

Innovations in access to TB and HIV/AIDS care in sub-Saharan Africa: dynamic engagement of the private sector

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A village of 5000 people in Africa will never justify the building of a new tuberculosis (TB) clinic. In Kenya, such a village will produce 25 new cases of TB each year, not all of whom will seek care. The costs of bricks and mortar, equipment, drugs and support make serving these people virtually impossible within government health care systems. As the World Health Organization (WHO) takes up the challenge of human resource needs for human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS), we propose an alternative for these 25 patients, and for the others in the village who are ill with opportunistic infections from HIV or with full-blown AIDS. We know, from demographic and health survey (DHS) data and other sources, that these people are likely to be getting care from a local private provider, if they get care at all. Our proposal is for a system to utilise this existing pool of human resources in health. Working with the private sector to achieve public health goals is both possible and pragmatic.

It is possible to improve service quality through using a well designed system for training, support, and both managerial and clinical supervision, suited to African conditions, and incorporating appropriate provider incentives. With the knowledge from franchise experience in services, retail and health systems in both OECD and developing countries, we believe that diagnosis and treatment for TB, HIV and AIDS can be affordably added to the package of care already being offered by many medical providers. For the villager without available quality care, the resident of urban slums not served by the national health programmes, and the many people who choose to be treated in the private sector because of expected better care, faster service and guaranteed anonymity, we propose a system of franchised private providers. This would assure quality and access to those for whom government providers are out of reach or not desired.

Our own financial analysis is supported by the evidence from existing health franchises and economic evaluations of pilot private sector TB treatment programmes. This makes us confident that, in many places, these services can be provided for significantly less cost than would be required were government programmes to be expanded and adjusted in order to serve the same populations (McBride and Ahmed 2001; Floyd unpub).

The private sector, TB and HIV/AIDS

Private expenditures make up 83% of total health care expenditures in Indonesia, 53% in Kenya and more than 70% of health care services in India (Bhat 1996; Marzolf 2002; Mudur 2003). In Vietnam, 60% of health consultations are made in the private sector, 80% in Pakistan and similar numbers are estimated for most developing countries in sub-Saharan Africa (SSA) and Asia (Hanson and Berman 1998; Ha et al 2002). In SSA, private payments to private medical providers make up 35%–70% of total health expenditure. Although this is partly the result of limited public sector coverage, patient preferences for the private sector are a significant determinant of health-seeking behaviour. Other factors include easier access, lower cost, perceived quality advantages and assurances of privacy (Fabricant et al 1999; Lonroth et al 2001).

Private providers play a particularly important role among the poor, who are more likely to seek nonformal care and spend more of their income on health care than the wealthy (Fabricant et al 1999; Grant and Grant 2003). The poor are also highly sensitive to opportunity costs in accessing care, often biasing care-seeking away from the public sector due to the relative ubiquity of private providers (Demery et al 1995 unpub, cited in Castro et al 2000). The private sector may be attractive to patients, but its quality advantages in SSA are uncertain, particularly for diseases requiring long-term treatment (Somse et al 2000; Schneider et al 2001; Chabikuli et al 2002). Private sector care for TB is associated with a 9–10-week delay in the start of treatment. The implications of this are important because the effects are society-wide (Needham et al 2001). Unregulated and variable use of antiretroviral therapy and monotherapy treatments for TB among private providers in Africa have led to fears of rapid increases in multidrug resistant strains of both diseases (Brugha 2003).

Approximately 36 million people are infected with HIV today, 70% of them in SSA. Of the 24 countries in the world with HIV prevalence rates above 5%, 23 are in SSA. The HIV

infection rate is climbing in this area of the world, fueling the infection rates, not only of opportunistic diseases, but also of TB. Thirty-seven percent of HIV-positive people in SSA are co-infected with *Mycobacterium tuberculosis*. In some countries in SSA, up to 70% of patients with active TB are co-infected with HIV (WHO 2003b).

Since 1994, Directly Observed Treatment Strategy (DOTS)¹ has been implemented in 155 countries around the world, with significant successes in improving rates of TB detection and treatment. However, in 18 of the 22 countries with high TB rates, the TB detection rate has slowed or declined. Based on current trends, the global detection rate is projected to flatten at 40%–50%, far below the targeted 70% (WHO 2003a). A central reason for the slowing progress is lack of engagement by the private sector.

To tackle TB and HIV/AIDS in SSA, a response is needed that: addresses the diseases together; can be quickly expanded and managed at a very large scale; can assure quality; and works through the channels where at-risk groups currently get care. At the same time, the services provided by governments must be upgraded, and the two channels of care must be coordinated.

How to work with the private sector

The implications of this initiative are large: 370 million people live in countries in Africa with populations above 10 million, with an average HIV prevalence of 4.8% and TB incidence of 0.32%. Close to half of these people, 180 million, get the bulk of their medical care from private providers. This translates to 8.6 million people living with HIV/AIDS and 576 000 new TB cases annually that are outside of the government health services.

Expanding existing TB and HIV/AIDS programmes to include these populations is desirable, but they are stretched thin. Moreover, they are soon to become stretched further as they begin the scale up required to reach WHO's goal of three million people on antiretrovirals (ARVs) by 2005. Expanding government care systems to those currently not served will cost more than current programmes. Outreach, new facilities, and entry into low-volume rural areas will make this care more expensive, on a per-patient basis, than current national DOTS or HIV/AIDS programmes. Finally, available economic studies of health-seeking behaviour, National Health Accounts research and DHS data analysis indicate that an increase in government services would not be sufficient to reach the Millennium Development Goals (Ngalande-Banda and Walt 1995; Rosen and Conly 1999; Leonard 2000). These issues lead us to conclude that the

solution to expanding access to care is not to replace the private sector, but to find ways to work with it.

The WHO is encouraging collaboration with private provider and private health facilities engaged in TB treatment through the Subgroup on Public-Private Mix. Projects have been tested and documented in four countries, with many more countries now engaging in various collaborations with private providers. Standardisation of services has been identified as one of the key criteria for successful collaboration with the private sector (WHO 2001b; Uplekar 2003).

The actual system of service delivery will follow from the type of service or coverage targeted. In many cases, the limitations to effective delivery of services for the poor are lack of infrastructure for close-to-client provision of care. The Commission on Macroeconomics and Health estimates that, globally, over 23% of the costs of scaling up TB treatments, and 25% of the cost of scaling up antiretroviral therapy (ART), will be attributed to infrastructure (Jha et al 2002). In SSA, the proportion of investment needs attributed to infrastructure will be higher still. Our focus, therefore, is on a system that can expand care using existing infrastructure resources.

Health franchising

Health franchising is a system based on commercial franchise contracting and management structures. Its central benefit as a management tool is the assurance of standardised inputs and procedures used in participating clinics. This way of working with private providers has been shown to effectively assure quality and service provision in a large group, over an extended period, and in a range of developing countries (Smith 1997; McBride and Ahmed 2001; Montagu 2002; Ruster et al 2003). A number of features particular to the franchising business model make this possible (Text box 1).

Health franchising, like commercial franchising, is based on contractual agreements with private providers where the goals of both the parent franchise organisation and the member provider are aligned. In the case of health franchising, equity and public health goals are both addressed through the availability and delivery of services in areas poorly served by government health programmes. Income to the franchise member provider is generated through the provision of these services. Health franchises can be quickly replicated and are highly efficient. The costs of staffing and bricks-and-mortar facilities are contributed by the member providers. Also, the self-interest

Benefits of health franchising model

Existing clinics. Makes rapid expansion possible because the infrastructure, the providers and the client pool are already in place.

Private providers. Serve smaller population areas, less mobile groups and marginalised populations.

Standardisation of inputs, services and procedures. Allows cost-effective and rapid expansion while assuring quality control. Contracts between franchiser and providers establish roles and responsibilities.

Profit motivation. Provides multiple levers of control. Providers participate because they gain access to drugs, laboratories and referral networks that they can only have through the franchise. These inputs generate income which otherwise would not be available to them. If they don't comply with franchise standards, they risk the loss of this income. Central to franchising is the philosophy that providers are motivated by income; if they are also generous, well intentioned and ready to work for the good of their community, that is a welcome and appreciated bonus, but the model doesn't need that to work.

Text box 1 Benefits of health franchising model.

of the providers can be counted on to further the aims of the organisation, decreasing the amount of oversight needed in comparison to clinics owned and run by a central organisation (Montagu 2002).

TB and HIV/AIDS franchising is possible in countries where private providers exist and where they are able to legally prescribe the appropriate medicine. By working with mid-level providers operating existing clinics, or motivated to open a self-financed private clinic, the franchise can make use of already available capital investments in infrastructure and existing clientele. While a population of 5000 may not justify a new TB clinic for 25 cases a year, it would still be possible to enlist an existing local provider into a franchise. Hence, TB services could be added to the package of care already provided, thereby making testing and care available to a larger population.

Immediate benefits will be threefold. First, a large increase in testing for TB and HIV. Second, a greatly expanded number of service delivery points for TB and HIV care, and for prevention services. Third, a pool of trained providers, organised and with established quality-control systems, to support the public health goals of ARV medicine delivery without placing additional burdens on government human resources.

There has been experience in many countries with franchises that provide essential drugs, safe birth delivery, reproductive health services, and voluntary testing and counselling for HIV. Considering this, we believe that the franchise model will deliver diagnosis and treatment for TB and opportunistic infections related to HIV/AIDS at

operating subsidy costs below those of any national TB programme in SSA. It would also serve populations that national programmes are least able to reach. The use of existing human resource capacity in health service delivery is particularly relevant as HIV/AIDS services expand to deliver ARV treatment. In most countries private providers have excess capacity. In all countries private providers are more able to expand their hours of operation and facility infrastructure to accommodate increasing client loads than their public sector counterparts. The franchise will integrate ARV delivery so as to coordinate and support national expansion goals.

Cost and cost-effectiveness

To best evaluate the likely costs and comparative cost-effectiveness, we have limited our initial modelling to established regimens, and are currently working to develop ARV delivery models and pricing in alignment with new WHO treatment protocols. We have calculated the cost of franchising care for TB and all opportunistic infections from HIV stages 1, 2 and 3, taking the twelve countries with populations above 10 million, and HIV and TB prevalence and incidence above 4% and 0.3%, respectively. There are two reasons for the choice of these criteria. First, there is a large fixed cost component associated with a national franchise due to training, monitoring and drug distribution costs. With a large population, this can be spread over a large number of franchised clinics. Second, because provider income in the franchise is directly linked to the priority diseases, high TB incidence and high HIV prevalence are important both as a demonstration of great need, and because they are indicators of market size and therefore of franchisee income.²

Before such a project can be initiated, a country needs an existing cadre of mid-level medical practitioners already working in the private sector, and a supportive government. We currently have little information on either of these, although a survey has recently been commissioned. Here we present calculations for all twelve countries meeting the initial size and disease burden criteria, although we acknowledge that some of the countries may ultimately not be appropriate for application of this model.³ The population assumptions and the pricing set for initial charges to patients for different services are shown in Table 1.

On the basis of these population and affordability assumptions, and lowest publicly priced drug costs as of October 2003, we developed pricing and subsidy systems

Table 1 Population and affordability/pricing assumptions (\$US)

<i>Population assumptions</i>	
Population covered by each clinic	20 000
TB incidence/HIV prevalence	According to each country's national average ^{a,b}
Percentage of population seeking treatment from franchise for non-TB- or non-HIV-related illnesses annually	10% ^c
HIV+ clients in stage II or III	71% ^d
Percentage of those ill with TB or HIV-related OI that seek care	75% ^e
Patients with OI that seek care	
Private sector	50% ^f
Franchise within the private sector	50% ^g
<i>Treatment affordability/Pricing assumptions</i>	
Client's ability to spend on treatment	
TB	\$14.25 ^h
HIV	\$20.00 ⁱ
Other drugs and services per year	\$3.61 ^j

^a (WHO 2003).

^b (UNAIDS/WHO/UNICEF 2002).

^c Estimate.

^d Extrapolation from findings in Uganda (Morgan et al 2002).

^e Estimate.

^f Hanson and Berman (1998); confirmed by DHS summary data from sub-Saharan Africa.

^g Estimate.

^h Estimates for expenditure on TB care in both public and private sector in Kenya ranges from \$25–\$51 (Hanson unpub).

ⁱ Reliable data unavailable. Ngalula et al (2002) found expenditure last six months of life in Tanzania approximately \$65.

^j Estimated combination of expenditure on drugs (\$1.73), nonpharmaceutical products (\$1.38) and consultation (\$0.50).

Abbreviations: TB, tuberculosis; HIV, human immunodeficiency virus; OI, opportunistic infection.

for specific diseases that would balance the needs of affordability to clients, profitability to providers and appropriate incentives to ensure treatment completion where relevant. For all general outpatient services, including treatment of most HIV-related opportunistic infections, we assume that health franchise organisational costs, including training, management etc, are subsidised, but that these are 'hidden subsidies' that do not significantly distort the market for care. For TB and for ART, the price of treatment and the public health imperatives have led us to develop systems of direct subsidies in addition to the indirect 'hidden subsidies'. These are being designed to minimise perverse incentives for providers and patients, but we recognise the necessity for continual evaluation and modification of these systems. An example for Category 1 DOTS care for TB is shown in Figure 1.

As a more specific example, to cover one-third of Kenya using our model,⁴ 11 million people would be served by 525 franchises, requiring an annual operating subsidy

of \$1 million once at steady state (see Figure 2). (All currency values relate to US dollars.) This is equivalent to US\$57 for each cured TB patient and \$7 for each HIV opportunistic infections (OI)⁵ treated patient per year. If implemented in the twelve countries initially identified, the average cost/TB cure would be \$74, compared with current national TB costs of between \$228 and \$2250 in SSA (Floyd et al 2003; Moalosi et al 2003; Nganda et al 2003; Okello et al 2003).

We calculate that a subsidy of \$55 million over five years will be required to establish functioning franchises in a dozen African countries with populations over 10 million. Assuming coverage of one-third of each country, the franchise will cover a population of 120 million and treat 1.2 million people for TB and HIV-related opportunistic infections. Once the operations are fully functional on a steady-state basis, TB patients can be treated on average for \$74 each and \$13 for HIV OIs.⁶ This will require external funding from bilateral or international agencies.

The Global Fund, the World Bank and other funding agencies have strong interests in cost-effective ways of reaching the poor, of which this is a striking example. The private sector is recognised as a critical partner by WHO, which considered franchising for the Global Drug Facility as early as 2002, and which has taken the lead in advocating expansion of Private-Public Mixed Directly Observed Treatment Strategy (PPM-DOTS)⁷ initiatives to treat TB. Exploring health franchising options is one of the draft recommendations from the PPM-DOTS subgroup to the StopTB coordinating board. TB franchising is central to a third round application from Pakistan for funding from the Global Fund, approved for \$6.7M in funding over two years. In Myanmar, TB care is being integrated into an existing reproductive health franchise starting in the first quarter of 2004. Ondo State, Nigeria, has endorsed the franchising of health services for inclusion in the state strategic plan. The need now is for international funding to take existing experience and apply it on a large scale to significantly supplement public programmes.

We recognise that some countries may not meet our criteria for operation, and present these numbers as preliminary best-estimates. Drug prices from the Global Drug Facility and elsewhere will certainly go up in 2004, and a number of countries included here will eventually be excluded due to lack of providers, government resistance, or for other reasons. We present preliminary calculations to illustrate the economic justification for further exploration of this delivery system.

	TB drug cost ^a	Clinic income
International supplier sells drugs to franchiser	\$8.26	
Franchiser sells drugs to clinic	\$9.50 (Cost + 15%)	
Clinic sells drugs to client	\$14.25 (Cost + 50%)	\$4.75
'Cure bonus' Franchiser pays clinic for cure	\$15.00 ^b	+
		\$15.00
Total clinic income per treatment		\$19.75

^a Fixed dose combination (HRZE (isoniazid, rifampicin, pyrazinamide, ethambutol)) tablets 3x/day for 2 months, RH tablets (rifampicin, isoniazid) 2x/day for 4 months. Treatment source: WHO Operational Guide for National Tuberculosis Control Programs (June 2002). Pricing source: Global Drug Facility FOB (free on board) price for 50 kg adult.

^b \$10 'completion reward' is budgeted for direct payment to clients from the franchiser.

Figure 1 A model of TB drug pricing within a health franchise US\$.

Conclusion

The enormous and growing TB and HIV/AIDS epidemics are rapidly transforming entire regions of Africa. As the Director-General of WHO has made clear, we cannot rely on 'business as usual' to address this situation (Lee 2003). New and creative approaches are called for. We have to reach populations not served by government programmes,

or unwilling to make use of them. We must make the most of existing human resources in health care in a way that is both swift and well structured.

The public health needs of the new millennium will only be met through innovation. This will be unsettling to public health professionals used to working in hierarchical systems, but we urge our colleagues to rise to this challenge.

NATIONAL FRANCHISE INCOME (Kenya Example)		CLIENTS TREATED	
REVENUE			
All drugs and ancillary products	\$1 554 687	TB treated	9975
Training	\$31 500	HIV treated	111 671
Annual franchise fee	\$152 250	Ancillary treatment	196 750
Debt repayment ^a	\$36 219		
Total revenue	\$1 774 656		
EXPENSE			
TB diagnosis	\$147 656		
All drugs and ancillary products	\$1 361 939		
Drug and product distribution	\$457 108		
Advertising	\$157 500		
'Cure bonus'	\$211 969		
Staff, monitors, training, overhead	\$530 750		
Total expenses	\$2 896 921		
REQUIRED NATIONAL SUBSIDY	\$1 122 266		

^a Assumes after year 3, 20% of clinics will be in first 3 years and will pay \$750 startup fee.

Figure 2 Preliminary costing estimates and results for a Kenya-based health franchise US\$.

Notes

- ¹ A highly effective system for treatment of TB, incorporating observed treatment, passive case detection, widespread diagnosis and care availability, and systematic reporting and tracking of confirmed cases.
- ² In Kenya, with a TB incidence of 0.51, we estimate that profit from TB care would be approximately $\frac{1}{5}$ of the total annual profit of a member provider.
- ³ Preliminary study results show strong private sector capacity in many target countries. For example, in Nigeria, 78% of doctors and 25% of nurses are reported to work exclusively in the private sector. The twelve initial target countries are: Nigeria, Ethiopia, Tanzania, Kenya, Uganda, Mozambique, Cameroon, Mali, Burkina Faso, Malawi, Zambia and Zimbabwe.
- ⁴ We make the assumption that we will be able to serve populations in the most densely settled one third of each country, parts of which will be dense rural areas such as Nyanza province in Kenya.
- ⁵ Infections resulting from immune system deterioration caused by HIV infection prior to the development of full-blown AIDS.
- ⁶ Prices do not include ART costs, as drug pricing and treatment regimens are still in development at the time of writing. We await clarification from WHO among others regarding best practices.
- ⁷ A WHO initiative to support country TB programmes in integrating private providers.

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