

Routine Monitoring and Clinical Sentinel Surveillance of Sexually Transmitted Infections

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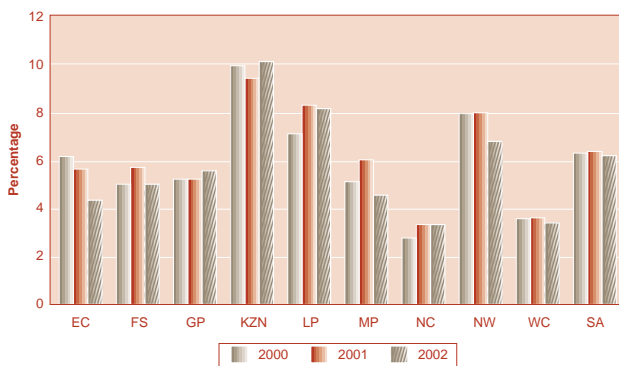
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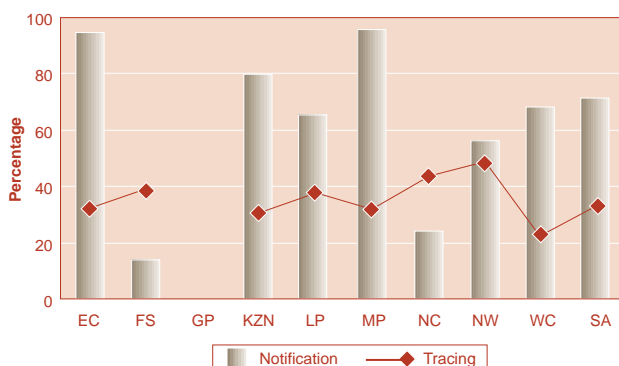
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Annual incidence of new STI episodes treated at PSHF (%)



STI partner notification and tracing rates, 2002 (%)



Key Messages

- ◆ Nearly 2 million new episodes of STIs were treated in the public sector annually in 2000-2002.
- ◆ Current estimates of the incidence of STIs treated in the public sector are considered much lower than the true burden of STIs in the population.
- ◆ Data from the LMIS and DHIS indicate a low condom usage rate.
- ◆ The DHIS minimum data set is now complemented by data from selected sentinel sites giving a national picture of the burden of STIs.
- ◆ There are still a number of constraints that are obstacles to the effective use of information particularly at the facility, sub-district and district levels.

Framework for Monitoring and Evaluation

Global:

No standardised systems at the global level

South Africa:

- ◆ HIV/AIDS/STD Strategic Plan 2000-2005
- ◆ STI National Clinical Sentinel Surveillance
- ◆ District STI Quality of Care Assessment (DISCA)

Key Indicators

Incidence of STI treated (new episode)

Incidence of Male Urethritis Syndrome (MUS) treated (new episode)

MUS ratio (%)

STI partner notification rate (%)

STI partner tracing rate (%)

STI partner treatment rate (%)

Male condom distribution rate

Key References and Data Sources

District Health Information System (DHIS)

Clinical Sentinel Surveillance

Logistic Management Information System (LMIS)

Introduction

The public health importance of sexually transmitted infections (STIs) has been increasingly underscored by epidemiological and biological evidence that they act as co-factors in the sexual transmission of HIV.¹ WHO estimated that 340 million new cases of syphilis, gonorrhoea, chlamydia and trichomoniasis had occurred throughout the world in 1999, in men and women aged 15-49 years.² STIs present a major disease burden for South Africa as well as many other developing countries,³ further fuelling the HIV pandemic experienced in these countries. Monitoring and surveillance systems are essential in order to effectively implement STI control and management programmes.

Framework for Monitoring and Evaluation

Key Components of the National STI Management and Control Programme

The prevention, management and control of STIs is one of the priority areas of the national HIV/AIDS/STD Strategic Plan 2000-2005.⁴ Key components of the national STI control programme are:

- ◆ Prevention of new STIs including HIV infection: This includes behaviour change campaigns as well as one-to-one health education and counselling to promote healthy sexual lifestyles and risk reduction through delayed onset of sexual activity, abstinence, consistent and correct condom use as a dual protection method, and reduction of the number of sexual partners.
- ◆ Prevention of mother-to-child transmission (PMTCT) of STIs: At the first antenatal visit, all pregnant women are routinely screened for syphilis and treated if indicated. Voluntary counselling and testing (VCT) for HIV is offered to all pregnant women; HIV positive pregnant women enter the HIV PMTCT programme. The determination of CD4 counts and clinical staging of HIV positive pregnant women will indicate the need for highly active antiretroviral therapy (HAART).
- ◆ Early treatment of symptomatic STIs using the syndromic approach: The syndromic approach is based on the clinical diagnosis of symptoms and signs (syndromes). The management for each syndrome follows national flow charts.

The syndromic management provides cure for most STIs and prevents clinical complications of untreated infections. Since STIs other than HIV increase the risk of acquisition and transmission of HIV, early treatment of symptomatic STIs contributes directly to the reduction of the HIV incidence.

- ◆ Notification and treatment of sexual partners: Health education, counselling and the provision of notification slips for each sexual partner aim to ensure partner treatment. Treatment of sexual partners provides cure and prevention of clinical complications for the partner as well as prevention of early re-infection for the patient.
- ◆ Continuum of HIV prevention, treatment, care and support: Patients presenting with symptomatic STIs are obviously at high risk of acquiring HIV infection or of being HIV infected. All patients with symptomatic STIs should therefore be tested for HIV depending on their consent. Those with a negative test result should be retested after 3 months since some patients will be in the highly infectious window period of primary HIV infection. HIV-positive patients will undergo CD4 testing and will be referred for HIV treatment, care and support services.
- ◆ Referral according to defined criteria: In the public sector, the first line management of patients with symptomatic STIs is provided by professional nurses. In case of treatment failure or clinical complications, patients are referred to doctors. Criteria for referral are defined in the national guideline for first line management.⁵
- ◆ Targeted interventions at high transmission areas (HTA): HTAs are defined as areas of populations among whom effective reproductive numbers^a for STIs are substantially higher than in the general population. This is due to a high sexual contact rate (high number of sexual partners), and a high transmission probability (co-infection of various STIs, risky sexual behaviour, high HIV incidence resulting in an increased number of highly infectious primary HIV infections). Sexual mixing patterns with populations at surrounding communities and geographically distant populations impact greatly on the future direction of the STI/HIV epidemic nationwide and across borders. Typically, HTAs are market places for sexual services where supply meets demand. The specific setting varies from place to place. Targeted interventions include intensified behaviour change campaigns, peer education, improved condom accessibility through non-traditional outlets, extended opening hours of STI services, and outreach services.

^a In epidemiological terms, the effective reproductive number R is defined as the expected number of new infectious hosts that one infectious host will produce during his or her period of infectiousness in a population of susceptible and non-susceptible people.

Management of symptomatic STIs is provided at all public sector PHC facilities throughout the country. This includes mobile and satellite clinics, fixed clinics and community health centres. Out-patient departments (OPD) of hospitals provide STI management in the absence of gateway clinics or during hours when the gateway clinic is closed. In addition, it is estimated that some 50% of patients with symptomatic STIs are managed through the private sector, mainly general practitioners (GPs).⁶ However, monitoring data for the private sector are not available to confirm this estimate.

STI Monitoring and Surveillance Tools

Table 1 summarises monitoring and surveillance tools for the STI programme. The microbiological sentinel surveillance is currently in the final planning phase. The implementation of systematic drug resistance monitoring has started at selected sites around the country. The District STI Quality of Care Assessment (DISCA) tool is undergoing a review process to become a quality assessment tool for integrated services comprising STI, HIV/ARV, TB, VCT, PMTCT, antenatal care (ANC) and family planning (FP) and to make it compatible with the District Health Information System (DHIS).

The cornerstone for routine monitoring of the STI programme is the DHIS, which collects data from every public sector health facility in the country. The clinical sentinel surveillance is its extension, involving a small number of randomly selected sites per province. The following sections of this paper will therefore discuss these two tools in detail.

Routine Monitoring of the STI Programme through the DHIS: data elements and indicators

The DHIS was designed to provide information about all services rendered through PHC facilities and out-patient departments (OPD) of hospitals. To make this concept operational, each health programme has to condense its information requirements to a few most relevant data elements. These data elements are used for the calculation of specific and well defined programme indicators that are regarded as essential for programme monitoring. The process of defining the essential indicators and their corresponding data elements for routine monitoring purposes is a valuable exercise for each programme manager. It enforces priority setting and an implementation strategy that focuses on the important programme components first. For new health programmes like the HIV/AIDS treatment programme, this process should be undertaken at the very beginning to ensure the availability of monitoring data as soon as possible.

The DHIS data elements for the STI programme and the corresponding indicators including their mathematical calculation are summarised in Table 2. Presented is the new terminology as submitted to the National Health Information Sub-committee (NHISSA) during its last meeting in November 2003.⁷

Table 1: Monitoring and surveillance tools

Tools	Ongoing routine	Periodic routine	Occasional
Patient records and registers	✓		
Stock register for drugs and supplies	✓		
Patient satisfaction surveys		✓	
Staff training register	✓		
District Health Information System (DHIS)	✓		
District STI Quality of Care Assessment (DISCA)		✓	
Clinical Sentinel Surveillance (selected sites)	✓		
Microbiological Sentinel Surveillance (selected sites)		✓	
Drug resistance monitoring (selected sites)		✓	
Logistic Management Information System (LMIS)	✓		
Antenatal HIV and Syphilis Survey (selected sites)		✓	
Notifiable Diseases (congenital syphilis)	✓		
Additional surveys and studies			✓

Table 2: DHIS data elements and indicators for the STI programme

Data Elements	Indicators
No. of STI treated new episode	<p>Incidence of STI treated new episode (annualised), calculated as:</p> $\frac{\text{No. of STI treated new episode}}{\text{Population} \geq 15 \text{ years}} \times 100 \times 12$
No. of Male Urethritis Syndrome (MUS) treated new episode	<p>Incidence of MUS treated-new episode (annualised), calculated as:</p> $\frac{\text{No. of MUS treated new episode}}{\text{Male Population} \geq 15 \text{ years}} \times 100 \times 12$ <p>MUS ratio (%), calculated as:</p> $\frac{\text{No. of MUS treated new episode}}{\text{No. of STI treated new episode}} \times 100\%$
No. of STI partner notification slips issued	<p>STI partner notification rate (%), calculated as:</p> $\frac{\text{No. of STI partner notification slips issued}}{\text{No. of STI treated new episode}} \times 100\%$
No. of STI partners treated new	<p>STI partner tracing rate (%), calculated as:</p> $\frac{\text{No. of STI partners treated new}}{\text{No. of STI partner notification slips issued}} \times 100\%$ <p>STI partner treatment rate (%), calculated as:</p> $\frac{\text{No. of STI partners treated new}}{\text{No. of STI treated new episode}} \times 100\%$
No. of male condoms distributed (through public sector health facilities)	<p>Male condom distribution rate (annualised), calculated as:</p> $\frac{\text{No. of male condoms distributed}}{\text{Male population} \geq 15 \text{ years}} \times 12$

Data analysis and target setting

STI data elements and indicators were included in the DHIS since its inception. A substantial amount of data is therefore available for analysis. Data can be analysed at facility level or in aggregated form at sub-district, district, provincial or national level. Some of the accumulated data date back as far as 1998 although this is restricted to a limited number of provinces, districts and facilities. It has taken a considerable amount of time to reach a stage where *all* provinces are in a position to collect data for the national Minimum Data Set (MDS). In fact, some provinces have implemented the MDS only in July 2003 resulting in information “gaps” in the following analysis.

The source of all data presented below is the DHIS national data set October 2003.⁸ The analysis concentrates on provincial and national aggregates of **public sector health facilities (PSHF)**, covering the reporting period from **April 2000 until July 2003**. Although guidelines are in place for the timely flow of data from facility to district, province and national level, it was not possible to analyse aggregated provincial and national data with reasonable accuracy beyond March 2003 due to delayed reporting of a number of sites. A timely year-to-date analysis is essential for programme management to react early to alarm signals and to review the impact of targeted interventions. A reporting delay of half a year for aggregated data undermines this possibility. The process of target setting involved all national and provincial STI programme managers.

Clinical Sentinel Surveillance (CSS) of STIs

Public sector

Some essential information for the STI programme management is not captured through the DHIS, including:

- ◆ the frequency distribution of STI syndromes;
- ◆ the gender and age distribution of patients treated;
- ◆ the incidence of symptomatic STIs among pregnant women;
- ◆ the monitoring of the syphilis screening programme among pregnant women with regard to effective treatment of latent syphilis;
- ◆ the number of referrals to higher levels due to clinical complications or failures of first line treatment algorithms;
- ◆ the frequency of stock-outs of drugs, notification slips and condoms.

During 2003, a proposal⁹ was finalised and approved by the senior management of the National Department of Health (NDoH), the NHISSA and the Provincial Health Restructuring Committee (PHRC) to capture this information through a clinical sentinel surveillance system.⁹ The key components of the design for the CSS are:

- ◆ Minimisation of additional data collection workload on facility

level by using a sentinel system that requires only a small number of participating PHC facilities per province.

- ◆ Random selection of sentinel sites to ensure that surveillance data are representative for each province and for a national aggregate.
- ◆ Full integration of the CSS into the DHIS to avoid parallel recording structures and data flow. At sentinel sites, data will be collected on a daily basis like the MDS data for the DHIS. The CSS monthly summary form will be forwarded to the sub-district information officer (DIO) together with the DHIS monthly summary form. CSS data will be computerised through the DIO into a newly developed DHIS module. The further data flow of the CSS will follow the DHIS data flow as one information package.
- ◆ Immediate access to surveillance data for all health managers and service providers. This follows the same principle as the DHIS.
- ◆ Strengthening of data capturing, time flow of data, analysis and use of routine monitoring data through the additional input of capacity building and supervision required by the integrated CSS.

Table 3 shows an overview of some programme indicators that can be calculated from the CSS data.

Table 3: STI clinical sentinel surveillance programme indicators

Indicators	Specifications
STI syndrome ratios	Syndromes include Male Urethritis Syndrome, Vaginal Discharge Syndrome, Genital Ulcer Syndrome, Lower Abdominal Pain, Genital Warts and Genital Blisters without Ulceration
Estimated minimum STI drugs consumption	For ciprofloxacin, doxycycline, metronidazole, erythromycin, ceftriaxone, and benzathinepenicillin
Age group ratios for patients with new episodes of STIs	Younger than 10 years, older than 39 years, and 5-year age bands in-between
Sex ratios for patients with new episodes of STIs	Male, non-pregnant female, pregnant female
Average number of new STI episodes per patient	By male, non-pregnant female, pregnant female, and total
Incidence of STI treated new episode among antenatal visits	Uses the DHIS data element of total antenatal visits as denominator
Proportion of pregnant women testing syphilis positive who received effective treatment	By first, second, and third dose of benzathinepenicillin
Referral ratios to doctors	For treatment failure, for other reasons, total, and referral ratio of pregnant women with STIs
STI tracer items stock-outs	Proportion of months within a year during which a stock-out occurred at any point in time of essential STI drugs, partner notification slips, and male condoms

b The CSS is a collaboration between the information and programme units at all levels of the Department of Health. External collaborators are the National Institute for Communicable Diseases (National Health Laboratory Services), the Health Information System Programme (University of Western Cape), the Medical Research Council (Pretoria), and members of the national STI Technical Advisory Group. The implementation is further supported by provincial STI programme facilitators seconded from the Reproductive Health Research Unit (University of the Witwatersrand).

The sampling frame for the random selection of sentinel sites was all public sector PHC facilities listed in the DHIS. Minimum criteria were a total PHC headcount of at least 5000 or a total number of new episodes of STIs treated of at least 100 per year. A detailed statistical analysis revealed that a maximum sample size of 30 PHC facilities per province was needed to fulfil defined criteria on precision and acceptable probability errors.¹⁰ Accordingly, 30 sentinel sites per province were randomly selected in August 2003.

Private sector

There are currently no mandatory reporting requirements for GPs for the MDS of the DHIS, and only a few GPs report on a voluntary basis. This situation is unsatisfactory, given the important role played by the private health sector.

With the support of the STI and HIV/AIDS Prevention Unit of the DoH, KwaZulu-Natal is currently piloting a CSS for STIs among GPs. The project started in September 2003.

Constraints on the project include the fact that a complete register of all GPs does not exist, the required sample size is difficult to determine without the availability of any monitoring data for the private sector, and that the most important denominator, the total number of STIs treated in the private sector, is unknown. Despite its limitations, the project will nevertheless pave the way for a new dimension in public-private relationships through providing a combined pool of monitoring data from which health planners and managers can draw.

High Transmission Areas (HTAs)

Currently, most interventions at HTAs are project based. A recent audit of HTA interventions in the country conducted by the STI and HIV/AIDS Prevention Unit in collaboration with provincial STI programme coordinators revealed that most projects use their own routine monitoring tools.¹¹ The result is that these important data are not readily accessible for programme managers. In addition, the use of different data elements and definitions which are not even compatible with the standard monitoring indicators of the DHIS is a serious obstacle for STI programme managers. Agreement needs to be reached on the MDS of the DHIS as the routine monitoring tool for HTA intervention projects and to define the role of HTAs within the concept of the sentinel surveillance system.

Data and Analysis

The following is a presentation of STI data and analysis of those indicators of the DHIS which are currently being used for target setting and programme planning by the national and provincial STI programmes.

Incidence of new STIs treated

Around 1.9 million new episodes of symptomatic STIs were reportedly treated nationwide per year with little change during 2000 to 2002. This translates into an annual incidence of new STI episodes treated at PSHFs of around 6.5%.

Provincial data indicate a substantial variation of the annual incidence of new STI episodes treated, both between provinces and between years (see Table 4). Eastern Cape shows a continuous decline of treated patients with new STI episodes; the reported incidence drops by 6.7% (2001 vs 2000) and 21.1% (2002 vs 2001). A drop of more than 10% is reported for Free State, Mpumalanga and North West for 2002 vs 2001. The first 3 months in 2003 show some turnaround in Eastern Cape, while Mpumalanga and North West drop by another 15% and 17%, respectively.

Table 4: Annual incidence of new STI episodes treated at PSHF (%)

Province	Year		
	2000	2001	2002
Eastern Cape	6.2	5.7	4.5
Free State	5.1	5.8	5.1
Gauteng	5.3	5.3	5.6
KwaZulu-Natal	10.0	9.5	10.2
Limpopo	7.2	8.3	8.2
Mpumalanga	5.2	6.1	4.6
Northern Cape	2.9	3.4	3.4
North West	8.0	8.0	6.8
Western Cape	3.6	3.6	3.5
South Africa	6.4	6.5	6.2

Source: DHIS⁸

Compared to the 2002 national average of 6.2%, the incidence of new STI episodes treated at PSHFs is considerably lower in Eastern Cape, Free State, Mpumalanga and Northern Cape. A comparison with the 2002 HIV Household Survey data¹² and the 2002 Antenatal HIV Survey¹³ data suggests that this is not solely explainable by a different level of the epidemic in these

provinces. On the other hand, particularly KwaZulu-Natal and Limpopo have treated a substantially higher number of symptomatic STIs per 100 population 15 years and older than the national average. Again, this was not solely explainable by a different level of the epidemic.

Target setting for this indicator is not straight forward. Theoretically, the target should be that all symptomatic STIs receive early treatment. Relevant for the target setting at PSHFs is therefore the burden of disease in the general population, the health seeking behaviour, and patients' preferences for public or private sector health facilities. Unfortunately, data for these factors are currently scarce. Representative data for the number of STI patients treated in the private sector are not available. Point prevalence data of all STIs are mostly restricted to non-representative studies among selected high-risk populations. A study in KwaZulu-Natal published in 1998¹⁴ suggested that the point prevalence of STIs among women of a rural population can be as high as 25%, about half of these STIs being symptomatic. Further, the study revealed that health seeking behaviour in the presence of symptomatic STIs was poor. In the absence of more systematic data, it should be noted that even a point prevalence half of that reported in the KZN study would require an incidence of symptomatic STIs in the population substantially higher than that suggested by the number of symptomatic STIs treated at PSHFs. Even under the assumption that some 50% of the patients may be treated through the private sector, **there is a general consensus among technical experts in the country that the reported number of patients with symptomatic STIs treated at PSHFs is too low compared to the actual burden of disease.** A first minimum target of 7% incidence of patients treated with new episodes of symptomatic STIs at PSHFs was therefore agreed among national and provincial STI programme managers. This will require a considerable programme review including a detailed analysis of district and facility data for some provinces.

Partner Notification, Tracing and Treatment

Nationwide, the STI partner notification rate increased steadily from 39% in 2000 to 71% in 2002. This trend is ongoing for the first 3 months in 2003 (77%). Gauteng was excluded from the analysis since data on the number of notification slips issued were not reported. All other provinces show the same positive trend of an increasing number of sexual partners being notified for treatment (Table 5). However, there is a substantial variation between provinces that partly reflects under-reporting. Some districts in Free State and Northern Cape did not introduce this data element until very recently in 2003 although it is part of the MDS. Facility visits and reviews from provincial STI programme

managers indicate that a number of sites do not count in the daily register the actual number of notification slips they have issued to a patient. Instead, they record only one tally regardless of how many slips were issued in case of multiple partners. Other reasons for low partner notification rates are the absence of standardised partner notification slips in some provinces, repeated stock-outs, and deficits in training and the workload of service providers resulting in sub-optimal outcome of sensitive parts of STI counselling sessions. A detailed analysis of quality assessment (training status and workload) and clinical sentinel surveillance data (stock-outs of notification slips) will provide more evidence for programme managers about the underlying reasons for weaknesses and strengths in each province.

Table 5: STI partner notification rate (%)

Province	Year		
	2000	2001	2002
Eastern Cape	81	83	94
Free State	12	12	14
Gauteng	-	-	-
KwaZulu-Natal	4	37	79
Limpopo	61	60	65
Mpumalanga	68	65	95
Northern Cape	10	1	25
North West	57	62	56
Western Cape	24	66	68
South Africa	39	53	71

Source: DHIS⁸

A 100% notification rate would mean that on average each patient treated with a symptomatic STI has received one notification slip for the sexual partner. By 2002, no province had achieved this goal, which is now the agreed minimum target. Targeted interventions focusing initially on the standardisation and availability of partner notification slips are in progress in most provinces and the data are promising in early 2003 (MP 107%).

The STI partner tracing rate is continuously declining nationwide. In 2000, 39% of the sexual partners that had been notified reported for treatment at PSHFs. This figure was only 34% in 2002 and declined further during the first months of 2003. Table 6 shows that this trend is particularly prominent in the Eastern Cape and Free State, while other provinces remain rather stable. No data are available for Gauteng for this MDS indicator. Large fluctuations are mainly due to reporting deficits of partner notification slips issued.

Table 6: STI partner tracing rate (%)

Province	Year		
	2000	2001	2002
Eastern Cape	43	39	33
Free State	48	41	39
Gauteng	-	-	-
KwaZulu-Natal	3	36	31
Limpopo	41	42	38
Mpumalanga	23	26	32
Northern Cape	74	21	44
North West	52	47	49
Western Cape	18	24	23
South Africa	39	37	34

Source: DHIS⁸

A target of 100% is not achievable for this indicator since a number of sexual partners may seek treatment in the private sector. The data indicate that a partner tracing rate of 40% is a realistic minimum target for PSHFs.

The national STI partner treatment rate through PSHFs was 15% in 2000, and has steadily increased to 24% in 2002 and in the first 3 months of 2003. However, the data indicate a substantial variation between provinces: Free State, Northern Cape, and Western Cape achieve significant lower partner treatment rates and provincial STI programme managers are in the process of reviewing the reasons. Interestingly, the increased partner notification rate corresponds well with an increased partner treatment rate in most provinces (KwaZulu-Natal, Mpumalanga, Western Cape), but not in all (Eastern Cape). The data seem to suggest that at a low level of partner notification an improved notification system will result in higher partner treatment rates, while at a relatively high level of partner notification like in Eastern Cape other components of partner management need to be strengthened too in order to achieve higher treatment rates.

Table 7: STI partner treatment rate (%)

Province	Year		
	2000	2001	2002
Eastern Cape	35	33	32
Free State	6	5	5
Gauteng	-	-	-
KwaZulu-Natal	<1	13	24
Limpopo	25	25	24
Mpumalanga	16	17	30
Northern Cape	8	<1	11
North West	30	29	28
Western Cape	4	16	16
South Africa	15	20	24

Source: DHIS⁸

The target of 100% for the partner notification rate and 40% for the partner tracing rate determines automatically a target of 40% for the partner treatment rate. Again, this takes into account patients' preferences for public or private sector health services.

Condom Distribution

Adjusted for the first 3 months in 2000, for which no data were available, an estimated 44 million male condoms were reportedly distributed through PSHF outlets. This number increased to 60 and 69 million in 2001 and 2002, respectively, and does not include male condoms distributed in Gauteng which did not report on this MDS data element.

The logistic management information system (LMIS) of the NDoH records the number of condoms bought centrally by the national programme and the number of condoms distributed to primary distribution sites in each province. In 2002, 190 million male condoms were distributed from the national programme to the provinces.^c Aiming for an equitable distribution to provinces takes the distribution of the male population 15 years and older into account. However, the condom distribution to provinces is mainly demand driven and reflects therefore the uptake capacity of the provincial programmes. Table 8 shows the number of government male condoms distributed to each province in 2002 in relation to the male population 15 years and older.

c This total includes condoms which will be distributed through PSHFs as well as those distributed through other outlets.

Table 8: Male condoms distributed to provinces and distribution of male population ≥15 years, 2002

	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA
Condoms* (thousands)	18 085	35 116	56 645	15 978	18 095	11 802	1 142	18 415	14 294	189 572
% of total condoms	10	19	30	8	10	6	1	10	8	100
% of male population ≥ 15 years	13	7	23	16	11	7	2	8	12	100

Source: *LMIS, NDoH

Note: Percentages do not add up due to rounding

The data indicate that Eastern Cape, KwaZulu-Natal, Northern Cape and Western Cape receive / demand a substantially smaller share of condoms than they should on the basis of population figures, while in particular Gauteng has a significantly larger share. More recent data show that the Free State uptake in 2002 was inflated by a bulk order, while the share of condoms distributed to Gauteng increased further to 40%. It is therefore of particular concern that no data are available for Gauteng about how many of these condoms were distributed to end-users through PSHFs outlets. STI programme managers from those provinces with a low uptake are currently reviewing the possible reasons.

Together, the LMIS and the DHIS are powerful tools to account for the distribution channels of the government's R130 million condom programme. A recent sub-analysis of LMIS data¹⁵ shows that 68% of the male condoms distributed to provincial primary distribution sites were further distributed within the provinces to PSHFs outlets, 1% to parastatal organisations, 14% to the private sector, and 17% to NGOs and community outreach programmes. In contrast to the LMIS, the DHIS reports on male condoms distributed at PSHFs outlets to end-users. According to DHIS data from 2002, 70% of all condoms distributed to the provinces (excluding Gauteng) were reportedly distributed through PSHFs. The correlation between LMIS and DHIS data indicate that condoms distributed to PSHFs are well accounted for and reached the intended end-user.

Looking at the male condom distribution rate for South Africa (excluding Gauteng), 4.3, 5.6 and 6.4 male condoms were distributed per male 15 years and older per year through PSHFs in 2000, 2001 and 2002, respectively. Table 9 shows the condom distribution rate achieved by province.

Table 9: Number of male condoms distributed per male ≥15 years through PSHFs

Province	Year		
	2000	2001	2002
Eastern Cape	6.1	6.6	7.1
Free State	4.2	4.9	4.8
Gauteng	-	-	-
KwaZulu-Natal	2.6	4.1	5.5
Limpopo	5.0	7.5	8.1
Mpumalanga	3.8	5.6	6.2
Northern Cape	1.9	3.1	3.2
North West	4.9	6.0	4.9
Western Cape	4.3	5.7	7.9
South Africa	4.3	5.6	6.4

Source: DHIS⁸

Although it is difficult to determine how many condoms a male needs per year on average, there is a general consensus that these figures are far too low. Achieving consistent and correct condom use as a dual protection method is clearly not possible with these distribution rates. However, the allocation of more resources to purchase more condoms will not solve the problem unless it is combined with more visible public campaigns and advocacy for condom use.

The national STI programme purchased 25% more condoms in 2003 than it did in 2002. The agreed minimum target is therefore an increase of 25% of the current provincial condom distribution rates through PSHFs and a minimum rate of 6.3 for those provinces who lag behind (Free State, North West, and Northern Cape). Gauteng has started to report condom distribution in July 2003 and the analysis of incoming data needs to be done urgently to guide the programme.

Use of DHIS data, indicators and targets

Monitoring data and indicators provide information about the implementation status of the programme against current targets and with regard to changes over time. However, they need to be interpreted through a process of hypothesis building and verification of each possible hypothesis. The key question for this process is what are the underlying factors that have influenced or are influencing the outcome as shown by the data and indicators? In most situations, a thorough analysis will require access to additional data from other monitoring and surveillance tools, as listed in Table 1. In addition, a more detailed analysis of district, sub-district and facility data is necessary.

This process is followed by priority setting for which the following key questions are relevant for programme managers: Which factor has the greatest impact on the output? Which factor can be influenced most cost-effectively considering available financial and human resources as well as system strengths and constraints? What time frame needs to be considered for each factor to achieve a reasonable impact? Can the factor be influenced by the programme management or do other stakeholders play a critical role? For the process of priority setting, these questions must be answered with the equity of service provision in mind. In general, an important measure for equitable services is the degree of variation of indicators between geographical areas and populations.

Priority setting will guide the process of developing strategic and operational action plans and negotiation for budget allocations. Monitoring and surveillance tools will provide information about the impact of targeted interventions carried out on the basis of these plans.

There are currently many constraints to the effective use of information. Correct and complete collection of DHIS data at facility level needs to be improved through continuous support and monitoring, conducted by programme and information managers. A recently developed audit tool was found to be very useful for this purpose during on-site baseline assessments of sentinel sites for the STI clinical surveillance.¹⁶ Agreed time lines of the data flow from facility level upwards need to be implemented by information officers. However, the responsibility for analysing and using the data lies with programme managers. Building of skills and the provision of the necessary infrastructure (functional computer, DHIS software installed and regularly updated) for programme managers are basic, but still neglected requirements.

The continuous analysis of provincial and national aggregates by national and provincial STI programme managers is proving to have a positive impact on the effective use of data and on a more focused approach to programme implementation and

output orientation. Regular analysis and use of data at district, sub-district and facility level are still a challenge in many areas. Training in data analysis for provincial and national STI programme managers has been introduced on a regular basis. Experience with these newly acquired skills is that the use of monitoring data alongside identified targets increases motivation to achieve measurable improvements step by step.

Recommendations

- ◆ The information gap in the private sector needs to be closed. One possible way is to consider mandatory monthly reports for all private health facilities, including GP practices, using a modified MDS which will be added to the DHIS routine monitoring module.
- ◆ The concept and practical experience of the STI clinical sentinel surveillance should be reviewed by other health programmes. The aim should be to concentrate on the minimum data set of the DHIS, to collect additional information only at sentinel sites (or via surveys), and to abandon the plethora of separate programme monitoring forms at each PHC facility, which occupy the time of health service providers unnecessarily.
- ◆ Agreed time lines for MDS data flow from facility to sub-district, district and provincial level should be implemented to facilitate the monthly analysis of indicators in time.
- ◆ Terms of reference and job descriptions for programme managers should clearly indicate required skills in monitoring and evaluation. Budget allocations need to be made for capacity building and improvement of the IT infrastructure.
- ◆ The prevention component of the HIV/AIDS and STD Strategic Plan for South Africa⁴ needs to be further strengthened. Although much has been achieved since the initial implementation of the STI and barrier methods programme, all DHIS indicators point to substantial gaps between the current implementation status and targets. An integrated preventive strategy should consider all aspects of HIV/STI prevention. The continuum of HIV prevention, treatment, care and support clearly indicates the critical position of prevention. This needs to be reflected in budget and human resources allocations. The restructuring process of the national STI and Barrier Methods Unit to an STI & HIV/AIDS Prevention Unit should be reviewed by provinces with regard to the terms of reference for the current provincial STI coordinators.
- ◆ Programme managers need to include the variation of indicators between geographical areas and populations in their analysis, to direct interventions towards the aim of more

equitable services. Rural and urban nodes that have been identified as underserved areas should be automatically identifiable on the DHIS analysis tables (pivot tables) and should be highlighted in each report.

Conclusions

While it is difficult to determine an exact target for the numbers of new episodes of STIs per 100 population ≥ 15 years due to information deficits from population-based studies and from the private sector, the current incidence of 6.5% is regarded as an under estimate. Although a reduction of this incidence is the long-term goal, it has to reflect a reduction in burden of disease among the general population. At the current stage of the epidemic, a decline in provincial aggregates of the incidence of new episodes of STIs treated at PSHFs must be regarded as a possible sign of declining services, programme deficits or reporting problems unless proven otherwise.

All other indicators, specifically the partner notification rate, partner treatment rate and the condom distribution rate at PSHFs demonstrate the need for substantial programme strengthening. Although under-reporting is still an issue for most data elements, the comparison with the LMIS indicates that most of the male condoms that were distributed from the national office to the primary distribution sites in the provinces, and from there to PSHFs for further distribution to end-users, were actually accounted for through the DHIS. If the resulting male condom distribution rate through PSHFs of 6.4 condoms per male 15 years and older for the year 2002 (excluding Gauteng) really indicates the current demand, there is a need to review the current strategy for condom promotion and behaviour change. Although 30% of all male condoms of the government programme were distributed through non-PSHF channels and even though there is a relatively small additional market of commercial condoms, this does not change the general situation much.

Data from routine monitoring and surveillance inform the programme about the output of past and current efforts. They are also a challenge and motivation to aim for further achievements.

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Commentary

Kerry Cullinan – Journalist: Health-e News Service

Chalking up the Department of Health's score for the decade is difficult, as many achievements have been undermined by the HIV/AIDS epidemic.

In addition, government's major health policy direction since 1994 – the move away from a hospital-based system to primary health care (PHC) – has brought with it both achievements and further challenges.

A key achievement of the PHC policy is that far more people now have easier access to basic health care, thanks to the upgrading and building of 701 clinics in the past decade.

Accessibility has also been improved by removing financial barriers. In 1994, the government extended free basic health care to pregnant women and children under the age of six. Two years later, free primary care was extended to all those who needed it. In 2003, a range of free services was extended to those with disabilities.

Better access to health care has meant that the immunisation rate of children has improved. As a result, tetanus in babies and polio have been eliminated, and there were only eight recorded cases of measles in 2001.

But the shift to PHC has not eased the burden on hospitals. Instead, admissions have increased by about 100 000 a year since 1994, mainly as a result of AIDS and trauma. Those requiring care are usually much sicker than in the past, so need more care and stay longer.

Despite the rapid expansion of primary health services and the increasing burden of AIDS, health expenditure in real terms has declined, according to Department of Health research (all in 2002 prices).

In 1997/98, real expenditure was R32.9-billion but in 1999/2000, this dropped to R30.9-billion. Expenditure is expected to rise to R36.8-billion in 2005/06, but in real terms this amounts to little more than an annual increase of 1.4%.

In 1997/98 government allocated R989 per person whereas, by 2005/06, it will be spending R948.

The introduction of free health services absolved even those who can afford to pay from doing so. Some form of cost recovery is vital, possibly through social health insurance, although there is a real danger that such a compulsory insurance could put further economic pressure on the working poor.

While the structures and systems in which to deliver health care to all citizens have been improved, the glaring glitch in the move to PHC has been the department's failure to manage its human resources properly.

“Despite the rapid expansion of primary health services and the increasing burden of AIDS, health expenditure in real terms has declined.”

Health workers have borne the brunt of the combination of an increase in primary services and a decrease in expenditure. Their working conditions have deteriorated steadily as they have had to deal with more patients yet they have received little financial compensation.

Staff shortages have led to the deterioration of services, particularly in densely populated urban areas. Under pressure from patients and blamed for poor services, many health workers have sought work in the private sector and overseas.

Many posts are standing vacant and, in 2002 there were 4% fewer professional nurses in the public service than in 2000.

Ironically, it is easy for overseas countries to poach our doctors and nurses but red tape makes it very difficult for foreign health professionals to work in SA.

In late January 2004, government finally listened to health worker organisations and introduced “scarce skill” and “rural” allowances ranging from 10-37% of their annual salaries. While this is a positive step, it is too early to assess whether it will be able to stem the resignations.

Commentary

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Government has also introduced a year of compulsory community service for newly qualified doctors, dentists, pharmacists and other health professionals to address staff shortages.

Other problems associated with PHC include erratic drug supplies and breakdowns in the referral of patients who need more specialised care from clinics to district, regional and tertiary hospitals. Such problems have been exacerbated by the destabilisation of district health structures caused when municipal boundaries were redrawn.

Aside from improved immunisation, children's health in the last decade has been boosted by the schools feeding scheme and the compulsory fortification of basic foods including mealie meal and brown bread.

Women now have access to abortion services before their 12th week of pregnancy. However, there has not been a decline in maternal deaths, although some experts attribute this largely to HIV-related illnesses rather than poor health services.

Government's interventions in private health, motivated by the need for the private sector to take responsibility for more citizens, have been brave but the results have been disappointing. In 1999, it became illegal for medical schemes to reject any paying customer or dependent. This year, medical schemes were compelled to offer a range of chronic care benefits as part of their basic packages.

However, the membership of private schemes has remained stagnant at around 16% of the population – largely as a result of above-inflation increases in contributions. Government's recent efforts to contain the costs of medicines may finally succeed in making private care more affordable.

Aside from attending to the health systems and human resource problems, government needs to pay urgent attention to the management of communicable diseases. The number of tuberculosis cases almost doubled between 1996 and

2002, largely as a result of HIV/AIDS. Yet the cure rate for 2001 was an unacceptable 54% (the target was 85%).

The roll-out of antiretroviral drugs provides an opportunity to revitalise a range of health services, such as drug supplies and laboratory support. But there is a serious threat of multi-drug resistant HIV if the roll-out is not done properly. So far, very little community mobilisation has taken place, yet the education of patients and communities is key to the success of the programme.

Ensuring that health services are equitable, both between provinces and within provinces – particularly between rural and urban areas – remains a challenge that is complicated by fiscal federalism.

Government has also committed itself in the 2003 Health Act to the gradual devolution of more health responsibilities to local government, starting with environmental health services in July 2004. However, this

policy direction needs careful consideration given the many weaknesses at local level.

“Health workers have borne the brunt of the combination of an increase in primary services and a decrease in expenditure.”