

The performance and impact of the Patient Centred TB Treatment (PCT) approach under Programmatic Conditions in the United Republic of Tanzania

Abdallah Mkopi¹, Nyagosya Range², Saidi Egwaga³, Fred Lwilla¹, Alexander Schulze⁵, Eveline Geubbels¹, Frank van Leth⁴

¹Ifakara Health Institute, Tanzania, ²National National Institute for Medical Research, Tanzania, ³National Tuberculosis and Leprosy Program, Tanzania; ⁴KNCV Tuberculosis Foundation, The Netherlands, ⁵Novartis Foundation for Sustainable Development, Switzerland.

Introduction

- Tanzania is among the 22 high burden TB countries in the world and the TB situation has worsened with the advent of the Human Immunodeficiency Virus (HIV) epidemic.
- The annual number of reported TB cases has increased six-fold from 11,753 in 1983 to 63,364 in 2008.
- The DOT coverage in the country is 100% since 1996. TB diagnosis and treatment are free of charge for all patients at private and public health facilities.
- In 2006, the National TB and Leprosy Programme (NTLP) of Tanzania changed first-line TB treatment from a 8-month to a 6-month regimen, containing rifampicin throughout in a fixed dose combination tablet. To maintain treatment observation at least 3 times per week throughout this period, as is recommended by WHO, places a high burden on the patient and the health system

- There was an urgent need to test the concept of delegating treatment observation outside the health facility under routine programmatic conditions. After a pilot, in 2006 the Patient Centred Treatment (PCT) approach for TB patients was scaled up.
- The PCT approach aims to empower patients by giving them a choice where they take their daily dose (at home or at the health facility) and who supervises them (a person of their own choice in their community or family or a health worker). The PCT approach enables patients to be observed during whole period of TB treatment.



Objectives

To generate evidence, under programmatic conditions, on:

- The effect of PCT approach on TB treatment outcome
- The operational issues of implementation of the PCT approach as perceived by patients, their supporters and health workers.

Methodology

- A cohort analysis in 2006 for patient outcomes comparing patient outcomes before and after introduction of PCT in the three PCT pilot districts, i.e. Arusha Municipality, Kahama and Mufindi.
- A cross-sectional survey for operational aspect of PCT in the same three districts in July 2007, using semi-structured questionnaires for interviews with patients, treatment supporters and health workers.

Results: TB treatment outcome*

- In the PCT cohort there were 1208 patients and 1417 were included in the historic cohort.
- The PCT approach showed similar cure rates (64.5% vs 60.9%) and better treatment success rates (82.2% vs 69.7%) compared to daily health facility DOT.
- There were no specific characteristics of treatment supporters associated with better treatment outcome.

* Saidi Egwaga, Abdallah Mkopi, Nyagosya Range, Vera Haag-Arbenz, Amuri Baraka, Penny Grewal, Frank Cobelens, Hassan Mshinda, Fred Lwilla and Frank van Leth. *Patient-centred tuberculosis treatment delivery under programmatic conditions in Tanzania: a cohort study. BMC Medicine 2009; 7:80.*

Treatment outcomes in historic and PCT cohorts

	Historic	PCT	RR†	95% CI	P-value
Smear-positive patients	n = 548*	n = 484*			
Smear conversion	409 (74.6)	388 (80.2)	1.07	1.01 -- 1.15	0.037
Cure	334 (60.9)	312 (64.5)	1.06	0.96 -- 1.16	0.247
Success	382 (69.7)	398 (82.2)	1.18	1.10 -- 1.26	<0.001
Death	92 (16.8)	59 (12.2)	0.73	0.54 -- 0.98	0.042
Default	28 (5.1)	13 (2.7)	0.53	0.28 -- 0.99	0.055
Transfer out	41 (7.5)	14 (2.9)	0.39	0.22 -- 0.68	0.001
Fail	2 (0.4)	0			
Missing outcome	3 (0.6)	0			
All patients	n = 1417*	n = 1208*			
Success	1015 (71.6)	954 (79.0)	1.10	1.05 -- 1.15	<0.001
Death	249 (17.6)	168 (13.9)	0.79	0.66 -- 0.95	0.012
Default	61 (4.3)	40 (3.3)	0.77	0.52 -- 1.14	0.222
Transfer out	80 (5.7)	41 (3.4)	0.60	0.42 -- 0.86	0.007
Fail	2 (0.1)	0			
Missing outcome	10 (0.7)	4 (0.3)			

*All data are n (%).

† Relative risk comparing PCT cohort with historic cohort. CI, confidence interval.

Results: Operational aspects of PCT



- A total of 45 health facilities were visited in three study districts where 127 TB patients, 107 treatment supporters and 70 health workers were interviewed.

- Overall, 93.7% (119/127) of all patients received home-based DOT.
- Of all interviewed TB patients, 74.8% (95/127) were given a choice with regard to the place of treatment, while 25.2% (32/127) were told to do home-based DOT or health facility-based DOT.
- Although 96% (103/107) of interviewed treatment supporters reported they had been informed about their responsibilities, only half (48.6%; 52/107) were told that they must make sure that TB patient swallows drugs, even fewer were instructed to provide a balanced diet to the TB patient (39.3%; 42/107) and to fill out the TB patients' treatment card after they have witnessed their patient swallow drugs (24.3%; 26/107).
- The majority of health workers (68.6%; 48/70) mentioned counting empty blisters as means of understanding whether home-based patients swallowed TB drugs.
- The majority of patients (74%; 94/127) and health workers (80%; 56/70) explicitly expressed satisfaction with the PCT program.

Conclusion

- The cure rates under the PCT strategy are as high as before introduction.
- The percentage of successful treatment outcomes increased under the PCT strategy and unfavourable outcomes diminished.
- The majority of patients interviewed were given the choice between home-based and facility-based DOT, however instructions given to treatment supporters were not complete.
- Even higher cure rates might be possible if instructions to treatment supporters and supervision were improved, e.g. through re-training and supportive supervision of health personnel.

Outlook

- An ongoing patient adherence study will provide evidence with regard to whether newly diagnosed home-based DOT patients under the PCT strategy actually take the treatment.
- Further research should estimate the cost effectiveness of the PCT program, and monitor the long-term treatment outcomes and TB drug resistance patterns under the PCT strategy.