Pharmacists’ role in managing sexually transmitted infections: policy issues and options for Ghana

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The debate about extending the role of pharmacists in health care is growing in recognition of the ongoing difficulties experienced by many public sector services. The perceived accessibility and confidentiality of pharmacists makes them particularly attractive to patients for the management of health problems such as sexually transmitted infections (STI) that may lead to stigmatization.

Despite growing interest in the subject, there are few documented analyses of the role of pharmacists in low-income countries. In Ghana, pharmacists are acknowledged by the government to be the preferred option for people seeking treatment for STI. A study was conducted to investigate the current role played by pharmacists in Greater Accra Region in the management of STI. On the basis of these findings, training schemes were developed, implemented and evaluated. This paper presents the findings of this operation-research and considers their implications for deciding to what extent and in what way pharmacists should be involved in managing STI in Ghana and other similar country settings.

These findings suggest that pharmacists have a crucial role in effective management of STI, particularly in the management of urethral discharge. They may need to limit their management of genital ulcer to referring customers to laboratories and medical practitioners. They also represent a currently under-utilized opportunity for preventive activities. Regulation and quality assurance issues need to be addressed by both pharmacy and medical professions.

Introduction

International consensus on the need to improve the management of sexually transmitted infections (STI) was reached after the 1994–95 results of a trial in Tanzania which suggested that proper treatment of STI could decrease HIV incidence by as much as 40% (Grosskurth et al. 1996). As a result, a number of funding agencies in Ghana, as elsewhere, are supporting STI and HIV/AIDS control programmes (Eledu 1996); one of these is the Canadian International Development Agency (CIDA) through its ‘West Africa Project to Combat AIDS’ (WAPTCA).

WAPTCA commissioned the Health Research Unit (HRU) of the Ghana Ministry of Health (MoH) to conduct a survey on STI management in pharmacy outlets in the Greater Accra Region (HRU 1996). The main objective of the study was to gather situation analysis information to facilitate the planning and implementation of STI training activities for pharmacists in Greater Accra, which were subsequently evaluated. In addition, the study led to a consideration of the wider policy implications of permitting pharmacists to actively diagnose and treat STI. After a summary of the research and its findings, this article will discuss the policy implications of allowing pharmacists to manage STI outside the mainstream medical sector, reviewing the advantages and disadvantages and suggesting policy options.

Background

Most literature on pharmacists’ roles and their prescribing practices are western focused. In the majority of developed countries pharmacists are not themselves allowed to prescribe antibiotics. They dispense drugs to clients who have prescriptions from a medical practitioner, and are encouraged – and sometimes required – to offer advice on how to take medication and on possible adverse effects and drug interactions (Pendergast et al. 1995; Shefcheck and Thomas 1996; Chamba et al. 1999). They therefore play an important role in ensuring the reduction of drug-related morbidity and the appropriateness and effectiveness of drug medications (Pendergast et al. 1995; Chamba et al. 1999; Young et al. 1999).

It might seem a small step in moving from acknowledged responsibility of pharmacists for assessing the appropriateness of medication prescribed by a medical practitioner, to allowing pharmacists themselves to prescribe drugs. While there is acknowledgement of the important role played by
pharmacists in STI management and there are calls to expand their role (Stergachis 1999), granting, or increasing, prescribing powers to pharmacists is highly controversial. In the US for example, only a minority of states allow pharmacists to either initiate or modify drug therapy (Shefcheck and Thomas 1996), although state legislation has broadened over the last decade to incorporate drug selection and, in some cases, even prescribing (Young et al. 1999).

These concerns are exacerbated in developing countries where there is a significant de facto gap between law and practice. Although in many developing countries the laws restrict pharmacists’ prescribing rights, limiting them to sale of drugs prescribed by a medical doctor, the capacity to enforce such laws is limited (Brugha and Zwi 1999). The reality is that pharmacists often sell antibiotics without prescriptions. It is acknowledged that pharmacists are a widely used source of drugs by communities in low-income countries where access to, or use of, public sector health facilities is low (Crabbé et al. 1996; Wilkinson 1998; Brugha and Zwi 1999; Somsé et al. 2000). Brugha and Zwi (1999) suggest that the current trend of international health policies to promote management and regulation of health services, rather than their financing and provision, is likely to increase the role of the private sector in STI treatment.

There are very few case studies of pharmacists’ practices in low-income countries (particularly anglophone) although the issues around pharmacists’ management of illness in low-income countries have been discussed in the anthropological literature for well over a decade (see, for example, van der Geest 1987; Bledsoe and Goubauld 1988). Existing studies suggest two major barriers to the expansion of pharmacists’ treatment role: issues concerning quality of care and opposition from the medical establishment. Quality of care issues arise largely from the serious deficiencies in currently documented private sector STI treatment practices (Trébuch 1994; Trostle 1996; Brugha and Zwi 1999; Somsé et al. 2000). There are also concerns about how STI management would be regulated (Brugha and Zwi 1999). Professional tensions between medical practitioners and pharmacists are recognized in both developed and developing countries as potential barriers to increasing pharmacist-prescribing powers (Stanton 1994; Henry 1995; Gilbert 1998).

Little research on pharmacists was conducted in Ghana before this project was undertaken. National data suggest that pharmacists in Accra are the first point of contact for STI management and that pharmacists currently see a total of 50 000–90 000 STI cases per year (Stanton 1994). This contrasts with approximately 2000 annual cases reported by Accra’s government clinics (MoH 1998). In Ghana there are a range of outlets licensed to sell drugs. Pharmacies licensed to sell all classes of drugs under the supervision of a licensed pharmacist were the establishments included in our study. ‘Chemical shops’ or ‘chemical sellers’ are also registered with the pharmacy council; they are licensed to operate without a qualified pharmacist but cannot stock and dispense antibiotics. In Ghana, there are relatively few ‘drug peddlers’ operating illegally in markets or commercial streets, in contrast to many other African countries.

Where literature exists, it highlights key issues generic to the debate on the extent to which pharmacists’ prescribing powers should be increased and how quality treatment can be ensured. Most importantly, it underlines the dearth of documented research on pharmacists’ practices in low-income countries, where the literature on STI control has focused on the public sector despite recognition of the urgent need to provide good medical care in addition to public sector services (Brugha and Zwi 1999). The research undertaken in Ghana provides valuable lessons in a field recognized as being increasingly important to the future of health care delivery in low-income countries.

Methodology

This was a multi-purpose study consisting of a situation analysis, development and implementation of an intervention, and subsequent discussion of the policy implications. A number of different methodologies were used to accommodate this.

Field site

Fieldwork was carried out in Greater Accra Region in the south of Ghana. This region is the main urban region of Ghana, home to 12.7% of the country’s total population, corresponding to more than 2.5 million inhabitants of whom 83% are urban dwellers (Ghana Statistical Service 1995). It covers 3245 km² within which the capital Accra and Ghana’s main international port, Tema, are located. These contribute to the high level of national and international migration in and out of the region.

Sample

All pharmacy shops in the Greater Accra Region were targeted initially for interviews, drawn from a list of pharmacies obtained from the Pharmacy Division of the Ministry of Health. Two of the five districts in the region were then chosen for interviews — Accra Metropolitan Area and the Tema District (the other outlying districts had few pharmacies so were not included). During June 1996, all pharmacies in the two districts (a total of 252 establishments) were visited and the pharmacist owner or the pharmacist in charge was interviewed on STI management. In addition, any two persons who came to buy drugs (not necessarily for an STI) at the time of this interview were also selected for interview.

Questionnaires

The main research instruments were structured questionnaires. Two separate questionnaires were developed for interviews with pharmacists and their employees and for their clients. The Pharmacists’ Questionnaire was developed for the survey by a three-member survey team from the Health Research Unit with comments from the Pharmaceutical Society of Ghana, the Pharmacy Council, the National AIDS Control Programme and WAPTCA. The final questionnaire was designed to collect data on the facility (location, opening hours, number of rooms, etc.); average monthly STI case-load of pharmacists; details of their treatment of STI cases; whether follow-up treatment, contact tracing and condom
promotion was occurring; sources of drug procurement and pricing.

The Client Questionnaire was developed in response to suggestions received on the main questionnaire circulated. This instrument sought to identify the age and sex of clients, their knowledge of STI and whom the client was buying drugs for. Both questionnaires were discussed and pre-tested during the 4-day training of interviewers (community health nurses with experience in personal interviews). The field pilot areas were excluded from the main survey. After the pilot study, all the interviewers met with the survey research team for discussion of emerging and pertinent issues and resolution of common problems. Regular meetings of interviewers with the research team during the main fieldwork session and the data checking mechanism outlined above enhanced the quality of the data. Field visits were also conducted by the research team members.

Training interventions

Following this base-line research, a training intervention was developed covering the syndromic diagnosis and treatment of STI. Each pharmacy registered in Greater Accra Region was invited to send one person to one 1-day training session. In total, 29 training sessions were conducted between April 1997 and March 1999 for 473 practising pharmacists in the region. Twenty-three training sessions for 323 pharmacists were held before the second pseudo-patient survey (detailed below and conducted one year after the beginning of the training programme) and six sessions for 150 pharmacists after the pseudo-patient surveys. Each session attracted between 12 and 25 participants and lasted a full day, covering the epidemiology of HIV in Ghana, the interaction between HIV and STI, the characteristics and most important etiological agents of common STI syndromes (urethral discharge, vaginal discharge, genital ulcer and pelvic inflammatory disease), and the drugs that are effective in the treatment of these syndromes. The training team consisted of the Manager of the National AIDS Control Programme (MoH), the STI/HIV/AIDS regional co-ordinator, project facilitators, facilitators from the Pharmaceutical Society of Ghana and other MoH resource persons. Participating pharmacists received only a modest allowance for transportation and lunch.

Pseudo-patient evaluation

A further evaluation was carried out to assess the extent to which pharmacists had assimilated their training and the efforts made in transferring that information to their employees, who were not pharmacists themselves. A pseudo-patient methodology was used for the evaluation. In April 1997, before training, two young men were sent to each of 248 pharmacies, one of them pretending to suffer from a urethral discharge and the other from a genital ulcer. They asked what treatment would be provided and at what price. In August 1998, six male pseudo-patients were sent, independently, to each of the same 248 pharmacies. Each pharmacy was thus visited by a total of six pseudo-patients, three of whom pretended to have urethral discharge and three a genital ulcer. The same data were obtained as in 1997. In each case, the pseudo-patients claimed to have no money with them and left without purchasing any drugs. This did create some difficulties since some pharmacists were reluctant to give advice or dosage details without first seeing the money. Specific therapeutic recommendations were therefore only obtained for 50–59% of pharmacists in the pre- and post-training pseudo-patient surveys. Where drug names and prices were obtained, they were recorded by the pseudo-patients on departure from the pharmacy. Drug responses were standardized according to the Essential Drugs List of Ghana and prices were standardized in ranges of 500 cedis. The pharmacies visited included some where the pharmacist had attended training and others where training had not yet been provided. The pseudo-patients were seen by staff working at the counter and not necessarily by the pharmacists themselves.

Main findings

Pre-training results: pharmacy questionnaires

Pharmacies, staff and facilities

Pharmacies opened for an average of 13 hours a day, at least 6 days a week, representing an accessible source of information and medication. On average pharmacies had three rooms. The average number of staff employed was five. Only 34% of counter-staff had a university degree, although most had at least O-level qualifications. The majority of owners and pharmacy staff at the 252 pharmacies were aged between 35–65. The median age of owners and staff were 54 and 43 years respectively.

STI case load

Respondents estimated having seen an average of 30 patients with an STI in the last month. Twenty-eight percent of pharmacists estimated that none of the STI patients they saw had a prescription; only 30% estimated seeing more than 10 STI patients per month with a prescription. The client survey showed that more than 60% came without a prescription, indicating that pharmacists see a large number of patients before they ever make contact with clinical health care providers. Although this is a reported number, there is no reason to doubt the reliability of client responses on prescriptions since this information is not perceived as sensitive. Numbers of male and female STI cases were similar. The most common STI syndromes reported were dysuria/urethral discharge in men and white vaginal discharge in women; genital ulcers were rarely seen (Tables 1 and 2).

<table>
<thead>
<tr>
<th>STI syndrome</th>
<th>Median number (range) of cases seen in the last month</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dysuria</td>
<td>6 (0–200)</td>
</tr>
<tr>
<td>Urethral discharge</td>
<td>4 (1–120)</td>
</tr>
<tr>
<td>Dysuria and urethral discharge</td>
<td>5 (0–240)</td>
</tr>
<tr>
<td>Genital ulcer (male)</td>
<td>0 (0–12)</td>
</tr>
<tr>
<td>White vaginal discharge</td>
<td>10 (0–150)</td>
</tr>
<tr>
<td>Other types of vaginal discharge</td>
<td>5 (0–200)</td>
</tr>
<tr>
<td>Genital ulcer (female)</td>
<td>0 (0–30)</td>
</tr>
</tbody>
</table>
Only 2% of the 377 clients interviewed said they were buying medication for painful urination or vaginal discharge, but 29% said they had experienced those complaints at some time and 36% said they knew of someone who had had an STI. Of the 29% who had themselves experienced STI symptoms, 22% said they had come first to a drug store or pharmacy; 55% claimed to have gone to a hospital or doctor; and 18% said they went elsewhere.

**STI treatments**

Before the WAPTCA-sponsored training, pharmacists gave first-line treatments for urethral and vaginal discharge, but usually referred genital ulcer cases. If patients returned with symptoms, the proportion of cases referred increased. Eighty percent of pharmacists said they always referred patients if they returned with symptoms after the first treatment. By definition, these cases were treated syndromically since no medical or clinical inspections are made of patients attending pharmacies.

**Table 2.** Drugs most frequently recommended for treatment of STI

<table>
<thead>
<tr>
<th>STI</th>
<th>Most frequently recommended drugs</th>
<th>No. (%) of respondents recommending the drug</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urethral discharge</td>
<td>spectinomycin</td>
<td>50 (20%)</td>
</tr>
<tr>
<td></td>
<td>norfloxacin</td>
<td>25 (10%)</td>
</tr>
<tr>
<td>Vaginal discharge</td>
<td>nystatin</td>
<td>56 (22%)</td>
</tr>
<tr>
<td></td>
<td>Miconazole</td>
<td>39 (15%)</td>
</tr>
<tr>
<td></td>
<td>Metronidazole</td>
<td>20 (11%)</td>
</tr>
<tr>
<td>Genital ulcer</td>
<td>clotrimazole</td>
<td>6 (2%)</td>
</tr>
<tr>
<td></td>
<td>ketoconazole</td>
<td>5 (2%)</td>
</tr>
<tr>
<td>Gonorrhoea</td>
<td>spectinomycin</td>
<td>66 (26%)</td>
</tr>
<tr>
<td></td>
<td>norfloxacin</td>
<td>36 (14%)</td>
</tr>
</tbody>
</table>

Table 2 indicates the treatments respondents said they most frequently recommended. The most common treatments reportedly given were spectinomycin and norfloxacin for urethral discharge, nystatin and metronidazole for vaginal discharge. No one medication was preferred for treatment of genital ulcers and most cases were referred without treatment. Ciprofloxacin and ceftriaxone are the MoH/WHO recommended medications for the treatment of gonococcal infections but neither of these drugs was regularly prescribed or stocked by most pharmacists. For 76% of pharmacists, their information regarding STI treatment had been obtained during their professional training. Only 16.5% said they used MoH guidelines on STI treatment and a further 11% said they had information from WHO guidelines. Drug supplies were generally reported to be reliable; only 9.5% said they experienced difficulties.

Follow-up, partner tracing and condom promotion

Eighty-nine percent of pharmacists said they told their patients to take all the prescribed medication, 68% said they ‘always’ asked the patient to come for follow up and 80.5% said they ‘always’ advised STI patients to get their sexual partners treated. Although most pharmacies sold condoms, only 59% of pharmacists claimed to regularly advise STI patients to use them.

**Table 3.** First choice treatments offered to pseudo-patients complaining of urethral discharge (percentages)

<table>
<thead>
<tr>
<th>Drug effectiveness for gonorrhoea</th>
<th>1997 survey, before training (n = 145)</th>
<th>1998 survey, untrained pharmacists (n = 196)</th>
<th>1998 survey, trained pharmacists (n = 198)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effective</td>
<td>31</td>
<td>40</td>
<td>64</td>
</tr>
<tr>
<td>Doubtful</td>
<td>43</td>
<td>30</td>
<td>24</td>
</tr>
<tr>
<td>Ineffective</td>
<td>26</td>
<td>31</td>
<td>13</td>
</tr>
<tr>
<td>doxycycline/tetracycline added as second drug</td>
<td>0</td>
<td>6</td>
<td>20</td>
</tr>
</tbody>
</table>

**Table 4.** First choice treatments offered to pseudo-patients complaining of genital ulcer (percentages)

<table>
<thead>
<tr>
<th>Drug effectiveness for syphilis and chancre</th>
<th>1997 survey, before training (n = 129)</th>
<th>1998 survey, untrained pharmacists (n = 187)</th>
<th>1998 survey, trained pharmacists (n = 190)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effective for syphilis</td>
<td>38</td>
<td>27</td>
<td>33</td>
</tr>
<tr>
<td>Effective for chancre</td>
<td>15</td>
<td>16</td>
<td>22</td>
</tr>
<tr>
<td>Effective for both syphilis and chancre</td>
<td>4</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Effective for neither</td>
<td>50</td>
<td>60</td>
<td>51</td>
</tr>
</tbody>
</table>

Pseudo-patients survey results

**STI drug prescribing practices**

Tables 3–5 display the results of the pseudo-patients surveys before and after training, representing what pharmacists actually did. The numbers (and percentages) indicated correspond to the number of pharmacies' employees independently evaluated through pseudo-patients (one per pharmacy per syndrome in 1997, three per pharmacy per syndrome in 1998). Results for 1998 are stratified according to whether or
not the owner of each visited pharmacy had yet attended the STI training at the time of this survey. Overall, it was possible to obtain a specific therapeutic recommendation from 50–59% of counter staff surveyed in 1997 and 1998, the others having told the pseudo-patient to see the doctor, to see the pharmacist or to come back later with money.

Comparison of pre-training and post-training evaluations indicated a marked improvement in the prescribed regimes for urethral discharge in trained establishments, as shown in Table 3. The pre-training regimes considered effective in the treatment of gonorrhoea included all quinolones, ceftriaxone and cefuroxime, and azithromycin. The improvement in efficacy was due mostly to more frequent use of ciprofloxacin as a first-line treatment for cases of urethral discharge, which rose from 5 to 39%. A concomitant decrease was noticed in prescriptions of spectinomycin – to which an estimated 30% of gonococcal strains in Ghana might be resistant (Adu-Sarkodie 1993) – as well as a significant decrease in the proportion of drugs prescribed which were completely ineffective (all penicillins, tetracyclines, rifampicin and so on) against the gonococcus. There was also an increase, from 0 to 20%, in the prescriptions of a second drug (doxycycline or tetracycline) which is recommended by MoH and WHO guidelines to cover concomitant Chlamydia trachomatis infections. Interestingly, ciprofloxacin was recommended in 21% of untrained pharmacies in 1998 compared to a baseline of 5% in 1997, with inverse trends for norfloxacin (11% in 1998, 25% in 1997) and spectinomycin (30% in 1997, 43% in 1998).

Disappointingly, little change was noted in the prescribing practices for genital ulcers, with quinolones remaining the most frequently proposed class of antibiotics having activity against Haemophilus ducreyi, the etiological agent of chancroid. A switch from norfloxacin to ciprofloxacin was noted and, in the trained group, a small increase in the number of pharmacies recommending erythromycin. There was little change in the proportion of pharmacies offering effective treatment for syphilis to the pseudo-patients complaining of a genital ulcer. A range of ineffective treatments was offered in all three categories, mostly for topical care of ulcers. Results are detailed in Table 4. Pharmacists interviewed after training sessions had taken place were, however, more likely to tell pseudo-patients with suspected genital ulcers to go to a medical practitioner.

**Drug pricing**

A slight increase was noted in the cost to the client of drugs. Prices charged for drugs and condoms varied considerably and showed a skewed distribution. For this reason the median (rather than mean) prices are shown, in Table 5, for first choice treatments for urethral discharge and genital ulcer. Many pharmacy employees working at the counter were reluctant to give information on their drug pricing and consultation fees unless the client was clearly in the process of purchasing drugs (rather than just enquiring about prices). Some pharmacists refused to give advice unless they were first shown money. This was the case with 20% of the ‘trained’ pharmacists and 11% of the ‘untrained’ pharmacists.

**Discussion**

The findings indicate that pharmacists offer an accessible means of care for the general public, being open considerably longer than health centres and clinics. They see and treat a substantial caseload of STI clients. The training interventions apparently resulted in some improvement in case management, notably for urethral discharge. A number of caveats should be noted, however, before proceeding to detailed discussions. The nature of the pseudo-patient methodology did not allow for distinction between respondents who were qualified pharmacists and their less qualified staff. It should also be remembered that where pharmacists and staff, as opposed to the clients and pseudo-patients, were interviewed about STI management, the data reflect the respondents claimed actions rather than their actual behaviour and activities.

**Policy implications and considerations: how far do and should pharmacists manage STI?**

Both the international literature and the Ghana experience indicate that pharmacists already play a major role in STI management. A survey commissioned by USAID in 1994 claimed that pharmacists in Accra see and treat substantially more STI than are seen in governmental health institutions, and that for many clients the pharmacist, rather than medical personnel, is the first point of contact with modern drugs (Stanton 1994). Our research has added weight to this. More than 60% of clients in our client survey come to pharmacies

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**Table 5. Median prices for first-choice treatments of urethritis and genital ulcer offered to pseudo-patients**

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>Urethritis:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>median cost of first-choice treatment</td>
<td>Cedis 8 500</td>
<td>Cedis 12 500</td>
<td>Cedis 13 400</td>
</tr>
<tr>
<td></td>
<td>US$4.51</td>
<td>US$5.38</td>
<td>US$5.77</td>
</tr>
<tr>
<td>Genital ulcer:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>median cost of first-choice treatment</td>
<td>Cedis 5 000</td>
<td>Cedis 5 000</td>
<td>Cedis 6 000</td>
</tr>
<tr>
<td></td>
<td>US$2.65</td>
<td>US$2.15</td>
<td>US$2.59</td>
</tr>
</tbody>
</table>

without a prescription indicating that they do not first attend a medical establishment. Improving pharmacists’ diagnoses of and prescribing knowledge for STI could therefore mean that the thousands of STI sufferers who do not attend medical establishments can nevertheless be confident of quality treatment.

Current legislation on the extent to which pharmacists can treat STI in Ghana is ambiguous. The 1994 Pharmacy Act states that pharmacists can treat in cases of first aid and ‘simple ailments of common occurrence where it is not reasonably practical for the patient to consult a medical practitioner’. The classification of STI as ‘simple ailments of common occurrence’ is open to debate. The Essential Drug List, however, is unequivocal in its listing of most STI drugs as ‘Programme Drugs’ which are not subject to the usual provider restrictions. Therefore pharmacists can legally supply STI antibiotics, although STI could be interpreted as ailments for which it might be ‘reasonably practical for the patient to consult a medical practitioner’. There is a de facto gap between the legal ambivalence regarding the prescribing of antibiotics without prescriptions and the reality of practice whereby they are prescribed routinely by pharmacists.

Further concern is added by the government policy focus on public sector health services. The rationale for making STI treatment a priority is based on the Mwanza study, which showed that better STI management led to 40% reduction in HIV transmission (Grosskurth et al. 1994). Mwanza is a rural area of Tanzania where governmental health centres deal with almost all cases of STI in the absence of private clinics, pharmacists and chemical sellers. Since the publication of those findings, the same approach (training of nurses, medical assistants, doctors working in governmental institutions) has been applied by many funding agencies and national AIDS control programmes to urban areas where HIV prevalence is much higher than in rural areas. However, our (and others’) data show that governmental institutions deal with a small fraction (5–10%) of STI cases, in urban Accra as elsewhere on the continent. Thus, even if the quality of STI management in governmental facilities was increased to 100%, there would be virtually no impact on HIV transmission. If STI control strategies are to have an impact on HIV transmission in large cities of sub-Saharan Africa, there is an urgent need to improve STI care where patients do seek care. In Ghana that means pharmacists and chemical shops as well as private medical and nursing practitioners. In the present scenario, then, the critical question is how the quality of care being sought from pharmacists can be improved. This requires consideration of a number of issues, discussed here.

**STI management and drug prescription**

Discussions about how far pharmacists should be given authority to diagnose and treat STI must involve members of both pharmacy and medical professions. Pharmacists are not doctors and there is legitimate concern over the limits of their treatment roles. The findings of this research indicate a sound base for supporting pharmacies to provide STI services, especially for urethral discharge. There are more reservations regarding pharmacists’ competence for treating genital ulcers and this area requires further research. Nevertheless, much can be achieved using the syndromic approach developed by WHO and adapted in Ghana by the National AIDS Control Programme (NACP). In contrast to medical doctors, who are generally opposed to syndromic management as a second-rate diagnostic tool, pharmacists inherently use a syndromic approach and are much more likely to recognize its usefulness. All pharmacists would benefit from having, and knowing how to use, the NACP’s guidelines for STI syndromic management. Pharmacists might also play a role in preventive activities such as condom promotion and displaying posters on their premises to inform customers about STI. The existence of several rooms in most pharmacies indicated space that could be used for private examinations. The high percentage of pharmacists claiming to advise suspected STI/HIV clients on follow-up and partner tracing (something medical establishments find very problematic) could be grounds for encouragement.

Table 4 indicates changes in effective first-choice treatments offered by pharmacists before and after training. ‘Effective’ doses were deemed to be those that corresponded with the WHO/MoH guidelines on syndromic STI management which formed the basis of the pharmacists’ training. The differential impact of the training undertaken in this project, which resulted in marked improved management of urethral discharge but not in the management of genital ulcers (see Table 4), could be due to a number of factors. There is very little genital ulcer disease in Acrera and, consequently, pharmacists were not especially interested in that part of their training, or did not feel it important enough to disseminate the information to their employees. This highlights the importance of country-specific data in designing STI management strategies for pharmacists. Genital ulcers are more difficult to diagnose using the syndromic approach since, without a clinical examination, they may be confused with skin problems or scabies (which are more common). Furthermore, the drug of choice for treating (ulcer-causing) syphilis is benzathine penicillin, an injectable drug, which is more difficult than oral or topical treatments to administer in pharmacies that lack an injection room or skilled staff. The post-training increase in pharmacies referring clients with genital ulcers to medical practitioners, however, may indicate a greater recognition by pharmacists of the limitations of accurately diagnosing and treating this condition in a pharmacy environment. Treatments offered to women with vaginal discharge were not evaluated because it is more difficult to evaluate this using a pseudo-patient approach. However, 80–90% of women with vaginal discharge suffer from vaginitis (rather than gonococcal or chlamydial cervicitis), the common causes of which (bacterial vaginosis, trichomoniasis, candidiasis) can easily be treated with single-dose metronidazole and an antifungal cream; pharmacists could reasonably be expected to offer such treatment for vaginitis and to refer women whose condition does not improve. In sum, the role of pharmacists in Ghana could reasonably be defined, from a public health perspective, by the activities in Box 1.
Pharmacists’ management of STI

History taking: questions on main symptoms and previous treatment.

Urethral discharge: treat (ciprofloxacin + doxycycline), refer only if patient comes back not improved.

Vaginal discharge: treat for vaginitis (antifungal cream + metronidazole), if not improved refer for management of cervicitis.

Genital ulcers: refer all cases.

Training and quality control

Once issues of treatment mandates have been clarified, consideration must be given to training and quality control issues. Our experience points to the benefit of in-service or workshop training sessions. Pharmacists in our survey were enthusiastic about improving their STI management skills and more than two-thirds of all pharmacists in Greater Accra Region attended the subsequent training sessions. The recorded post-training improvements in urethritis management and prescription habits indicate the willingness and ability of pharmacists to put this training into practice and to change their prescribing habits. This willingness to change, however, could be explained by the need of pharmacists to respond regularly to changing drug markets. Drug representatives actively tout in Ghana, and it is possible that the improved habits of pharmacists are fragile and could be susceptible to persuasive drug representatives selling a different drug or approach.

In the long term, thought should be given to incorporating STI management into pharmacy training curricula. Given that the curricula have just undergone revision (which does not include any enhancement of STI management knowledge), this process could be lengthy and problematic. In the interim, the MoH and WAPTCA are in the process of scaling up their training initiative. Ninety qualified pharmacists and 100 final year pharmacy students were trained in Kumasi, the second largest city in Ghana, between March and December 1999. In-service training for current pharmacists has also been undertaken in collaboration with the Ghana Pharmaceutical Society, which already undertakes this role with responsibility for organizing continuing education workshops and programmes.

Collaboration between the medical and pharmacy professions will be particularly important for maintaining standards of STI screening and treatment by pharmacists. There is some, acknowledged, tension between the medical establishment and the pharmacy profession, over the treatment role of pharmacists, which needs to be overcome to ensure effective organization of training and quality control (Interviews, 1995–96). Ghana’s medical establishment is likely to want to be involved, but the pharmacy bodies may feel threatened; negotiations and co-operation between the MoH and pharmacy bodies will be critical. Joint regulation responsibility between the Pharmacy Council and the Ghana MoH could reduce tensions between pharmacists and the medical establishment, but may be difficult to implement. Nevertheless, the fact that the MoH, pharmacy bodies and researchers collaborated for this project should be regarded as a very positive step.

If pharmacies are going to provide adequate STI treatment, the quality of staff actually on duty at the pharmacy will need to be given attention; of the staff interviewed in the survey, the majority were not qualified pharmacists. The use of pseudo-patients, in the post-training evaluation, did not permit the distinction between qualified/unqualified staff. Nevertheless, the demonstrated improvement in the practices of staff from establishments where the pharmacist received training, and from some where the pharmacist did not, suggests that knowledge acquired by qualified pharmacists attending training is passed on to their colleagues and employees outside the training session, though other information sources have also had an influence.

Policies concerning chemical sellers require some attention. Chemical sellers do not have the qualifications of pharmacists and are therefore not legally allowed to sell antibiotics. There is a serious policy–practice gap here. In clear contravention of the law, chemical sellers do sell STI antibiotics, and their outlets are frequented by the general population. Neither the pharmaceutical nor medical professions are likely to be happy about training these personnel in STI management; nevertheless, the reality is that they are dispensing STI drugs. There may be scope for them to be involved in STI/HIV education and awareness, condom promotion and referral (either to a pharmacy or medical facility), though they may regard referral as losing them business. Strategies and policies in this area have been little studied.

Drug procurement and costing

Pharmacies have experienced some problems of drug supply in the past, especially of the latest gonorrhoea drugs. These were partly because of system-related difficulties with the time taken for new, more effective drugs to filter through the market. Currently, STI drugs are largely available. Pharmacists’ access to the open market means their drug supplies are often more reliable than at public medical facilities, though their prices may also be higher. Thus pharmacists can provide adequate, effective treatment, and clients prefer to go where they know they can get the drugs they want.

Availability and costing of MoH/WHO recommended STI drugs is probably an issue that must involve the government. While most pharmacists in the survey reported reliable supply systems, obtaining their drugs from pharmaceutical distributors and condoms from the Ghana Social Marketing Foundation, the prices they charged varied considerably. In clear contravention of the law, chemical sellers do sell STI antibiotics, and their outlets are frequented by the general population. Neither the pharmaceutical nor medical professions are likely to be happy about training these personnel in STI management; nevertheless, the reality is that they are dispensing STI drugs. There may be scope for them to be involved in STI/HIV education and awareness, condom promotion and referral (either to a pharmacy or medical facility), though they may regard referral as losing them business. Strategies and policies in this area have been little studied.

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same price to the patients and thus increase their profit margins. Pharmacists are more likely to support efficacious changes in treatment regimens where they can be certain of safeguarding their profits. Obtaining treatment for STI from a pharmacy will never be an option for the poorest, but for clients with some money, who do not wish to wait in clinic queues, there is the option of visiting a pharmacy.

Accessibility and logistics

Pharmacists offer services that are highly accessible to general populations. Despite their proximity to the public, however, there is a continuing problem of urban–rural bias. Pharmacies are located more in urban areas where they are well utilized. Where pharmacies do exist in rural areas they are also well utilized, but improving management of STI in rural areas is likely to require other strategies.

MoH surveillance of STI is limited, but if STI incidence bears any correlation with HIV prevalence, it is likely that there are high pockets in major urban cities and in the border lands and mining areas (Mayhew 1999). In theory, pharmacists could provide a much-needed source of data to complement that generated by MoH establishments, on the prevalence of STI and patterns of certain diseases. In practice, however, this is unlikely to be achieved. A pilot test, involving 12 pharmacists recording data on STI customers, was set up by WAPTCA over 6 months. The findings indicated that the quality of information collected was poor for a number of reasons, including irregularities in recording and customers being unwilling to talk. For pharmacists to collect reliable data on STI prevalence they need to ask questions when clients come asking for certain drugs. This could potentially compromise confidentiality, which in turn may affect patients’ views of pharmacists as places of anonymous, ‘no-questions-asked’ sources of care. It is this very perception that often directs them there in the first place in preference to a clinic. Furthermore, pharmacies are for-profit businesses and there are no obvious gains for them in participating in surveillance activities.

Conclusion

Pharmacists represent a valuable point of contact for STI patients. This study has indicated that training interventions can enhance the quality of care that pharmacists provide for STI patients. Training interventions for pharmacists should include appropriate diagnosis and treatment of STI, with an initial focus on urethral discharge and the possible treatment of vaginitis among women presenting with a discharge, encouraging referral for genital ulcers and unimproved vaginal discharge. Preventive activities including information to clients and the public on STI/HIV prevention and treatment, and promotion of condoms, are opportunities currently under-exploited by pharmacists for limiting the spread of STI and HIV. Pharmacists’ activities relating to STI management should be clearly defined by the MoH and supported in policy to avoid possible tensions and controversies. This is preferable to merely tolerating the status quo; defining the role of pharmacists in the management of some STI is a pre-requisite to any structured quality control programme. The Pharmacy Council and the Ghana Pharmaceutical Society should play a key role in the development and implementation of interventions involving training and distribution of guidelines on STI management. These pharmacy bodies will also be key in regulating standards to safeguard the quality of STI management offered by pharmacists.

Involving pharmacists in the diagnosis and treatment of STI may not be the ideal situation, but in Ghana, like many other low-income countries, they do play a critical role in reaching affected individuals by providing accessible, well-stocked, private and to a large extent anonymous and rapid service to communities. They should be acknowledged as professionals who dispense drugs both for common ailments and for more serious ones, and their involvement, on a professional basis, with the medical establishment should be secured for the wider improvement of STI management.

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