Reduction of client waiting time using task shifting in an anti-retroviral clinic at Specialist Hospital Bauchi, Nigeria

Nisser Ali Umar,[1,2] Moses John Hajara,[1] Mohammed Khalifa[3]

[1]Bauchi State Agency for the control of HIV/AIDS, Tuberculosis and Malaria, Bauchi, Nigeria
[2]Faculty of Medicine, Health Policy and Practice, University of East Anglia, Norwich, UK
[3]London School of Hygiene and Tropical Medicine, University of London, UK

Abstract

Aiming to assess the impact of the intervention in reducing the patients' waiting time in the clinic, two surveys were conducted before and after task shifting intervention in an anti-retroviral (ARV) clinic at the Specialist Hospital, Bauchi, Nigeria in November 2008 and April 2009, respectively. Before the task shifting, six nurses from the clinic were trained on integrated management of adolescent and adult illness, as well as on the principle and guidelines for the anti-retroviral therapy, after which their schedule in the clinic was broadened to include seeing HIV patients presenting for routine refill and follow-up visits. In this study, fifty-six and sixty patients, respectively out of 186 and 202 who attended the clinic on the days of the pre- and post-intervention surveys, were randomly sampled. Data on patients' sex, age and marital status, whether patient a first timer or follow up visitor and the time spent in the clinic on that day as well as the number and composition of staff and equipment in the clinic was collected. The difference in waiting time spent between the first group before task shifting and second group after task shifting was statistically analyzed and significance tested using unpaired t-test. There was a reduction in the average waiting time for patients attending the clinic from 6.48 h before task shifting to 4.35 h after task shifting. The difference of mean was -2.13 h, with 95% CI: -2.44:-1.82 hours and the test of significance by unpaired t-test P<0.0001.

Introduction

Sub-Saharan Africa bears the largest burden of diseases per unit population,[1] and incidentally its the region in the world with the most pronounced crisis in human resources for health: 36 of the 57 countries that now face health worker shortages are in Africa.[2] Obviously, the situation becomes worst with persistence of HIV pandemic across the region.[3]

Much interest has recently been paid to how to streamline HIV care, both to offer high-quality care to patients and expand access to care.[4-6] One response to this shortage has been the reassignment of clinical roles by shifting tasks to different cadres of health workers, for instance nurses may become involved in prescribing drugs to particular group of patients,[2,7] counselors may get trained to test for HIV or patients may be engaged to take over some elements of their own care.[4,5]

The potential for task shifting in HIV care was elaborated by the World Health Organization's 2004 publication of Integrated Management of Adult and Adolescent Illness guidelines, which recommended nurses and clinical aids be trained to provide primary care for HIV.[8] In 2008, this potential was expanded and formalized by the WHO/UNAIDS/PEPFAR guidelines for the implementation of task shifting[2] as an immediate way to address staff shortages while delivering good quality care. The objective of task shifting is to mainstream HIV care by allocation responsibility across cadres of staff in facilities based patients' needs and the capacities of the staff while maintaining quality standards for patients and increasing access to interventions.[2,8-12]

Bauchi state is located in the north-eastern geopolitical region of Nigeria in West Africa, with a population of about 4.6 million people[13] and estimated HIV prevalence rate of about 3.8%,[14,15] which means about 175,000 people with HIV in the state. There are 7 anti-retroviral drugs treatment (ART) clinics in the State.

In these clinics, the practice is for doctors' initiate and monitor ART, while nurses provide adherence counseling for patients starting the ART regiment and those already enrolled when necessary.

It's observed that patients spent long time waiting to receive services in the clinic due to the high burden of patients per doctor. This observation could affect the health seeking behavior of patients in variety of ways.[16] This situation therefore makes the idea of task shifting not only interesting but a necessity.

Materials and Methods

Aiming to assess the impact of the intervention in reducing the patients' waiting time in the clinic, two surveys were conducted before and after task shifting intervention in an ARV clinic at the Specialist Hospital, Bauchi, Nigeria in November 2008 and April 2009, respectively.

In this study, we randomly selected and sampled 56 and 60 patients, respectively out of 186 and 202 who attended the clinic on the days of the pre- and post-intervention surveys. Data on patients' sex, age and marital status, whether patient a first timer or follow up visitor and the time spent in the clinic on that day, as well as the number and composition of staff and equipment in the clinic was collected. The difference in waiting time spent between the first group before task shifting and second group after task shifting was statistically analyzed and significance tested using unpaired t-test. The number and quality of staff and equipment in the study have been controlled by ensuring that the same staff and equipment were available during both the pre- and post-intervention surveys. Ethical approval for this research was sought and granted by the appropriate ethical approval committee.

Setting

This study was conducted in Specialist Hospital, which is one of the ART sites in Bauchi State, Nigeria. About 4800 HIV+ patients are enrolled for ARV treatment in the facility as at 30 October, 2009. There are usually about 3-4 doctors, about 7-8 nurses, and about 3-4 support staff in the clinic, at any clinic day. The clinic attends to about 200 patients daily.

Patients *waiting time* before task shifting, *t1*

Fifty six patients were randomly selected from the pool of patients lined up to receive services at the clinic on 5 November 2008. Participants were informed on the study and their consents were sought and documented.

The time these patients came and joint the queue was asked and recoded (*t1a*).

Correspondence: Nisser A. Umar. Planning, Research and Statistics Directotate, Bauchi State Agency for the control of HIV/AIDS, Tuberculosis and Malaria (BACATMA), 4 Yandoka Road, Bauchi, Nigeria.
E-mail: nisser.au@usa.net

Key words: task shifting, anti-retroviral clinic, Nigeria.

Received for publication: 6 September 2010.
Accepted for publication: 25 October 2010.

Journal of Public Health in Africa 2010; 1:e8
doi:10.4081/jphia.2010.e8

Patients were then tagged and informed that at the end of the clinic session, he or she will be given a T-shirt as an incentive for participation in this study.

Patients were subsequently tracked and immediately after been attended to, time was recorded (*t1b*).

The total time spent during visit (waiting time) is equal to: *t1= t1b – t1a*.

Task shifting

A two weeks training was organized and sponsored by the Bauchi State Agency for the control of HI, Tuberculosis and Malaria (BACATMA) for the ART clinic nurses (6 nurses from the Study clinic) on the Integrated Management of Adolescent and Adult illness (IMAI), and during this training, they were introduced to the HIV/AIDS National ART principles and guidelines. After this training, the schedule for nurses in the ART clinic was broadened from providing only adherence counseling to include seeing patients on follow-up visits without any clinical complaint, normally coming in for refill with CD4 count of 350 or higher. All new patients and those with complaints or a CD4 count less than 350 were followed by doctors. A triage nurse, who is also the clinic manager, screens patients to filter based on patients' weight, other vital signs, the CD 4 count and whether patient is coming in with any complaint or not. Patients are subsequently asked to join the appropriate queue.

Patients *waiting time* after task shifting, *t2*

Sixty patients (30 from nurses queue and 30 from doctors queue) were randomly selected from the pool of patients lined up to receive services at the clinic on April 2, 2009. Participants got informed on the study and their consents were sought and documented. The time these patients came and joint the queue was asked and recorded (*t2a*). Patients were then tagged and informed that at the end of the clinic session, he or she will be given a T- shirt as an incentive for participation in this study. Patients were subsequently tracked and immediately after been attended to, time was recorded (*t2b*). The total time spent during visit (waiting time) is equal to: *t2= t2b - t2a*.

Analysis

The average 'waiting time' for patients before (*t1*) and after task shifting (*t2*) was calculated. The difference between these values was calculated, and the statistical significance of this difference was tested by unpaired t-test. ScienceDirect statistics software was used for this analysis.

Results

Pre-intervention survey

About 16% (9) of the patients were first timers, 84% (47) follow up patients, 45% (25) were female and 55% (31) male, 36% (20) were married, 13% (7) were either divorced or separated, and 17% (10) were widows or widowers, and 34% (19) were single.

Patient's average waiting time was estimated at about 6.48 h (range 2.50-9.9 h, SD 1.87).

Post intervention survey

About 18% (11) of the patients were first timer and 82% (49) follow up patients, 50% (30) were female and 50% (30) male, 45% (27) were married, 10% (6) were either divorced or separated, 10% (6) were either widows or widowers and 35% (21) were single. Patient's average waiting time was estimated at about 4.35 h (range 2.50-6.0 h, SD 1.23) (Table 1).

Impact of the intervention

There was a reduction in the average waiting time for patients attending the clinic from 6.48 h before task shifting to 4.35 h after task shifting. The difference of mean was -2.13 h with 95% CI: -2.44:-1.82 h and the test of significance by unpaired t-test gave a P<0.0001.

Table 1. Comparison of the pre- and post-intervention sample population and observed waiting time.

	Pre-task shifting survey	Post-task shifting survey
Study population (n)	56	60
Total patient population (N)	186	202
First timers % (number)	16% (9)	18% (11 patients)
Follow ups patient % (number)	84% (47)	82% (49 patients)
Female % (number)	5% (25)	50 % (30 patients)
Male % (number)	55% (31)	50% (30 patients)
Married % (number)	36% (20)	45% (27)
Divorced or separated % (number)	13% (7)	10% (6)
Either widows or widowers % (number)	17% (10)	10% (6)
Single patients % (number)	34% (19) 34% (19)	35% (21)
Average waiting time % (number)	6.48 h (2.50-9.9 h, SD 1.87 h)	4.35 h (2.50-6.0 h, SD 1.23 h)

Discussion

The main findings in this study is a 2.13 h (which is about 2 h, 8 min) 'task shifting' attributable reduction in the 'waiting time' for HIV patients attending ARV clinic, and a P<0.0001 suggesting a strong statistical significance for this finding.

These findings means task shifting by redistribution of responsibilities from doctors to nurses without necessarily compromising quality of care could be time and resources saving for both patients and staff.

These results add evidence to the calls for adoption of task shifting towards a nurse-centered HIV care rather than the popular physician centered model as an effective approach to alleviate the severe physician shortages that currently hinders HIV treatment scale-up in many resource limited settings.[4,10,17,18]

Some earlier studies reported the potentials of task shifting as not only cost effective but a cost saving approach to achieve universal access to care by HIV patients.[6,7,10,19,20]

The potential confounders in this study are social and individual factors, such as the time spent by some patients discussing *non relevant* issues with the attending, thereby prolonging consultation time for him/herself and others, and also bias by the attending, been conscious of the study taking place.

Conclusions

Task shifting is an effective approach for addressing shortages of doctors in HIV treatment settings. It offers opportunity for quality care to more patients than the popular physician-centered model of ARV treatment. However, the main challenge is in ensuring proper training for the nurses before stating the new task.

References

1. WHO. Disease and injury regional estimates for 2004. Home page address: http://www.who.int/healthinfo/en/
2. WHO/UNAIDS/PEPFAR. Task Shifting. Global Recommendations and Guidelines. Home page address: http://www.who.int/workforcealliance/en/

3. Levin BR, Bull JJ, Stewart FM. The intrinsic rate of increase of HIV/AIDS: epidemiologic and evolutionary implications. Math Biosci 1996:132:69-96.
4. Callaghan M, Ford N, Schneider H. A systematic review of task- shifting for HIV treatment and care in Africa. Hum Resour Health 2010;8:8.
5. Sanjana P, Torpey K, Schwarzwalder A, et al. Task-shifting HIV counselling and testing services in Zambia: the role of lay counsellors. Hum Resour Health 2009;7:44.
6. Babigumira JB, Castelnuovo B, Lamorde M, et al. Potential impact of task-shifting on costs of antiretroviral therapy and physician supply in Uganda. BMC Health Serv Res 2009;9:192.
7. McPake B, Mensah K. Task shifting in health care in resource-poor countries. Lancet 2008;372:870-1.
8. WHO. Integrated Management of Adolescent and Adult Illness. 2004. Home page address: http://www.who.int/3by5/publications/documents/imai/en/
9. Selke HM, Kimaiyo S, Sidle JE, et al. Task-Shifting of Antiretroviral Delivery From Health Care Workers to Persons Living With HIV/AIDS: Clinical Outcomes of a Community-Based Program in Kenya. J Acquir Immune Defic Syndr 2010;55:483-90.
10. Lehmann U, Van Damme W, Barten F, Sanders D. Task shifting: the answer to the human resources crisis in Africa? Hum Resour Health 2009;7:49.
11. Berer M. Task-shifting: exposing the cracks in public health systems. Reprod Health Matters 2009;17:4-8.
12. Morris MB, Chapula BT, Chi BH, et al. Use of task-shifting to rapidly scale-up HIV treatment services: experiences from Lusaka, Zambia. BMC Health Serv Res 2009;9:5.
13. National Population Commission. 2006 Population Census Report. Abuja, Nigeria.
14. Federal Ministry of Health. 2005 National HIV/Syphilis Sero-Prevalence Sentinel Survey among Pregnant Women Attending Antenatal Clinics in Nigeria. Technical Report National AIDS/STDs Control Programme.
15. National Population Commission. Nigeria Demographic and Health Survey 2003. ORC Macro Publ., Calverton, MD, USA.
16. Prasad G. Urban Health in Uttar Pradesh: Challenges and Opportunities. Proc. of 2009 Workshop on Maternal, Neonatal and Child Health Scenario in the Slums of Meerut, Uttar Pradesh, New Delhi, India.
17. Price J, Binagwaho A. From medical rationing to rationalizing the use of human resources for AIDS care and treatment in Africa: a case for task shifting. Dev World Bioeth 2010;10:99-103.
18. Shumbusho F, van Griensven J, Lowrance D, et al. Task shifting for scale-up of HIV care: evaluation of nurse-centered antiretroviral treatment at rural health centers in Rwanda. PLoS Med 2009;6:e1000163.
19. Campbell C, Scott K. Retreat from Alma Ata? The WHO's report on Task Shifting to community health workers for AIDS care in poor countries. Glob Public Health 2009;13:1-14.
20. Zachariah R, Ford N, Philips M, et al. Task shifting in HIV/AIDS: opportunities, challenges and proposed actions for sub-Saharan Africa. Trans R Soc Trop Med Hyg 2009;103:549-58.