Health sector reform and tuberculosis control: the case of Zambia

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**SUMMARY**


**OBJECTIVE:** To describe the process leading to the collapse of Zambia’s National Tuberculosis Programme (NTP).

**DESIGN:** A descriptive analysis of health sector reform in Zambia and its effects on the NTP during the period 1995–1997.

**RESULTS:** By the end of 1997 the NTP had stopped functioning. The main reason was that external support had ended, while the National Strategic Health Plan 1995–1999 had no budget for special programmes according to the policy to integrate these into the general health services. As a consequence, technical support for tuberculosis control to districts ended as staff was reduced to one officer responsible for the national coordination of AIDS/HIV, sexually transmitted diseases (STD), tuberculosis and leprosy. The most serious effect of the transition was the interruption of supplies of anti-tuberculosis drugs in 1998.

**CONCLUSIONS:** The experience in Zambia demonstrates the urgent need for constructive dialogue between ‘health reformers’ and ‘disease controllers’. The aim of this dialogue would be to develop a model that ensures that tuberculosis patients are properly diagnosed and cured in countries that are embarking on a reform of their health services.

**KEY WORDS:** health sector reform; tuberculosis control; Zambia

IN SEPTEMBER 1995, the Parliament of Zambia passed the National Health Services Act, endorsing radical reform of the country’s health services. Through this Act responsibility for the implementation of health services was delegated to autonomous national, district and hospital boards. The boards are financed from a national ‘basket’ in which funds of the Government of Zambia and its collaborating partners are pooled.

Since 1988, the National Tuberculosis Programme (NTP) had been funded under a bilateral agreement between the Governments of Zambia and the Netherlands. With the expiry of this agreement on 31 December 1997 the external funding of the NTP ended. Since the ‘basket’ does not fund special programmes de facto, the NTP, which was established at independence in 1964, ceased to exist on 1 January 1998. As the Government of Zambia failed to secure the procurement of anti-tuberculosis drugs in time in 1997, the country ran out of anti-tuberculosis drugs at the end of the second half of 1998.

This article describes the process which led to the collapse of structured tuberculosis control in Zambia and the catastrophe leading to the death of an unquantified number of tuberculosis patients due to the absence of anti-tuberculosis drugs in the second half of 1998. In describing the underlying factors of the process leading to this outcome the article aims to initiate discussion between the proponents of radical health sector reforms and the ‘guardians’ of special disease control programmes.

**BACKGROUND**

The ‘Health for All’ (HFA) policy and the ‘Primary Health Care’ (PHC) strategy, formulated by the World Health Organization (WHO) in 1978 during the conference in Alma Ata,1 can be considered as the


Editor’s note: In recognition of the substantial difficulties experienced by the TB Control Program in Zambia after decentralization, a TB Working Group was constituted in early 1999, comprised of individuals with expertise in TB to provide technical advice on issues relating to TB control. Of great concern, however, is that drug procurement for TB drugs has been integrated with the procurement of other drugs, and delays in obtaining funding for drugs have led to serious TB drug stock-outs. The TB Working Group continues to advocate for funds for TB drugs to be secured within the basket funding but to be earmarked specifically for this purpose to ensure continuous supplies of TB drugs. (A. Mwinga, personal communication).

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first global attempt to organise health services in low-income countries in such a way that they would provide equity of access to quality care addressing the basic health needs of all people. The PHC strategy aimed at replacing the so far mainly hospital based and curative oriented health services, as well as disease specific special programmes, by preventive and promotive services as close as possible to the community, with community participation, inter-sectoral collaboration and implementation of cost-effective interventions using appropriate technology.\(^2\)

In the process of implementing the HFA policy and PHC strategy, several approaches were developed depending on different interpretations of the concept and local circumstances: selective PHC\(^3\) versus integral PHC, the district health care system, cost-recovery schemes following the Bamako Initiative,\(^4\) and community based health care. Even though approaches differed, they all focused on improving health services at the user’s level rather than on reorganising the health sector in general. An evaluation of the implementation of the HFA policy by the WHO\(^5,6\) showed that on a global level considerable progress was made with regard to the 12 global indicators formulated at Alma Ata.

However, in many low-income countries, in particular in sub-Saharan Africa, the strategy was hampered severely by economic recession, debt crisis, structural adjustment programmes\(^7\) and shrinking donor support. The overall health situation in these countries was further affected by epidemiological changes, in particular due to the human immunodeficiency virus (HIV) pandemic, demographic pressure, urbanisation and continuation of poverty in general.\(^8\) As it became clear that the goal of ‘Health for All’ would not be achieved by the year 2000, the WHO began to formulate a new global policy for Health for All in the 21st century.\(^9\)

The WHO HFA policy and PHC strategies were defined from a health perspective. Structural adjustment programmes,\(^10,11\) designed in the 1980s to address the problems of the economic and debt crises in low-income countries, led to the development of strategies for improving the health situation from an economic perspective. In the World Development Report 1993 ‘Investing in Health’,\(^12\) and in ‘Better Health in Africa’,\(^13\) published by the World Bank in 1993 and 1994, health is defined as an essential factor for economic development. Using the Disability Adjusted Life Year (DALY) method to calculate the cost-effectiveness of health interventions, affordable minimum packages of care addressing basic health needs should be formulated and provided to the population. In the agenda for action of the 1993 report and The Health Nutrition and Population Sector Strategy published in 1997,\(^14\) the World Bank emphasises the need for a reform of the health sector itself. The proposed Health Sector Reform (HSR),\(^15,16\) aims at better use of scarce resources and increased efficiency of the health services by moving from centralised to decentralised planning systems, redistributing funds from tertiary to peripheral levels, introducing alternative funding mechanisms, provision of integrated services by polyvalent health staff and contracting out services to the private sector and non-governmental organisations. Since the introduction of these concepts extensive health sector reforms have been embarked upon in Africa,\(^17,18\) South America, parts of Asia and the former Soviet Union. Both the traditional PHC strategy and the new HSR strategy challenge the existence of special disease control programmes, which are considered expensive, vertical, i.e., not integrated, and without much impact.

In the 1950s the colonial powers introduced tuberculosis control programmes in their colonies using diagnostic tools and chemotherapy with streptomycin and isoniazid developed in the Western world. During the same period the epidemiology of tuberculosis in the developing world was studied extensively by the WHO.\(^19\) In the 1960s and 1970s numerous trials using new anti-tuberculosis drugs such as rifampicin and pyrazinamide were carried out in high prevalence countries in joint studies by Western and local research institutes, leading to the development of the current short-course chemotherapy regimens.\(^20,21\) At independence most high prevalence countries had national tuberculosis control programmes organised following the concepts of tuberculosis control in the Western world. By the end of the 1970s tuberculosis ceased to be an important public health problem in the majority of industrialised countries, and was no longer considered a priority disease on the WHO’s international health agenda. A turning point was made at the start of the 1990s, when the WHO declared tuberculosis a global emergency\(^22\) and established the Global Programme on Tuberculosis (GTB). Experiences in a number of high prevalence countries had shown that well organised tuberculosis programmes using short-course chemotherapy, including supervised intake of rifampicin, were achieving high cure-rates of 80%–90%.\(^23,25\) It had furthermore been proven that under such circumstances tuberculosis control is among the most cost-effective health interventions evaluated to date.\(^26,27\) The GTB therefore recommended the ‘Framework for essential TB control’\(^28\) and the ‘Directly observed treatment, short-course strategy’ (DOTS) as the strategy of choice for effective tuberculosis control services. This decision was timely, as due to the HIV epidemic\(^29\) the incidence of tuberculosis had been increasing dramatically since the second half of the 1980s, in particular in sub-Saharan Africa;\(^30,31\) also, due to poor tuberculosis control, multidrug resistance (MDR) was emerging in several countries.\(^32\)

The objective of this article is to contribute to the longstanding debate between the proponents of ‘radical’ reforms of the health sector and the ‘guardians’ of specialised disease specific programmes. For this
purpose we describe the effects of the introduction of HSR on tuberculosis control in Zambia and analyse the factors and reasons leading to the collapse of tuberculosis control in 1998.

METHODOLOGY
This paper presents a descriptive analysis of the evolution of HSR and its components in Zambia during the period 1995–1997 and its effects on the NTP and tuberculosis control in general. The analysis is based on a study of HSR policy documents published before and during this period, discussions with key policy makers within the Ministry of Health, the Central Board of Health (CBoH) and representatives of bilateral agencies supporting HSR. The analysis is further based on 10 missions to Zambia and visits to a wide range of districts and provinces all over Zambia from 1991 to 1997. During these visits the practical implications of HSR on the health services in general and tuberculosis control in particular were discussed with health authorities at national, provincial and district level. The findings of these missions were documented in a series of progress reports, which were used as resource material for this article.

SETTING
Zambia is a land-locked country in Southern Africa covering an area of 752,614 km². The country is divided into nine provinces and 61 districts. Zambia is a low-income country, with a poorly functioning economy. In 1994 the GNP was $350 per capita, and the external debt was approximately US$6.6 billion.

The estimated population in 1998 was approximately 10 million, with an annual population growth rate of 3.2%. Zambia is one of the most urbanised countries in Africa, with about 42% of the population living in urban areas. The health situation in Zambia, characteristic of sub-Saharan African countries in general, was shown by the 1992 Zambia Demographic and Health Survey to be deteriorating. Under-five mortality rose by 15%, from 152 per 1000 births in 1977–1981 to 191 in 1987–1991, and currently one in five Zambian children dies before reaching the age of five. During the last decade adult health has been seriously affected by the HIV and tuberculosis co-epidemic. HIV seroprevalence in women attending antenatal clinics in recent years is between 20–30%, with little difference between urban and rural populations. Current annual deaths due to the acquired immune-deficiency syndrome (AIDS) are estimated at 100,000 and new HIV infections at 180,000.

No tuberculin surveys to measure the level of transmission of Mycobacterium tuberculosis have ever been held in Zambia. Based on the tuberculosis surveys in the Copperbelt Province in 1937–1938 and in Livingstone District in 1968, the level of the annual risk of tuberculosis infection during the 1960s can be estimated to have been about 2.5%. Case notification data from 1964 to 1996 show two distinct periods in the evolution of the trend of tuberculosis in Zambia:

1. A more or less stable situation during the period 1964–1984. In this period the total number of notified cases, all forms, increased from 4572 in 1964 to 7272 in 1984, reflecting a population increase of an average 3% per year. During this period the case notification rate remained relatively constant, fluctuating at around 100 per 100,000 population.

2. A sharp increase of cases and rates during the period 1985–1996. During this period the absolute number of notified new cases increased from 8246 in 1985 to 38863 in 1996. The case notification rate increased more than threefold, from 124/100,000 in 1985 to 409/100,000 in 1996. The increase in tuberculosis notifications since 1985 coincided with the spread of HIV in Zambia. HIV seroprevalence in tuberculosis patients in Lusaka was 60% in 1988 and 73% in 1989. It is estimated that in 1995, nation wide, more than half of tuberculosis patients were co-infected with HIV.

THE ZAMBIAN NATIONAL TUBERCULOSIS CONTROL PROGRAMME
After independence in 1964, the National Tuberculosis Control Programme (NTP) was established by the new Government of Zambia. In 1980 tuberculosis and leprosy control were combined, and in 1993 the national AIDS/STD (sexually transmitted diseases), tuberculosis and leprosy control programme was formed. From 1988 the NTP received support from the Government of the Netherlands; the major component of this support comprised provision of annual needs in anti-tuberculosis drugs. At the request of both governments the programme was reviewed in 1991. The main findings of the team were low cure rates and high default rates; other findings concerned lack of management capacity and skills in tuberculosis control at all levels. Based on the recommendations of the review team, a 5-year development plan was designed. In 1994 the Government of the Netherlands agreed to finance a 2-year action plan for tuberculosis control support to the district level, which aimed at improving the results of the programme by training staff and instituting a system of supervision at the various levels. In 1996 this agreement was extended to 31 December 1997. By the end of 1997, continuation of external funding after the expiry of the agreement was not secured by the Government of Zambia.

The tuberculosis control strategy of the NTP in the period 1995–1997, formulated in the aforementioned...
5-year plan, was designed according to the policy frame of the WHO-GTB. The NTP of Zambia was organised according to the model of successful tuberculosis control programmes developed with the assistance of the International Union Against Tuberculosis and Lung Disease (IUATLD), the Royal Netherlands Tuberculosis Association (KNCTV), the WHO and the World Bank in a number of countries in Africa, Latin America and Asia. At the national level a Central Unit in the Ministry of Health was responsible for the overall planning and co-ordination of the programme. In all nine provinces provincial tuberculosis co-ordinators attached to the Provincial Medical Offices formed the link between the central level and the districts. The main function of these staff was to provide technical support to the District Health Management Team (DHMT) in providing quality-assured tuberculosis services at the district level. At district level the programme was fully integrated. In Zambia financing of tuberculosis control activities at this level is entirely the responsibility of the district. NTP support for the districts consisted of provision of anti-tuberculosis drugs, laboratory materials, stationery for recording and reporting, and training and technical assistance by the provincial co-ordinators.

During the period 1995 through 1997, the NTP was developed according to a national plan with clear objectives, targets, activities and corresponding budget approved by the Government of Zambia. Situation analyses were performed district by district, and management cycles were developed for tuberculosis control at the district level. The WHO-recommended information system was implemented in all districts, allowing for monitoring and evaluation of case finding and treatment. A national tuberculosis manual and a tuberculosis guide for programme staff and general health workers was developed and published. Throughout this period all treatment centres received uninterrupted supplies of anti-tuberculosis drugs, and half-yearly national technical review meetings were held for the purpose of national evaluation, standardisation and co-ordination of planning and implementation. These efforts resulted in a conversion rate at the end of the intensive phase of 88% in cases enrolled in 1996 and an increase in the treatment completion rate at 8 months of 70% in cases enrolled in 1995 as compared to 50% in the preceding years.

THE REFORM OF THE HEALTH SECTOR

In Zambia, falling copper prices and the worldwide energy crisis of the mid 1970s led to a massive decline in government revenues. Due to extensive borrowing, an overvalued exchange rate and subsidies on consumer goods, by the end of the 1980s an external debt of about US$7 billion had been created. The new government elected in 1991 was faced with a multiplicity of problems in the health sector: a run-down physical health infrastructure, epidemics of cholera, tuberculosis, HIV/AIDS and endemic malaria, chronic shortages of drugs and medical supplies, demoralised health workers, uncontrolled population growth and an antiquated health management structure unresponsive to the prevailing health needs.

Goal, aim, vision, principles
In 1991 the Movement for Multiparty Democracy formulated new national health policies and strategies to address these problems. The Corporate Plan for Implementing National Health Policies and Strategies, and the National Health Policies and Strategies, both published in 1992, provide the blueprint for HSR in Zambia. In the National Strategic Health Plan (Investment plan) 1995–1999, ‘From Vision to Reality’, published in 1994, and the Handbook for District Health Board Members published in 1996, the goal, aim and vision of the HSR are formulated as follows: “To achieve radical and affordable improvements in health care provision, utilisation and quality aiming at better health for all Zambians and to provide equity of access to cost-effective quality care as close to the family as possible”.

Process
The main features of the HSR process are the decentralisation of authority and responsibility from central and regional levels to the districts, and strengthening of planning, budgeting and managing capacity at that level. Crucial in this process is the re-direction of funding from the centre to the district, from tertiary to primary care, from curative to preventive care and from categorical programmes to integrated care. The process further aims to increase community involvement and ownership and cost-sharing through medical fees.

Structure
In September 1995 the Parliament of Zambia enacted the National Health Services Act. This Act was needed “to establish the Central Board of Health; provide for the procedures for establishing management boards for hospitals and health services; to define functions and powers of such boards and their relationship. . . .” The main purpose of the act was to create autonomous corporate bodies responsible for developing and implementing annual health plans. In November 1995 the Health Reforms Implementation Team Secretariat issued District Guidelines, which describe the roles, functions and responsibilities of these new bodies, called health boards.

In June 1997 the Government of Zambia published The National Health Services (Transfer and Secondment of Public Officers) regulations, 1997. These regulations make it possible to transfer a public
officer to a management board. In this way civil servants employed by the Ministry of Health could be ‘de-linked’ from government service and contracted by the health boards, and a number of new bodies were created (Table).

At the village level, neighbourhood committees represent the populations of areas covered by planned health posts. The Area Health Boards and Health Centre Committees are responsible for the health of the population in the catchment area of a health centre. At district level the District Health Board (DHB) is responsible for the entire district, while the Hospital Management Boards (HMB) are responsible for overseeing the hospitals. The District Health and Hospital Health Management Teams respectively provide technical advice to DHBs and HMBs. At the national level, the CBoH functions as the implementing agent of the Ministry of Health. As part of the CBoH, four Regional Boards of Health (RBoH) were created, replacing the nine former (health) provinces and the former Provincial Medical Offices.

### Main elements of the reformed health services

Health sector reform aims to provide cost-effective packages of care addressing the most common diseases that contribute to the high disease burden. All districts need to address six health thrusts: maternal health and family planning, child health, water and sanitation, malaria, AIDS/STD and tuberculosis. The key staff of the district health service is the polyvalent public health practitioner, capable of providing all components of the minimum package of care at health post, health centre and hospital out-patient department level. Autonomous DHBs are responsible for the planning, management and finances of annual district health plans through contracts with the CBoH, financed from one central basket funded by the Government and the donor community. The ordering of drugs and other materials is decentralised. It is the responsibility of the districts to calculate requirements and order supplies of drugs and other materials in accordance with the ‘Pull’ instead of ‘Push’ approach, i.e., drugs are no longer routinely distributed from national level, as districts have to take action to order them. The districts use a Health Management and Information System (HMIS), which is action-oriented and geared to the needs of the health staff, i.e., only information that can be used for decision making at district level is collected. The four RBoHs are supposed to assure the quality of the district health service and audit the performance of the district health staff. Teams from the Regional Offices of the CBoH and DHMTs are expected to support the polyvalent public health practitioners through integrated supervisory visits.

### Implementation of HSR

Milestones in the development of HSR are the publication of the Corporate Plan in 1992, the Strategic Health Plan in 1994, the endorsement of the National Health Act in 1995 and the establishment of the CBoH in 1996. From 1995 through 1996 a country wide district capacity-building ‘campaign’ was held, and districts entered into contracts with the CBoH for the first time in 1997. The Government of Zambia received financial support and advice on developing and implementing HSR from bilateral agencies such as DANIDA (from Denmark) and USAID (from the USA), and from the World Bank. Regular meetings with consultants and representatives of embassies contributing to the health sector, e.g., Sweden and the Netherlands, were organised by the Health Reform Implementation Team and later the CBoH, to discuss the progress of implementation. In this way the process was developed as a joint effort of the Ministry of Health and its main donors.

The actual implementation of the HSR principles faced considerable obstacles. Because of budgetary constraints the MoH and CBoH honoured only part of the district budgets for the 1997 district health plans. Districts were therefore unable to implement activities fully as planned. The transfer of health staff employed by the Ministry of Health to the autonomous boards met with considerable constraints, leading to demoralisation of staff, in particular at provincial and national level. In 1998, the creation of the four health regions to replace the nine health provinces was reconsidered. The number of staff on these

### Table New administrative bodies created under health sector reform

<table>
<thead>
<tr>
<th>Level</th>
<th>Population</th>
<th>Institution</th>
<th>Administrative responsibility</th>
<th>Technical responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Village</td>
<td>500–1000</td>
<td>Health post</td>
<td>Neighbourhood committee</td>
<td></td>
</tr>
<tr>
<td>Health area</td>
<td>25 000–50 000</td>
<td>Health centre</td>
<td>Area Health Board (AHB)</td>
<td>Health Centre Committee</td>
</tr>
<tr>
<td>District</td>
<td>100 000–250 000</td>
<td>District hospital</td>
<td>District Health Board (DHB)</td>
<td>District Health Management Team (DHMT)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Hospital Management Board (HMB)</td>
<td>Hospital Health Management Team (HHMT)</td>
</tr>
<tr>
<td>Regional</td>
<td>2.5 million</td>
<td></td>
<td>Regional Board of Health (RBoH)</td>
<td></td>
</tr>
<tr>
<td>National</td>
<td>10 million</td>
<td>Ministry of Health</td>
<td></td>
<td>Central Board of Health (CBoH)</td>
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boards, the size of the areas and the distances to the districts inhibited proper execution of such core functions as quality assurance, performance audits and technical support visits. In implementing the reforms strategic shortcomings were that the establishment and manning of the RBoHs was undertaken much later than the district capacity building, and that the roles and relations between the boards at national, regional and district level were not well enough developed.\textsuperscript{54,55} In practice, therefore, the RBoHs did not function as planned, and the intermediate level was essentially lacking as the link between the districts and the CBoH.

**THE EFFECTS OF HSR ON THE NTP**

With the expiry of the agreement between the governments of Zambia and the Netherlands on 31 December 1997, the NTP de facto ceased to exist by the end of 1997, as in accordance with the National Strategic Health Plan 1995–1999 the national health budget had no funds for special programmes. The direct consequence was that technical support for tuberculosis control at district level came to an end, while at the same time no alternative was formulated and put in place. Furthermore, with the creation of the RBoHs, the provincial medical offices were closed and thus the function of provincial tuberculosis and leprosy co-ordinator also ceased to exist. However, by the end of 1997 the RBoHs were still in the process of being developed, while the capacity for technical assistance for tuberculosis control at regional level remained undefined. Finally, at national level in the CBoH, the staffing for TB was reduced to one officer, who was also responsible for national co-ordination of AIDS/HIV, STD and leprosy.

The most serious indirect effect of the expiry of the agreement was the interruption of the supply of anti-tuberculosis drugs during 1998. The government of Zambia had not ordered drugs for 1998 by mid 1997, whereas as experience shows the lead time for an order involving international competitive bidding is at least 12 months, and often more. By mid 1997 it was estimated based on existing stocks that anti-tuberculosis drugs would run out during the first half of 1998. This did indeed occur, and the Government of the Netherlands airlifted an emergency supply of anti-tuberculosis drugs to Zambia after a pledge was made by the Minister of Health in mid 1998. However, in 1999, after these supplies were finished, shortages of anti-tuberculosis drugs occurred once again.

**DISCUSSION**

**Opportunities of HSR for TB control**

In the case of HSR in Zambia, opportunities do exist in the priority given to tuberculosis control as one of the six health thrusts, which are to be addressed by the DHBs and DHMTs in the annual district health plan. Furthermore, the diagnosis and treatment of tuberculosis are included in the minimum package of care.

The involvement of the health centre and neighbourhood committees could increase case finding and improve treatment compliance. If the HSR achieves the stated goal of establishing health services able to provide the minimum package of care as close as possible to the community, further decentralisation of DOTS to the health post and health centre level, and to those communities where community based health care exists, TB control would greatly benefit. A clear positive result of HSR is visible in the increased capacity of districts to plan and manage the district health services. Annual district health plans include tuberculosis control, and the Integrated Technical Guidelines for Frontline Health Workers\textsuperscript{56} include a chapter on diagnosis and treatment of tuberculosis.

**Risk factors inherent to HSR that directly affect the quality of TB control**

With regard to TB control, HSR has a number of risk factors that need to be addressed to ensure the quality of diagnosis and treatment of TB in the future. In the CBoH and the RBoHs, the capacity for providing technical assistance for control of diseases of major public health importance is insufficient. The capacity of the DHMTs for proper management of tuberculosis control is not yet developed in the majority of the districts. When the DHMT as a team is responsible for the whole package, the risk exists that responsibilities for specific interventions are no longer well defined. Furthermore, it is not clear who will be held responsible in case of poor performance. The assumption of the reformers that districts are able to provide good quality tuberculosis care and control without considerable technical support should be considered premature in the current situation. Training modules for the polyvalent public health practitioner were still under development in 1997, and existing staff as clinical officers and nurses still needed to be retrained as ‘polyvalent public health practitioners’. Capacity building at district level was mainly directed at planning and management. The development of technical capacity to provide the minimum package had by the end of 1997 largely still to start.

A final risk factor is the newly developed quarterly ‘health management and information’ form. The only information regarding TB control, which districts are required to report using this form, is the total number of cases of tuberculosis, all forms, registered during a quarter, and the number of patients who default during that quarter. With this limited information it is not possible to assess the quality of diagnosis or to monitor trends of registration rates and outcome of treatment of quarterly cohorts of smear-positive cases.

The new form can not serve as a tool for routine eval-
uation and surveillance in tuberculosis control, as it lacks information on these three essential indicators. It therefore poses a serious risk for the quality of TB control in the future.

Risk factors inherent to HSR in financing of TB control

Although tuberculosis is included in the minimum package of care and among the six health thrusts, priority setting in the district health plan is the responsibility of the DHB and DHMT. As the relative share of interventions of the package is unquantified, both in volume and with respect to lower limits or ceilings of budget per intervention, the risk exists that tuberculosis might receive insufficient attention and funding. Even though the current rate of tuberculosis is as high as 400/100,000, this number might be perceived by the DHB and DHMT as relatively small in view of the total morbidity and mortality due to all diseases in the district.

With regard to planning and budgeting, the 1997 district health plans usually mention tracing of defaulters as the only specific TB control activity. The plans in general lack a clear tuberculosis control strategy with well-defined case finding and treatment objectives aiming at default prevention by providing quality assured tuberculosis care. As districts are funded from a common basket, the inherent risk exists that in case of budgetary constraints the deficit will affect all components of the package. No special instructions have been formulated to safeguard activities of high public health priority under such circumstances. Finally, cost-sharing policies may have a negative effect on early reporting of suspects and diagnosis of tuberculosis patients as well as on treatment adherence.

Risk factors inherent to HSR in ensuring availability of anti-tuberculosis drugs

The most serious and acute threat of HSR in TB control concerns the provision of anti-tuberculosis drugs. If the responsibility and budget for drug procurement is fully decentralised to the district level, a serious risk exists that repeated shortages of one or more of the drugs used in tuberculosis treatment will occur. One or more of the following factors would contribute to this risk: inadequate planning and budgeting for anti-tuberculosis drugs; low priority given by the DHB to tuberculosis control; the comparatively high costs of anti-tuberculosis drugs, so that they might, in the view of the DHB, take a disproportionate share of the district drug budget—districts receive insufficient funds from the basket, and cannot purchase all the drugs that are required; finally, at national level financing of anti-tuberculosis drugs and laboratory materials is a heavy burden on the MoH budget (estimated costs 1998–2000 US$6.7 million).

The recurrent shortages of anti-tuberculosis drugs in 1998 and 1999 can be partly attributed to the tight national budget and partly to the capacity of the Ministry of Health in bidding and procure-

Causes leading to the collapse of structured TB control

In summary, the HSR concept developed in Zambia offered theoretical opportunities for TB control, although with a number of inherent risks. In practice, however, HSR has had disastrous effects, both on the NTP and on tuberculosis control. This adverse outcome can be attributed to the following factors: the HSR blueprint was developed to a great extent by a small group of policymakers and (external) technical advisers. Furthermore, it was based on a number of principles which in practice were non-negotiable. A crucial factor was further that HSR depended heavily on external funding, while the Government of Zambia could not commit itself sufficiently due to the adverse economic situation. From 1995 through 1997, the NTP failed to convince the HSR team of the need to maintain a core structure for tuberculosis control. It was only in December 1997 that the CBoH adopted the Strategic Plan of Quality Assured Tuberculosis Care and Control for District and Hospital Health Boards for 1998 to 2000, which was developed by the NTP as an alternative approach for TB control which could be incorporated in the HSR. The plan offered opportunities for integrated tuberculosis control by introducing a planning and management cycle for tuberculosis control at district level incorporated in the overall District Health Plan, by defining and delegating responsibilities for quality care and control of tuberculosis to one or more members of the boards and committees, while the overall responsibility would remain with these bodies, and by introducing the concept of integrated communicable disease control capacities for malaria, AIDS/HIV and tuberculosis at national, regional and district level. The plan also included a system for guaranteed supplies of anti-tuberculosis drugs through a combination of central purchase, delegated responsibility for ordering to district level and a central monitoring system to prevent stocks running out at district level. However, no local and/or external resources to finance the plan were mobilised during 1997. In line with the principle of ‘basket funding’, no special finances were made available for TB activities in 1998, and as a consequence organised TB control ceased to exist, while the country ran out of anti-tuberculosis drugs due to the delays in procurement by the Government.

The moral obligation of HSR stakeholders

The experience in Zambia proves that HSR should be redesigned to include a component for disease con-
control, including TB control, at district, regional and national levels. The main responsibility for the collapse of organised TB control in Zambia lies with the Zambian Ministry of Health. However, the organisations that funded the reforms and the experts who advised the Ministry of Health on HSR are equally or even more responsible for the catastrophe in tuberculosis control that resulted from their participation in the HSR process. All stakeholders in HSR in Zambia were undoubtedly aiming at improving the health situation for the Zambian population. However, in choosing the paradigm of ‘radical reforms’ they obscured the moral obligation to consult with the direct recipients, i.e., the people of Zambia, in this case in particular with regard to adequate services for diagnosis and treatment of tuberculosis. As a consequence of this combination of insufficient capacity for tuberculosis control at district level, lack of technical assistance from regional and national level and recurrent partial or total anti-tuberculosis drug shortages, failure and default rates will now inevitably increase. HSR has thus created a situation that is promoting the development and transmission of multidrug-resistant strains of *M. tuberculosis*.

The experience of Zambia demonstrates the urgent need for constructive dialogue between ‘health reformers’ and ‘disease controllers’. The aim of this dialogue should be to develop a model that ensures that tuberculosis patients are properly diagnosed and cured in countries that are embarking on reforming their health services.

References

El PNT dejó de funcionar a fines de 1997. La principal razón fue que terminó la ayuda externa, mientras que el Plan Nacional Estratégico de Salud 1995–1999 carecía de presupuesto para programas especiales, de acuerdo con la política de integrar a éstos en los servicios generales de salud. Como consecuencia terminó el apoyo técnico al control de la tuberculosis ya que el equipo fue reducido a un solo agente responsable de la coordinación nacional del VIH/SIDA, de las infecciones sexualmente transmisibles (IST), de la tuberculosis y de la lepra. El efecto más grave de esta transición fue la interrupción en la fijación de medicamentos antituberculosos en 1998.

CONCLUSIONES: La experiencia de Zambia demuestra la urgencia de un diálogo constructivo entre los ‘reformadores de la salud’ y ‘los que controlan las enfermedades’. Le but de ce dialogue serait de développer un modèle permettant aux patients tuberculeux de bénéficier d’un diagnostic correct et d’une guérison dans les pays qui s’embarquent dans une réforme de leurs services de santé.