

# Training pharmacy workers in recognition, management, and prevention of STDs: district-randomized controlled trial

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**Objectives** To determine the effectiveness of an intervention for pharmacy workers in improving their recognition and management of sexually transmitted disease (STD) syndromes.

**Methods** We randomly selected 14 districts (total population nearly 4 million) from the 24 districts of low socioeconomic status in Lima, Peru. We randomly assigned paired districts to receive training and support for management and prevention of STDs or a control intervention about management of diarrhoea. The STD intervention included interactive luncheon seminars on recognition and management of four STD syndromes (urethral discharge, vaginal discharge, genital ulcers, and pelvic inflammatory disease) and STD/HIV prevention counselling; monthly pharmacy visits by "prevention salespersons" who distributed materials that included "STD/HIV prevention packets" containing information, condoms, and cards given to patients for referral of their sex partners; and workshops for physicians on managing patients with STD syndromes referred from pharmacies. Standardized simulated patients visited pharmacies in intervention and control districts at one, three, and six months after training to assess outcomes.

**Findings** Standardized simulated patients reported significantly better recognition and management (appropriate antimicrobial regimens provided for discharge syndromes and referral to specially trained physicians for genital ulcers or pelvic inflammatory disease) by pharmacy workers of all four STD syndromes. They also reported significantly more frequent recommendations for use of condoms and treatment of partners at pharmacies in intervention districts than in control districts (by "intention-to-train" analyses,  $P \leq 0.05$  for 47/48 primary outcome comparisons).

**Conclusion** Training was feasible and effectively improved pharmacy workers' practices.

**Keywords** Sexually transmitted diseases/prevention and control/diagnosis/drug therapy; Education, Pharmacy; Pharmacists/utilization; Pharmacies/utilization; Physicians; Referral and consultation; Patient simulation; Syndrome; Randomized controlled trials; Peru (*source: MeSH, NLM*).

**Mots clés** Maladies sexuellement transmissibles/prévention et contrôle/diagnostic/chimiothérapie; Enseignement pharmacie; Pharmacien/utilisation; Officine pharmaceutique/utilisation; Médecin; Consultation pour avis expert; Simulation maladie; Syndrome; Essai clinique randomisé; Pérou (*source: MeSH, INSERM*).

**Palabras clave** Enfermedades sexualmente transmisibles/prevenición y control/diagnóstico/quimioterapia; Educación en farmacia; Farmacéuticos/utilización; Farmacias/utilización; Médicos; Remisión y consulta; Simulación de paciente; Síndrome; Ensayos controlados aleatorios; Perú (*fuentes: DeCS, BIREME*).

Bulletin of the World Health Organization 2003;81:806-814

Voir page 812 le résumé en français. En la página 813 figura un resumen en español.

## Introduction

Early recognition and treatment of STDs can reduce transmission and prevent complications and, in some settings, it may reduce HIV transmission (1). In developing countries, patients with symptomatic STDs initially often seek health care in pharmacies (2–9), which has prompted attempts to train pharmacy workers in syndromic management of STDs (10–14).

In Peru, medicines are sold without prescription by pharmacies or boticas (not owned by a pharmacist but licensed to sell pharmaceuticals); we refer to both of these as pharmacies (15).

We previously observed with the use of standardized simulated patients that pharmacy workers in Lima had trouble recognizing STD syndromes (especially in women), usually offered medications not recommended for these syndromes, and seldom referred clients to clinicians or counselled on risk reduction or measures for treatment of partners (15). A didactic educational intervention improved STD and HIV prevention counselling but not recognition or management of STD syndromes (15).

We learned through focus groups that pharmacy workers preferred small interactive group seminars near their workplaces; that incentives (lunch and materials for workers' clients) and

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Ref. No. 02-000802

continuing supportive contact were needed to compete with the pervasive influence and rewards of pharmaceutical salespeople; and that concurrent training of physicians to accept referrals from pharmacies of clients with suspected STDs would make pharmacy-level interventions acceptable to the medical community. These findings, and national Peruvian guidelines on syndromic management of STDs, guided our efforts to develop and evaluate a more effective intervention for pharmacy workers.

## Methods

We selected the 24 districts with the lowest socioeconomic status from the 29 districts of the city of Lima. On the basis of numbers of pharmacies (determined by our own census), location, population size, population density, and literacy rates, we matched the districts into 12 pairs. We randomly chose seven of the 12 pairs with a table of random numbers for the intervention trial. The populations totalled 2.3 million for intervention districts and 1.65 million for control districts. Within each pair, we flipped a coin to select one district to receive the STD intervention and one to serve as a control. Pharmacy workers in control districts received only a one-day seminar on treatment of diarrhoea. One of the seven pairs was selected randomly for a pilot run; one district of the pair received the STD intervention and the other served as a control district. After seven months of experience with this pilot pair, we simultaneously initiated the STD training and diarrhoea seminars in the remaining six pairs.

In the pilot phase, we invited all pharmacy workers from every pharmacy in the intervention district to participate over three months in four 90-minute luncheon seminars on STD/HIV; these were attended by 8–12 pharmacy workers at a restaurant near their work. At each seminar, a pharmacist and midwife team used a seminar syllabus and flipcharts for didactic teaching, which was followed by interactive discussion of practical approaches to be used in pharmacies (Box 1). Participants received certificates upon completion of the course. When all personnel from a pharmacy completed the training, we accredited that pharmacy, included it in a follow-up programme, and provided and periodically restocked merchandise and educational materials

### Box 1. Topics included at seminars

- Recognition of four STD syndromes
  - Male urethral discharge
  - Vaginal discharge
  - Genital ulcer
  - Pelvic inflammatory disease
- National guidelines for syndromic management of male urethral and vaginal discharge syndromes
- Role of physicians in management of STDs, especially:
  - Genital ulcers, pelvic inflammatory disease, and syndromes not responding to therapy
  - Encouragement to refer such patients to physicians who had concurrently received training and joined the STD referral network
- Promotion of use of condoms during commercial or casual sex and treatment of sexual partners, with role-playing in counselling and peer evaluation of role players

for clients. The remaining six intervention districts received three 90-minute luncheon training seminars with content similar to that in the pilot over a two-month period.

We invited all practising physicians within each intervention district, including physicians from community health centres to attend a six-hour workshop on management of STD syndromes. Physicians who completed the training and subsequently received satisfactory evaluations by standardized simulated patients were invited to join a referral network. The referral network included 36 physicians and 22 health centres; these were listed in a directory of certified physicians and health centres that was distributed to certified pharmacies.

The pharmacist and midwife who conducted the STD intervention seminars subsequently made monthly follow-up visits for six months to all certified pharmacies, referral physicians, and health centres within their district. These “prevention salespersons” discussed STD/HIV prevention and provided and replenished materials for the project, including materials for pharmacies and materials for clients (Box 2). Five issues of a newsletter containing information about AIDS and STDs, with profiles of certified trainees, were published during the study and distributed to certified pharmacies in intervention districts.

We recruited and trained 16 medical students and actors as standardized simulated patients to visit pharmacies in intervention and control districts at one, three, and six months after pharmacy workers completed training (15, 16). Each standardized simulated patient presented a previously described sex-specific, scripted scenario that corresponded to one of the four different STD syndromes (15). After each pharmacy visit, they completed a standardized report to evaluate the pharmacy worker’s ability to recognize and discuss the syndrome as a possible STD; adequacy of management (Box 3); and recommendations for condom use with commercial or casual partners and for partner evaluation and treatment. We used these standardized simulated patients to evaluate the four primary outcomes of the study:

### Box 2. Project resource materials

For pharmacies:

- Pocket-size folding cards for pharmacy workers that summarized management of each STD syndrome, with prevention messages for symptomatic clients
- Posters with information similar to the cards
- 32-page manuals about recognition, management, and prevention of and counselling for STD
- Displays and lapel pins stating “I know about STD, ask me”
- White coats with STD logo for pharmacy workers
- Listings of certified referral physicians and clinics

For clients:

- Nearly 20 000 fotonovelas that depicted:
  - Consequences for married couples of inadequate pharmacy-based management of STD
  - Benefits of adequate management in certified pharmacies
  - 100 000 sex-specific pamphlets for clients with information about recognition of STD symptoms and condom use
- Over 50 000 “STD/HIV prevention packets” containing:
  - Information about STD
  - Condoms
  - Recommendations about condom use
  - Partner referral cards
- Over 50 000 referral slips for referral of clients from pharmacies to physicians

**Box 3. Definitions of adequate management**

For urethral discharge

- Whether patient was offered treatments for gonorrhoea and *Chlamydia* that conformed to national guidelines or was referred to physician

For vaginal discharge

- Whether patient was offered treatment with 2 g single oral dose metronidazole or was referred

For genital ulcers and pelvic inflammatory disease

- Whether patient was only referred to a physician

recognition of STD symptoms, adequate management of the syndrome, recommendations for use of condoms, and recommendations for treatment of partners.

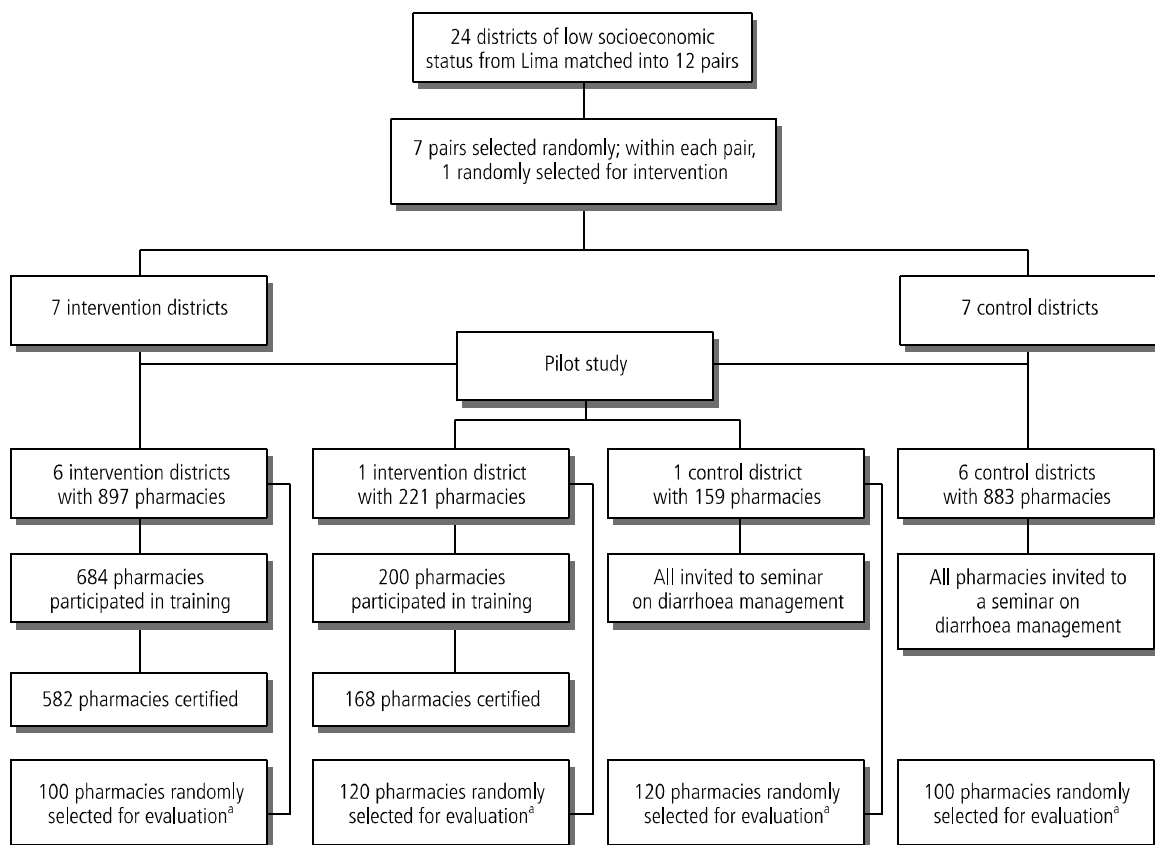
In the pilot study, we randomly selected 120 pharmacies from the intervention district and 120 from the control district for evaluation, and standardized simulated patients visited each pharmacy to present the STD syndromes at one, three, and six months after the luncheon seminar series was completed. For each pharmacy, we used a different standardized simulated patient for each of the four syndromes and for the one-, three-, and six-month evaluations to prevent recognition of standardized simulated patients by pharmacy workers.

From the other six pairs of districts, we randomly chose 100 pharmacies from all intervention districts combined and 100 from all control districts combined, with the number cho-

sen per district proportional to the total number of pharmacies per district (Fig. 1). Different standardized simulated patients visited each pharmacy to present the four syndromes at one, three, and six months, with no pharmacy revisited by the same standardized simulated patient. This represented 2880 separate standardized simulated patient visits when evaluating the pilot study and 2400 visits when evaluating the remaining six pairs of districts.

We took several measures to minimize possible bias of the evaluators. The standardized simulated patients were not informed about the nature or design of the study. Specifically, they were not told that some districts did not receive the intervention, rather they were told we had trained pharmacy workers in all of Lima. We assigned each standardized simulated patient 100 pharmacies to visit (divided between intervention and control districts). As the number of pharmacies chosen per district was proportional to the number of pharmacies within the district, standardized simulated patients visited 4–15 (average, 8) pharmacies per district. We randomly selected a new set of intervention and control pharmacies for each of the one-, three-, and six-month evaluations, so that very few pharmacies were visited twice. In the intervention districts, we included pharmacies that did and did not receive training, as the analysis was an “intent-to-train” analysis. The team of standardized simulated patients had no contact with the training team. We recruited a new team of standardized simulated patients for the six-month evaluation to decrease possible recognition of differences between districts as a result of multiple evaluations at one and

Fig. 1. Trial profile. Random selection of intervention and control pharmacies carried out separately for each evaluation at one, three, and six months after training



<sup>a</sup>Random selection of pharmacies carried out separately for each evaluation

three months. Furthermore, we asked standardized simulated patients to record whether materials related to STD or other health issues were displayed or available at the pharmacies, and we analysed evaluations that excluded pharmacies in which such materials were observed to assess whether recognition of these “clues” biased the standardized simulated patients’ evaluation.

To ensure realistic transactions, standardized simulated patients in all intervention and control districts were allowed up to US\$ 5 per pharmacy visit to buy the drugs offered: purchases averaged US\$ 1–2 (standardized simulated patients often purchased only part of the medications offered, indicating intent to return to purchase the remainder). We donated drugs purchased to a nongovernmental organization.

For the pilot study, we used Fisher’s exact test to evaluate differences in proportions of standardized simulated patients from the intervention and control district for which STD was mentioned as a possibility, adequate management was given, condoms were recommended, and treatment of partners was recommended. This analysis assumes no “community effect” (no intracluster correlation) and may be too liberal (*P*-values too small). We thus extended the study to use multiple intervention and control districts.

We compared the remaining six pairs of intervention and control districts with unconditional logistic regression by using districts as clusters, analysing each time period separately, and using generalized estimating equations to control for intracluster correlation (17). In the few comparisons in which logistic regression could not be applied (because of zeros in one cell of the two-way table), *P*-values were computed by Fisher’s exact test. We used Stata software (version 6.0) for all analyses.

Independent review boards of the University of Washington and the Universidad Peruana Cayetano Heredia approved the protocol.

## Results

Of 1118 pharmacies found in seven districts randomized to the intervention (75–301 per district), 884 (79%) agreed to participate; 750 (84%) of these completed training of all workers and were certified (57–76% of all pharmacies in the seven districts) (Fig. 1). Of the 2223 workers who participated in at least one seminar, 1872 (84.2%) attended all seminars.

During follow-up, 90 certified pharmacies closed; owners of these pharmacies opened 14 new pharmacies. At study end, 671 (89.4%) of the certified pharmacies still actively participated in the programme. New staff hired during the follow-up period usually reported receiving training in STDs from co-workers.

In the pilot study, pharmacy workers in the STD intervention district performed significantly better for all four syndromes throughout the six-month follow-up than those in the control district in discussing STD as a possibility, in adequate management of the syndrome, and in recommending use of condoms and partner treatment (Table 1). Differences between the intervention and control districts were particularly striking for vaginal discharge and pelvic inflammatory disease, because pharmacies in the control district performed so poorly for these syndromes. The seminars recommended referral to a physician only for genital ulcer and pelvic inflammatory disease. The percentage of standardized simulated patients referred at the one-, three- and six-month visits was higher in the intervention than control district for both syndromes. Treatment with drugs effective for urethral or vaginal discharge were offered more often for

genital ulcers and pelvic inflammatory disease at pharmacies in the intervention district, but we classified this as inadequate management (although potentially effective), as it was not advocated in the training seminars.

For the remaining 12 districts, pharmacy workers in the six intervention districts had significantly better adherence ( $P \leq 0.05$ ) to training guidelines for 47 of the 48 primary outcome measures at one, three, and six months, including substantially and significantly ( $P < 0.05$ ) higher rates of discerning and discussing each of the four syndromes as possibly representing STD; of adequate management offered for the syndrome; and of recommendations for condom use (except for pelvic inflammatory disease,  $P = 0.06$ ) and for referral of partners for treatment (Fig. 2). Fisher’s exact test was used to compare intervention and control districts where none of the control district pharmacies adhered to training guidelines (recommended use of condoms for pelvic inflammatory disease at one and three months and vaginal discharge at three months; discussing STD as possible pelvic inflammatory disease at three and six months; and recommending partner treatment for pelvic inflammatory disease at six months). Several outcomes improved over the six months of follow-up, perhaps reflecting ongoing pharmacy visits by prevention salespersons and the effects of the newsletter.

In pharmacies where no intervention materials were on display (most frequent at the one-month evaluation), standardized simulated patients still reported significantly better adherence at intervention pharmacies than control pharmacies for all four primary outcomes combined (Table 2). Standardized simulated patients gave similar evaluations at intervention pharmacies with and without materials observed on display. These findings suggest that potential bias by the presence of such materials did not account for evaluation differences between control and intervention districts.

## Discussion

The pilot study demonstrated the feasibility and acceptability of a training programme for pharmacy workers on STD recognition and management, and on counselling for STD and HIV prevention. Subsequent evaluations in the six pairs of intervention and control districts confirmed significantly better practices in pharmacies in the six intervention districts than in the six control districts; these differences persisted through the six months, with some outcomes improving in intervention districts during the six months. Although nearly all outcome measures favoured the intervention arm, the absolute level of improvement was quite modest for certain outcomes, especially in women. Nonetheless, management for the syndromes improved during follow-up and was judged adequate in 61% of pharmacies in the intervention arm compared with 19% in the control arm after six months for pelvic inflammatory disease (which had the least improvement of the four syndromes).

We did not do pre-intervention assessments because our previous study of a random sample of 360 pharmacies throughout Lima found consistently low rates of recognition and discussions of the etiology of STD syndromes and very infrequent recommendations for condom use or for treatment of partners (15); these were similar to the rates found in the control districts in this study, with frequent offerings of ineffective antimicrobial drugs. Our previous, largely unsuccessful, didactic educational efforts at improving STD management indicated the need for a different approach to changing the practices of pharmacy workers (15).

Table 1. Evaluations by standardized simulated patients of adherence to training guidelines by pharmacy workers in pilot study in one intervention and one control district

Evaluation	Urethral discharge			Genital ulcer			Vaginal discharge			Pelvic inflammatory disease		
	Intervention	Control	P-value <sup>a</sup>	Intervention	Control	P-value <sup>a</sup>	Intervention	Control	P-value <sup>a</sup>	Intervention	Control	P-value <sup>a</sup>
<i>n</i>	120	120		120	120		120	120		120	119	
<b>First (one month)</b>												
Mention STD as possibility	111 (92.5)	86 (71.7)	<0.001	109 (90.8)	75 (62.5)	<0.001	70 (58.3)	45 (37.5)	0.002	75 (62.5)	11 (9.2)	<0.001
Adequate management for syndrome	97 (80.8)	28 (23.3)	<0.001	80 (66.7)	16 (13.3)	<0.001	59 (49.2)	15 (12.5)	<0.001	20 (16.7)	4 (3.4)	0.001
Recommend use of condoms	67 (55.8)	52 (43.3)	0.070	84 (70.0)	14 (11.7)	<0.001	45 (37.5)	0 (0)	<0.001	57 (47.5)	0 (0)	<0.001
Recommend partner treatment	57 (47.5)	10 (8.3)	<0.001	60 (50.0)	6 (5.0)	<0.001	54 (45.0)	22 (18.3)	<0.001	60 (50.0)	6 (5.0)	<0.001
<b>Second (three months)</b>												
Mention STD as possibility	114 (95.0)	63 (52.5)	<0.001	109 (90.8)	62 (51.7)	<0.001	68 (56.7)	6 (5.0)	<0.001	56 (46.7)	6 (5.0)	<0.001
Adequate management for syndrome	92 (76.7)	25 (20.8)	<0.001	65 (54.2)	20 (16.7)	<0.001	81 (67.5)	7 (5.8)	<0.001	60 (50.0)	9 (7.6)	<0.001
Recommend use of condoms	90 (75.0)	17 (14.2)	<0.001	37 (30.8)	8 (6.7)	<0.001	25 (20.8)	2 (1.7)	<0.001	34 (28.3)	0 (0)	<0.001
Recommend partner treatment	66 (55.0)	28 (23.3)	<0.001	14 (11.7)	6 (5.0)	0.100	28 (23.3)	6 (5.0)	<0.001	53 (44.2)	0 (0)	<0.001
<b>Third (six months)</b>												
Mention STD as possibility	114 (95.0)	98 (81.7)	0.002	114 (95.0)	70 (58.3)	<0.001	46 (38.3)	26 (21.7)	0.007	50 (41.7)	4 (3.4)	<0.001
Adequate management for syndrome	99 (82.5)	30 (25.0)	<0.001	81 (67.5)	25 (20.8)	<0.001	48 (40.0)	24 (20.0)	0.001	48 (40.0)	8 (6.7)	<0.001
Recommend use of condoms	103 (85.8)	22 (18.3)	<0.001	66 (55.0)	3 (2.5)	<0.001	25 (20.8)	3 (2.5)	<0.001	32 (26.7)	1 (0.8)	<0.001
Recommend partner treatment	101 (84.2)	2 (1.7)	<0.001	52 (43.3)	1 (0.8)	<0.001	30 (25.0)	12 (10.0)	0.004	38 (31.7)	5 (4.2)	<0.001

<sup>a</sup> Estimated by Fisher's exact test for all comparisons.

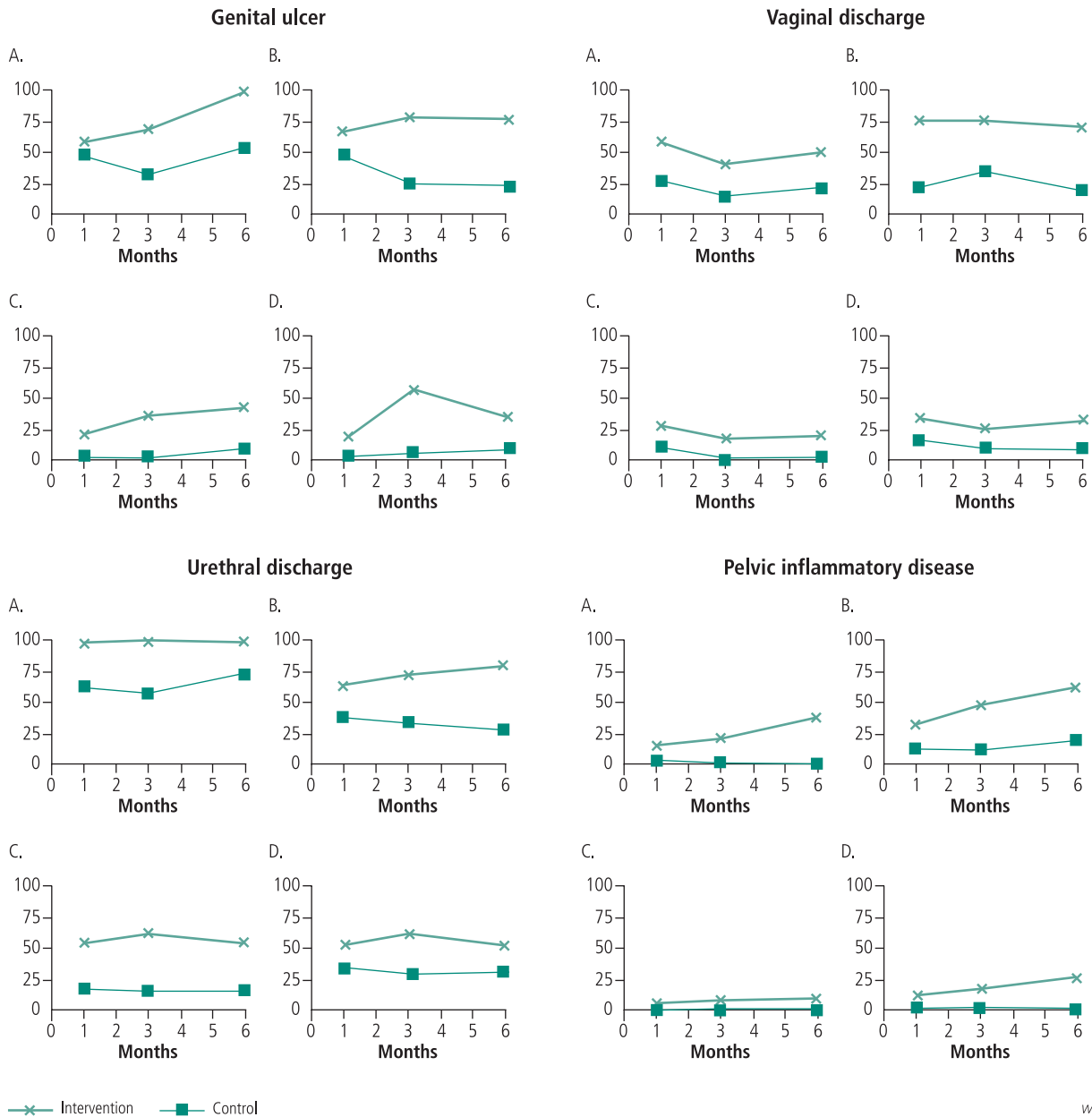
Strengths of our study include the census of pharmacies and boticas in all districts of Lima city, the pilot study, and random selection of districts for further randomization to intervention and control groups. We included the brief diarrhoea management intervention as a benefit for pharmacies assigned to the control group; this would not have removed a non-specific "intervention effect" from the study. We randomized districts rather than pharmacies to minimize "contamination," (i.e. diffusion of the intervention from intervention to control pharmacies). Standardized simulated patients were blinded to the nature of the training, the randomization procedure, and

the status of districts or pharmacies as intervention or controls. Their ability to purchase medications helped simulate realistic transactions. The high proportion of pharmacies that accepted and completed training made "intent-to-train" analyses possible. The intervention consisted of interactive workshops, employed national guidelines, and gave out ongoing structural support materials — all features previously found more effective in changing health care practices than didactic lectures (18–23).

An alternative approach might promote physician training alone (for example, through continuing medical education), prevent dispensing of antibiotics by pharmacies without prescription,

Fig. 2. Evaluation of pharmacy workers by standardized simulated patients at one, three, and six months after training for four syndromes at 100 pharmacies from six intervention districts and 100 pharmacies from six control districts.

A. Recognition as a sexually transmitted disease; B. Adequate management; C. Recommend use of condoms; D. Recommend treatment of partner



and provide rapid access for symptomatic persons to low-cost, high-quality care in the private and/or public medical sectors. We chose an intermediate, and perhaps more pragmatic and balanced approach, in which pharmacy workers were trained to recognize STD syndromes, treat those most easily managed syndromically, and refer patients for whom examination and, ideally, laboratory testing are most important to a network of trained clinicians.

A recent Cochrane Review identified four published population-based interventions for preventing STD/HIV infection, including our previous study and another that targeted nurses in primary care clinic in Hlabisa, South Africa and provided STD syndromic management packets similar to those we used in Lima pharmacies but that also contained antimicrobials (24, 25). We elected not to include antimicrobials in packets we distributed, as this approach had previously generated resis-

tance from physicians in West Africa (26). We encountered no resistance in Lima when we used packets without antimicrobials and a referral network of physicians.

In some industrialized countries, pharmacies now provide emergency hormonal contraceptives (27–30), and some pharmacy schools provide training in interpersonal communication and counselling skills (31). Some studies have called for stronger links between pharmacies and clinicians (32, 33), and some specifically have recognized a need for closer liaison between pharmacies and specialist physicians about the management of STDs (34).

### Conclusion

In Latin America, opportunities exist for training and empowering pharmacy workers in management of STD syndromes, for strengthening links between pharmacies and clinical specialists

Table 2. Evaluations by standardized simulated patients of pharmacies in intervention and control districts, excluding pharmacies where intervention materials on display were seen by standardized simulated patient

Evaluation	Intervention	Control	P-value <sup>a</sup>
<b>First (one month)</b>			
<i>n</i>	157	372	
Mention STD as possibility	75	135	0.07
Adequate management for syndrome	73	109	0.001
Recommend use of condoms	35	29	<0.001
Recommend partner treatment	39	50	0.007
<b>Second (three months)</b>			
<i>n</i>	42	400	
Mention STD as possibility	17	100	0.029
Adequate management for syndrome	25	100	<0.001
Recommend use of condoms	5	17	0.001
Recommend partner treatment	15	46	<0.001
<b>Third (six months)</b>			
<i>n</i>	42	395	
Mention STD as possibility	29	142	<0.001
Adequate management for syndrome	22	81	0.003
Recommend use of condoms	9	27	0.012
Recommend partner treatment	15	46	0.004

<sup>a</sup> All P-values estimated by unconditional logistic regression.

in STD, and for a programme of training and support to influence practices of pharmacy workers. The International Pharmaceutical Federation represents a useful resource on the emerging role of pharmacies in community health (<http://www.fip.org/>). A number of issues remain unproven. Firstly, how well STD syndromes presented by actual clients correlate with presence of STDs (the positive predictive values of the four STD syndromes for specific urethral, vaginal, genital ulcer infections, and pelvic inflammatory disease in various developing country settings have been extensively reviewed elsewhere (35)) is unknown. The best way to strengthen efforts by pharmacy workers to inform and counsel clients who practise high-risk sex on the use of condoms and to motivate partner treatment and whether this leads to corresponding intentions and actions of clients is unclear. The impact that similar approaches will have in lowering prevalence and incidence of STD and HIV at the population level is unproven. An encouraging finding is that the randomized trial of strengthened syndromic management of STD at the primary care level, coupled with a related information, education, and

communication strategy in Masaka, Uganda, did significantly reduce the incidence of gonorrhoea and syphilis (36), which supports earlier data from a similar trial in Mwanza, United Republic of Tanzania, which reported reduced rates of urethritis in men and of syphilis (1). ■

#### Acknowledgements

The authors thank Dr Jorge Sanchez for support, Dr Jackie Gardner for advice, and the pharmacy owners and workers and the trainees who participated in the study.

**Funding:** World AIDS Foundation Grant (WAF 155(97-060)); NIH Fogarty International Center AIDS Research and Training Program (T22TW00001); National Institute of Mental Health Supplement D43TW00007; the University of Washington Center for AIDS Research (AI27757); and STD Cooperative Research Center (AI31448).

**Conflicts of interest:** none declared.

## Résumé

### Formation du personnel des pharmacies à la reconnaissance, la prise en charge et la prévention des MST : essai contrôlé randomisé dans les districts

**Objectif** Etablir l'efficacité d'une intervention à l'intention du personnel des pharmacies pour améliorer la reconnaissance et la prise en charge des syndromes liés aux maladies sexuellement transmissibles (MST).

**Méthodes** Sur les 24 districts socio-économiquement défavorisés que compte Lima (Pérou), nous en avons sélectionné 14 au hasard (où vivent au total près de 4 millions d'habitants). Nous les avons associés par paires aléatoires, un des districts bénéficiant d'une formation et d'un appui à la prise en charge et à la prévention des MST et l'autre d'une intervention sur la prise en charge des maladies diarrhéiques. L'intervention sur les MST comportait des

déjeuners-séminaires interactifs sur la reconnaissance et la prise en charge de quatre syndromes liés aux MST (écoulement urétral, écoulement vaginal, ulcérations génitales, infection génitale haute) et sur les conseils pour la prévention des MST et du VIH ; des visites mensuelles dans les pharmacies de « représentants de la prévention » qui distribuaient du matériel d'information, notamment des « enveloppes de prévention MST/VIH » contenant des informations, des préservatifs et des fiches à remettre par les patients à leurs partenaires pour les orienter vers les soins ; des ateliers destinés aux médecins sur la prise en charge des patients adressés par les pharmacies pour des syndromes liés aux MST. De faux patients

simulant des syndromes standardisés se sont rendus dans les pharmacies ciblées par l'intervention et dans les districts témoins un mois, trois mois et six mois après la formation pour évaluer les résultats.

**Résultats** Les faux patients ont signalé une amélioration nette de la reconnaissance et de la prise en charge des quatre syndromes par le personnel des pharmacies (traitements antimicrobiens fournis qui convenaient pour les syndromes d'écoulement, orientation vers un médecin spécialement formé

pour les ulcérations génitales ou les infections génitales hautes). Ils ont également rapporté avoir reçu plus fréquemment, dans les pharmacies des districts couverts par l'intervention par rapport aux districts témoins, des conseils d'utiliser des préservatifs ou de faire traiter leurs partenaires (analyse « intention de formation »,  $p \leq 0,05$  pour 47/48 comparaisons des résultats primaires).

**Conclusion** La formation est possible et elle a effectivement amélioré les pratiques en pharmacie.

## Resumen

### Entrenamiento de trabajadores de farmacia en el reconocimiento, manejo y prevención de las ETS: estudio controlado, aleatorizado por distritos

**Objetivo** Determinar la eficacia de una intervención destinada a mejorar el reconocimiento y manejo de los síndromes asociados a las enfermedades de transmisión sexual (ETS) por parte de los trabajadores de farmacia.

**Métodos** Se seleccionaron aleatoriamente 14 de los 24 distritos de Lima, Perú, con bajo nivel socioeconómico. La población total de los 14 distritos seleccionados era de cerca de 4 millones. Los distritos fueron apareados y asignados aleatoriamente a una intervención que proporcionó entrenamiento y apoyo en el manejo y prevención de las ETS (distritos I) o a una intervención de control relacionada con el tratamiento de la diarrea (distritos C). La primera incluyó: seminarios interactivos sobre el reconocimiento y manejo de cuatro síndromes de las ETS (descarga uretral, flujo vaginal, úlceras genitales y enfermedad inflamatoria pélvica) y la consejería para la prevención de las ETS y la infección por VIH; «visitadores de la prevención» que visitaron mensualmente las farmacias para distribuir material que incluía «paquetes informativos sobre la prevención de las ETS/VIH», condones y tarjetas para que los pacientes enviaran a

sus parejas sexuales a la consulta; y talleres para los médicos sobre cómo tratar a los pacientes enviados por las farmacias con síndromes de las ETS. Para evaluar los resultados se utilizaron pacientes simulados con síndromes estandarizados que acudieron a las farmacias de los distritos C e I uno, tres y seis meses después del periodo de entrenamiento.

**Resultados** La evaluación con pacientes simulados mostró un significativo mejor reconocimiento y manejo (uso apropiado de antimicrobianos para descarga uretral y flujo vaginal, y referencia a médicos entrenados para los casos de úlceras genitales y enfermedad pélvica inflamatoria) por parte de los trabajadores de farmacia de los distritos de intervención para los 4 síndromes de ETS. Asimismo, se encontró que las recomendaciones sobre el uso de condones y el tratamiento de las parejas fue más frecuente en las farmacias de los distritos I que en las de los distritos C ( $P \leq 0,05$  en 47 de las 48 comparaciones de los resultados en los análisis por "intención de entrenar").

**Conclusión** El entrenamiento fue factible y mejoró efectivamente las prácticas de los trabajadores de farmacia.

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