

Improving quality of sexually transmitted disease case management in rural South Africa

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Objective: To measure quality of sexually transmitted disease (STD) syndromic case management and aspects of health-seeking behaviour at baseline in an intervention trial.

Setting: Ten rural primary care clinics, Hlabisa district, South Africa.

Design: Simulated patients (fieldworkers trained to present with STD syndromes) made a total of 44 clinic visits; 49 STD patients were interviewed when exiting clinics; facilities were assessed for availability of necessary equipment and drugs; 10 focus group discussions were held with staff; and STD syndrome surveillance was performed in all 10 clinics.

Results: A total of 9% of simulated patients were correctly managed (given correct drugs, plus condoms and partner notification cards), recommended drug treatment was given in only 41% of visits, and appropriate counselling was given in 48% of visits. Among patients leaving the clinic, although 39% waited over an hour to be seen and only 37% were consulted in private, all reported staff attitudes as satisfactory or good. Only six clinics had syndromic management protocols available, three reported intermittent drug shortages, and seven lacked partner notification cards. Focus group discussions revealed good staff knowledge about STD, but showed lack of training in syndromic management and low morale. Surveillance data showed that while 75% of those presenting for care did so within 1 week of symptom onset, 27% had been treated for an STD in the preceding 3 months, and only 6% of those treated were contacts.

Conclusions: Quality of STD case management was poor despite good staff knowledge and availability of most essential resources. An intervention comprising staff training and STD syndrome packets has been designed to improve quality of case management.

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Introduction

Sexually transmitted diseases (STD) are significant causes of morbidity in developing countries and they facilitate HIV transmission [1,2]. Unfortunately, STD case management is frequently neglected, resulting in suboptimal care and continued disease spread [3]. Syndromic management of STD patients, which uses

algorithms to specify treatment for common causative organisms, is a strategy that enables high quality case management in under-resourced settings [4]. Effective syndromic management is, however, dependent on both the quality of service provided and health-seeking behaviour; patients and their partners need to present for care, and they need to do so soon after symptom onset. Quality of care studies are well documented in

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family planning and primary health care [5-7], but are less well known in the area of STD management [8-11]. The few studies that have been carried out show case management to be generally poor [9-11] and indicate that counselling, particularly condom promotion, is often neglected [11].

The potential impact of syndromic management on HIV and STD control is thought to be substantial [3,12]. However, only one randomized controlled trial testing improved STD case management has been published, demonstrating a 42% reduction in HIV incidence [2], a 29% reduction in syphilis prevalence, and a 49% reduction in incidence of symptomatic urethritis [13]. Further trials are required to inform STD prevention and control strategies in different settings. In Rakai, Uganda, mass community treatment of STD is being studied, while in nearby Masaka, improved syndromic management plus an information, education and communication intervention is being tested [14].

We report baseline results from a clinic-randomized trial of an intervention to improve quality of STD case management in rural South Africa.

Methods

Setting

The study was conducted in 10 primary care clinics in Hlabisa, a rural health district in KwaZulu/Natal, South Africa. The clinics are staffed by nurses, some of whom have advanced training in midwifery and primary health care, and medical officers visit monthly. In comparison with the rest of Africa, clinics are well resourced, most have telephones, running water, and are relatively easy to reach. STD syndromic management was introduced in KwaZulu/Natal in 1993, nurses from each district attended courses to become peer trainers, and a secure supply of modern drugs (e.g., ciprofloxacin and doxycycline) is available centrally.

HIV and STD prevalence

KwaZulu/Natal has the highest HIV prevalence in South Africa [15]. In Hlabisa, antenatal prevalence increased from 4.2% in 1995 [16] to 25.9% in 1997 (unpublished data). Clinic-specific prevalence of HIV varied between 18.9 and 30.9% ($P = 0.02$) in the 10 clinics involved in this study, whereas syphilis prevalence ranged from 5.1 to 10.6% ($P = 0.085$).

From STD syndrome surveillance we estimated a 9% annual incidence of symptomatic STD in Hlabisa [17]. Almost half of all patients seeking care for STD are treated at public clinics, the rest being treated by private general practitioners. A traditional medical sector also exists, and STD patients frequently attend more

than one practitioner, with most seeking care at a public clinic at some point during an STD episode [18]. Prevalence of STD is high. Amongst 189 consecutive family planning attenders, 42% had at least one of the following STD: *Chlamydia*, gonorrhoea, syphilis, *Trichomonas* and HIV [19]. Among 327 antenatal patients, 52% were infected [20].

Design

Five complementary methods were used to measure quality of case management and key aspects of health-seeking behaviour.

Simulated patients

In an attempt to objectively measure quality of provider practice, two male and three female Zulu-speaking field workers aged 20-25 years were trained to present with symptoms of urethral discharge and pelvic inflammatory disease (PID). Urethral discharge was chosen because it is the most common syndrome in men. PID is often under-diagnosed and the simulated patients provided an opportunity to assess the reasons for this. In all, 44 anonymous visits were made to 10 clinics, with a minimum of four visits per clinic. Quality of care was measured using a standardized instrument completed by the simulated patients immediately following the consultation. Simulated patients recorded whether they were offered a physical examination, whether a complete history was taken (defined to include general medical history, detailed history of the current complaint, sexual history, and other social and behavioural issues).

Exit interviews

To determine levels of patient satisfaction and to further evaluate provider practice, 49 structured interviews with STD patients were conducted at eight clinics. Only eight clinics were visited because two of the clinics were not fully operational at the time of this assessment. Patients were approached first by the clinic nurse, who explained that a researcher would like to interview them; the researcher then explained the purpose of the study and conducted the interview.

Facility assessment

A standardized checklist was used in each clinic to obtain an inventory of drugs, equipment and staff available for STD management. The resulting clinic profile provided a quantitative assessment of available resources, and served as a measure of clinic preparedness to provide STD syndromic management.

Focus group discussions

These were held with six to 10 staff at each clinic to obtain provider perspectives on quality of care and problems with implementation of syndromic management. These focus groups also helped to determine priorities for STD training. Discussions were held in English, with notes transcribed after the sessions.

STD syndrome surveillance

A surveillance system for anonymous reporting from public and private health sectors was developed to provide data on the number and type of STD syndromes presenting for treatment, sociodemographic data, and measures of health-seeking behaviour such as symptom duration, previous STD episodes and where they were treated, and proportion of asymptomatic contacts seeking care [18].

Outcome measures

We defined a number of indicators to measure quality of case management and health-seeking behaviour.

Recognizing that case management comprises several key components, we used data from simulated patient visits to quantify (i) the number who received drugs as recommended by the Provincial Health Department (e.g., ciprofloxacin plus doxycycline for male urethral discharge, benzathine penicillin plus erythromycin for genital ulcers, and ciprofloxacin plus doxycycline plus metronidazole for PID) [21], (ii) the number appropriately managed (defined as being given recommended drugs, plus condoms and a partner notification card), and (iii) the number appropriately counselled (defined as receiving any three of the following five key health education messages: 'your illness is sexually transmitted', 'your partners must be treated', 'your partners may be infected even if he/she is asymptomatic', 'STD increase the risk of HIV transmission', 'you must take all the treatment provided'). We used data from simulated patient visits and from exit interviews to gain insight into delays prior to consultation, privacy of the consultation, and staff attitudes.

Key aspects of health-seeking behaviour, identified as being useful in measuring clinic performance, were (i) STD caseload, (ii) symptom duration prior to receiving care, (iii) proportion of patients previously treated for an STD in the preceding 3 months, and (iv) proportion of asymptomatic contacts presenting for treatment. These measures were based on standard indicators for STD programme evaluation [22,23].

Statistical analysis

Quantitative data were analysed using EpiInfo version 6.02 (Centers for Disease Control and Prevention, Atlanta, Georgia, USA). Differences between proportions were measured using the χ^2 test, with statistical significance defined as $P < 0.05$. To assess the comparability of intervention and control groups at baseline, a paired t-test was used to examine differences within pairs. Content analysis was performed to elicit major themes that emerged during focus group discussions.

Ethical approval to conduct this study was granted by the University of Natal Medical School Ethics Committee.

Results

Syndromic management

In only a minority of the 44 simulated patient visits (Table 1) was a complete history taken (45%) or physical examination offered (19%). Treatment was given in all but one visit (98%); however, the recommended drug protocol was followed in only 41% of visits. In 18 (41%) out of 44 visits, a recommended drug was missing from the treatment given. In addition, the wrong drugs were given in 11% of visits, as well as the wrong duration (4.5%) or dose (2.5%). These patterns also varied by disease: 67% of men presenting with urethral discharge were treated correctly compared with 13% of women presenting with PID ($P = 0.0003$). In very few visits (9%) did simulated patients receive correct drugs, plus condoms and partner treatment cards. Quality of counselling was also poor (Table 1): only 48% received any of the three health education messages.

Most simulated (82%) and real patients (74%) waited at least 30 min to be seen, and although most simulated patients were consulted in privacy (68%; Table 1), most real patients were not (only 37% seen in privacy; Table 2; $P = 0.002$). Interestingly, all real patients

Table 1. Simulated patient assessment: quality of STD management (n = 44).

| Indicators | Yes (%) |
|--|---------|
| Education | |
| Were you told the following: | |
| That your illness is sexually transmitted? | 25 (57) |
| To take all of your treatment? | 22 (50) |
| That you can be reinfected if your partner is not treated? | 21 (48) |
| That STD can facilitate HIV transmission? | 18 (41) |
| How to prevent STD? | 22 (50) |
| That your partner may be infected but have no symptoms (asymptomatic infection)? | 11 (27) |
| That your partner must be treated? | 33 (75) |
| Case management | |
| Did the nurse do the following? | |
| Take a complete history?* | 19 (45) |
| Offer a physical examination? | 8 (19) |
| Give you condoms? | 16 (36) |
| Tell you where to get condoms? | 19 (43) |
| Demonstrate how to use condoms? | 5 (11) |
| Give you a partner card? | 16 (34) |
| Give you treatment? | 43 (98) |
| Privacy | |
| Were you seen in a private room? | 30 (68) |
| Time factors | |
| Waiting time | |
| < 30 min | 8 (18) |
| 30-60 min | 20 (46) |
| > 60 min | 16 (36) |
| Time spent in consultation | |
| < 5 min | 15 (34) |
| 5-10 min | 17 (39) |
| > 10 min | 12 (27) |
| Staff attitudes | |
| Good | 21 (48) |
| Satisfactory | 9 (20) |
| Poor | 14 (32) |

*Total of 43 patients.

Table 2. Exit interviews: assessment of provider performance and patient satisfaction (n = 49).

| Indicators | Yes (%) |
|---|---------|
| Education | |
| Were you told the following? | |
| How STD are transmitted? | 39 (80) |
| About your symptoms (and the fact that STD can be asymptomatic) | 22 (45) |
| About the need to tell your sexual partners (contacts)? | 36 (73) |
| That you can continue to infect others if you do not take all your medicine (compliance)? | 34 (69) |
| Case management | |
| Did you get a card to give to your partners? | 31 (63) |
| Were you given any condoms? | 29 (59) |
| Privacy | |
| Were you seen in a private room? | 18 (37) |
| Waiting | |
| How long did you wait? | |
| < 30 min | 13 (26) |
| 30-60 min | 17 (35) |
| > 60 min | 19 (39) |
| Staff attitudes | |
| What were the attitudes of the staff? | |
| Good | 32 (65) |
| Satisfactory | 17 (35) |
| Poor | 0 (0) |

reported staff attitudes to be either satisfactory or good, whereas this was the case in only 68% of simulated patient visits ($P < 0.0001$)

Variability between clinics in these outcome measures was low, as was variability between simulated patients, and between those conducting the exit interviews. However, differences by date were evident, suggesting either that nurses within each clinic provided different standards of care, or that the same nurse performed differently on separate days.

STD patients responding to exit interviews reported receiving better counselling than simulated patients. Correct advice was given to both STD patients and simulated patients most often about partner treatment (73 and 75%, respectively). Counselling about asymptomatic infection in partners was least reliable among simulated patients (27%), whereas information about asymptomatic STD was most often neglected among real patients (45%). A higher proportion of respondents to exit interviews than stimulated were counselled about adherence to treatment (69 versus 50%).

Equipment and resources

Only six of the 10 clinics had syndromic management protocols available (Table 3). Whereas three clinics reported intermittent problems with drug supply, all had appropriate drugs in stock at the time of the assessment. However, most lacked some important equipment: in particular, specula (50%) and partner notification cards (70%) were often missing. Although all clinics supplied free condoms and only two highlighted condom supply as an occasional problem, only

Table 3. Facility assessment: availability of equipment and supplies in primary care clinics (n = 10).

| | Yes (%) |
|---|----------|
| Are the protocols for syndromic management displayed? | 6 (60) |
| Does the clinic have the necessary drugs for syndromic management in stock? | 10 (100) |
| Is there a reported problem with supply of drugs? | 3 (30) |
| Are there a speculum and light available? | 5 (50) |
| Are there posters that address HIV/AIDS? | 10 (100) |
| Posters on other STD? | 7 (70) |
| Does the clinic distribute free condoms? | 10 (100) |
| Is there a reported problem with condom supply? | 2 (20) |
| Is there a partner notification card in use? | 3 (30) |
| Is there at least one trained HIV counsellor at the clinic? | 6 (60) |

six clinics had an open access point for patients to help themselves.

Factors underlying poor quality of care

Although most nurses who participated in the focus group discussions knew how and why to treat STD comprehensively, and stressed the importance of ensuring compliance, counselling, partner notification and condom promotion, none reported treating STD patients in this way. Poor attitudes towards STD patients, which often include shouting and scolding, as well as a feeling that STD patients are often stigmatized and thus receive a lower standard of care than other patients, and lack of training and support emerged as major constraints. Frequently given reasons for poor care were time constraints, resource limitations, and lack of motivation from supervisors. Low morale among nursing staff was evident. Although few participants were able to list steps required to improve quality of care, several stated, 'all we know is that the numbers [of STD patients] continue to increase,' and many expressed the need for nurses to change, stating that, 'we nurses are the problem; we must also change our attitudes.'

Treatment-seeking behaviour

The monthly mean STD caseload was 177 per clinic; 75% of patients reported seeking care within 1 week of symptom onset, 27% had been treated for a previous STD in the preceding 3 months, and only 6% of patients treated were asymptomatic contacts of index cases (Table 4). Of patients seeking care for a previous STD within the last 3 months, 65% had been treated at a clinic, 21% by general practitioners, 8% by traditional healers, and 5% reported self-treatment. Within both the intervention and control groups, significant differences between men and women were found with regard to symptom duration prior to seeking care and presentation as an asymptomatic contact (Table 4). Those with urethral discharge were more likely to seek treatment promptly, although no significant differences from other syndromes were found. By syndrome, no significant differences regarding prior STD treatment and presentation as a contact were found.

Table 4. Baseline measures for intervention: quality of care scores (44 simulated patients) and health-seeking behaviour (2427 STD patients).

| | n (%) | | | P |
|--|-------------|--------------|------------|--------|
| | Total | Intervention | Control | |
| Quality of STD case management | | 22 | 22 | |
| Received recommended drugs | 18 (41) | 8 (36) | 10 (45.5) | NS |
| Correctly managed (received appropriate drugs, contact card and condoms) | 4 (9) | 3 (14) | 1 (4.5) | NS |
| Appropriately counselled (were told any three out of five key messages*) | 21 (48) | 11 (50) | 10 (45.5) | NS |
| Privacy during consultation (consulted in a private room with no other patients or staff present) | 30 (68) | 13 (59) | 17 (77) | NS |
| Experienced good staff attitudes (rated as good or excellent on a five point scale ranging from excellent to poor) | 21 (48) | 10 (45.5) | 11 (50) | NS |
| Health-seeking behaviour | 2427 | 1242 | 1185 | |
| Men | | 669 | 730 | |
| Women | | 573 | 455 | |
| Caseload (mean no. cases/month) | 177 | 180 | 174 | |
| Symptom duration [†] (proportion with symptoms for ≤1 week prior to seeking care) | 1759 (74.6) | 833 (68.9) | 926 (80.6) | < 0.05 |
| Men | | 450 (68.0) | 601 (83.5) | |
| Women | | 383 (70.1) | 325 (75.8) | |
| <i>P</i> [‡] | | 0.42 | < 0.001 | |
| Previous STD treatment [§] (% seeking care for an STD within previous 3 months) | 656 (27.1) | 328 (26.5) | 328 (27.7) | NS |
| Men | | 177 (26.5) | 216 (29.6) | |
| Women | | 151 (26.5) | 112 (24.6) | |
| <i>P</i> [‡] | | 0.99 | 0.06 | |
| Asymptomatic contacts (% seeking care as asymptomatic partners of index patients) | 152 (6.3) | 87 (7.0) | 65 (5.5) | NS |
| Men | | 23 (3.4) | 15 (2.1) | |
| Women | | 64 (11.2) | 50 (10.9) | |
| <i>P</i> [‡] | | < 0.0001 | < 0.0001 | |

*Patients were told any three of the following: 'your illness is sexually transmitted', 'your partner must be treated', 'your partner may be infected even if he/she is asymptomatic', 'STD increase the risk of HIV transmission', 'you must take all the treatment given to you'. [†]Total, 2357; intervention, 1208 (662 men and 546 women); control, 1149 (720 men and 429 women). [‡]The *P* values show the statistical relationship between men and women for each variable. [§]Total, 2422; intervention, 1237 (667 men and 570 women).

Some differences between intervention and control groups existed in health-seeking behaviour indicators (Table 4). In particular, differences were found between intervention and control groups regarding symptom duration for those with vaginal discharge, ulcers and PID, and fewer asymptomatic contacts were reported in the control clinics.

Discussion

Despite good staff knowledge and availability of most key resources such as drugs and condoms, quality of STD syndromic management is poor in this setting. Against the backdrop of an explosive HIV epidemic, there is clearly an urgent need for intervention. The data generated have informed the design of an intervention and provide baseline measures against which its impact will be measured.

The poor quality of care that we identified exists despite recent efforts at both national and provincial level to introduce STD syndromic management into South Africa's primary care clinics. Although nurses have been trained as trainers, little effort has been made

to ensure that they pass on these skills to colleagues in their own districts. At a time of major health system restructuring and budget deficits [24], health service managers may be forced to neglect important clinical and public health issues. Without strong managerial support, staff have difficulty putting their training into practice.

Quality of care and health-seeking behaviour are closely related. In this assessment, most patients presenting with an STD were given incorrect or inadequate drugs, and most were not correctly managed, because counselling, condom promotion, and partner treatment were frequently inadequate. More than one-quarter of STD patients had been treated for an STD in the preceding 3 months, and because 65% of these had previously been treated in these clinics, this suggests a failure to manage the initial episode successfully, or failure of patients to adhere to safe sex practices or get their contacts treated.

STD control depends on a balance of treatment and prevention. In these clinics, the problems in diagnosis and treatment are particularly disturbing because the necessary resources were mostly available. The difference in correct treatment of men for male discharge

and women for PID is striking, and highlights the importance of providing appropriate, practice-based training in clinic examination for primary care staff. Poor staff attitudes rooted in low morale appear to exacerbate a gap between knowledge and practice, and clinical staff feel unable to provide better care. Furthermore, negative attitudes towards STD patients are pervasive, and may have the effect of driving away those patients who do seek care.

It is notable that the patient simulation and exit interview methods produced differing results regarding some aspects of STD management. Each method was associated with some bias, and there are several possible explanations for these results. In general, the simulated patient method is considered the most practical, consistent and accurate way to measure practice of health-care providers [25]. Other options, such as direct observation of consultations by a third party, may be useful for evaluation of clinical skills but do not provide an objective assessment of counselling skills and attitudes and may inflate overall performance levels [26]. Recent work using these methods to assess STD services confirms this, although the feasibility of simulated patients for routine assessment is questioned by some [27]. In contrast, exit interviews provide second-hand information, and rely on the reports of untrained observers whose accounts are inevitably influenced by their experience [26]. They may also suffer from 'courtesy bias' [26], in that respondents may be too polite to offer their true opinions to an interviewer with whom they have not established trust and rapport. In addition, clinic staff have a greater incentive to provide good quality care if they know that their patients will be asked to evaluate the service received. In these interviews, bias may have been exacerbated by the need to involve health services personnel in the selection of respondents.

On the basis of our findings, we have designed the following intervention, based on STD syndrome packets and training of primary care nurses:

- (1) Workshops to provide comprehensive training of district nursing staff in syndromic management of STD;
- (2) STD syndrome packets that contain drug treatment for each syndrome, condoms, partner treatment cards and a health promotion leaflet;
- (3) Formation of a district STD team comprising peer trainers who visit clinics to provide on-going training;
- (4) Monthly in-service and follow-up in each clinic, with an emphasis on clinical and counselling skills, appropriate attitudes and correct use of syndromic management protocols and packets;
- (5) Efforts to increase support for districtwide STD control amongst health service management.

Intervention clinics will receive the programme outlined above, whereas control clinics will maintain the current standard of care, which is syndromic management previously introduced through a provincewide initiative. Control clinics will be visited once a month for collection of surveillance data and follow-up.

The syndrome packets are designed to promote comprehensive syndromic management by providing recommended drug treatment for each syndrome, as well as condoms, partner cards, and a patient information leaflet. A partner notification card, patient information leaflet containing basic information about STD and the importance of partner treatment, and the packets themselves were designed through qualitative research with STD patients and primary care providers. The packets ensure that treatment, condoms and partner cards are all readily available, allowing staff to focus on patient counselling. Furthermore, the packets may help to overcome problems with temporary shortages of drugs and condoms.

In spite of these benefits, syndrome packets are not a magic bullet, and it will be important to ensure that packets facilitate, rather than substitute, a positive staff-patient interaction. In addition, such an intervention must be set up to enhance, rather than compete with, existing services. Importantly, STD services must be viewed as an integral part of primary care. Staff training in the clinics, rather than centrally, provides the opportunity for all clinic staff to participate, and is seen as having spillover effects into other areas of the service.

The impact of this intervention will be studied through a randomized design. We aim to measure the impact of this intervention on provider behaviour at clinic level, and associated changes in health-seeking behaviour [11]. The intervention and control groups are well balanced on most variables (Table 4), although there is some variability in indicators of health-seeking behaviour. Based on clinic-specific prevalence of HIV and syphilis in antenatal women, and sociodemographic and geographic data, the 10 clinics have been formed into matched pairs. Matching will address variability between clinic pairs, and should address the differences observed in health-seeking behaviour variables. Residual variability in health-seeking behaviour indicators will be taken into account through adjusted analysis.

We have defined several indicators (Table 4) that will allow us to measure and understand the process by which improvements in quality of care come about. This is important, because although improved syndromic management has been associated with reduced HIV incidence and STD prevalence [2,13], process measures that make clear the mechanism for these improvements are lacking. The important princi-

ple of using STD interventions to reduce HIV transmission is clear both from the Mwanza trial [2], and from biological data that demonstrate increased HIV shedding in semen and genital secretions of men [28] and women [29] with an STD, and reduction of this following STD treatment. The public health challenge now is the implementation of improved STD case management.

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