will reinforce the system against potential impacts of HIV/AIDS in future.

4. Effects of all-case attrition, death and absenteeism due to illness seem to disproportionately affect certain categories of schools:

- Free State schools were worse affected than Limpopo schools in terms of prolonged absenteeism, attrition and proportion of schools experiencing death in services

- Secondary schools were worse affected than primary schools for prolonged absenteeism and for deaths in service following illness.

- It is interesting that schools that reported higher attrition and absenteeism were not disproportionately affected by vacant posts. This finding would suggest that the pre-existing factors (i.e. 'pull' factors that attract staff to fill positions in attractive schools or 'push' factors that make other schools less attractive) are likely to be significant modifiers of schools' vulnerability that arise from illness and death amongst staff. Thus policy and plans to mitigate potential HIV/AIDS supply side impacts in schools should not necessarily use 'early warning' data on staff absenteeism and death to identify vulnerable schools to the exclusion of known vulnerability.

5. The study did not inquire about absenteeism due to funerals or other compassionate reasons (or other reasons in general). Emerging indications from other countries (and SA in the case of other absenteeism) are that these causes of absenteeism tend to be more disruptive than direct illness-related absenteeism and that this should be monitored and addressed more closely in future surveys and initiatives, again independent of potential levels of AIDS among staff per se.

6. Whether or not overall attrition and absenteeism are increasing could not be answered by this survey. Its attempts to establish trends in attrition and absenteeism, by asking principals for retrospective data, seemed to fail due to poor record keeping at school level, and possibly other factors such as recall biases and reluctance to disclose deaths of staff. There is a need for reliable serial data to understand trends, and whether death and illness are becoming more prevalent.

7. This study was not able to ascertain whether or not stigmatisation of educators with HIV/AIDS in the school and community environment is a significant issue. More than 1 in 3 educators reported that they did not know if infected educators were treated differently from other teachers. Only 4% believed that they were treated differently. This situation should be monitored.

5. Exploration of school-level capacity to respond to impacts of illness and death

The purpose of this section is to understand some of the response capacities and constraints currently experienced at school level. From a monitoring and measurement perspective, responses are likely to attenuate impacts. A quality school response is likely to help children and teachers cope better with the various risk-related factors that were discussed in the preceding sections, with, hopefully enhanced educational outcomes. An understanding of the response capacity context may also help us to be realistic about recommendations flowing from this study. There are three categories of information described in this chapter. These were derived from literature review and the conceptual frameworks for demand and supply side impacts shown in Annex 1A and 2B.

Firstly the report describes existing types of support (e.g. food, encouragement to attend school, counseling and advice etc.) provided to needy learners and identifies gaps and potential opportunities for support.

Secondly, data on HIV prevention, education and knowledge are presented. This study was not concerned primarily with how education institutions and curricula can reduce the spread of HIV in South Africa. However, more than any other sector, education has opportunities to influence levels of HIV infection among young people, through its direct contact with them in the classroom and through extra-curricula activities. Prevention programmes can also promote knowledge and attitudes that create a foundation for HIV/AIDS impact management. It is in this context that the data on HIV knowledge and receipt of HIV information are described. The heightened risk of OVCs is explored where possible.

Finally, there is information about the overall school environment, and challenges experienced that are not restricted to those related to HIV and AIDS.

5.1 Key questions

The key questions addressed in this section are outlined below.

What existing support is available to reduce potential HIV and AIDS impacts at school level, and what are the gaps?
What is the current capacity of learners and educators to protect themselves against HIV, and to respond compassionately to those who are infected and affected?

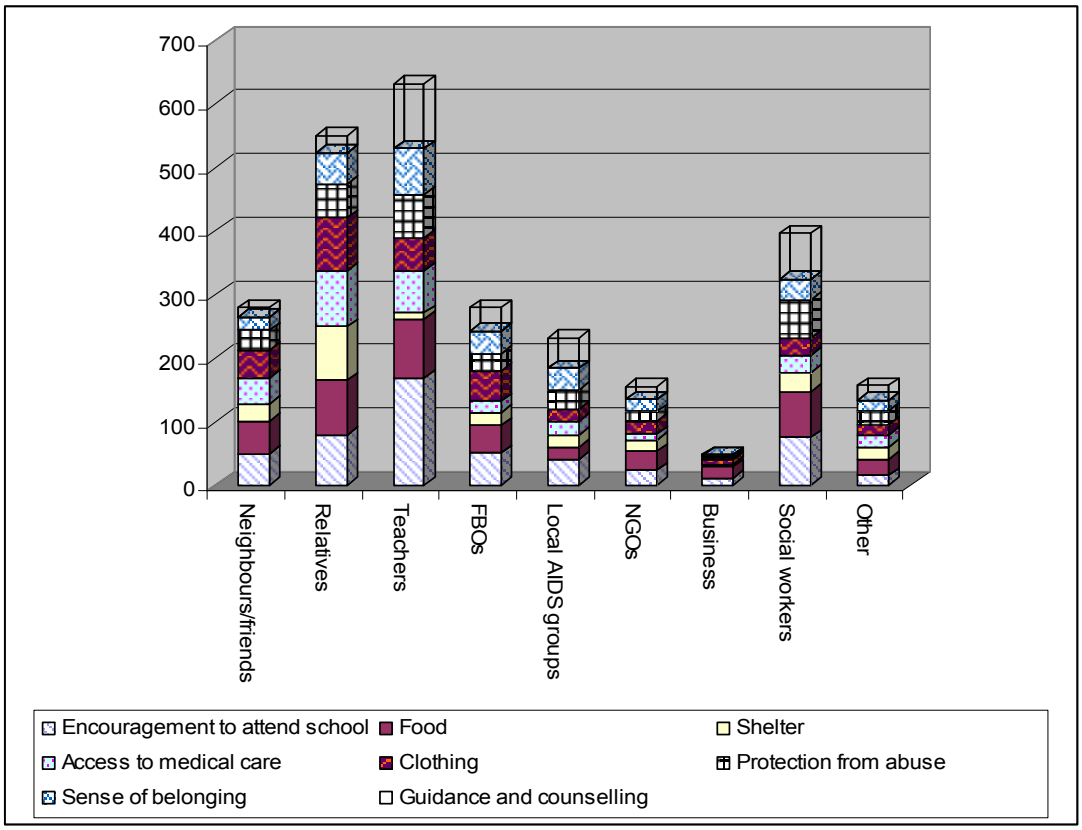
What are the current obstacles to good education outcomes, not restricted to AIDS-related factors, in the sampled schools?

5.2 Sources of support for OVCs and affected teachers

Information on schools' response capacity to meet the needs of children affected by illness and death was sourced primarily from interviews with schoolteachers, and to a lesser extent from interviews with school heads and learners. The teachers were asked to provide their understandings of the most common sources of support for needy children with respect to a range of needs.

As shown in Figure 12 below, teachers perceive that support for needy children comes from a diverse range of sources; teachers do not perceive that there is a specialised or single source available to meet a particular type of need. The various categories of people or agencies that provide support provide numerous types of support. The role of the agencies that provide support is discussed below.

Figure 12: Teachers perceptions on the type of support offered by various agencies to needy children in the school



5.2.1 The role of teachers in providing support to needy children

When all the types of needs were combined, teachers perceived of themselves as being the most common source of support for needy children. Teachers were the most commonly mentioned source of support for encouragement to attend school, and they also provide food, shelter, access to medical care, protection from abuse, guidance and counseling etc. Just fewer than 50% of the teachers interviewed said that for children affected by HIV/AIDS, teachers were their most common source of support for food. Teachers reported that they provided food for needy children through feedings schemes; buying food for them; bringing in food from their homes and even giving them money to buy their own food. Teachers were the most commonly source of support, with respect to providing guidance and counseling to affected children.

Since these are teacher perceptions of support, and many teachers may not be aware of what others do, this finding must be interpreted with caution. However, it seems clear that teachers with their day to day contact with learners, are well placed to support needy children in their day to day needs, and many are doing so, or at least perceive that they and their colleagues are doing so.

Teachers from the two provinces also appeared to produce similar perceptions of the most common sources of support for needy children. There were no marked differences by province or by level of school.

However, there were some disparities between understandings of most common sources of support among teachers from different school sizes. For instance, there were significant discrepancies with respect to perceptions of the most common sources of support for food. More of the teachers from large schools saw relatives as a primary source of support for food, and fewer of the teachers from small schools (43% vs. 22%). In small schools, teachers seemed to be providing food for needy children, and this was informally, not through organized feeding schemes. It could be that teachers in small schools are able to be more attuned to learners needs, possibly knowing the situations better, and therefore rely less on perceived outside help.

Further, most teachers believed that they personally were attuned to learners home circumstances. Three out of four teachers said that if a parent or caregiver of learners died during the year, they would always get to know, while a further 18% said that they would sometimes know.

School learners views

Learners were asked whom they would turn to for help in the event of a difficulty, and to describe the nature of the help provided. Some 5% of learners reported that their teachers would be the first people they would turn to for help in the event of a problem. Around 58% of learners reported that their parent(s)/ caregiver(s) at home would be the first the person/ people they would turn to. Over 15% commented that they would first turn to 'other young people like themselves' for help. Clearly, there seems to be some disjuncture between teachers' perceptions of the roles they play in providing support to needy children, and children's views of the support that teachers do provide.

However these were responses from all children, not all of whom would present to teachers as 'needy' children. Disaggregated by orphan status showed that double orphans relied on teachers for support more than other children, although these differences were not marked. Around 5% of learners with both parents alive reported that their teachers would be the first people they would turn to compared to 6% of maternal and paternal orphans respectively, and 9% of double orphans.

For learners who have been absent from school due to work commitments, there were very small differences with respect to whom they would turn to for support; 5% compared to 8% of learners who had not and who had missed school days because of work commitments reported turning to teachers first if there is a problem. There were very slightly more learners from poor households who would turn to teachers for support than from non-poor households (6% compared to 4%).

The kind of help sought by learners covered the range of needs, but most commonly mentioned were counseling and advice, followed by money and then school uniforms, fees and books.

Teachers were aware of many people involved in caring for children in need and teachers themselves reported that they provided many different kinds of support to children in need. More orphans than other children said that teachers were the first person they would turn to for help in the event of a problem (9% compared to 5% of non-orphans in the Grade 10 sample). The proportion of orphans turning to teachers for support may be higher in younger age groups, although this was not able to be explored in this study.

5.2.2 Linkages to outside agents and people who provide support

Social work services

Social work services were the third most commonly mentioned agency involved in providing support to children, in the views of teachers (Figure 12). Services provided by social workers included all types of support, not only access to grants. In fact, grant access, surprisingly was rarely mentioned and teachers have a potentially greater role in encouraging greater grant uptake for needy children.

Teachers perceptions of access to social work services in both provinces appear to be relatively similar with 64% of teachers from the Free State and 66% of teachers from Limpopo reported having easy access to social work services. Further, some 67% of teachers from both provinces reported having referred children/ families to social work services in the past year. Access to social work services also appeared to be relatively comparable across levels of schooling.

It would be interesting to know what the result was of the referrals to social workers, and from the perspective of the social work services, what the nature of the partnerships, and how networks and referrals can be optimized. We did not ask about feedback from social workers to schools concerning the outcome of referrals or other follow up.

Although partnerships with social work services do appear to exist, social workers were not mentioned at all by children in their description of whom they would turn to if they had a problem – unsurprisingly, social workers are not ready first points of contact for most needy children.

Relatives, neighbours and friends, FBOs, NGOs, local AIDS groups, business

Respondents held that relatives were the most common source of support with respect to providing shelter, clothing to needy children (including those affected by HIV/AIDS) as well as assisting them to seek medical care. This is in keeping with teachers' general perceptions that relatives were very or fairly supportive of needy children. Less than 5% of teachers commented that relatives would reject or react with hostility towards needy children.

With respect to building networks and partnerships, both school heads and teachers also reported some level of participation in organisations in the broader community. 55% of teachers stipulated that they were involved in outside groups or associations such as church and community groups. Given the existence of these links, efforts could be made in promoting links between schools and these organisations, with the view to provide support for HIV/AIDS programmes and initiatives in schools; and in so doing ease some of the burden placed on schools.

5.2.3 School governing bodies, policies and plans

Focusing specifically on policy and planning developments at a school level, some 57% of all school heads reported that their schools had developed its own plan or policy to HIV prevention and management; there were no marked provincial differences. This is significant, as it demonstrates that at a school-level, management appears to be taking active measures to deal with the impacts of HIV/AIDS on school communities

Further, 93% of all schools heads reported that the existence of an active school governing body in his/her school, 65% of which were actively involved in assisting needy children or staff in their schools. These governing bodies were reported to provide a range of support functions, which included exemption from school fees; fundraising and donations; donating clothes, uniforms and books, and providing advice, motivation and encouragement.

With regards to providing support for orphans specifically, 42% of school heads reported that their schools had devised an orphan register. These registers were purported to be used to identify children who required referral to a social worker or welfare department; to identify children who required school fees exemptions, clothing, food and help in applying for grants; for the purposes of monitoring absenteeism and performance; as well for generating statistical information for government or the Department of Education.

5.2.4 Perceived barriers to support

Just fewer than 60% of the respondents commented that the lack of support for some needy children could be attributed to the poverty of the communities that these children were positioned in. Over a quarter of teachers reported that some needy children were not supported because there was a lack of awareness of children's needs. While stigma and/or

fear are often cited as one of the causes of discrimination and a lack of support towards needy children, few teachers/ respondents appeared to regard this a an important reason why some needy children were not supported.

5.2.5 Key issues

- Many teachers perceive that teachers play an important role in the provision of support for needy children. It is perceived that a range of support is provided by teachers, including food, counseling and advice, shelter, money, school fees, encouragement to attend school etc.

- Around 5% of all Grade 10 learners and 9% of Grade 10 double orphans said that teachers were the first they would turn to for help in the event of a problem. This is fairly significant, and it would be expected that in earlier grades with younger children, this proportion might be substantially higher. Amongst Grade 10's, around 15% would first turn to other young people like themselves.

- There is a high expectation that social workers are involved in support for needy children and around two thirds of teachers had recently made referrals to a social worker. The survey did not ask about the outcome of the referral; it would be important to look at social worker caseload from schools, and the outcome of referrals such as these.

5.3 Staff and students ability to protect themselves from HIV

Accurate knowledge of HIV and AIDS and the ability to feel empowered to protect oneself from HIV infection are regarded as an important cornerstone of HIV and AIDS impact management. In this study, learners, teachers and heads were asked about HIV/AIDS education and training that they had received; questions aiming to assess their own knowledge of basic facts of HIV and AIDS and condom and VCT access for staff and learners. Respondents were also asked about the context in which prevention programmes take place.

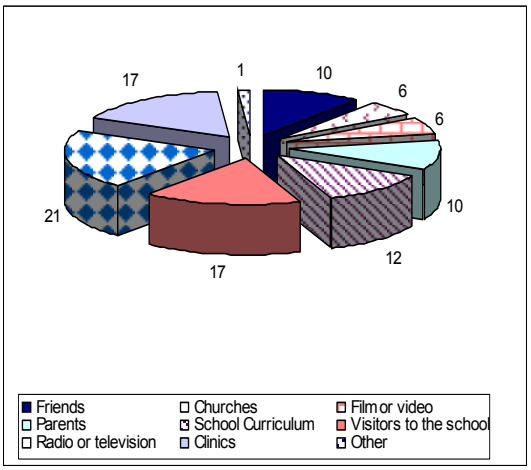
5.3.1 HIV/AIDS education and training and basic knowledge of HIV and AIDS

Eighty percent of principles said that staff at their school had been provided with training in HIV/AIDS prevention while 75% of the teachers said they had received training in HIV/AIDS prevention. Similarly, teachers believed that learners had received information about HIV. Nearly all teachers, 97%, said that to their knowledge learners received information or education on HIV/AIDS.

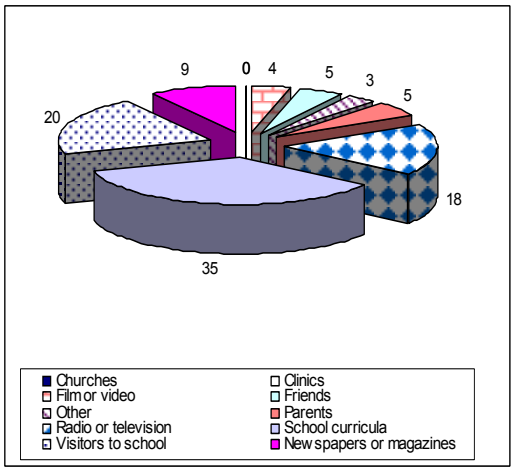
Some 88% of learners in the Free State said that they had received information about HIV and AIDS, compared to 80% of those in Limpopo. These differences were statistically significant [*Pearson chi2(2) = 31.8303 Pr = 0.000]*. A smaller proportion of girls than boys had received information; 18% of girls had received *no* information compared to 13% of boys [*Pearson chi2(2) = 8.7851 Pr = 0.012]*.

Teachers believed that the most frequently reported source of learner HIV/AIDS information was school curricula (35%). Outside visitors to schools and radio/TV, were also perceived as important sources, while parents were cited as less often (5.4%) (Figure 13). When learners were asked where or from whom they had received information about HIV/AIDS, radio or television was reported more commonly (20%) than other sources for HIV/AIDS information. Other sources mentioned included Love Life (n=8), youth clubs, PPASA and hospitals. Although the teacher responses were from all school levels, and the learner responses were secondary school learners only, the disjuncture was similar when analysed by level of school (not shown).

Figure 13: Sources of HIV/AIDS information for learners – learner and teacher perceptions



% responses: Teacher perceptions



% responses: Learner perceptions

Basic knowledge of HIV: heads, teachers and learners

Knowledge was assessed with four questions about HIV/AIDS. Three questions were combined into a composite question where a correct answer was given if all three components were correctly answered. The data indicate that there is still some level of confusion in respect of the basic facts of HIV, amongst educators and heads in the sampled schools, regardless of HIV prevention programmes. A relatively large proportion (35%) of principles did not answer all 3 components of the composite question correctly. For the composite question, 20% of the teachers did not give correct answers for all three questions. Correct answers were not associated with having received training in HIV/AIDS prevention and although there were a higher proportion of incorrect or unsure responses given by teachers who had not received HIV/AIDS training, these differences were not statistically significant (p=0.4).

For example, in response to the question “”Can people reduce their chances of getting the HIV/AIDS virus by having sex with just one partner who has no other partners?” up to 16% (n=37) of heads either said no or were not sure. Teachers scored slightly worse, with 21% saying no or not sure.

This suggests that at extra support is likely to be needed if heads or teachers are to be equipped to provide leadership in HIV/AIDS responses at school level.

Learner knowledge

Learner knowledge was surprisingly poor in this survey. Table 11 below shows learner responses to three questions concerning basic knowledge of HIV. There seemed to be confusion amongst learners on how HIV is transmitted, with around 1 in 4 learners believing that HIV can be transmitted via mosquitoes, and a further 14% being unsure if this is possible. Around a third of learners believed that a healthy looking person cannot be carrying the virus, and a further 10% were not sure. Further, some almost 1 in 5 learners believed that a person could get the virus from sharing food with someone who has AIDS, or they were not sure if this was possible.

Table 11: Learner responses to questions on HIV transmission

	Can a person get the HIV virus from Mosquitoes? N (%)	Can a person get the aids virus by sharing food with a person who has aids? N (%)	Is it possible for a healthy looking person to have the AIDS virus? N (%)
Yes	366 (24.5)	137 (9.1)	816 (54.9)
No	922 (61.8)	1234 (82.7)	514 (34.5)
Not sure	203 (13.6)	121 (8.1)	156 (10.5)
TOTAL	1491	1492	1486

Less than one third of learners answered all three questions correctly. There were no gender or province differences detected.

Relationship between HIV and AIDS information and knowledge for learners

Given the lower than expected levels of learner HIV/AIDS knowledge, we examined the effects of HIV/AIDS education on knowledge, and found that having received information about HIV and AIDS was positively associated with accurate knowledge (Table 12).

The analysis also indicated that this association is not confounded by factors such as age or school performance. Age appears to modify the effect, since a stronger association was measured for younger age groups, suggesting that in younger learners, the benefits of receiving information about HIV/AIDS is greater compared to older learners (bearing in mind that in this sample, the older learners were old for grade, as all learners were in the same grade). Good school performance also appears to be associated with good knowledge, although this was not statistically significant after adjustment for age. Thus, although there

is room for improvement in learner knowledge, and this is a matter of urgency, indications are that existing information sources are having some effect.[t]

Table 12: Effect of HIV/AIDS information received on learner HIV/AIDS knowledge, adjusted for age and school performance

Factors associated with good HIV/AIDS knowledge		Adjusted odds ratio (95% CI)	p-value
Age group	< 16 years	1.57 (1.14-2.17)	<0.01
	17-18 years	0.88(0.64-1.19)	<0.41
	> 19years	1.00	
Received information about HIV/AIDS	Yes	1.82 (1.28-2.60)	<0.01
	No	1.00	
Good school performance	Good	1.17 (0.89-1.54)	0.23
	Average/Poor	1.0	

5.3.2 Access to condoms

According to 60% of teachers, and approximately two-thirds of school heads, condoms are easily accessible to staff and community members either at the school or a point close by. With respect to condom access for learners, over two thirds of learners from both provinces stipulated that condoms were easily available at schools or a point nearby. There is also similar consistency with respect to male and female learners' access to condoms. Some 66% of learners from the Free State and 67% of learners from Limpopo noted having easy access to condom. Most learners reported that clinics were their main resource for accessing condoms. Fewer than 3%of learners reported that schools were a source of condom provision for them.

Just over half of all schoolteachers and heads supported condom provision at schools, for sexually active learners. However, while 60% of male teachers supported condom availability at schools, only 48% of female teachers concurred with this position. Further, greater number of younger teachers (under 40 years), as compared to older teachers (over 40 years) appeared to support condom provisioning at schools. (Neither of these differences reached statistical significance).

About one fifth of teachers said that it was school policy to question a student should he/she be found with a condom, while nearly 40% said there was no policy at their school.

Learners were asked if they or their partner used a condom when they last had sexual intercourse. Including only sexually active learners in the analysis (around ½ of the learner sample), 60% said they used a condom during their last sexual encounter. A statistically significant higher proportion of sexually active male learners did not use a condom (44%) (n=185) compared to females (28%) (n=103). [*Pearson chi2(2) = 20.0868 Pr = 0.000*].

[t] It would be interesting to explore levels of knowledge in relation to the source of information, but this is beyond the scope of the current report.

5.3.3 Voluntary counseling and testing

Importantly, 1 in 5 teachers believed that there was not an accessible place where teachers from their school and other community members could receive VCT for HIV. Where VCT was known to be available, health care services, both at the primary care level and district hospital level, were identified as the most utilised providers of VCT. There appears to be similar level of access to VCT services for teachers across provinces.

Slightly lower proportions of teachers identified VCT services as being available for learners; 68% of schoolteachers and 73% of school heads reported that counselling and testing services were readily accessible to learners. There were no provincial differences, and there were no differences in these proportions by level of school.

A secondary study could possibly be used as a vehicle to assess whether learners (or teachers) in fact took up these services, and barriers and facilitating factors related to uptake.

5.3.4 Sexual relationships and protection from abuse

Around half of learners in secondary schools (Grade 10) were sexually active. Some 9 % of learners indicated that they had been forced or pressured into having sex against their will. Sexual coercion emanates mainly from fellow learners.

Sexual coercion was more 2-3 times more commonly reported by double orphans and maternal orphans than by children whose parents are alive. Some 16% of double orphans reported forced sex compared to 6% of children whose both parents were alive; these differences were significant (OR=3.01; 95% CI 1.54;5.89). Maternal orphans also showed an increased risk compared to other children (OR=1.78; 95% CI 1.02;3.07). These data underline the interactions between learner vulnerability and high-risk situations, and point to the urgent need for protection for these and other vulnerable children. There were no other significant associations between forced sex and other risk-related factors.

Intergenerational sexual relationships

There was a general acknowledgment in the surveyed schools of the existence of sexual relationships between learners and older men and women in the community, and between learners and teachers.

Around 28% of learners were of the view that sexual relationships between learners and older men and women were either frequent or very frequent. Just over 21% of learners and a similar percentage of teachers believed that relationships between teachers and learners were frequent or very frequent, while 43% of learners and 27% of teachers said that they did not know. Heads were slightly more likely to be of the view that these relationships were frequent or very frequent (35%). One quarter of all principles interviewed were aware of instances of sexual relationships between teachers and learners.

Heads of schools and teachers were asked what they believed to be the main reason that learners have sexual relationships with men/women older than themselves. They both said that financial factors promoted this practice, with nearly 80% of heads and similar proportion

of teachers citing money and help with food and shelter or money and help with other things, as the main reason.

Just under 10% of teachers, 9% of learners and 7% of heads believed that being forced/pressurised led learners to have intergenerational sex.

When learners were asked what they believed to be the main reason for certain students having sexual intercourse with older men or women, just under half of the learners said that money, food or help with shelter prompted students to have sexual intercourse with older men or women. An additional 10% said that the receipt of luxuries or treats led to these relationships, while around 20% believed that love or affection was the main reason. Around 9% said that they believed that learners were forced or pressurized into these relationships.

Teachers were asked if relationships between learners and older men or women were a problem that should be addressed by the education system. The large majority, 81% said yes, 12% said no, while around 6% did not know. There were no differences in responses between male and female teachers.

5.3.5 Perceptions of HIV infection amongst learners and staff

Twenty (8.2%) Heads of Schools said that they were aware of children who were thought to be sick with HIV/AIDS, while a further 3% knew of children in the school who had tested positive for HIV. These findings were similar to the teachers' responses to questions on their knowledge of children with HIV/AIDS.

Most principles (82.8%) thought that learners at his/her school could easily obtain treatment for sexually transmitted infections if it is needed

Stigma toward learners and teachers affected

While nearly half of the teachers interviewed did not believe that children infected/affected by HIV/AIDS were treated differently, while nearly 40% did not know. Of those that said that this was a problem (n=27), the community, neighbours, and other children were identified as treating such children differently.

5.3.6 Key issues

- Although a large proportion of Grade 10 learners said they had received information about HIV, it is surprising that around 18% of girls and 13% of boys had not received information.
- Learners did not identify schools as significant sources of HIV information, although teacher respondents believed they were.
- Knowledge of the basic facts of HIV on the selected indicators was low amongst heads, teachers and learners: there was considerable uncertainty about the facts of HIV transmission.

- It is encouraging however that learner knowledge was associated with having received information about HIV and AIDS, and this issue could be analysed further with respect to the source of information reported.

- It is also encouraging that despite confusion around HIV transmission, condom use was reasonably high amongst sexually active learners (at 60% of girls and 44% of boys in their last sexual intercourse), and that teachers and heads believed that condoms were accessible to the majority of teachers. Condom use in this study is lower than that reported in the Nelson Mandela/HSRC study on HIV/AIDS.

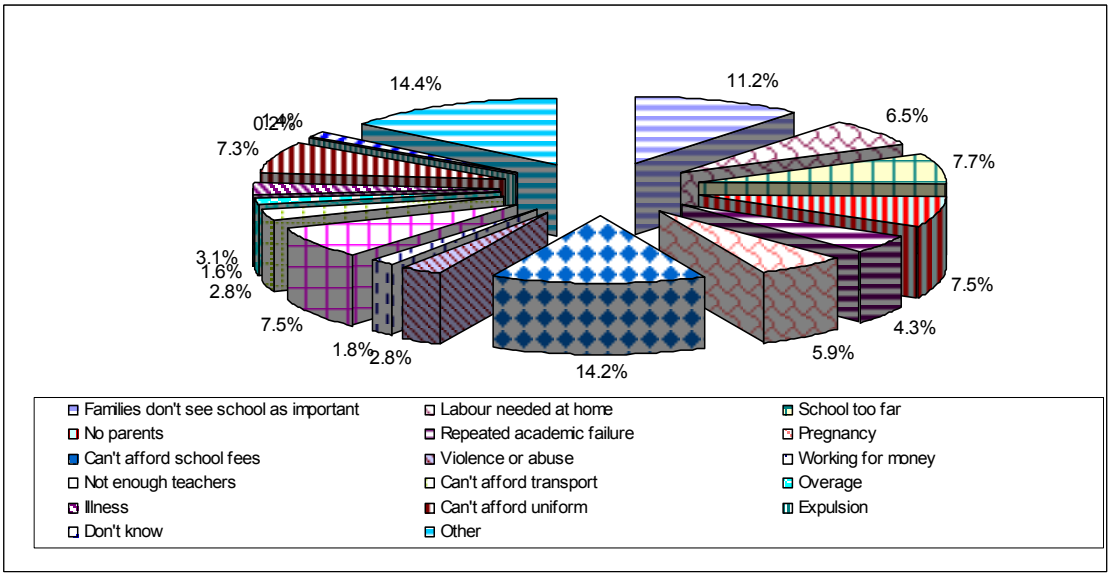
- Around 7% of all sexually active learners said they had been forced to have sex against their will; maternal and double orphans were 2-3 times more likely to have been pressurized to have sex than other children. These data underline the interactions between learner vulnerability and high-risk situations, and point to the urgent need for protection for these and other vulnerable children.

5.4 The overall school environment

5.4.1 Perceived obstacles to good education outcomes

When Heads of School were asked about obstacles for learners learning well and completing their education, the most frequently reported reasons given were an inability to afford school fees (14.2% of all reasons mentioned), followed by families not viewing school as important (11.2%). Approximately 1 in 3 heads and 1 in 4 heads mentioned these two reasons respectively. Obstacles to education perceived by Heads are shown in Figure 14 below.

Figure 14: Perceptions of heads of schools regarding what stops learners at the school from obtaining good quality education



As has been discussed elsewhere, despite policy imperatives against children being discriminated against on the basis of fees, this practice is still perceived as a barrier in relation to the education of fostered children;[7] our survey shows that heads perceive this as the main barrier to good education outcomes for many needy children, and indicates that this practice may be fairly widespread – this reason was mentioned by 30% of heads in our sample.

Further, around two thirds of heads of schools reported that no learners had been given fee exemptions at their school, 13% of heads had exempt learners from paying fees, and about 20% of heads refused to answer the question or did not know.

5.4.2 Reasons for drop out and erratic attendance by learners

In the surveyed schools, drop out and erratic attendance was already fairly commonly reported. Just over half of the teachers interviewed said that learners from their classes had left school for a period of more than one month without yet returning. Three hundred and ninety eight learners in total were estimated to have left school, or an average of just less than two per teacher. Of concern was that 2/3rds of teachers who knew of learners who had left, said that learners were not attending school elsewhere.

Many teachers believed that the school or Department of Education was already doing something to prevent children dropping out of school.

Reasons for drop out amongst girls and boys are included in Figure 15 and 16 respectively.

There were some gender differences apparent in reasons for drop out:

- Pregnancy is seen as a common reason for girls dropping out (most commonly mentioned reason)
- Illness amongst girls seemed to be a concern amongst teachers, but this was not mentioned for boys (19% of all responses given, ranking third most common reason for girls). It is not clear what illness is being referred to, and if it were AIDS related, it would imply HIV infection in late childhood, early teens.
- Behavioural problems, repeated academic failure and being overage were cited as obstacles for boys completing schooling, but mentioned far less often for girls.

Forty percent of teachers who were aware of out of school children said that the Department of Education made efforts to get these children to attend school, forty five percent said such efforts were not being made, 14.6% said that they did not know.

Figure 15: Reasons given by teachers for girls dropping out of school permanently

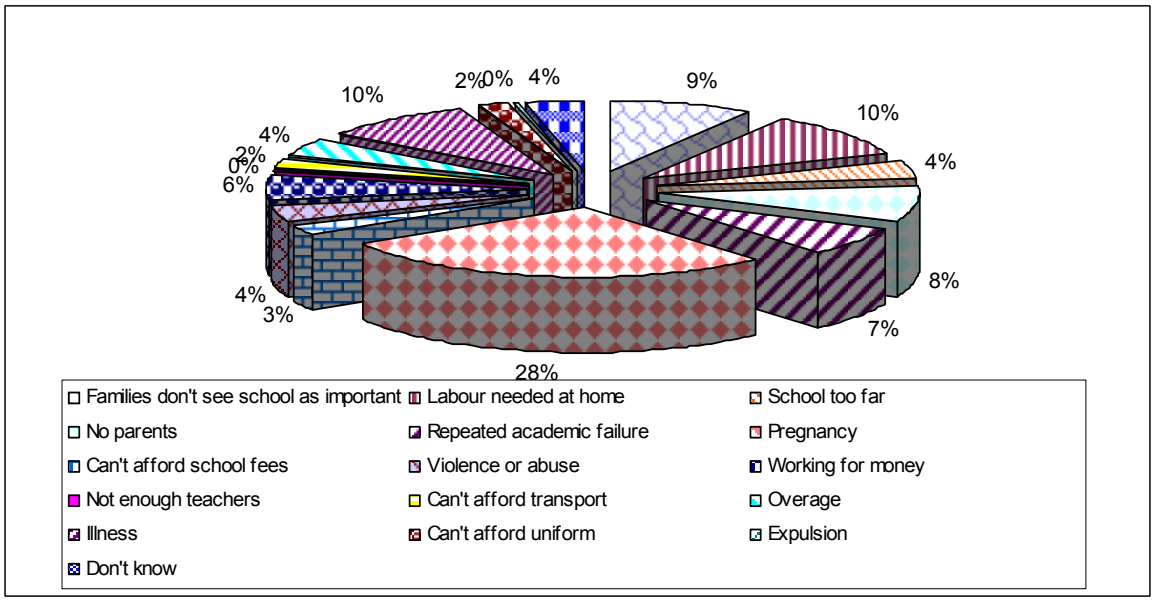
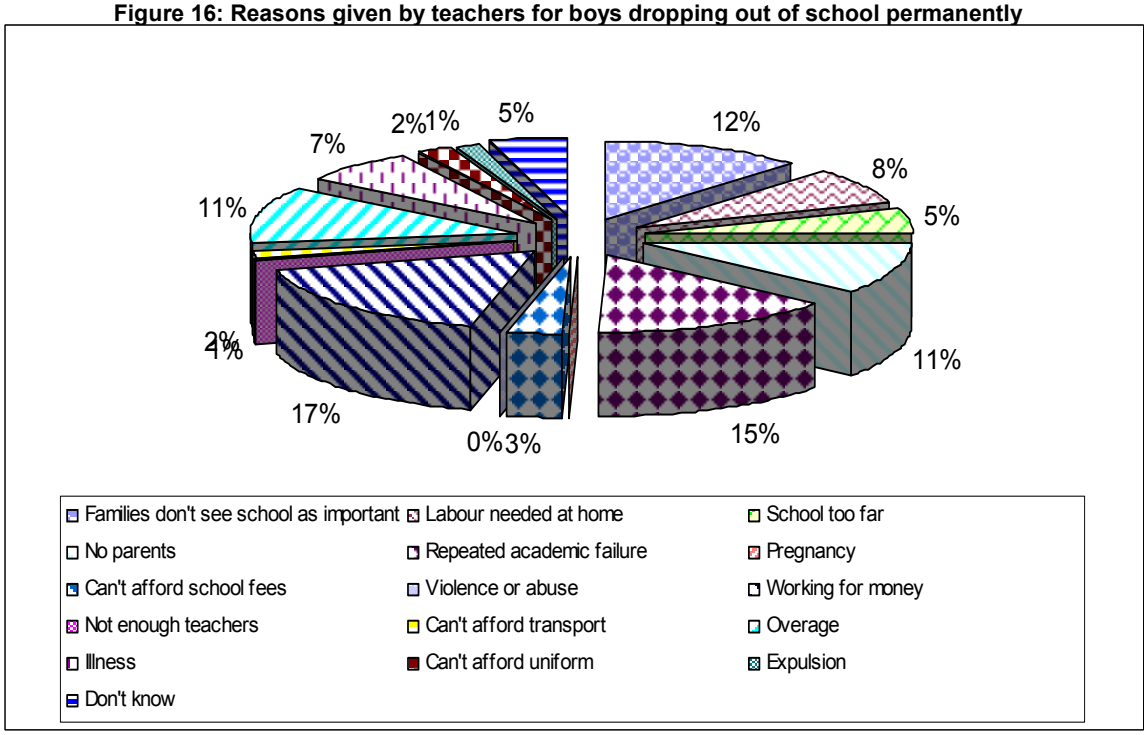


Figure 16: Reasons given by teachers for boys dropping out of school permanently



5.4.3 Key issues

- School fees were still perceived by 1/3 of heads of schools as posing significant barriers to learners completing education in their schools. This issue remains important, independent of HIV and AIDS.

- Family support for schooling was also perceived as critically important; mentioned by around ¼ of heads. Initiatives to try to strengthen family support for schooling (through media, open days, encouraging parent participation and involving other sectors in promoting school enrollment and attendance) are likely to strengthen the school's ability to keep needy children enrolled.

- Teenage pregnancy amongst girls and behavioural problems amongst boys are both factors that seem to affect a significant number of learners with severe impacts on education.

5.5 Implications and recommendations arising from information on school capacity to respond

1. Teachers perceive themselves to be providing a range of different types of support to children in need.

- Double orphans seem to draw on support from teachers more than other children, and proportions of children coming to rely on teachers may increase as proportions of needy children increase.

- Systems to monitor quality and appropriateness of care and support provided though schools and teachers would seem to be important, given potential for abuse and exploitation in both directions.

2. Without extra support, any expectations on heads of schools to provide leadership on a comprehensive HIV and AIDS response at school level seems unrealistic in view of low overall levels of knowledge about HIV and transmission.

- Routine incorporation of questions designed to assess basic knowledge about the facts of HIV and AIDS in in-service training course modules, and/or with exit 'tests' assessing basic knowledge at teacher training colleges may be considered as ways to routinely incorporate monitoring HIV knowledge amongst education sector staff.

- However lack of knowledge should not hold up action in certain areas. School Governing Bodies (SGB) in many schools are apparently already active in supporting needy children and their families. Ensuring that SGB are networked into existing resources to help them in this task would seem important.

3. Existing barriers to learning in the school environment that were identified by heads and teachers are likely to make it harder for HIV and AIDS affected and other vulnerable children to maintain their education, or even enter education.

- Of particular concern are experiences at school level regarding fees as a perception to barrier to access. Barriers posed by fees will potentially affect the most vulnerable children and any stigmatization of children from AIDS affected families may make it harder for these children to access outside resources to pay school fees. Around 2/3 of heads said that no children at their school had been granted fee exemptions.

- Strengthening referrals and linkages between schools and the Adult Basic Education (ABET) system, and supporting initiatives to enhance ABET would seem important given that being over-age was cited as a significant reason for drop out in the sampled schools. Ways to support the learning environment for learners who are significantly over-age in the lower grades, but not old enough for ABET also need exploration. In the absence of effective interventions to support OVC's in their education, delayed enrollment and increased school interruption are likely to increase (influenced by several HIV and AIDS related factors), and proportions of overage learners in the system may increase.

- Lack of family support for education was also regarded as a significant barrier to education completion. Efforts that encourage family and household participation in school (open days etc), media and other interventions to stress the importance of enrollment and regular attendance could be explored as means to increase family support generally in communities.

6. Conclusions: Implications for measurement and monitoring of potential HIV and AIDS related impacts on education at the school level

This study pre-supposes that surveillance and data collection are valid activities, but research and data collection clearly do not take the place of interventions. The Education System and other sectors should hold up action to address critical needs. Examples of intervention areas that are highlighted by this study include:

1. Continuing to re-inforce a culture of learning and teaching in schools, ensuring that staff and learners are accountable for attendance and that schools have systems and procedures to manage and cover for ill or absent teachers

2. Committing to protecting orphans and other vulnerable children from abuse, and promoting recognition of children's rights.

3. Strengthening efforts to reduce barriers to schooling, such as fee exemptions, teenage pregnancy and other issues.

The findings of this study also support the active involvement of the education sector in ensuring that critical key indicators of HIV and AIDS impact and response capacity are monitored in South Africa's schools.

- The data from this survey illustrate that extra-school factors such as household and living circumstances, are directly independently associated with educational outcomes. Ensuring that vulnerable groups are not disadvantaged in their educational chances are likely to be in keeping with education policy and goals for the foreseeable future.

- School staff and SGBs in the two provinces surveyed, already participate in various support and monitoring activities (supplying food, clothes, keeping orphan registers, etc.) that go beyond traditional education roles. Schools as a point of entry for interventions aimed at supporting children at risk and their families, and to a lesser extent, staff is emerging as a promising approach to address the complex problems facing needy children and their families. Such approaches are becoming increasingly common worldwide, with greater integration between education and social services and boundaries between these disciplines becoming blurred. It seems important for the education sector to take an active role in monitoring what goes on in schools to avoid over-burdening of teachers and facilities; to ensure that

negative unintended consequences of interventions are tracked and in order to help promote and replicate positive successful initiatives.

- The situation with respect to the proportions of vulnerable children (and staff) is unlikely to remain static in the next decade, given the scale and stage of the HIV/AIDS epidemic. Indications from the two provinces included here, show that there are already fairly substantially higher proportions of educationally vulnerable learners in the province that has a more severe and advanced epidemic.

Some specific recommendations arising from this study, related to measurement at school level are described below. These are a consolidation of lessons learned from the school survey, the literature review, and international best practice guidelines.[8],[9]

6.1 Recommendations related to measurement of HIV and AIDS related factors

1. ***Cost-effective ways to strengthen monitoring information and reduce duplication and wasted effort should continue to be sought. The use of standardized indicators and building on previous research should be encouraged.***

   - The Department of Education could consider encouraging any formal evaluations by outside agencies at school level to track important indices of vulnerability.
     - For example partners and evaluators of the lifeskills programme, loveLife Games and other school-linked interventions could be encouraged or required to include educational outcomes as well as other minimum 'vulnerability' indicators as part of any M&E of their programmes.
     - Where feasible, a minimum set of indicators should be collaboratively developed by the education sector and stakeholders for use in evaluation.
   - Another source of valuable information on educational disadvantage is that from household surveys, both national surveys, and those of AIDS affected households.
     - Collaboration between the education sector and survey specialists and repositories of data should be encouraged; for example, it may be productive for the education sector to ensure that critical questions relevant to education access and vulnerability are included in forthcoming surveys where feasible and appropriate.
     - Consider advocating for access to the completely disaggregated national and other household survey datasets for targeted analysis of key education issues, or for more focused analysis of critical issues.

2. ***Consider encouraging the participation of children in routine data collection***

   - There were some important discrepancies between teacher and head and learner perceptions identified in this study, and heads cannot be expected to proxy report on for example, orphanhood and other issues, where children are the best

informants. E.g. proportion of children in a class who have basic needs met, proportion of household children out of school, orphaning and illness and death in the household could be reliably and fairly simply reported by learners on self-complete data collection instruments, rather than relying on teachers records and orphan registers, or as a way to verify these. Learner reports on teacher absenteeism also show promise as providing plausible information and may be appropriate in some settings.

3. ***Data collection is also a form of intervention, and involving heads, teachers, SGB and learners themselves, in collation of data from their schools may have positive spin-off.***

- Involvement of the school community may cause greater awareness of needs, help reduce stigma and prompt discussion about interventions and feasible means of support for needy children and staff.

- Given the potential of data collection to focus responses, it is also critically important that indicators that are collected are in line with Education strategy and priority.

4. ***Use a range of indicators for monitoring to avoid misleading conclusions.***

- In school settings, things may get worse before they get better. If certain schools or districts are being more successful in keeping vulnerable and needy children in school, they may score worse on some indicators – overall performance and daily attendance may go down, for example. Using a range of indicators should go some way toward avoiding misleading conclusions

5. ***Systems should not be over-burdened by data collection. There is less chance of this happening if monitoring is guided by a carefully considered monitoring framework that outlines the dimensions of impact to be considered, the recommended indicators, who will be responsible for collecting the information and the time frames and frequency of data collection.***

- It is beyond the scope of this project to develop such a framework, but several issues flowing from this research are highlighted that may be useful. One approach that could be further developed is to consider the usefulness of identifying possible indicators according to categories recommended for National AIDS Programmes by UNAIDS and widely used in different settings; an example of how this framework could be adapted for education is illustrated in Figure 17.

    - According to this framework, indicators that are monitored should include input, outputs, outcomes and impact indicators. Although this model cannot necessarily be directly applied to HIV and AIDS-related factors on education, there are some useful lessons to be drawn. Firstly, it is helpful to distinguish between indicators that should be collected routinely, and those that are best collected in specific evaluations. In general, UNAIDS recommends that all programmes or implementing partners should collect input data, some partners should collect process data and the further along the continuum

toward impact or effectiveness evaluation, the fewer implementing partners or projects will collect these data.

- Routine monitoring by schools and districts will not necessarily be the best source of collection of information on impact indicators, in this case, educational quality measures (unless there are other pressing reasons for these data to be routinely collected).

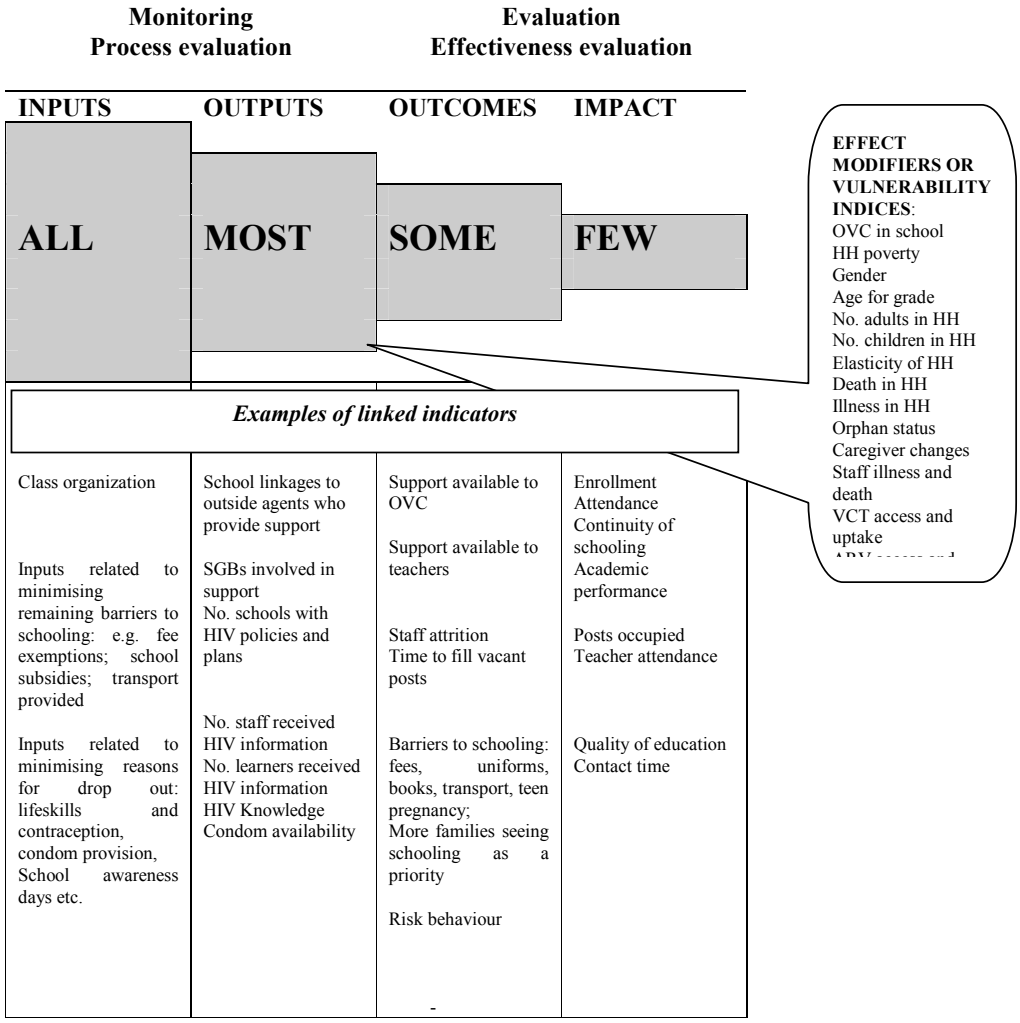
- As shown in the Figure, the UNAIDS framework can be modified to include dimensions of vulnerability (important to track in order to understand the context for outcomes, and these are important effect modifiers and confounders).

6.2 Measurement considerations for specific indicators

Table 13 below illustrates some examples of potential indicators that were identified in this study. They are presented with considerations for their use and interpretation.

As is evident in the table, there is an uneven spread of available indicators. Particularly lacking are indictors to measure school response capacity and support available to OVCs. Input indicators also need to be clearly defined. Specific areas for research arising from the findings from this study, and the literature review, are identified in the table for each dimension.

Figure 17: Draft Adapted Monitoring and Evaluation Results Pyramid



Source: Adapted from UNAIDS Monitoring and Evaluation Operations Manual 2002

6.3 Conclusions

There is clear evidence from this study of educational disadvantage for several categories of children affected by orphanhood, migrancy and other household composition shifts related to illness and death of household members. There is also evidence of substantial proportions of schools affected by prolonged absenteeism and death of staff members. Ongoing monitoring of these situations is critical.

Overall, there are many opportunities for ongoing surveillance of HIV and AIDS related factors at school level. This study suggests that monitoring many dimensions of risk related factors is feasible. Secondary data analysis and focused studies should take some of the potential burden of data collection.

The school survey approach used in this study helped to identify indicators and measurement considerations. Follow on studies could be conducted, and we believe that the approach taken was sufficiently successful to merit replication in most dimensions of impacts, taking into account the refinements suggested in the Table. However, future studies of this type should be preceded by focused research to develop robust methods of certain attributes such as school response capacity. Lessons learned from other current work on supply side impacts may be useful to future efforts, and should be drawn on.

Table 13: Measurement considerations identified in this study for select dimensions of HIV and AIDS related factors and educational outcomes

Dimension	Examples of Indicators	Measurement Considerations
IMPACT		
Enrollment	% children of school age enrolled % children who are late enrollers % school age children in learner households who are not enrolled % school age children in learner households who are not attending this year Above disaggregated by vulnerability criteria e.g. household poverty; orphan status and household size and fluid or elastic households.	♦ Ongoing routine monitoring of age at enrollment is critical. △ Late enrolled children in our study were at risk for educational disadvantage, although their late enrollment would have pre-dated effects of AIDS; a previous study (Tanzania) found that delayed enrollment was marked in households with an adult death – particularly adult female death; in a school setting, In South Africa, trends are difficult to interpret because of policy changes. ♦ Household-based rather than school-based surveys are best placed to capture overall enrollment, and often collect useful data on other dimensions of impact. △ Survey of AIDS affected households and other national surveys are often conducted with other primary objectives in mind, apart from education, and for some studies, education-related information does not always get analysed in ways that are optimally useful to the education sector. Where possible, household survey data should be obtained for secondary analysis to answer key questions, and questions optimally useful to education should be inserted at the outset. △ Inclusion of questions on children who are not attending for sustained periods should be checked (many may be enrolled, but not attending). △ Follow on studies of AIDS affected households can underestimate important impacts on children due to household dissolution, and/or child-migration, although these can be measured and reported on. △ Movement of children between households seems to be an important point of vulnerability for school interruption and other outcomes; increasing sensitivity of instruments to be sure that migrating children who may not get picked up in household registers are documented seems important to track the extent and patterns of these events. ♦ There is potential for learners to provide information about enrollment of other children in the household △ In addition to the indirect information on out of school children, this also gives an indication of the learners own vulnerability to educational disadvantage, as learners with other household children out of school were more likely to have experienced school interruption and absenteeism themselves. △ Having other children in the household who were not in school was associated with recent maternal orphaning, with many children in the household and with being in 'elastic households' – having received children into the household in the past year.

		Research recommendations ♦ Studies looking at intra-household resource allocation – who attends school in times of crisis, and who gets left out are likely to be important, given the high proportion of learners who report that there are other children out of school in the household. This could be done through secondary analysis of existing household and other datasets, but is also likely to be enriched by qualitative work to understand dynamics. ♦ There is potential under-reporting by boys on non-enrollment of other household children (or possibly over-reporting by girls) – qualitative investigation of this issue looking at gender differences in the question interpretation and awareness of needs would inform understanding of interpretation and robustness of the indicator. ♦ Secondary analysis of any routinely available data on age at enrollment, and/or primary collection of this from surveillance sites, may help identify schools and districts most in need of support.
Attendance	% learners with erratic daily attendance ('do you attend school on most school days?' % learners with sustained school absence in previous term (>2 weeks) % learners reporting school absenteeism because of work	♦ This is one of the first studies to use multiple measures of learner absenteeism in relation to HIV and AIDS related factors, and each of the measures shows slightly different effects of HIV and AIDS related factors; △ For erratic daily attendance, our findings concurred with findings from Uganda, showing associations with having ill family members in the household; we also showed elevated erratic attendance amongst recent maternal orphans and double orphans; girls were affected more than boys. △ Missing school because of labour needed at home or to work for money was strongly associated with having lived less than 1 year with the primary caregiver, and with children being sent away from the household. Double orphans also seemed to be at elevated risk; boys were affected more than girls ♦ Sustained absenteeism (>2 weeks) may reflect different underlying mechanisms wrt to vulnerable children, and we would caution against too rapid use of aggregate annual learner absenteeism in monitoring potential AIDS impacts; △ in this study, maternal orphans were *less* likely to report sustained absenteeism, but more likely to experience erratic daily attendance. △ our indicator definition included sustained absence by other children in the household along with learner sustained absenteeism, and in hindsight, we would recommend separating learner and household children outcomes as far as possible, because of inabilities to distinguish intra-household resource allocation dynamics in a combined question and difficulties with interpretation. ♦ Continuing to encouraging class teachers to keep attendance registers is probably important in its own right, as well as a potential source of useful data for record review. ***Research recommendations*** ♦ Further understanding of the patterns and underlying mechanisms of the different forms of learner absenteeism discussed in this study may be useful to help design interventions to keep children in school. ♦ Further tool development on ways to track learner absenteeism are merited. Other approaches additional to the ones used in this study, such as asking learners to keep diaries of school absenteeism in pilot settings, or asking learners

		to report the number of hours that they spent in school in the preceding week, could be explored. ♦ Research to assess the effectiveness of interventions to reduce learner absenteeism, with a focus on needy children, is likely to be highly useful, and should be conducted in the context of a randomized evaluation design.
Continuity of schooling	% learners with school interruption (>1 year)	♦ Periods of school interruption have not previously been widely measured, but the measure seems likely to be quite sensitive to a range of HIV and AIDS related factors, making it an important issue to watch in the future. △ In our study the measure was associated with large households; elastic households; having no contact with extended family; recent death of a household member under 60 years of age. △ Importantly, because this is a cross-sectional study and because we did not ask for information on the timing of school interruption, we do not know anything about the time sequence of events and the associations mentioned above may well not have anything to do with causality. Our findings suggest that it is a potentially useful measure, but would benefit from refinement, including information on time sequencing. ***Research recommendations*** No specific recommendations.
Academic performance	% learners reporting A or B as highest grade achieved for any subject at the end of past school year teacher and head perceptions of performance declines following HIV and AIDS learner perceptions of performance declines in past year	♦ Two previous studies that were identified in the literature review measured school performance in relation to HIV and AIDS impacts, but neither reported their findings! The measure used in this study was based on learner self-reports of highest grade achieved in the past year and showed significant associations with a number of risk factors. △ Poor performance was associated with poverty, class organization and illness in the household in the past year;; old-age for grade learners also reported better grades than their younger classmates. ♦ Measures to pick up changes in an individual child's performance would seem to be ideal – it is not that one is trying to get all children to get A' symbols, but rather it is the changes in performance – children doing badly, who previously were doing well that are important, particularly if declines are sustained. We asked learners for their recall of performance declines, and declines in performance were significantly associated with reports of household member illness and death in the previous year; numbers were small – around 7% of learners reporting declines in grades. ♦ Teacher and head perceptions of performance declines following parental death concur with orphanhood affecting school performance, but the usefulness of this question as an indicator seems limited. ***Research recommendations*** ♦ A pilot validity study of self-reports against actual grades received would be useful to check on the extent of reporting biases ♦ Development of tools to identify performance decliners for the purpose of tracking and intervention may be useful; it seems unlikely that existing school records would be adequate in most schools.
	Repetition and grade failure	♦ High background levels of repetition in this study indicated that it would probably not be very sensitive to HIV and AIDS related impacts at this stage. Improving system efficiency seems important enough independent of HIV and

		AIDS.
Posts occupied	% school with vacant posts % of all posts that are vacant	♦ Discrepancies between different sources of data have previously been noted, and were also evident in this study, with records under-reporting events compared to data elicited through interview with heads. ***Research recommendations*** ♦ Existing initiatives to understand reporting biases from various sources and to develop and implement new reporting tools remain critically important. However, in the Limpopo Province and Free State, death, illness and attrition did not seem to be a determinant of vacant posts and understanding underlying reasons for vacant posts and finding ways to enhance school capacity at less attractive schools would seem critical.
Teacher attendance/class contact time	% teachers absent >30 days by reason Learner reports of teacher absenteeism	♦ Collecting information on teacher absenteeism is subject to many reporting biases, with possibly perverse incentives to under-report. ♦ Asking learners to report on the extent of teacher absenteeism/ contact time seems to hold promise for monitoring in some circumstances, but the measure used in this survey needs some refinement and consideration. Learners cannot be expected to identify reasons for teacher absenteeism, but they can comment on outcomes/ effect on the learning environment. ♦ Retrospective information from any informant is likely to be subject to recall biases. ***Research recommendations*** ♦ Ongoing development and monitoring of tools and indicators to measure teacher absenteeism continue to be critical to track this important dimension of impact; learners may be able to supply this information.
VULNERABILITY INDICES/ EFFECT MODIFIERS		
Orphan status	There are numerous orphan indicators and definitions; the ones used in this study are as follows[21]; % learners whose: ♦ parents are both alive ♦ both died ♦ mother only died ♦ father only died % learners whose mothers: ♦ are alive	♦ It is important to remember that school-based orphan prevalence is not a measure of overall orphaning; possible drop out of many orphaned children would under-estimate these numbers. ♦ Associations between orphan status and educational disadvantage might be dampened if the most vulnerable of the orphans have dropped out of school, leaving the best resourced in the sample. Nonetheless, in this study, significant independent associations between orphan status and various educational disadvantage measures were noted, particularly elevated erratic daily attendance was noted amongst double orphans and maternal orphans. ♦ Prevalence of orphans in a local area may be affected by migration of children; the data from this survey showed substantial numbers of children from 'elastic households' ♦ Time of orphaning is possibly as important as orphan status per se wrt educational disadvantage – having household children not in school was associated in this study with maternal orphaning within the past three years, but not with maternal orphaning more than 3 years back.

[21] In defining orphans in this study we did not use an age-cut off, since the respondents were all scholars and arguably dependents.

	♦ died in last 3 years ♦ died more than 3 years ago ♦ don't know when they died	♦ Measures of children living with ill caregivers is also important, this measure showed independent associations with educational disadvantage in our study.
Household poverty	Learner self reports on a single question describing their household	♦ The poverty indicator used had been previously used in South Africa[22]; it was easily understood and interpreted and gives a simple single indicator that seemed to show associations in the expected directions with the various outcome and risk-related factors.
Household 'elasticity'	♦ % learners in HHs who had received other school age children into the hhh in the past year ♦ % of learners in HHs who had sent school age children away to live elsewhere in the past year ♦ % learners reporting no regular contact with extend family who live elsewhere ♦ % learners experiencing changes in their primary caregiver in the past year	♦ Children from elastic or fluid households seem to be vulnerable across a range of educational outcomes. ♦ In this study, we did not ask for the reasons for the movement of the children – our initial piloting discouraged this in a self-administered questionnaire, probably only feasibly in a face to face interview situation. ***Research recommendations*** ♦ Greater understanding of reasons for and impacts of household fluidity wrt children's schooling seems important given the frequency of these phenomena in South Africa. ♦ Inclusion of measures to specifically look at movement of children between households and their school enrollment and/or periods of school interruption could usefully be added to household surveys and other studies if feasible. These data may exist in some surveys e.g. the birth to twenty cohort – but may require further analysis.
Death and illness	♦ % learners experiencing death in the household in the past year ♦ % learners experiencing illness in	♦ There are many reasons not to try to elicit data specifically on AIDS illness and death – and under-reporting on AIDS-specific questions is well documented, lack of a definitive diagnosis, stigma, confidentiality etc. ♦ There was some under-reporting of age and sex-specific information that was requested; this may have been due to concerns over confidentiality (even though the interviewers would not have mentioned HIV in relation to that question, there was knowledge that the survey was about HIV and AIDS).

[22] In the Nelson Mandela/HSRC study of HIV and AIDS, 2002.

	the household in the past year. ♦ % school staff died in past year ♦ % school staff absent>30 days in past year ♦ Above disaggregated into age-categories of person ill or deceased and gender. ♦ Above disaggregated into whether death was after a long illness, short illness, accidents or other.	♦ The questions yielded a fairly rich source of information about potential HIV and AIDS impacts on schools and learners – impacts of adult death of a household or staff member, regardless of a definitive diagnosis, are serious enough to warrant tracking, and trends over time are likely to give a good idea of the contribution of AIDS to the phenomena, obviously in the absence of increases in other competing causes of death. ♦ ARV therapy however has the potential to shift mortality and illness patterns, and future studies should consider including questions on ARV access and uptake as far as possible.
Class organization	♦ % of children in classes with daily class attendance registers ♦ % schools with daily class attendance registers in every class	In this study, we used the class register variable as a proxy for general levels of class organization, and it proved to be strongly associated to educational outcomes, as well as with learner absenteeism. Potentially useful in a survey setting; ongoing routine reporting by heads and teachers may be prone to under-reporting. ***Research recommendations*** No specific recommendations.
OUTCOMES AND INTERMEDIATE OUTCOMES		
Support available to OVC	♦ % of children who have someone to turn to when they have a problem ♦ above disaggregated by who they turn to, and for what type of support ♦ above disaggregated by orphan status and other effect modifiers	♦ % of children without support might get worse as interventions get better – more needy children kept in school. ♦ Measures used in this study are not adequate, and further tools need development as part of a focused study of response capacity. ♦ Certain responses e.g. that high levels of teachers refer to social workers, is not interpretable without an understanding of the typical outcomes of such referrals - and this is unlikely to be feasible to ask in a school survey setting. ***Research recommendations*** ♦ The measurement of the outcomes of school responses seems to be under-developed worldwide and needs more focused study.

	♦ teachers' perceptions of sources of support for needy children and types of support provided.	♦ Development of measurement tools and indicators for monitoring the quality and extent of support provided to needy children should be further developed and the applicability of existing tools from other sectors for use in the school setting could be explored. ♦ Identification and documentation of best practice examples of support, including quality of care considerations.
OUTPUTS		
HIV and AIDS information and knowledge	♦ % of staff and learners who have received HIV information ♦ above disaggregated by source of information ♦ % staff and learners correctly answering questions on basic facts of HIV ♦ % learners and staff who believe condoms are easily accessible ♦ % condom use at last sexual intercourse	♦ Numerous standardized indicators are available and extensively tested. ***Research recommendations*** ♦ Exploring the interactions between vulnerability and risk behavior would seem important in further understanding the needs of vulnerable children in order to guide responses. The associations observed in this study between orphanhood and experience of sexual coercion, for example, merit further investigation.
School structures and systems involved in support	♦ % SGBs involved in support of needy children ♦ % schools with AIDS policies and plans ♦ % schools with linkages to outside agencies who provide support	♦ This dimension is not well developed and requires focused study as part of a study of response capacity in schools.
INPUTS		
Inputs related to promoting capacity to manage HIV and AIDS	♦ % of staff, SGBs and learners trained ♦ % of schools with resources distributed	As above.

impacts, including minimizing barriers to schooling	♦ % learners trained	

7. References

[1] See for example, Parry S. (1999) Farm orphans: who is coping? A study of commercial farm workers and their responses to orphanhood and foster care in Mashonaland, Zimbabwe and FOST. Muchiru SM. (1999) Rapid assessment on the situation of orphans in Botswana. For Ministry of Local Government, Lands and Housing, Botswana.

[2] See for example, Clacherty and Associates, The role of stigma and discrimination in increasing the vulnerability of children and youth infected with and affected by HIV/AIDS, Report on Participatory Workshops, Commissioned by Save the Children, 2002. Also, Anne Strode and Kitty Barrett Grant The role of stigma and discrimination in increasing the vulnerability of children and youth infected with and affected by HIV/AIDS Research Report Commissioned by Save the Children, 2002.

[3] Kinghorn A, Schierhout GH, Johnson S. Impact of HIV/AIDS on the South African Departments of Education. Technical Report. Abt Associates 2001.

[4] Johnson L and Dorrington R. The impact of AIDS on orphanhood in South Africa: a quantitative analysis. CARE monograph No 4. Centre for Acturial Research, University of Cape Town. October 2001.

Schierhout GH et al. Development of survey instruments to quantify HIV/AIDS impacts and response capacity at school level: Lessons from field testing in sub-Saharan Africa. AIDS conference, Barcelona 2002 (poster accepted for presentation).

[6] Peter Badcock-Walters, Christopher Desmond, Daniel Wilson and Wendy Heard, 2003. Educator Mortality In-Service in Kwa-Zulu Natal. A Consolidated Study of HIV/AIDS Impacts and Trends. 28 March 2003. Mobile Task Team on the Impact of HIV/AIDS on Education, HEARD, University of Natal.

[7] Giese S. 2000. The Foster Grants. Child Health Policy Unit, University of Cape Town. Paper submitted to the Committee of Enquiry into a Comprehensive System of Social Security.

[8] Horsch K, 1998. Evaluating School-Linked Services: Considerations and Best Practices. Harvard Family Research Project.

[9] UNAIDS. Monitoring and Evaluation Operations Manual 2002.